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BEFORE THE ARIZONA CORPORATION COMMISSION

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GARY PIERCE- CHAIRMAN
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SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

EXHIBIT
TEP-1
ADMITTED

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-11-0055

Direct Testimony of

David G. Hutchens

on Behalf of

Tucson Electric Power Company

June 15, 2012

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I. INTRODUCTION.

Q. Please state your name and business address.

A. My name is David G. Hutchens. My business address is 88 East Broadway Blvd., Tucson, Arizona 85702.

Q. By whom are you employed and what are your duties and responsibilities?

A. I am employed by UNS Energy Corporation ("UNS Energy") and Tucson Electric Power Company ("TEP" or the "Company") as President. UNS Energy was known as UniSource Energy Corporation before a name change that took effect on May 4, 2012. For simplicity's sake, I will refer to that company as UNS Energy throughout my testimony, even when describing actions taken under the company's previous name.

Q. Please describe your background and work experience.

A. I received a Bachelor of Science degree in Aerospace Engineering from the University of Arizona in 1988 and a Master of Business Administration degree from the University of Arizona's Eller Graduate School of Management in 1999.

I was commissioned into the United States Navy in 1988 and served as a Nuclear-Trained Submarine Line Officer until 1993.

I was hired by TEP in 1995 as an Analyst in Product Planning and Development. In 1996, I moved into TEP's Wholesale Marketing Department as an Energy Marketer/Trader. I was promoted to Supervisor of the area in 1999, Manager in 2001, and General Manager in 2003. I was promoted to Vice President of Wholesale Energy and UNS Gas in 2007 and the Vice President of Energy Efficiency and Resource Planning in 2009. In 2011, I was promoted to Executive Vice President of UNS Energy

and in December I was promoted to my current position of President of UNS Energy and TEP.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide an overview of TEP's view of energy efficiency ("EE") resources and the potential impacts of the Arizona Corporations Commission's ("Commission") Electric Energy Efficiency rules (A.A.C. R14-2-2401 et seq.) ("EE Rules"). I am also setting forth the reasons that TEP is requesting approval of an interim EE Implementation Plan that will act as a bridge between now and the end of TEP's upcoming rate case. Finally, I explain that TEP will be proposing a different way – and what we believe to be a more effective way – to fund EE programs in an effort to meet the Commission's Energy Efficiency Standard ("EE Standard") set forth in the EE Rules in TEP's upcoming rate case.

Q. Could you please summarize your testimony?

A. Yes. First, TEP has been and continues to be a strong proponent of EE. However, due to unique circumstance surrounding the timing of the implementation of the EE Rules and TEP's rate case moratorium, there have been several challenges for TEP to meet the EE Standard. In order to avoid a confiscatory application of the EE Rules, TEP needs to be able to recover the lost fixed cost revenues resulting from compliance with the EE Rules. However, certain legal issues have been raised about adoption of a mechanism to recover those lost revenues outside of a rate case. Although TEP does not agree with those concerns, those potential legal issues provided some of the impetus to have an evidentiary hearing in this docket.

Second, in order to eliminate or mitigate those potential legal concerns and to implement a more robust EE program than is currently in place at TEP, the Company is proposing

that the Commission approve a "bridge" implementation plan. TEP submitted such a modified plan in this docket on January 31, 2012 and then filed an updated version of the modified plan on May 2, 2012 ("Updated Plan"). Our position in this docket is that the Commission should approve the Updated Plan because it will provide a bridge to the end of the TEP rate case, where the Commission can approve a more coordinated solution, and it avoids an unduly confiscatory application of the EE Rules. TEP witness Denise Smith provides a more detailed explanation of the Updated Plan in her testimony.

Third, our "bridge" proposal is also important because TEP will be proposing a new way to fund EE in its upcoming rate case. In its rate case filing, TEP will propose a new, forward looking approach for financing EE programs and complying with the EE Standard. Under TEP's proposal, the Commission would approve a three (3) year EE investment plan and associated Demand Side Management Surcharges ("DSMS"). The Company will invest its capital in cost-effective demand side management and energy efficiency ("DSM/EE") programs, recovering its costs through the DSMS and eliminating the performance incentive. This approach should reduce the cost to TEP's customers compared to the existing approach set forth in the EE Rules and provide more stability and predictability regarding the level of the DSMS.

II. THE DILEMMA OF THE EE RULES FOR TEP.

Q. Please provide TEP's concerns about complying with the EE Rules.

A. At their core, the EE Rules require utilities to reduce their energy sales. The EE Rules are the latest in a series of Commission rules that are intended to change the way (i) utilities provide electric service; and (ii) customers pay for electricity. For example, in addition to the EE Rules, in recent years, the Commission has also promulgated separate sets of rules and issued decisions regarding Renewable Energy and Net Metering. These

rules and orders result in reductions to the volume of sales to our customers without the requisite changes in cost recovery methods that would enable TEP to recover its costs and provide the Company with an opportunity to earn a reasonable return.

Under the EE Rules, TEP is required to sharply reduce its retail sales by:

- 1.25% in 2011,
- a cumulative 3.0% in 2012, and
- a cumulative 5.0% in 2013 through the use of customer EE and demand response programs.

Successful implementation of any cost-effective DSM program will reduce TEP's kWh sales and revenues compared with the levels anticipated when the Company's current rates were approved. Under TEP's current rate design, for every 1.0% reduction in retail energy sales, its fixed costs recovered through volumetric rates (non-fuel revenue) is also reduced by 1.0%. Therefore, by 2013, TEP will be facing a decrease in non-fuel revenues of 5.0% from compliance with the EE Rule.

As part of Decision No. 70628, which approved TEP's 2008 Rate Case Settlement Agreement ("2008 Rate Case Settlement Order"), TEP's base rates are frozen until January 1, 2013, further exacerbating the situation. In other words, TEP is precluded from updating its base rates to reflect the lower sales volumes required by the Commission's EE Rule until 2013. TEP estimates that, without any recovery mechanism, it will lose a total of $39 million in fixed cost recovery from 2011 through 2013 with full compliance of the EE Rules.

Q. Was the Company an active participant in the electric EE Standard rulemaking process?

A. Yes, the Company was an active participant in the rulemaking process to adopt the EE Rules and to determine the EE Standard.

Q. Did the Company express concern about the EE Standard during the rulemaking process?

A. Yes, the Company filed the following documents:

- Comments to the Proposed Rules on November 16, 2009;
- Exceptions to the Recommended Order and Opinion on December 11, 2009;
- Comments on the EE Standard on February 16, 2010; and
- Exceptions to the Recommended Order and Opinion on July 6, 2010.

TEP also participated in workshops and public comment sessions during the rulemaking process. In filings, rulemaking workshops and public comment sessions, TEP repeatedly argued for synchronization of the EE Standard with an appropriate cost recovery mechanism. The Company also expressed its concerns about the mandated sales reductions and the adverse financial impacts on TEP during the term of its rate freeze.

Further, TEP was concerned about the lack of information regarding the definition of "cost-effective", the supply curve of available cost-effective programs, market penetration, technological issues and customer adoption rates– in short, the ability to meet such an aggressive standard in a cost-effective manner.

Q. Why isn't TEP requesting a waiver of the EE Rules until these issues are addressed in TEP's upcoming rate case?

A. TEP has always been a strong proponent of cost-effective EE as a means to keep customer rates down, to provide customers with the opportunity to manage their energy needs and to access low-cost energy resources. In fact, the Company was recently recognized by Target Rock Advisors Sustainability Rankings, as one of fifteen utilities in the United States that are industry leaders for demand-side management and energy efficiency ("DSM/ EE"). Although TEP has proposed a waiver of the EE Rules as an alternative to Staff of the Commission's (hereinafter "Commission Staff") Proposed Order, TEP has repeatedly indicated that it preferred the adoption of an Implementation Plan that would allow TEP to implement cost-effective programs that would enable the Company to meet the EE Standard, provided that the confiscatory impacts of the Plan were suitably ameliorated through appropriate synchronization of compliance with the EE Rules with timely recovery of lost fixed cost revenue.

Through Integrated Resource Planning efforts, the Company shows that certain DSM/EE measures can be the lowest cost generation resource available. It is well documented that EE can cost less than other resources and also helps to reduce peak loads. Further, EE reduces water consumption associated with traditional energy generation and in some instances EE can also reduce the need for new transmission and distribution investments.

Therefore, for the reasons set forth below, TEP would prefer to have a more robust interim EE plan approved by the Commission in this docket rather than to receive a waiver that effectively keeps TEP's EE spending at levels approved in 2010 before the EE Rules were adopted.

III. OVERVIEW OF TEP'S EE EFFORTS.

Q. Did the Company offer EE Programs prior to adoption of EE Rules on January 1, 2011?

A. Yes. The Company has offered a limited number of DSM/EE programs since the 1980's. However, the level of DSM/EE activity offered prior to adoption of the EE Standard is small compared to the level required to meet the EE Standard. Prior to 2009 the Company's DSM/EE programs produced savings of 0.3% or less of prior year sales. In compliance with the 2008 Rate Case Settlement Order, the Company increased its EE program offerings and continued to ramp up the level of program offerings in 2010 in anticipation of the EE Standard implementation.

Q. Was the Company allowed to recover program costs of all Commission approved DSM/EE Programs?

A. Yes. The company was allowed by the 2008 TEP Rate Case Settlement Order to recover all allowable program costs associated with implementing DSM/EE Programs. Approval to recover costs was also included in each individual Decision for the approved programs.

Q. Did the Commission also approve a utility performance incentive ("PI") for the Company?

A. Yes. The company was allowed by the 2008 Rate Case Settlement Order to include a utility PI. The approved PI structure allowed the Company to recover up to 10% of net benefits from the DSM/EE programs with a cap of 10% of costs, excluding costs for Low-Income Weatherization, Education and Outreach, and Demand Response Programs.

Q. Did the Company file an EE Implementation Plan as required by the EE Standard?

A. The Company filed its 2011 EE Implementation Plan on the January 31, 2011due date. The 2012 EE Plan was due on June 1, 2011. Because of the close proximity of due dates, the Company incorporated both requests into a 2-year EE Implementation Plan Filing. The Company requested expedited review and approval of the plan by June 1, 2011 to be in compliance with both the EE Standard and the DSMS adjustment implementation date.

Q. Since the filing of the EE Implementation Plan on January 31, 2011, there have been numerous filings in the docket. Can you identify the key filings?

A. The information in Table 1 below should be helpful in understanding the various filings since January 31, 2011, including the short-hand description of those filings.

Chronological Events Related To TEP EE Implementation Plan

Date	ACC Filing	Description	Reference
1/31/2011	TEP EE Implementation Plan	Original 2011-2012 EE Implementation Plan	EE Implementation Plan
6/30/2011	Notice of Filing	Supplemental information for EE Plan on monetization of environmental impacts.	EE Implementation Plan
8/22/2011	TEP Notice of Filing Updated Information	Filed updated information on Residential Financing, Program Budgets, Portfolio Savings, ARRT, and DSMS due to timing delay for EE Plan approval.	EE Implementation Plan
11/16/2011	Staff Proposed Order	Staff Proposed Order on EE Plan	EE Implementation Plan
12/2/2011	TEP Exceptions to Proposed Order	TEP Exceptions to Staff Proposed Order on EE Plan	EE Implementation Plan
1/5/2012	TEP Supplemental Comments to Staff's Proposed Order	TEP's Supplemental Comments to Staff's Proposed Order	EE Implementation Plan

1/10/2012	Open Meeting	Open meeting for EE Plan	EE Implementation Plan
1/31/2012	TEP Proposed Modified EE Plan	TEP Filed Modified EE Plan	Modified Plan
2/14/2012	TEP's Letter to Chairman Pierce	TEP Letter requesting hearing on Feb 23, 2012 Securities Open Meeting	Modified Plan
2/29/2012	Staff Amended Order	Staff Updates and Amended Order provides alternate proposals to Modified EE Plan.	Modified Plan
3/7/2012	TEP Comments to Staff's Update	Comments to Staff's updated alternate proposals.	Modified Plan
3/16/2012	Open Meeting	Open meeting for Modified EE Plan	Modified Plan
3/29/2012	Procedural Order	Procedural Order to refer Modified EE Plan to evidentiary hearing.	Modified Plan
5/2/2012	TEP Procedural Comments	Included Updated Plan	Updated Plan

I am not going to summarize the content of all of those filings. Our focus in this evidentiary hearing is the Updated Plan, which we filed on May 2, 2012, and which I will address below.

IV. TEP's PROPOSED UPDATED MODIFIED IMPLEMENTATION PLAN.

Q. What is TEP's proposed Updated Plan that was filed on May 2, 2012?

A. On May 2, 2012, TEP filed Procedural Comments and an Updated Plan. The Updated Plan was necessary to reflect the impact of the passage of time since TEP filed its Modified Implementation Plan on January 31, 2012. Specifically, the Updated Plan made modifications to the proposed budgets, interim PI and DSMS.

Q. How was the Modified Implementation Plan developed?

A. TEP submitted its Modified Implementation Plan in response to the discussions at the Commissions' January 10-11, 2012 Open Meeting. At that meeting, TEP and other interested parties, including Commission Staff, requested an opportunity to further discuss the issues surrounding the 2011-2012 Implementation Plan and to determine if a compromise proposal could be reached to present to the Commission for consideration. The Commission agreed to allow such discussions to take place and continued the Open Meeting agenda item.

TEP, Commission Staff, Residential Utility Consumer Office ("RUCO"), Arizonans for Electric Choice and Competition ("AECC") and Southwest Energy Efficiency Project ("SWEEP") met several times in person and by phone to discuss potential resolution of the issues. TEP provided an initial compromise proposal which was then modified based on the comments of the other participants. Although the Modified Implementation Plan appeared to have the conceptual support of all the participants, Commission Staff and AECC did not fully support the Plan.

Q. Could you provide an overview of the Modified Implementation Plan?

A. Yes, I can. The Modified Implementation Plan (filed on January 31, 2012) is the EE Plan on which the Updated Plan is based. This Modified Implementation Plan:

- Adopted the programs recommended for approval by Commission Staff, but at a funding level that is 75% of the amount recommended by Commission Staff;
- Adopted an Interim PI that: (i) encourages increased program benefits and results; (ii) provides a financial bridge to TEP's next rate case; and (iii) avoids the need for a significant waiver of the EE Rules for 2012;
- Did not incorporate TEP's proposed Authorized Revenue Recovery True-up ("ARRT") mechanism;

- Set the 2012 DSMS collection at $29,694,240, which is less than the $34,668,899 recommended by Commission Staff;
- Set the 2013 Implementation Plan budget at the same level as 2012 and retains the Interim PI, but allows TEP to propose modifications to the programs to improve the 2013 Implementation Plan effectiveness;
- Set the DSMS at $0.003608 per kWh for residential customers and at a rate of 4.19% on all charges (except taxes and other governmental assessments) for all other customer classes. The DSMS resulting from this Modified Implementation Plan results in incremental average bill impacts ranging from 2.39% to 2.94% for the various customer classes. The bill impact for the average residential customer would be $3.18/month, which would be an incremental bill impact of $2.08/month over the current DSMS bill impact of $1.10/month; and
- Provided TEP with a reasonable opportunity to meet the EE Standard for 2012, and perhaps, for 2013.

Q. Could you please summarize the Updated Plan?

A. As set forth in our May 2, 2012 filing, the Updated Plan effectively revises the Modified Implementation Plan to reflect the passage of time and the potential October 1, 2012 effective date for an adjusted DSMS. The Updated Plan:

- Adopts the programs recommended for approval by Commission Staff, but at a funding level that is 75% of the amount recommended by Commission Staff;
- Does not incorporate the ARRT mechanism or any other decoupling mechanism;
- Adopts a reduced interim PI that encourages increased program benefits and results:
- Sets a DSMS Collection for the 15 month period of **October 1, 2012 to December 31, 2013** at $27,894,412;

- Sets the DSMS at $0.002497 per kWh for residential customers and at a 2.86% rate on all charges (except taxes and other governmental assessments) for all other customer classes. This DSMS rate results in incremental average bill impacts ranging from 1.17% to 1.71% for the various customer classes. The bill impact for the average residential customer would be $2.20/month, which would be an increase of $1.10/month compared with the current average residential DSMS bill impact of $1.10/month.

TEP witness Denise Smith provides a more detailed explanation of the Updated Plan in her testimony.

Q. Why does TEP want the Commission to approve the Updated Plan?

A. The Updated Plan allows TEP to increase its EE programs well before the conclusion of its upcoming rate case, providing a more gradual ramp up of programs and costs needed to try to meet the Commission's EE Standard. The Updated Plan also represents a compromise position that still provides customers with cost effective programs to reduce their electric bill, stability to the DSM market place, and is a bridge mechanism to TEP's next rate case, where lost fixed cost recovery can be synchronized with TEP's future implementation plans.

Q. Will approval of this Updated Plan allow the Company to meet the EE Standard for 2012 and 2013?

A. No. Due to timing of approval for any of the EE Plans filed - and the cumulative nature of the EE Standard, the Company will not be able to meet the 2012 or 2013 EE Standard. However, it will provide TEP with the opportunity to narrow the compliance gap with the EE Standard in the future rather than the status quo.

Q. Will TEP need a waiver of the EE Standard for 2012 and 2013?

A. While we are not currently requesting a waiver, it is likely that a waiver will be required for 2012, 2013 and beyond depending on future Commission approvals of EE plans and the availability of cost effective EE resources.

V. TEP'S UPCOMING PROPOSAL FOR FUNDING EE PROGRAMS.

Q. What are the Company's plans for DSM/EE Programs in the future?

A. TEP will propose, in its July 2012 rate case application, a new, forward looking approach for financing DSM/EE Programs and complying with the EE Standard.

Q. What does the Company plan on proposing as an alternative to the current regulatory framework in its rate filing?

A. The Company believes there is an alternative solution for financing the cost of complying with the EE Standard that will reduce and stabilize the rate impacts to customers, better synchronize the benefits of EE with the costs, provide a base level of certainty to program offerings and eliminates the need to provide a PI to TEP. The Company's proposal is called the Energy Efficiency Resource Plan ("EE Resource Plan"). TEP's proposed EE Resource Plan would establish a three-year planning horizon for the Company's EE programs and the associated DSMS. The Company will invest its capital in cost-effective DSM/EE programs, recovering its costs through the DSMS and eliminating the PI. This capital investment and recovery model is similar to that used for any other supply-side resource except that the capital invested by the Company in cost-effective DSM/EE measures will be considered a regulatory asset.

Q. Why does TEP believe this approach is better than the current method of funding EE programs under the EE Rules?

A. The Company's proposed EE Resource Plan will be a win-win proposition for all stakeholders:(i) customers' will know in advance what the DSMS will be for multiple years and have assurances that programs and program funding will be stable over a multi-year timeframe; (ii) DSM/EE contractors will have more certainty regarding program funding levels; (iii) TEP will have more certainty related to the amount and timing of energy savings it can rely on in its resource and system planning; and (iv) this proposal reduces the annual burden that the DSMS review process puts on Commission Staff.

Q. Does this conclude your direct testimony?

A. Yes.

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
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EXHIBIT
TEP-2
ADMITTED

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-11-0055

Rebuttal Testimony of

David G. Hutchens

on Behalf of

Tucson Electric Power Company

July 6, 2012

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I. INTRODUCTION.

Q. Please state your name and address.

A. My name is David G. Hutchens. My business address is 88 E. Broadway, Tucson, Arizona 85702.

Q. Have you reviewed the Direct Testimonies filed by the Arizona Corporation Commission's Utilities Division ("Staff"), the Residential Utility Consumer Office ("RUCO"), Southwest Energy Efficiency Project ("SWEEP") and Arizonans for Electric Choice and Competition ("AECC")?

A. Yes I have.

Q. Please provide an overview of your rebuttal testimony.

A. My Rebuttal Testimony addresses Staff's recommendations concerning TEP's proposed "bridge" energy efficiency implementation plan ("Updated Plan"). Because both RUCO and AECC have stated their support for the Updated Plan in their respective rebuttal testimonies, I am not commenting on those testimonies. Although SWEEP is also supportive of the Updated Plan as discussed in its rebuttal testimony, SWEEP sets forth a couple of recommendations that TEP does not agree with which I will briefly address.

TEP would like to move forward in efforts to meet the Energy Efficiency Rules ("EE Rules") and provide customers with programs and services that encourage energy savings. As a result of significant time and resources expended by many parties, the Company is proposing the Updated Plan as an interim solution that has been delicately balanced to resolve both practical and legal issues communicated by AECC, RUCO, SWEEP and Staff. The Updated Plan has support from AECC, RUCO, and SWEEP. These same parties understand that the interim plan has been designed to address a

unique situation for TEP, created by the adoption of the EE Rules during TEP's rate freeze and rate case moratorium, and that the interim plan will not set precedent for future filings. It is simply a short "bridge" that allows TEP to move forward with EE for its customers until the conclusion of its pending rate case in 2013.[1]

With respect to Staff's recommendations, TEP continues to believe that the Updated Plan presents the most appropriate approach to address the unique interplay of TEP's rate case moratorium with the potentially confiscatory impact of the EE Rules. Staff's recommendations do not provide an acceptable resolution of the unique challenges facing TEP. Staff's proposes a larger EE Plan budget and a higher Demand Side Management Surcharge ("DSMS"). This increases costs to our customers and unnecessarily exacerbates the confiscatory impact of the EE Rules on TEP. Moreover, Staff's proposed deferral account does not provide sufficient protection to the Company against that confiscatory impact. Staff's other proposed modifications to the Updated Plan upset the delicately negotiated balance that made the Updated Plan operationally and economically palatable to TEP, as well as RUCO, AECC and SWEEP. Staff's two alternative proposals also are unacceptable. Alternative 1 results in a confiscatory impact on TEP. Alternative 2 is a full waiver of the EE Rules for a short window of time, which does not timely advance cost-effective EE programs and, which could put TEP in a difficult position to "catch up" to the EE Standard after the short waiver expires.

[1] Docket No. E-01933A-12-0291.

II. RESPONSE TO STAFF.

Q. Does the Company have any concerns with the programs and measures that Staff is recommending for approval.

A. No. The Company agrees with the programs and measures that Staff is recommending. Those programs and measures are the same programs and measures proposed in the Updated Plan.

Q. Does the Company support Staff's proposed budget increase from $18.5 million to $23 million?

A. No, the Company does not support an increase in the budget for the Updated Plan. The budget amount in TEP's Updated Plan is the result of extensive negotiations between the Company, AECC, RUCO, and SWEEP, and provides a solution to concerns raised by each of these stakeholders. By increasing the budget from $18.5 million to $23 million as recommended by Staff, the customer impact resulting from the increased budget will likely disrupt the delicately negotiated balance achieved by the Updated Plan that is supported by RUCO, AECC and SWEEP.

Q. What is TEP's position on Staff's recommendation that TEP not be granted a waiver from either the 2012 or 2013 EE Standard?

A. I believe Staff's position is unreasonable given these unique circumstances and ignores the reality of the situation given the timing. TEP still does not have an approved EE Implementation Plan for 2011 and it is unlikely to have any approved plan until 2012 is almost over. The Commission has stated that TEP's energy efficiency effort is to remain at "status quo" until this evidentiary process is concluded. It is clear that TEP cannot meet the EE Standard for 2012. Further, in order to jump from the status quo to full

compliance by 2013 presents numerous operational and financial challenges that I do not believe would be in the best interest of the Company and its customers.

Q. Does the Company support the methodology for calculating the Performance Incentive ("PI") recommended by Staff?

A. No, the Company does not support Staff's recommendation to alter the Interim PI proposed in the Updated Plan. Again, that interim PI is a key element to the compromise developed to: (i) facilitate a more robust EE program, while addressing the issues raised in this docket, including the confiscatory impact of applying the EE Rules at this time (i.e. before TEP's rate case is concluded) and (ii) provide a bridge to the end of the now-pending TEP rate case, where the Commission can approve a more coordinated solution to the issues. TEP witness Denise Smith addresses the Interim PI and Staff's proposals concerning the PI in more detail in her rebuttal testimony.

Q. Staff's recommends that its proposed PI be trued up to actual performance. Would the Company agree to true-up its proposed PI?

A. Yes. TEP's proposal already contemplates that it would be trued-up to actual performance, not projected performance, subject to the floor-to-ceiling range set forth in the Updated Plan. The true-up will take place in the next reset of the DSMS, which will happen either as part of TEP's 2012 rate case or the approval of a subsequent EE Plan, whichever occurs first.

Q. Is the Company amenable to Staff's recommendations that the DSMS should be maintained on a per-kWh basis for all customer classes?

A. No, the Company does not support the recommendation to maintain the DSMS on a per-kWh basis for non-residential customers in this proceeding. The recommended change in the application of the DSMS to a percentage of bill rather than on a per-kWh basis for non-

residential customers is the result of discussions with other parties to this application - yet another component of the delicately balanced negotiations for the Updated Plan.

Q. Staff states (at page 14 of Ms. McNeely-Kirwan's testimony) that the Updated Plan expresses concern about LFCR and implies that TEP is attempting to resolve the LFCR issue in this docket. Do you agree?

A. No, the Updated Plan does not address LFCR and the Company does not seek to resolve the issue in this docket. The Updated Plan provides only a compromise position that still provides net-benefits to all customers, provides programs for customers to reduce their electric bill, provides stability to the DSM market place, and provides a bridge mechanism to TEP's next rate case, where lost fixed cost recovery can be synchronized with TEP's future implementation plans.

Q. Assuming the LCFR issue is addressed in this docket, would the Company agree to Staff's recommendation to defer recovery of lost unrecovered fixed costs associated with energy efficiency savings?

A. No. The Company does not support deferred recovery of lost fixed costs or the quarterly reporting requirements recommended by Staff. Staff has not provided any specific guidance or methodology as to how TEP would actually recover those lost fixed costs and there is simply too much uncertainty about the ultimate recovery of those costs. Further, Staff's proposal does not address the following concerns TEP's previously expressed in its Comments filed in this docket on March 7, 2012:

> *"a. It does not provide immediate relief for the confiscatory impact of EE Standard compliance;*
>
> *b. It does not provide certainty of any recovery of lost fixed cost revenues attributable to EE Standard compliance. Tellingly, the proposed deferral account amendment does not state that TEP will, indeed, recover the deferred lost fixed cost revenues;*

c. *It is unknown what type of deferral methodology might be acceptable to Staff, which adds another layer of uncertainty;*

d. *The alternative proposal only allows calculation of unrecovered fixed costs from the approval date of this order and does not provide for a solution associated to unrecovered fixed costs from January 1,2012 through the date of this order; and*

e. *It requires TEP to make yet another filing to seek approval of a deferral methodology and quarterly reporting to Commission Staff. The proposal does not offer any deadline for Commission approval or effective date for such methodology. Moreover, if Staff does not agree with TEP's proposed methodology, this could further delay the approval and effective date."*

TEP still has these concerns and believes that the Updated Plan provides the appropriate bridge to the now-pending rate case where LFCR issues can be fully addressed on a going-forward basis.

Q. Would the Company agree to modify the Updated Plan with details provided in either Alternative #1 or Alternative #2 described in Staff's Direct Testimony?

A. No, the Company does not agree to modify the Updated Plan with either of the Alternatives proposed by Staff for the following reasons:

Alternative #1

This alternative does not include the Interim PI and recommends that the DSMS recovery be based on the per-kWh basis for all customers. Both of these elements are key components to the balance struck between the Company, RUCO, AECC, and SWEEP in the Updated Plan. For the reasons I discussed above, the Company cannot agree to their exclusion.

Alternative #2

Staffs "waiver" proposal creates more problems than it solves and should be rejected. The proposal does not solve the dilemma facing TEP and it creates the potential for an undue increase to the DSMS in future years as TEP tries to play "catch-up" to the EE

Standard. As stated in my Direct Testimony: *"TEP would prefer to have a more robust interim EE plan approved by the Commission in this docket rather than to receive a waiver that effectively keeps TEP at spending levels approved in 2010 before the EE Rules were adopted."*

III. RESPONSE TO SWEEP.

Q. Do you have any responses to SWEEP's Direct Testimony?

A. Yes. Generally, SWEEP appears to support the Updated Plan. SWEEP raises concerns about the waiver for 2013 and the bill impacts. I have addressed those issues above and will not repeat them here. SWEEP also suggests that the small commercial customers receive "at least the level of EE program funding collected from small customers." TEP will endeavor to do so provided it comports with the approved budget and results in cost-effective use of the funds. Finally, SWEEP requests that TEP be required to file a 2013 implementation plan. The Updated Plan has been carefully designed to cover the remainder of 2012 and 2013.[2] Moreover, in TEP's pending rate case that will be decided in 2013, the Company is proposing to replace annual EE implementation plan filings with a completely new approach to fund EE. If the Commission approves the Updated Plan, the filing of a 2013 implementation plan is simply unnecessary under the circumstances.

Q. Do you have any concluding remarks?

A. Yes. The financial aspects of the Updated Plan are designed to collect the proposed budget through the DSMS commencing on October 1, 2012. Additionally, as discussed in the direct testimony of Denise Smith, the Company has been awarded a U.S. Department of Energy grant. If TEP does not receive approval of the Updated Plan by October 1, 2012,

[2] *See* TEP's *Request to Accept Proposed Implementation Plan in Pending Energy Efficiency Docket as 2013 Implementation Plan Filing Under A.A.C. R14-2-2405* filed on May 11, 2012, which is incorporated herein by reference.

the Company could be at risk of losing the grant. Accordingly, I would urge the Commission to approve the Updated Plan as expeditiously as possible, but in no later than October 1, 2012 so our customers may once again be able to more fully benefit from the level of EE programs that they expect, as well as the additional funding that the grant will provide.

Q. Does this conclude your Rebuttal Testimony?

A. Yes it does.

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
GARY PIERCE- CHAIRMAN
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EXHIBIT
TEP-3
ADMITTED

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-11-0055

Direct Testimony of

Denise Smith

on Behalf of

Tucson Electric Power Company

June 15, 2012

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DS-1 Updated Plan

I. INTRODUCTION.

Q. Please state your name and business address.

A. My name is Denise Smith. My business address is 88 E. Broadway, Tucson, Arizona 85702.

Q. What is your employment position?

A. I am the Director of Demand Side Resources at Tucson Electric Power Company ("TEP" or the "Company"), UNS Gas, Inc. ("UNS Gas") and UNS Electric, Inc. ("UNS Electric"), collectively referred to as the UNS Energy Corp.

Q. Please describe your background and work experience.

A. I graduated from Northern Arizona University ("NAU") earning a Bachelor of Science degree, in Mathematics with an extended major in Statistics, and then completed graduate work in Statistics at NAU. During my tenure at TEP, I completed a Masters of Business Administration at the University of Phoenix. After leaving NAU, I was hired by Pima Association of Governments in the Travel Reduction Program, which reduces vehicle emissions by targeting major employers to reduce employees' travel to and from work.

I was hired in 1996 by TEP as a Demand-Side Management ("DSM") Analyst, developing, analyzing and researching new DSM and energy-related market programs. In addition, I implemented and reported progress of existing DSM programs and then transitioned them into market-transformation programs. In 1999, I moved into the Pricing and Rates Department, and developed cost-of-service and revenue requirement models. In 2002, I was promoted to the Director of the Pricing and Rates Department. I then accepted the position of Director of Conservation and Renewable Programs. During my tenure as Director of Conservation and Renewable Programs and more recently

Director of Demand Side Resources I have overseen the implementation and management of 29 new DSM programs. I also managed the successful design and implementation of several Renewable energy programs for TEP and UNS Electric.

Q. Please provide a summary of your testimony.

A. Because of extenuating circumstances surrounding the 2011-2012 Energy Efficiency ("EE") Implementation Plan, the Company had to restrict DSM/EE Program Budgets to an amount that can be recovered, along with other approved costs, through the Demand Side Management Surcharge ("DSMS") approved in Decision No. 71720 (June 3, 2010). Participation in DSM/EE programs for customers in the TEP service territory are now limited and budgets have been significantly reduced. The Company's intended progress toward meeting the savings targets outlined in the Commission's Electric Energy Efficiency Rules AAC R14-2-2401 et seq. ("EE Rule") has been severely disadvantaged, creating a ripple effect that will handicap TEP's ability to achieve both short-term and long-term EE targets that are mandated by the Commission. In order to reduce further erosion of TEP's ability to meet the EE Standard set forth in the EE Rules, TEP is proposing that the Commission approve the Updated EE Implementation plan by October 1, 2012. This will provide significant net-benefits to all customers, provide programs that enable customers to reduce electric consumption, provide stability to the DSM marketplace and provide a bridge mechanism between now and the conclusion of TEP's rate case, which will be filed in early July 2012.

IV. CURRENT STATUS OF TEP'S EE PROGRAMS.

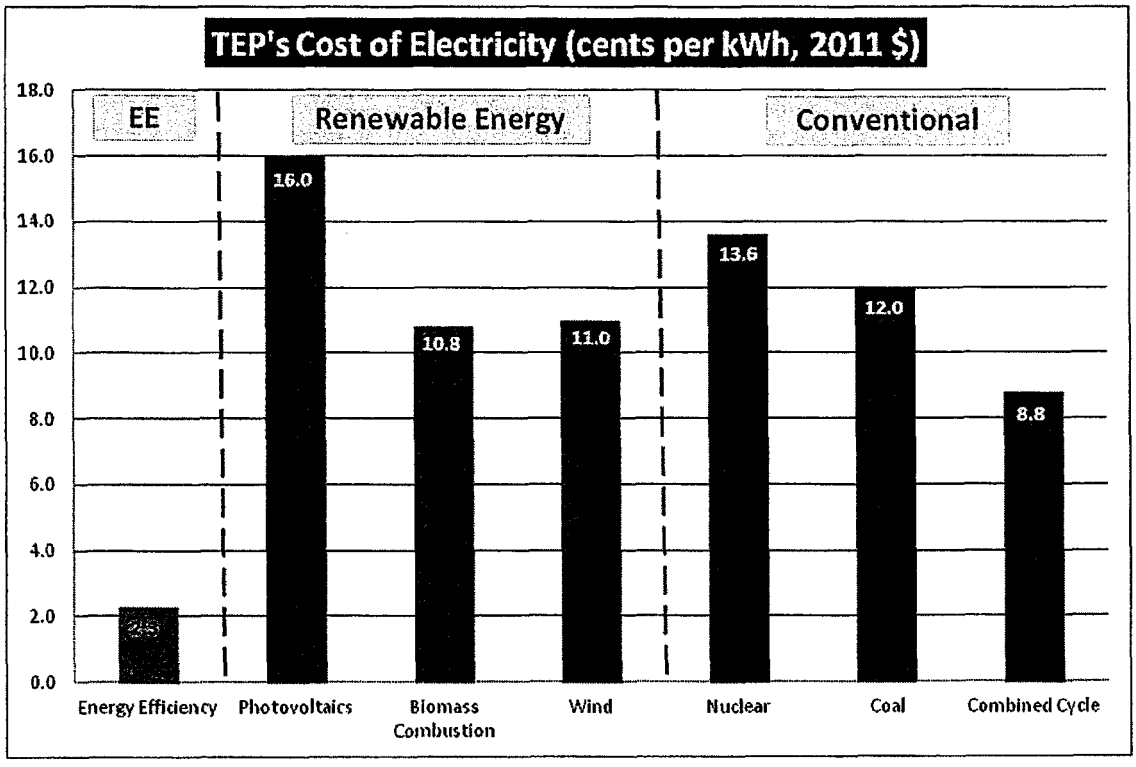
Q. Does the Company support DSM/EE as a cost-effective supply-side resource?

A. Yes. As mentioned in Mr. Hutchens's testimony the Company supports cost-effective EE that provides value to our customers. The Company takes several steps to ensure each

measure within each EE Program is cost effective and represents an accurate picture of the Company's costs. Those steps include:

- Comprehensive research on equipment/measures to determine both baseline and EE savings potential (both kWh and kW);
- Comprehensive research to acquire incremental costs and equipment/measure life;
- Comprehensive research to gather information and develop hourly load profiles from each type of equipment/measure;
- Determination of avoided utility costs from the Company's most recent Integrated Resource Plan;
- Development of budgets and participation estimates for each proposed measure and program;
- Preparation of cost-effectiveness calculations for each EE measure and program using the Societal Cost Test as required in the EE Rule; and
- Comprehensive analysis of the total EE Savings (resource) to traditional and non-traditional supply-side resources.

The table below shows the cost comparison of resources of EE to other traditional and non-traditional resources with information filed in TEP's 2012 Integrated Resource Plan. Investments in cost-effective EE can also reduce the impact on water resources, emissions, and other non-energy related benefits such as thermal comfort in homes/businesses, jobs, and indoor air quality.



Q. Does the Company offer DSM/EE savings opportunities to customers within the TEP service territory?

A. Yes. The Company received Commission approval to implement several DSM/EE programs in 2008 in anticipation of the implementation of the EE Rule and a handful of programs had received prior Commission approval dating back to the 1980's. These programs include:

- Low-Income Weatherization Program
- Existing Homes Program
- Residential New Construction Program
- Shade Tree Program
- Non-Residential Existing Facilities
- Small Business Direct-Install
- CFL Buy-Down
- Efficient Commercial Building Design (Pilot Program)

- Education and Outreach
- C&I Direct Load Control Program
- Zero-Energy New Homes Program (Pilot Program)
- Residential and Small Commercial Direct Load Control Program (Pilot Program)
- TEP Energy Assessment
- Home Energy Reports

Q. Was the Company allowed to recover costs of all Commission approved DSM/EE?

A. Yes, Decision No. 70628 (December 1, 2008) authorized TEP to recover all allowable costs associated with implementing DSM/EE Programs including a utility Performance Incentive ("PI"). Approval to recover costs for some of the above mentioned programs was also included in other Commission Decisions.

Q. Describe the mechanism allowed by the Commission for cost recovery.

A. The initial DSMS Adjustor was established on December 1, 2008, in Decision No. 70628. The Company is required to file for approval of an adjustment to the DSMS on April 1st of each year, with any adjustment taking effect on June 1st of the same year. The Adjustor Filing requires the Company to include documentation on actual program spending for the previous 12 months, projected program budgets for the following 12 months, and a true-up of any over or under collection. In addition the Company is required to document the calculation on its PI, including program net benefits and program spending (less Low-Income Weatherization, Education and Outreach, and Demand Response programs). The DSM adjustor is applied to customer's bills as a per kWh charge.

Q. When was the DSMS adjustor last modified?

A. The last DSMS was approved in June 2010 in Decision No. 71720 (June 3, 2010). This decision set the DSMS to allow recovery of the 2010 estimated Program Expenses, a 2009 PI, and some under-recovery of previous years' program costs. Since the reset in 2010, the Company received approval to implement new programs and to spend additional monies, but the Commission has not authorized TEP to recover the costs of those new or expanded programs. This lack of synchronization has had a significant financial effect on TEP and has reduced its ability to continue funding EE programs at those previously established levels. Approval of TEP's 2011-2012 EE Implementation Plan as modified in this proceeding would remedy those issues.

Q. Has the Company received approval of the EE Implementation Plan?

A. No, the Company has not received approval of the EE Implementation Plan.

Q. What is the current status of TEP's DSM/EE Programs?

A. As a result of the discussion and vote at the Commission's March 16, 2012 Open Meeting, the Company modified its DSM/EE Programs to reflect the status quo funding generated by the existing DSMS. The primary modifications included:

- Rather than continuing to increase the burden on customers by continuing DSM/EE spending at a level greater than collections and increasing the lost fixed cost burden on the Company, TEP reduced program spending to previous levels as to better synchronize recovery of approved DSM/EE costs with the current DSMS approved June 3, 2010.
    - To determine the actual amount available for program spending, the Company estimated its annual revenue collections from the current DSMS ($11 million) and compared it with the TEP's under-recovered costs as of December 31, 2011 ($6.5 million).

- Based on the level of annual DSMS collections, it was TEP's belief that in order to maintain a marginal level of DSM/EE program funding, it would extend the collection of its $6.5 million in under-recovered costs over a two year period. Based on this decision, the annual program budgets were reduced to $7.5 million per year.

With a $7.5 million annual program budget, TEP reduced program budgets across the board with the exception of Low-Income Weatherization.

The following explains the program changes:

- The Multi-Family Direct Install Program, Schools Facility Program, Retro-Commissioning Program, Bid for Efficiency Program, Behavioral Comprehensive Program, and Combined Heat and Power Joint Program had not been approved during previous Commission hearings so all programs are on hold and will not go forward until approved by the Commission.
- Although the Appliance Recycling Program was not previously approved by the Commission, the Company had already selected an implementation contractor ("IC"). The contractor was notified that the program would not be implemented as planned. The TEP plan for an Appliance Recycling Program is on hold and will not go forward until approved by the Commission.
- Although the Residential Financing Program was not previously approved by the Commission, the Company had already selected a program lender. The lending partner was notified that the program would not be implemented as planned. The TEP plan for a Residential Financing Program is on hold and will not go forward until approved by the Commission.
- Participation in the Large Business and Small Business Direct-Install Program was very active. However, the reduction in funds for these programs resulted in

the suspension of these programs effective in March 2012 until additional funding is made available. The IC responsible for these two programs was notified and made necessary modifications and reduced staff assigned to the Company from 6 to 2. Program information was removed from the Company website. Because it was necessary to reallocate the remaining implementation funding toward the payment of incentives for work completed, no funds are available for either incentives or implementation and the program has been fully suspended for the remainder of the program year.

- The Existing Home Program has been suspended as the incentives already paid plus incentives approved for payment have exhausted incentives available at the reduced funding level. TEP notified the IC of this situation and the Company provided the required 30 day notice of cancellation for the contract. The IC made necessary modifications and reduced staff assigned to the Company from 8 to 0. The IC has indicated to TEP that it is now in the process of closing the local office. With the small amount of funds still available to operate the Existing Homes Program, the Company began development of an alternate plan to continue offering certain pieces of the program without incentive payments. The Company hopes to at least maintain some interest in the program until additional funding is approved by the Commission.
- The partner in the Shade Tree Program was notified of the reduced funding so they could reduce activity for the remainder of 2012.
- The Company notified the IC providing Home Energy Reports of reduced funding for 2012 but the Company decided to continue mailing the existing reports through September 2012 to complete the cycle and provide the Company with one full year of available data and savings. After September 2012, the Home Energy Reports program may be suspended unless additional funding is approved by the Commission.

- The Company notified the IC for the CFL Buy-Down program of reduced budgets for 2012 and 2013. The IC supplied an alternative work plan with reduced buy-down incentives in attempts to continue with program activity through 2012 and 2013.
- The Company notified the IC for the C&I Direct Load Control program of the reduced funding level and suspended signing on new customers to the program until additional funding is available.
- The Company notified home builders participating in the Residential New Construction Program of reduced budgets and that participation would continue until funding was no longer available. Builders were notified that incentives would be made on a first-come-first served basis but the program would be suspended in the near future. Funds were exhausted or reserved the last week of May and the New Home Construction Program was suspended effective May 31, 2012.

III. TEP's UPDATED MODIFIED IMPLEMENTATION PLAN.

Q. Mr. Hutchens stated that TEP is now proposing the Updated Plan, which is an EE Implementation Plan that acts as a bridge to the end of the upcoming rate case. Please provide a summary of details for the Updated Plan proposed by TEP.

A. As Mr. Hutchens testified, the Updated Plan:

- Adopts the programs recommended for approval by Commission Staff in the Proposed Order dated November 16, 2011, but at a funding level that is 75% of the amount recommended by Staff;
- Does not incorporate the Authorized Revenue Recovery True-up ('ARRT') mechanism or any other decoupling mechanism;

- Adopts a reduced interim PI that encourages increased program benefits and results; and
- Sets a DSMS collection for the period of October 1, 2012 to December 31, 2013 at $27,894,412 which includes $18.5 million for Program Budgets, $3.9 million for estimated under-recovery of previous expenses as of September 30, 2012, $2.2 M for the 2010 and 2011 PI, and $3.3 million for a 2012 PI; and
- Sets the DSMS at $0.002497 per kWh for residential customers and at a 2.86% rate on all charges (except taxes and other governmental assessments) for all other customer classes. This DSMS rate results in incremental average bill impacts ranging from 1.17% to 1.71% for the various customer classes. The bill impact for the average residential customer would be $2.20/month, which is an increase of $1.10/month over the current average residential DSMS bill impact of $1.10/month.

This Updated Plan allows TEP to increase its EE programs well before the conclusion of its upcoming rate case, providing a smoother ramp up of programs and costs needed to try to meet the Commission's EE Standard. The Updated Plan also represents a compromise position that still provides net benefits to all customers, provides programs for customers to reduce their electric bill, provides stability to the DSM market place, and provides a bridge mechanism to TEP's next rate case, where lost fixed cost recovery can be synchronized with TEP's future implementation plans. The Updated Plan, filed May 2, 2012, is attached as **Exhibit DS-1**.

Q. Please identify the programs proposed by the Company that Staff recommended for approval in its November 16, 2011 Proposed Order.

A. The November 16, 2011 Proposed Order recommended approval of the following new Programs:

- Multi-Family Direct Install
- Retro-Commissioning
- Schools Facilities
- Bid-For-Efficiency
- Residential Financing
- Behavioral Comprehensive
- Combined Heat and Power

The Proposed Order also recommended updated budgets for existing programs and recommended approval of new measures within the following Programs:

- Low-Income Weatherization Program
- Existing Homes Program
- Residential New Construction Program
- Shade Tree Program
- Non-Residential Existing Facilities
- Small Business Direct-Install
- CFL Buy-Down
- Efficient Commercial Building Design (Pilot Program)
- Education and Outreach
- C&I Direct Load Control Program
- Zero-Energy New Homes Program (Pilot Program)
- Residential and Small Commercial Direct Load Control Program (Pilot Program)
- TEP Energy Assessment
- Home Energy Reports

These programs are fully described in TEP's 2011-2012 EE Implementation Plan, which the Company will be submit as an Exhibit at the evidentiary hearing.

Q. What is the funding level for each program in the Updated Plan?

A. The proposed funding level for each program is shown in Table 1 below. This funding will cover the full 15 month period proposed for the Updated Plan (October 1, 2012-December 31, 2013).

Table 1: TEP Updated EE Plan Budgets

Program	Updated Plan Budget
Efficient Products	$2,453,253
Appliance Recycling	$755,095
Res. New Construction	$1,011,949
Existing Homes and Audit Direct Install	$2,304,525
Shade Tree	$250,681
Low Income Weatherization	$526,464
Multi-Family	$181,565
Residential Direct Load Control - Pilot	$167,864
Subtotal	**$7,651,396**
C&I Comprehensive Program	$3,728,462
Commercial Direct Load Control	$1,431,445
Small Business Direct Install	$2,044,806
Commercial New Construction	$515,702
Bid for Efficiency - Pilot	$388,846
Retro-Commissioning	$336,493
Schools Facilities	$170,049
CHP Joint Program - Pilot	$22,000
Subtotal	**$8,637,804**
Home Energy Reports	$699,197
Behavioral Comprehensive Program	$724,151
Subtotal	**$1,423,349**
Education and Outreach	$155,250
Residential Energy Financing	$315,405
Codes Support	$73,288
Program Development, Analysis, and Reporting Software	$276,115
Subtotal	**$820,058**
Total	**$18,532,606**

Q. If the Updated Plan is approved, what will happen if the proposed EE Resource Plan (discussed in Mr. Hutchens testimony) that will be filed with TEP's upcoming rate case is approved prior to December 2013?

A. In the event that the proposed EE Resource Plan is approved in the rate case prior to December 31, 2013, the actual spending and revenue collections on the effective date of the rate case decision would be used to determine any over or under recovery amount to true-up in the new DSMS adjustment. At that time, the new EE Resource Plan, with budgets approved within the rate case decision, would become effective and this interim "bridge" plan would end.

Q. What will the DSMS be under the Updated Plan?

A. The Updated Plan establishes the DSMS at $0.002497 per kWh for residential customers and at a 2.86% rate on all charges (except taxes and other governmental assessments) for all other customer classes. This DSMS rate results in incremental average bill impacts ranging from 1.17% to 1.71% for the various customer classes. The bill impact for the average residential customer would be $2.20/month, which would be a net bill impact of $1.10/month over the current DSMS bill impact ($1.10/month).

Q. The Updated Plan contains an interim PI. Please describe how the interim PI works.

A. The Interim PI is based entirely on the Company's performance in delivering cost-effective EE programs to customers in its' service territory. This Interim PI is divided into two parts; (1) a base PI; and (2) additional performance metrics.

1. The Base PI.

The base PI includes 7% of the net benefits achieved from EE Programs delivered during 2012. The Participants have agreed to a tiered structure for the base PI allowing for a lower payment if TEP meets 80% of the EE net benefits goal and a

higher payment if the Company meets up to 120% of the goal. Net benefits are determined by subtracting the calculated Societal Cost of program delivery from the calculated Societal Benefits derived through those same EE programs. Thus, net benefits will be greater if program costs are kept low while delivering increased societal benefits. Both the tiered payment structure and payment based on net benefits create an atmosphere that encourages the Company to deliver the most cost-effective and highly beneficial programs and measures at the lowest possible cost.

2. Additional Performance Metrics

Part 2 of the proposed Interim PI consisted of five (5) specified performance metrics. Payments would be made on individual metrics, meaning the Company may receive payment on some individual metrics but not others. These additional performance metrics follow the same tiered structure with 80% being the floor value and 120% being the maximum value.

The calculation for the 2012 Shared Benefits PI is shown in Table 2 below.

Table 2: 2012 Shared Benefits PI

Energy Efficiency Shared Benefits
DSM Program Year 2012

Part I - Base Performance Incentive	
DSM Costs	$ 11,040,296
2012 Net Benefits	$ 22,626,485
Shared Savings	7.00%
Part 1: Base Energy Efficiency Shared Benefits (net benefits times 7.0%)	**$ 1,583,854**

Part II - Other Performance Metrics	Target	Dollars
Net Benefit per customer dollar spent (net benefits/actual spending)	2:1 Ratio	$ 1,100,000
Community weatherization workshops	30	$ 150,000
Community outreach – monthly outreach to Seniors on EE (Starting Oct)	4	$ 150,000
Loan program – train contractors on TEP's new loan program	8	$ 150,000
Low Income Weatherization – 5% increase in participation over 2011	163	$ 150,000
Part II: Other Performance Metrics at 100% of Goal		**$ 1,700,000**
Total New Performance Incentive for 20120		
At 80% of Goal		$ 2,627,083
At 100% of Goal		**$ 3,283,854**
At 120% of Goal		$ 3,940,625

Q. Is TEP currently recovering a PI?

A. Yes. The 2008 Rate Case Settlement Agreement approved in Decision No. 70628 authorized TEP to recover a PI. The approved PI structure allowed the Company to recover up to 10% of net benefits from the DSM/EE programs with a cap of 10% of costs, excluding costs for Low-Income Weatherization, Education and Outreach, and Demand Response Programs. A PI is expressly permitted by the EE Rules.

Q. Is it critical to have the Updated Plan and the DSMS for this plan approved on October 1, 2012?

A. Yes. In order to for the Company to have sufficient time to collect the proposed budget through the DSMS proposed in the Update Plan, TEP must begin collections through the new DSMS on October 1, 2012. An October 1, 2012 approval for proposed program budgets will also allow the Company to lift restrictions on existing program participation and begin to ramp-up new program offerings in an effort to meet the EE Rule in 2013.

In addition, the Company, in cooperation with the State of Arizona, has been awarded a U.S. Department of Energy grant for "Smart Grid Data Access" to study the savings potential from installation of residential in-home displays. However as with any grant application there is a requirement for the Company to provide a portion of the project costs. In order to comply with the commitment made during the application process, TEP must provide a total of $677,450 in matching funds, equipment and support for the grant. If TEP does not receive approval of the Updated Plan by October 1, 2012, the Company could be at risk of losing the grant.

Q. How will the Updated Plan help TEP ultimately meet the EE Standard?

A. Because of the delay in the timing of the approval of the EE Plan, the Updated Plan itself will not result in TEP meeting the EE Standard for 2012 or 2013. However it will provide a better foundation to build on than maintaining the status quo until the conclusion of TEP's rate case. TEP will be able to start some new programs and expand some existing programs. Allowing this gradual expansion will smooth the costs of compliance and put TEP closer on the track for narrowing the compliance gap with the EE Standard.

Q. Does this conclude your direct testimony?

A. Yes.

EXHIBIT

DS-1

Tucson Electric Power

Updated Modified Plan for TEP's 2012-2013 EE Plan

The changes in this updated modified plan ("Updated Plan") are updates to the Modified Implementation Plan (filed January 31, 2012) ("Compromise Plan') due to anticipated timing of approval of the Updated Plan and subsequent program performance. The numbers in the Updated Plan are calculated based on an assumed implementation plan start date of October 1, 2012.

1. **TEP DSM program budgets.**

In the Compromise Plan, TEP and parties agreed to reduce its 2012 proposed $24.7 million program budget by 25%, to $18.5 million. The updated modified plan would spread the $18.5 million in DSM program budgets over a 15 month period to cover an assumed start date of October 1, 2012 through December 31, 2013. Specific program budgets are shown in Table 1.

TEP will not meet the EEES for either 2012 or 2013 under the Updated Plan and will need a waiver from the EEES for 2012 and 2013.

2. **2013 Implementation Plan.**

TEP will request a waiver of filing its 2013 Implementation Plan as the Updated Plan will encompass 2013.

3. **The unrecovered balance will be collected over a 15 month period.**

TEP estimates there will be an unrecovered balance as of September 30, 2012 totaling $6.1 million related to the period 2008 - 2011. This balance includes $3.9 million of unrecovered program costs, the 2010 performance incentive of $1.1 million and the 2011 performance incentive of $1.1 million.

4. **TEP will implement an updated revised interim 2012 Performance Incentive titled "Energy Efficiency Shared Benefits."**

As an interim Performance Incentive titled "Energy Efficiency Shared Benefits" until a replacement is approved in the rate case, TEP will implement a methodology similar to one suggested by SWEEP. This incentive includes two components, a base amount calculated as 7.0% of net benefits and an additional amount based on other key metrics.

This updated proposal reduces TEP's requested performance incentive from $7.2 million in the compromise plan to $3.3 million for the year 2012, with a floor of $2.6 million and a ceiling of $3.9 million. The Energy Efficiency Shared Benefits will be trued-up in the 2012 rate case proceeding. See Table 3 for details.

5. **TEP reduces its requested DSMS.**

TEP will decrease its requested DSMS from $0.003608 per kWh (in the Compromise Plan) to $0.002497 per kWh for residential customers and to a 2.86% rate for all other customer classes (in the Updated Plan). The rate has been adjusted to reflect recovery of a 15 month timeframe. Table 2 sets forth a comparison of the overall budgets of the Compromise Plan and the Updated Plan. Table 4 shows the average incremental increases and bill impacts by customer class. These DSMS rates will remain in effect until changed by further order of the Commission.

TABLE 1: TEP Program Budgets (Oct. 2012 – Dec. 2013)

Program	Cost
Efficient Products	$2,453,253
Appliance Recycling	$755,095
Res. New Construction	$1,011,949
Existing Homes and Audit Direct Install	$2,304,525
Shade Tree	$250,681
Low Income Weatherization [1]	$526,464
Multi-Family	$181,565
Residential Direct Load Control - Pilot	$167,864
Residential Subtotal	**$7,651,396**
C&I Comprehensive Program	$3,728,462
Commercial Direct Load Control	$1,431,445
Small Business Direct Install	$2,044,806
Commercial New Construction	$515,702
Bid for Efficiency - Pilot	$388,846
Retro-Commissioning	$336,493
Schools Facilities	$170,049
CHP Joint Program - Pilot	$22,000
Commercial Subtotal	**$8,637,804**
Home Energy Reports	$699,197
Behavioral Comprehensive Program	$724,151
Behavioral Subtotal	**$1,423,349**
Education and Outreach	$155,250
Residential Energy Financing	$315,405
Codes Support	$73,288
Program Development, Analysis and Reporting Software	$276,115
Support Subtotal	**$820,058**
Total	**$18,532,606**

TABLE 2: TEP 2012-2013 Overall Budget Comparison

	Compromise Plan (March 2012-December 2013)	Updated Plan (October 2012 - December 2013)
Budget		
2012 Program Budget	$18,532,606	
2013 Program Budget	$18,532,606	
2012 - 2013 Program Budget (10/1/12 start date) [1]		$18,532,606
Carry Over Balance	$5,614,113	$3,861,556
2010 Performance Incentive	$1,114,648	$1,114,648
2011 Performance Incentive	$1,101,749	$1,101,749
2012 Performance Incentive	$7,246,379	$3,283,854
2013 Performance Incentive	$7,246,379	TBD in Rate Case
Total	**$59,388,980**	**$27,894,412**
Tariff		
2012-2013 Forecasted MWh (22 months)	16,461,914	
2012-2013 Forecasted MWh (15 months)		11,170,724
Residential Tariff (per kWh)	$0.003608	$0.002497
Non-Residential Tariff	4.19%	2.86%

(1) TEP estimates it will spend $6.2 million on DSM programs from January 2012 through September 2013. This expense will be covered by the collection of the existing DSMS through September 2013

TABLE 3: Interim Performance Incentive

Energy Efficiency Shared Benefits
DSM Program Year 2012

Part I - Base Performance Incentive		
2012 DSM Costs		$11,040,296
2012 Net Benefits		$22,626,485
Shared Savings		7%
Part I - Base Energy Efficiency Shared Benefits (net benefits times 7.0%)		**$1,583,854**
Part II - Other Performance Metrics	Target	Dollars
Net Benefit per customer dollar spent (net benefits/actual spending)	2:1 ratio	$1,100,000
Community weatherization workshops	30	$150,000
Community outreach – monthly outreach to Seniors on EE (starting Oct)	4	$150,000
Loan program – train contractors on TEP's new loan program	8	$150,000
Low Income Weatherization – 5% increase in participation over 2011	163	$150,000
Part II: Other Performance Metrics at 100% of Goal		**$1,700,000**
Total New Performance Incentive for 2012		
At 80% of Goal		$2,627,083
At 100% of Goal		**$3,283,854**
At 120% of Goal		$3,940,625

TABLE 4: Average Bill Impact

Average Bill Impact	Current DSMS	Proposed DSMS	Dollar Increase	Total Bill % Increase
Residential	$1.10	$2.20	$1.10	1.17%
Small Commercial	$5.37	$13.60	$8.23	1.71%
Large Commercial	$200	$460	$260	1.60%
Industrial	$1,874	$3,393	$1,519	1.26%

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
GARY PIERCE- CHAIRMAN
BOB STUMP
SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

EXHIBIT
TEP-4
ADMITTED

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-11-0055

Rebuttal Testimony of

Denise A. Smith

on Behalf of

Tucson Electric Power Company

July 6, 2012

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I. INTRODUCTION.

Q. Please state your name and address.

A. My name is Denise A. Smith. My business address is 88 E. Broadway Blvd., Tucson, Arizona 85702.

Q. Are you the same Denise Smith that previously submitted Direct Testimony on behalf of Tucson Electric Power Company ("TEP" or "Company") in this Docket?

A. Yes.

Q. Have you reviewed the Direct Testimonies filed by the Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission"), the Residential Utility Consumer Office ("RUCO"), Southwest Energy Efficiency Project ("SWEEP") and Arizonans for Electric Choice and Competition ("AECC")?

A. Yes I have.

Q. Please summarize your Rebuttal Testimony.

A. I address concerns raised by Staff about the interim Performance Incentive ("PI") included in the Updated Plan. The Company believes that the Energy Efficiency ("EE") Rules expressly provide that the Commission can and should address and can modify PIs in connection with a proposed EE implementation plan. I also address concerns raised about the requested waiver regarding the filing of TEP's 2013 EE Implementation Plan.

II. PERFORMANCE INCENTIVE.

Q. Staff is concerned that the Updated Plan would change the PI methodology outside of a rate case. Do you share this concern?

A. No. Contrary to Staff's statement, Section R14-2-2411 of the EE Rules specifically provides for a modification of a PI in the annual Implementation Plan to encourage the utility to achieve the targets set by the Commission's approved EE standard:

> *"In the implementation plans required by R14-2-2405, an affected utility may propose for Commission review a performance incentive to assist in achieving the energy efficiency standard set forth in R14-2-2404. The Commission may also consider performance incentives in a general rate case."*

The EE Rules specifically state that it is appropriate for the Commission to review the PI when requested by an affected utility. Further, although the EE Rules acknowledge the PI "*may also*" be addressed in a rate case, the EE Rules do not require it nor provide that it is the only forum in which it can do so. It makes sense for the Commission to consider adjusting the PI in connection with a specific implementation plan especially when the Commission's EE Rules increase annually. In doing so, for example, the Commission can ensure that the PI fits the approved programs thereby assisting the utility in meeting the increasing EE standard. Further, the Commission may want to modify a PI that is not effective or that is incenting the wrong behavior. Staff's position, if accepted, would lead to the odd result that the Commission would have to wait for a rate case to change the PI. Cleary, that is contrary to the intent of A.A.C. R14-2-2411. This case is a good example of why a PI should be adjusted now because the Updated Plan's PI results in a more cost-effective approach that incents actual results and the Commission should not delay such modifications until a future rate case.

Q. Staff also has raised concerns about altering the methodology for calculation of the PI. Please address each concern.

A. Staff has listed four concerns (at page 8 of Ms. McNeely-Kirwan's direct testimony) related to altering the methodology for calculation of the PI.

Staff Concern 1: "The methodology significantly increases the Performance Incentive at the expense of rate payers"

TEP's Updated Plan included the development of an Interim PI structure as a bridge mechanism to the end of the TEP current rate case.[1] Although the Interim PI is higher, the total cost of the Updated Plan is significantly reduced. The Interim PI is based on the Company's performance in delivering cost-effective EE programs to rate payers and includes two separate calculations. This type of structure is beneficial to rate payers as both the tiered payment structure and payment based on net benefits create an atmosphere that encourages the Company to deliver the most cost-effective and highly beneficial programs and measures at the lowest possible cost.

Staff Concern 2: "With respect to Part II (the Other Performance Metrics), the payment associated with Net Benefits per customer dollar spent amounts to a double recovery"

Contrary to Staff's belief, these two performance metrics are entirely different and do not constitute double recovery. The percent of net benefit metric is an incentive for the utility to deliver EE programs that produce greater net-benefits. By comparison, the payment associated with net-benefits per customer dollar spent is a measurement of the efficiency of delivering cost-effective EE programs.

[1] *See* Docket No. E-01933A-12-0291.

Staff is also concerned that the 2/1 ratio of net-benefits to customer dollars spent is too modest. In response, the Company would reiterate that the 2012 Interim PI will not begin until October 2012 and there will be limited time remaining in 2012 for the Company to direct necessary spending to even reach the 2/1 ratio prior to the end of the year.

Staff Concern 3: "Payments associated with the other four performance metrics are not justified by direct, measurable, and verifiable kWh savings."

The whole point to the Part II (the Other Performance Metrics) PI is to incent additional items that are beneficial to the community in ways other than just direct energy savings. The Company, working in collaboration with SWEEP, identified additional performance metrics that would provide these additional benefits.

The Company has proposed a specified number of community weatherization workshops, senior outreach events, contractor training and a 5% increase in weatherized homes from the previous year. Because the 2012 Interim PI is not anticipated to receive approval for implementation until October 2012 and considering the Holiday schedule between the date of approval of this plan and the end of the program year, there will be limited time remaining in 2012 for the Company to schedule and complete all of the events listed. Therefore, the proposed performance metrics constitute a 'stretch' goal and should be approved.

Staff Concern 4: "It would be preferable to review the PI Mechanism in TEP's rate case, where it can be more fully considered in conjunction with related issues."

This issue has already been discussed above. The Company disagrees that it would be preferable to address this matter in the rate case. Further delay of this issue will continue

to complicate this matter. Additionally, as previously stated, the Commission's own EE Rules allow for a more timely and cost-effective solution for the adjustment of the PI.

Q. Staff also raises concerns about the proposed floor for the PI. Why is the 80% floor important to the Company?

A. Staff is concerned that the Company could *"receive a performance incentive that is too high relative to the actual energy savings achieved."* It is important to understand that the Company's proposed Interim PI creates significant incentive for the Company to extend efforts to achieve the 'ceiling' level of $3.9 million rather than limiting ourselves to the guaranteed floor of $2.6 million. The floor is an important element of the negotiated bridge mechanism designed to address the unique circumstances facing TEP until a lost fixed cost recovery mechanism can be implemented following the rate case.

Q. Will the Updated Plan be subject to true-up?

A. Yes, the Updated Plan will be subject to true-up in the same manner as previous DSMS resets. This would include a true-up of the Interim PI based on actual performance. This will occur either as part of TEP's 2012 rate case or the approval of a subsequent EE Plan, whichever is first

III. WAIVER OF FILING 2013 EE IMPLEMENTATION PLAN.

Q. In light of SWEEP's recommendation that TEP file a 2013 Implementation Plan, please explain why the Company requested a waiver.

A. The Company requested a waiver of filing the 2013 EE Implementation Plan because of the delay in the timing of the approval of the 2011-2012 EE Implementation Plan and the aggressive cumulative standard set forth in the EE Rules. Any decision in this evidentiary hearing will likely not occur until September, 2012, and therefore the EE programs and measures that can be delivered from the date of that Order through December 2013 will remain identical to those filed on January 31, 2011. As a result, a 2013 EE Implementation Plan would be essentially identical to the Updated Plan as it relates to the already filed 2011-2012 EE Implementation Plan. In addition, TEP has filed in its 2012 rate case, a new proposal for DSM/EE programs that includes a three-year plan. It is anticipated that the rate case decision will occur in 2013 and will supersede any currently approved TEP EE Implementation Plan. Given these facts, the Company believes it is not necessary to file a separate 2013 EE Plan, and also believes that Staff will benefit from a reduction in the administrative burden associated with additional review of another Plan. Finally, the filing of yet another Implementation Plan in such a short period of time will provide even less certainty to customers and other stakeholders as to the status of TEP's EE/DSM program.

Q. **Please provide comment to SWEEP's proposal that the Company prepare a filing proposing additional EE programs or program enhancements in a 2013 EE Implementation Plan.**

A. The Company appreciates the efforts by SWEEP to accelerate the DSM/EE savings to meet the EE Rules however, the Company has proposed seven new programs and many program enhancements in its 2011-2012 EE Implementation Plan that have not yet been

approved. If the Company receives a favorable decision on the Updated Plan in this proceeding, the Company will begin efforts to launch these new programs and enhancements. The necessary infrastructure to deliver both existing and new EE programs has been severely compromised due to the suspension of many of the existing EE programs. The Company will need to rebuild the infrastructure to ramp up new programs. It will take many months for the Company to regain the momentum in order to launch new programs. The Company therefore believes it would be difficult to launch additional programs in 2013. Moreover, the outcome of the new EE funding mechanism set forth in TEP's rate case must also be taken into consideration before TEP proposes new or enhanced programs.

Q. Does this conclude your testimony?

A. Yes it does.

BEFORE THE ARIZONA CORPORATION COMMISSION

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IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-11-0055

APPLICATION FOR APPROVAL OF:

(1) ENERGY EFFICIENCY IMPLEMENTATION PLAN;

(2) DEMAND-SIDE MANAGEMENT SURCHARGE; AND

(3) AUTHORIZED REVENUE REQUIREMENT TRUE-UP MECHANISM

(Expedited Review and Approval Requested by June 1, 2011)

Tucson Electric Power Company ("TEP" or "Company"), through undersigned counsel, and in accordance with Arizona Administrative Code R14-2-2405 and the Arizona Corporation Commission's Policy Statement of Regarding Utility Disincentive to Energy Efficiency and Decoupled Rate Structures (the "Commission's Policy Statement") hereby submits for Arizona Corporation Commission ("Commission") approval of its:

(i) Energy Efficiency Implementation Plan for 2011-2012 ("EE Plan");

(ii) Proposed Demand-Side Management ("DSM") Surcharge ("DSMS"); and

(iii) Authorized Revenue Requirement True-Up Mechanism ("ARRT").

In support hereof, TEP states as follows:

I. INTRODUCTION.

Throughout the proceedings that resulted in the Energy Efficiency ("EE") Rules, and the related Commission's Policy Statement, the issue of synchronizing a lost revenue recovery mechanism with the implementation of the rules was deliberated. There was consistent consensus that (i) appropriately devised EE is in the public interest; and (ii) the standards set in the EE Rules could only be achieved if rates were decoupled or an alternative lost revenue mechanism was in place.

Nevertheless, the EE Rules were finalized without a provision for lost revenue recovery. Likewise, the Commission's Policy Statement recommended deferral of the implementation of a lost revenue recovery mechanism to future rate cases.

TEP submits this application for approval of its EE Plan jointly with a lost revenue mechanism, the ARRT. In order to avoid confiscation of TEP's authorized revenues, the EE Plan and ARRT should be implemented at the same time. The Commission's Policy Statement recommendation that a lost revenue recovery mechanism be considered (and, presumably, ordered) in a future rate case will not avoid or resolve the confiscation problem for TEP as it is precluded from filing a rate case until July 1, 2012.[1] For these reasons, the Commission should simultaneously implement the EE Plan and ARRT or waive the EE requirements for TEP until such time as the ARRT (or other adequate remedy) is in place.

II. THE EE PLAN.

The EE Plan is designated to comply with the requirements of the electric Energy Efficiency Standard ("EE Standard") in conjunction with the ARRT. As part of the EE Plan, TEP has included: (i) a description of how the Company intends to meet the EE Standard target for 2011 of 1.25% and the cumulative EE Standard target for 2012 of 3%, as well as an estimate of the annual kilowatt hour ("kWh") and kilowatt ("kW") savings projected for each program through 2012; (ii) a description of existing and proposed DSM programs, their estimated total cost and cost per kWh

[1] Commission Decision No. 70628 (December 1, 2008)

reduction, and how those programs comply with the requirements of the EE Standard; (iii) a tariff filing that complies with A.A.C. R14-2-2406(A); and (iv) a request to modify and reset the existing Demand Side Management Surcharge ("DSMS") for implementation through 2012 in order to ensure just and reasonable rates.

TEP estimates that the EE Plan will require a budget of approximately $85.7 million. At this time, it is anticipated that the DSMS required to implement the EE Plan will be approximately $0.005675/kWh, based on forecasted retail sales for the same 19 months. The average impact to a residential customer will be $4.99 per month.[2] Key provisions of the EE Plan are summarized as follows:

A. Implementation of the proposed EE Plan, DSM Surcharge and ARRT should be effective as of June 1, 2011.

A.A.C R14-2-2405(A) requires TEP to file its initial EE Plan within 30 days of the effective date of the EE Standard. A.A.C. R14-2-2405(A) also requires that subsequent plans be filed on June 1 of each odd year, making TEP's next EE Plan due June 1, 2013. The EE Plan is a 2 year implementation plan. TEP believes that an initial 2 year plan provides an appropriate time frame for the Commission to evaluate the impact of the EE Standard and its results.

TEP also requests that the DSMS be implemented by June 1, 2011 so that the Company can continue its effective implementation of the EE Standard. This expedited review and implementation of the DSMS will ensure no gaps in implementation or program delivery between the previously approved DSM Plan and the newly filed EE Plan.

B. Conforming existing reporting requirements in light of the reporting requirements contained in the EE Standard.

Pursuant to A.A.C. R14-2-2409(D), TEP requests that the reporting requirements in the EE Standard be found to be in compliance with the Company's existing reporting requirements in Decision No. 70628 (December 1, 2008). Currently, TEP is required to file its DSM surcharge on April 1st and its semi-annual DSM reports on March 1st and September 1st of each year. The

[2] The Company's proposed DSMS is explained more fully in the EE Plan attached hereto, and incorporated herein.

reporting requirements contained in R14-2-2409 require that certain DSM reports be filed annually on March 1st and September 1st respectively. In order to avoid confusion or duplicative filings, TEP requests that the reporting requirements set forth in A.A.C. R14-2-2409 be used and that the Commission find that the use of such reporting requirements by TEP is in compliance with Decision No. 70628.

C. New DSM programs.

TEP is proposing the following new Residential, Commercial, Behavioral and Support DSM Programs: Multi-Family, Appliance Recycling, Schools Program, Combined Heat and Power Pilot, Retro-Commissioning, Bid-for-Efficiency, Behavioral Comprehensive (including K-12 Education, Direct Canvassing, Compact Fluorescent ("CFL") Bulb give-away, and Community Education), Residential Financing, and Codes and Support.[3]

D. Enhancements to existing DSM programs.

The EE Plan incorporates enhancements through modifications to the following existing DSM programs: Efficient Products (formerly CFL Buy-Down), C&I Comprehensive (formerly Non-Residential Existing Facilities), Small Business, and Commercial New Construction. TEP is also proposing to modify its existing Low-Income Weatherization Program by modifying customer eligibility requirements to match the current Low-Income Home Energy Assistance Program ("LIHEAP") standard of Federal Poverty Level. The modifications to these programs are set forth in the attached EE Plan.

The EE Plan contemplates that the following existing programs will continue with no modifications: Residential New Construction, Shade Tree, Direct Load Control Pilot, Home Energy Reports (sub-section), Existing Homes and Audit Direct Install, C & I Direct Load Control, and Education and Outreach.

E. The proposed DSMS.

TEP is seeking approval of the proposed DSMS to recover three elements: (i) DSM

[3] The new DSM programs are set forth in detail in the attached hereto, and incorporated herein.

program costs; (ii) DSM performance incentives; and (iii) the ARTT.[4] Specifically, the DSMS will collect $51.14 million in DSM program costs; $16.4 million in pre-tax DSM performance incentives; and $18.2 million in ARRT.

F. Procedural and Administrative Modifications.

In order to sustain participation in EE programs, the EE Plan contemplates flexibility for the Company to shift approved funds between programs, and modify budget line items, where cost-effective. This type of flexibility has proven to be valuable in the implementation plans of the Renewable Energy Standard. TEP is requesting that the following language be adopted in order approving the EE Plan:

> Accordingly, TEP will be allowed to shift up to 25% of approved funds from Residential to Commercial or from Commercial to Residential programs as deemed necessary based on program activity, and TEP will be allowed the option of increasing, up to 25%, the total Energy Efficiency budget where cost-effective to continue participation until approval of the next regularly scheduled Energy Efficiency Implementation plan.

III. THE ARRT.

The issue of synchronizing a revenue recovery mechanism with the implementation of the EE Rules is critical and should be resolved in this proceeding. The Commission's Policy Statement accurately states "[t]he Commission believes it is critical that utility disincentives to demand side management programs and energy efficiency be addressed. As stakeholders recognized, it is unlikely that the EES can be met without addressing financing disincentive and impacts to utilities' revenues and earnings." Commission's Policy Statement at page 27.

As previously stated, however, both the EE Rules and the Commission's Policy Statement were finalized without providing a mechanism for lost revenue recovery. Instead, the Commission has stated that a company may seek redress for lost revenues due to the implementation of the EE Standard in the company's next rate case. While the Commission's recommendation on how a company can address the disincentives of EE may work for some companies, this recommendation

[4] The ARRT is discussed herein and is detailed in Exhibit 4 attached hereto, and incorporated herein. .

does not provide an equitable solution for those companies, like TEP, that are in a rate freeze.[5]

In TEP's case, this inequity can be rectified through the ARRT. TEP's ARRT is a straightforward mechanism which has been described in numerous Energy Efficiency workshops and decoupling discussions over the past two years. The ARRT recovers the revenue requirement associated with the incremental energy efficiency kWh savings from the EE Standard starting in 2011 by multiplying these savings by the applicable approved non-fuel variable rates from TEP's last rate case. TEP is proposing this mechanism only remain in effect until approval of a revenue decoupling, or similar mechanism, in its next rate case.

Successful implementation of cost-effective EE programs, and the resultant reduced sales volume, will ultimately result in a utility being unable to recover its authorized revenue requirement. For TEP, this is caused, in part, by its Commission-approved rate design in which variable energy-based (per kWh) charges are used to collect non-fuel fixed utility costs. Thus, the mandatory nature of complying with the EE Rules, without the concurrent ability to request for the recovery of the costs of those rules, will result in elimination of a portion of TEP's authorized revenue requirement, which was deemed just and reasonable in Decision No. 70628.

In order to avoid this confiscation of TEP's authorized revenues, the EE Plan and ARRT should be implemented at the same time. In the alternative, the Commission should waive the EE requirements for TEP until such time as the ARRT (or other adequate remedy) is in place.

IV. CONCLUSION.

The EE Plan and the ARRT are designed to comply with the Commission's EE Rules and to provide a framework for future compliance. The Company's approach set forth herein is prudent as it seeks to comply with the EE Rules in a way that benefits TEP customers and maintains its financial integrity. Accordingly, for all the forgoing reasons, TEP respectfully requests that the Commission issue an order in this case:

---

[5] In TEP's case, rates are frozen until July 1, 2012 (Decision No. 70628). A decoupling or other mechanism could not be implemented until July 2013 at the earliest, leaving the Company with no recovery of lost revenues for the first 5% of the EE Standard.

1. Approving the EE Plan;
2. Finding that compliance with the reporting requirements set forth in A.A.C. R14-2-2409 should be used and are in compliance with the requirements of Decision No. 70628 (December 1, 2008);
3. Approving the DSMS;
4. Approving the ARRT;
5. Approving the proposed performance incentives;
6. Setting the effective date of the EE Plan, ARRT and DSMS as of June 1, 2011;
7. In the alternative, if the Commission does not approve the ARRT, then granting TEP a waiver of the EE Rules until such time as the ARRT (or other adequate remedy) is in place; and
8. For and such other relief as the Commission deems appropriate and in the public interest at this time.

RESPECTFULLY SUBMITTED this 31st day of January 2011.

Tucson Electric Power Company

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By Mary Ippolito

TUCSON ELECTRIC POWER COMPANY
2011-2012
ELECTRIC ENERGY EFFICIENCY IMPLEMENTATION PLAN

JANUARY 31, 2011

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I. Executive Summary

Tucson Electric Power Company ("TEP" or "Company") is pleased to present its 2011-2012 Energy Efficiency Implementation Plan ("EE Plan") for Arizona Corporation Commission ("Commission") approval, in compliance with Arizona Administrative Code R14-2-2405. As part of its EE Plan, TEP has included a description of how the Company intends to meet the 2011 Electric Energy Efficiency Standard ("EE Standard" or "EEES") of 1.25% and the cumulative 2012 EE Standard of 3%, as well as an estimate of the annual kilowatt hour ("kWh") and kilowatt ("kW") savings projected for each program through 2012.

TEP's EE Plan also contains a description of existing and proposed Demand-Side Management ("DSM") programs, their estimated total cost and cost per kWh reduction, and how those programs contribute to the Company's 2011-2012 EE savings goals. TEP has included a tariff filing that complies with A.A.C. R14-2-2406(A) and a request to modify and reset the existing adjustment mechanism for implementation through 2012 in order to ensure just and reasonable rates.

TEP estimates a 2011-2012 EE Plan Budget total of approximately $85.7 million. Additional details and the elements of the Company's proposed Demand-Side Management Surcharge ("DSMS") for June 1, 2011 through December 31, 2012 can be found in the attached Exhibit 3. At this time, it is anticipated that the incremental increase in the DSMS required to implement the 2011-2012 EE Plan will be approximately $0.005675/kWh based on forecasted retail sales for the same 19 months.[1] The average impact to a residential customer will be $4.99 per month. Budget details as well as a summary of portfolio savings, net benefits, and benefit-cost results appear in Table 1-1.

Table 1-1. Summary Costs and Savings

Program Year	Total Program Budget	Annual Savings (MWh)	Lifetime Savings (MWh)	Peak Demand Savings (MW)	Total Net Benefits	Portfolio Societal Cost Test
2011	$23,612,678	155,325	1,831,174	47.32	$58,605,017	2.7
2012	$27,486,097	180,603	2,533,363	73.74	$74,743,247	2.9
Total	$51,098,774	335,928	4,364,537	121.07	$133,348,264	2.8

As part of TEP's EE Plan, the Company is seeking approval of the following new Residential, Commercial, Behavioral and Support Programs: Multi-Family, Appliance Recycling, Schools Program, Combined Heat and Power Pilot, Retro-Commissioning, Bid-for-Efficiency, Behavioral Comprehensive (including K-12 education, direct canvassing, compact fluorescent bulb give away, and community education), Residential Financing, and Codes and Support. The full details of each program, including each program's budget, can be found in the attached appendices.

TEP is also seeking enhancements through the addition of new measures to the following existing DSM programs (full details and budgets appear in the attached appendices): Efficient Products (formerly CFL Buy-Down), Commercial and Industrial ("C&I") Comprehensive (formerly Non-Residential Existing Facilities), Small Business, and Commercial New Construction. TEP is also proposing to modify its existing Low-Income Weatherization Program by modifying customer eligibility requirements to match the current Low-Income Home Energy Assistance Program ("LIHEAP") standard of Federal Poverty Level.

[1] TEP's existing DSMS of $0.001249 will remain in effect through May 31, 2011.

TEP plans to continue administering the following existing programs with no modifications: Residential New Construction, Shade Tree, Direct Load Control Pilot, Home Energy Reports (sub-section), Existing Homes and Audit Direct Install, C&I Direct Load Control, and Education and Outreach. TEP's proposed portfolio of new and expanded programs is projected to meet the 2011 goal of 1.25% of previous year retail sales and the 2012 cumulative goal of 3%. Program planning also accounts for delays in program approval and start-up.

In addition to programmatic changes, TEP is seeking approval of its proposed DSM Surcharge to recover three elements: (i) DSM program costs; (ii) after tax DSM performance incentives; and (iii) Authorized Revenue Requirement True-up ("ARRT"). Specifically, TEP is requesting approval to collect $51.1 million in DSM program costs for 2011-2012, a $16.4 million pre-tax DSM performance incentive for 2011-2012, and $18.2 million in ARRT for 2011-2012. TEP is also seeking approval to shift approved EE Plan funds between programs, and to moderately increase the budgets outlined in the 2011-2012 EE Plan where it would be cost-effective to do so.

As explained in the attached EE Plan and appendices, TEP's 2011-2012 EE Plan contains new programs, enhancements to existing programs, and continued implementation of already successful programs. TEP respectfully requests approval of these programs and their budgets, as well as implementation of the ARRT. TEP believes these measures are prudent and necessary to the successful implementation of the EEE Standard and are in the public interest.

II. Introduction

The following EE Plan presents a detailed overview of the proposed electric energy efficiency programs targeted at the residential, commercial and industrial ("C&I") sectors, as well as their associated implementation costs, savings, and benefit-cost results. The EE Plan presents detailed information on the approach, energy efficiency measures, and proposed incentive levels.

TEP, with input from other parties such as the Southwest Energy Efficiency Project ("SWEEP"), has designed a comprehensive portfolio of programs to deliver electric energy and demand savings to meet annual DSM energy savings goals outlined in the Electric Energy Efficiency Standard. These programs include incentives, direct-install and buy down approaches for energy efficient products and services, educational and marketing approaches to raise awareness and modify behaviors, and partnerships with trade allies to apply as much leverage as possible to augment the rate-payer dollars invested.

For context and reference, service territory graphics are included below. Figure 2-1 shows TEP service territory in the context of all Unisource Energy Corporation territories and Figure 2-2 shows greater detail of TEP service territory.

Figure 2-1. Unisource Energy Service Territory

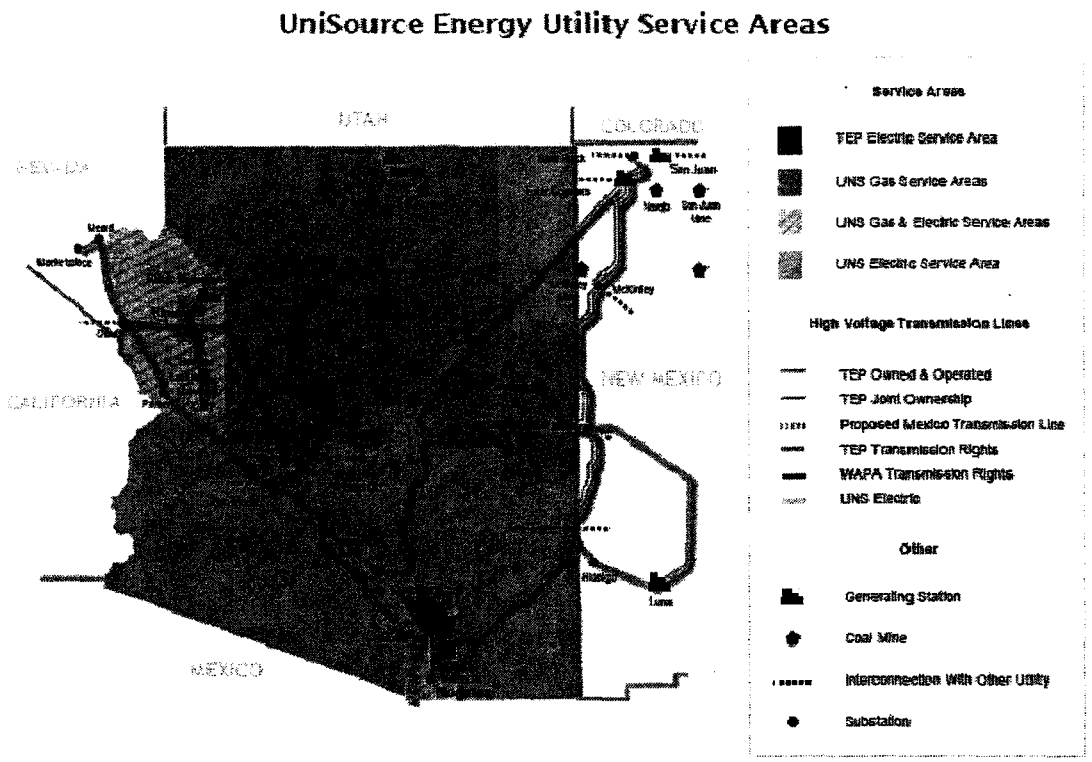
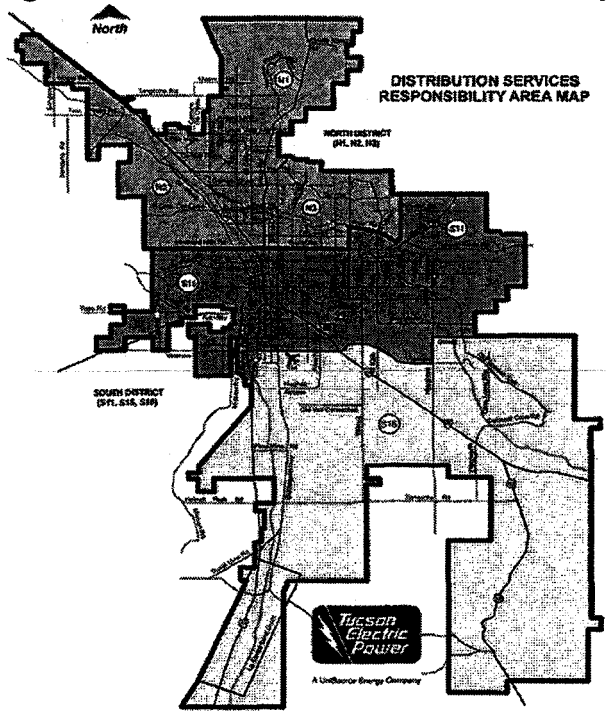


Figure 2-2. Tucson Electric Service Territory



A. Implementation Plan, Goals, and Objectives

TEP's high-level efficiency-related goals and objectives for the 2011-2012 EEES are as follows:

- Implement only cost-effective energy efficiency programs.
- Design and implement a diverse group of programs that provide opportunities for participation for all customers.
- Achieve a 2011 energy savings goal equal to 1.25% of 2010 retail sales and a 2012 energy savings goal equal to 1.75% of 2011 retail sales to achieve the cumulative 3% EE goal.
- When feasible, maximize opportunities for program coordination with other efficiency programs (e.g., Southwest Gas Corporation, Arizona Public Service Corporation) to yield maximum benefits.
- Maximize program savings at a minimum cost by striving to achieve comprehensive cost-effective savings opportunities.
- Provide TEP customers and contractors with web access to detailed information on all efficiency programs (residential and business) for electricity savings opportunities at www.tep.com.
- Expand the energy efficiency infrastructure in the state by increasing the number of available qualified contractors through training and certification in specific fields.
- Use trained and qualified trade allies such as electricians, HVAC contractors, builders, architects and engineers to transform the market for efficient technologies.
- Inform and educate customers to modify behaviors that enable them to use energy more efficiently.

B. Planning Process

TEP's portfolio of programs incorporates elements of the most successful energy efficiency programs across North America into program plans designed for the Tucson market and TEP customers in particular. A substantial amount of information including evaluations, program plans and potential studies were used to develop specific programs for TEP. TEP also used a benchmarking process to review the most successful energy efficiency programs from across the country, with a focus on successful Southwest programs to help shape the portfolio.

C. Portfolio Risk Management

As of December 2010, the Arizona economy remains in the midst of recovering from a severe economic recession. In this economic environment, TEP's ability to convince residential and business customers to voluntarily take on additional debt for the installation of cost-effective measures, even with very short pay-back periods, will likely be challenging. TEP recognizes this challenge and has developed a portfolio of programs that provide opportunities for participation at multiple levels. By proposing a multi-faceted and broad portfolio of programs, TEP will attempt to capitalize on those sectors of the market willing to invest in energy efficiency regardless of the challenging economic landscape. In balance, this will allow us to meet aggressive regulatory efficiency goals.

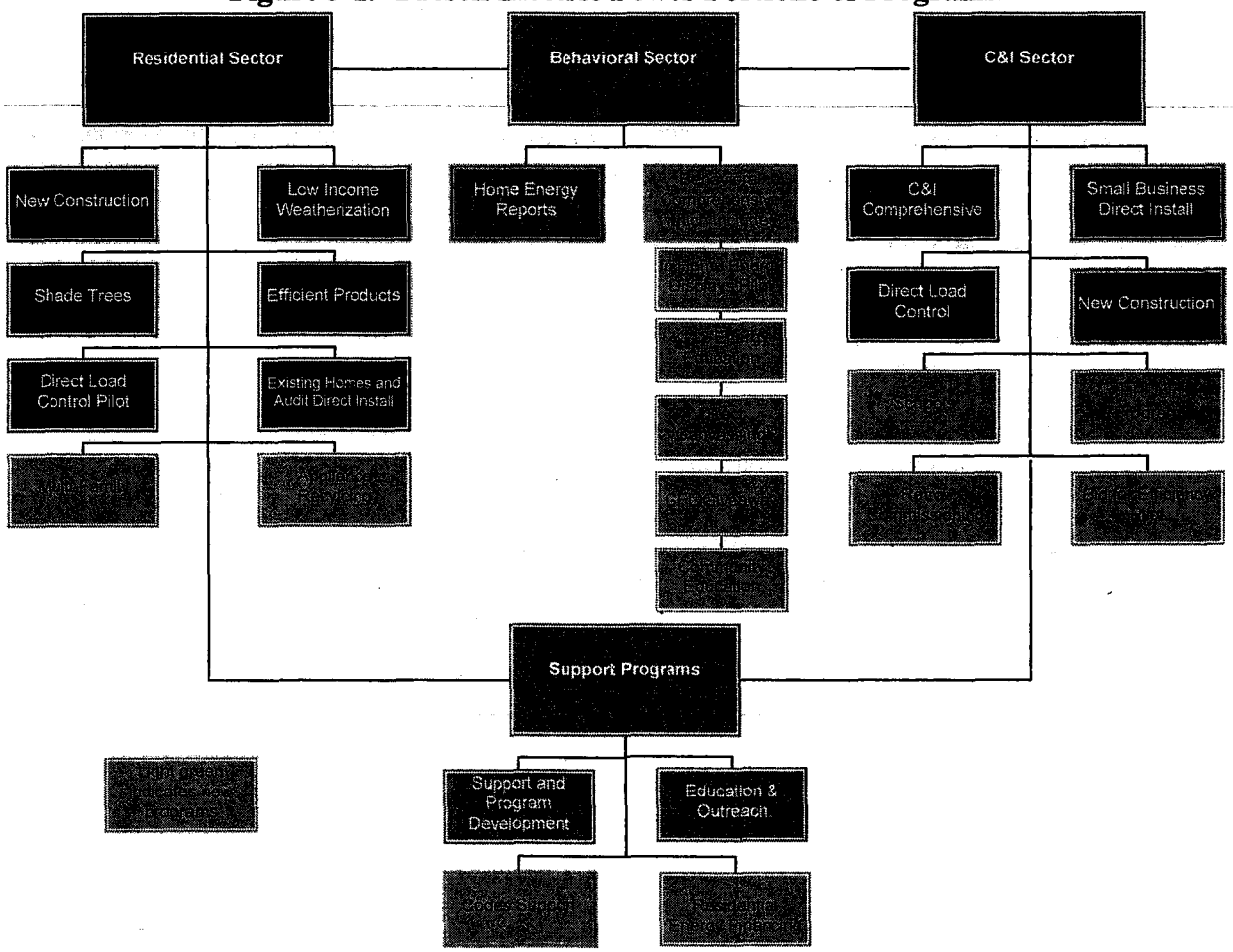
TEP used the following strategies to minimize the risks and produce the lowest cost associated with its portfolio of energy efficiency programs:

- Implementing primarily "tried and true" programs that have been successfully applied by other utilities in the Southwest and across the country.
- Implementing programs through a combination of third-party contractors and TEP staff. TEP designs programs on the most cost-effective basis utilizing implementation contractors where they provide the lowest cost per kWh and likewise utilizing TEP staff when appropriate.

III. Program Portfolio Overview

As demonstrated in Figure 3-1, TEP's portfolio of programs can be divided into residential, commercial, behavioral, and support sectors with administrative functions providing support across all program areas. Detailed information on existing program design, measure savings, costs and other technical details are available in Section V through Section X and detailed information for all new programs are included in the appendices.

Figure 3-1. Tucson Electric Power Portfolio of Programs



A. Savings, Budgets, and Benefit-Cost Results Overview

While this plan presents a two-year portfolio of investment consistent with the requirements of the Energy Efficiency Standard, TEP will continue to monitor projected program funding and program participation. As such, we expect there may be some slight adjustments in the forecasted investment levels. Additionally, incentive levels and other program elements will be reviewed and modified on an annual basis to reflect changes in market conditions or implementation processes in order to maximize cost-effective savings. Such modifications will be reported in the annual reports submitted to the Commission.

As detailed in Tables 3-1 through 3-4, TEP has developed this plan with the intent of meeting statutory electric savings goals as a percent of prior year sales as outlined in Energy Efficiency Standard Section R14-2-2404. For 2011, TEP's budget forecast is $23.6 million increasing to $27.5 million in 2012.

Table 3-1. Summary Costs and Savings

Program Year	Total Program Budget	Annual Savings (MWh)	Lifetime Savings (MWh)	Peak Demand Savings (MW)	Total Net Benefits	Portfolio Societal Cost Test
2011	$23,612,678	155,325	1,831,174	47.32	$58,605,017	2.7
2012	$27,486,097	180,603	2,533,363	73.74	$74,743,247	2.9
Total	$51,098,774	335,928	4,364,537	121.07	$133,348,264	2.8

As noted in Table 3-2, the 2011 Energy Efficiency Standard target is 1.25% savings as a percent of sales of the previous calendar year; for 2012 this increases to 1.75%. TEP's proposed portfolio of new and expanded programs is projected to meet the 2011 and 2012 goals. TEP believes it is prudent to factor project fall-out and delay in approval to achieve the EEES goals. This approach will show the Company overachieving the EEES, but as inevitabilities take place, the Company expects to meet the EE Standard for both 2011 and 2012.

Table 3-2. Planned Savings and EE Standard Target

	2011	2012
Annual MWh Savings Goal as % of Sa	1.25%	1.75%
MWh Savings Goal	116,133	163,367
Planned MWh Savings	155,325	180,603
Planned MWh Savings as % of Sales	1.67%	1.93%
Percent of Savings Goal Achieved	134%	111%

Note: MWh Savings include line loss reductions created from energy reductions which are not included in the Authorized Revenue Requirement True-up.

Table 3-3 provides cost and savings details per program over 2011 and 2012 period combined. Given that the current behavior programs all benefit residential customers, the break down in spending between residential and commercial is even and in line with revenues.

Table 3-3. 2011-2012 Costs and Savings by Program

		Annual Savings (MWh)	Peak Demand Savings (MW)	Total Program Cost	Percent of Annual Savings (MWh)	Percent of Peak Demand Savings (MW)	Percent of Total Portfolio Cost
Residential	Efficient Products	99,122	11.56	$4,358,106	30%	10%	9%
	Appliance Recycling	14,459	1.74	$1,716,258	4%	1%	3%
	Res. New Construction	7,088	3.90	$5,165,772	2%	3%	10%
	Existing Homes and Audit Direct Insta	6,371	3.94	$6,153,682	2%	3%	12%
	Shade Tree	1,956	0.31	$644,737	1%	0%	1%
	Low Income Weatherization	431	0.22	$1,227,641	0%	0%	2%
	Multi-Family	1,193	0.06	$169,738	0%	0%	0%
	Residential Direct Load Control - Pilot	-	2.56	$969,966	0%	2%	2%
	Subtotal	130,619	24.29	$20,405,901	39%	20%	40%
Commercial	C&I Comprehensive Program	59,199	11.32	$8,079,990	18%	9%	16%
	Commercial Direct Load Control	27,950	66.30	$5,489,805	8%	55%	11%
	Small Business Direct Install	43,993	11.19	$7,616,648	13%	9%	15%
	Commercial New Construction	4,011	0.54	$808,788	1%	0%	2%
	Bid for Efficiency - Pilot	3,978	0.36	$797,353	1%	0%	2%
	Retro-Commissioning	1,105	0.10	$175,520	0%	0%	0%
	Schools Facilities	697	0.08	$157,941	0%	0%	0%
	CHP Joint Program - Pilot	15,912	1.99	$150,756	5%	2%	0%
	Subtotal	156,844	91.38	$23,276,802	47%	76%	46%
Behavior	Home Energy Reports	26,934	2.46	$1,074,496	8%	2%	2%
	Behavioral Comprehensive Program	21,532	2.43	$2,239,568	6%	2%	4%
	Subtotal	48,466	4.89	$3,314,064	14%	4%	6%
Support Programs	Education and Outreach	-	-	$768,641	0%	0%	2%
	Residential Energy Financing	-	-	$1,573,908	0%	0%	3%
	Codes Support	-	-	$124,825	0%	0%	0%
	Program Development, Analysis and Reporting Software	-	-	$1,634,633	0%	0%	3%
	Subtotal			$4,102,008	0%	0%	8%
Total	Total	335,928	121.07	$51,098,774	100%	100%	100%

Table 3-4 provides program level detail of budgetary break downs as well as program and portfolio level cost effectiveness results.

Table 3-4. 2011 and 2012 Program Budgets, Net Benefits, and Cost Effectiveness

		2011-2012 Total		
		Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
Residential	Efficient Products	$4,358,106	$24,903,753	4.8
	Appliance Recycling	$1,716,258	$2,475,348	1.9
	Res. New Construction	$5,165,772	$8,131,101	1.7
	Existing Homes and Audit Direct Insta	$6,153,682	$1,207,322	1.1
	Shade Tree	$644,737	$839,078	1.5
	Low Income Weatherization	$1,227,641	$175,013	1.2
	Multi-Family	$169,738	$260,777	2.5
	Residential Direct Load Control - Pilot	$969,966	$675,098	1.7
	Subtotal	$20,405,901	$38,667,489	2.2
Commercial	C&I Comprehensive Program	$8,079,990	$35,204,278	3.4
	Commercial Direct Load Control	$5,489,805	$18,486,223	8.1
	Small Business Direct Install	$7,616,648	$16,827,820	2.5
	Commercial New Construction	$808,788	$3,624,068	5.6
	Bid for Efficiency - Pilot	$797,353	$1,295,514	2.3
	Retro-Commissioning	$175,520	$419,165	3.0
	Schools Facilities	$157,941	$341,881	3.2
	CHP Joint Program - Pilot	$150,756	$15,438,653	8.0
	Subtotal	$23,276,802	$91,637,603	3.8
Behavior	Home Energy Reports	$1,074,496	$34,880	1.0
	Behavioral Comprehensive Program	$2,239,568	$4,642,925	3.0
	Subtotal	$3,314,064	$4,677,805	2.4
Support Programs	Education and Outreach*	$768,641	$0	N/A
	Residential Energy Financing*	$1,573,908	$0	N/A
	Codes Support*	$124,825	$0	N/A
	Program Development, Analysis and Reporting Software	$1,634,633	-$1,634,633	N/A
	Subtotal	$4,102,008	-$1,634,633	N/A
Total	Total	$51,098,774	$133,348,264	2.8

B. 2011 Portfolio Results

This section presents a detailed review of the 2011 projected savings and costs. As noted in the Table 3-5, the savings goal for 2011 is 1.25% and the proposed portfolio is 1.67% as a percent of sales, meeting the required savings goals. As noted above, prudent program planning must account for delays in program approval and fall-out of projects, but as inevitabilities occur, TEP expects to meet the EEES for 2011.

Table 3-5. 2011 Savings Goal

	2010 Electricity Sales (MWh)	Percent Savings	Program Savings (MWh)
Target	9,290,665	1.25%	116,133
2011 Savings Forecast		1.67%	155,325
Difference		0.42%	39,192
Percent of Target Reached			134%

Table 3-6 presents a detailed review of 2011 portfolio savings, costs, and detail in terms of program level costs per first year and lifetime energy and demand savings.

Table 3-6. 2011 Annual and Lifetime Portfolio Savings and Costs

		2011							
		Annual Energy Savings at Generator (MWh)	Coincident Demand Savings at Generator (MW)	Total Program Budget	Program Cost per Lifetime kWh Saved ($/kWh)	Program Cost per First Year kWh Saved ($/kWh)	Program Cost per kW Saved ($/kW)	Percent of MWh Savings by Program	Percent of Budget by Program
Residential	Efficient Products	50,948	5.95	$1,926,611	$0.006	$0.04	$324	33%	8%
	Appliance Recycling	7,229	0.87	$856,725	$0.020	$0.12	$983	5%	4%
	Res. New Construction	3,339	1.83	$2,445,125	$0.024	$0.73	$1,336	2%	10%
	Existing Homes and Audit Direct Install	2,562	1.56	$2,577,643	$0.072	$1.01	$1,652	2%	11%
	Shade Tree	978	0.16	$319,155	$0.016	$0.33	$2,034	1%	1%
	Low Income Weatherization	215	0.11	$611,190	$0.142	$2.84	$5,675	0%	3%
	Multi-Family	0	0.00	$0	$0.000	$0.00	N/A	0%	0%
	Residential Direct Load Control - Pilot	0	1.28	$785,150	$0.000	$0.00	$613	0%	3%
	Subtotal	65,272	11.76	$9,521,599	$0.018	$0.15	$810	42%	40%
Commercial	C&I Comprehensive Program	26,568	5.12	$3,794,134	$0.01	$0.14	$741	17%	16%
	Commercial Direct Load Control	11,613	22.10	$2,737,846	$0.01	$0.24	$124	7%	12%
	Small Business Direct Install	19,579	4.82	$3,547,437	$0.02	$0.18	$736	13%	15%
	Commercial New Construction	2,006	0.27	$402,469	$0.01	$0.20	$1,478	1%	2%
	Bid for Efficiency - Pilot	1,547	0.14	$294,261	$0.02	$0.19	$2,083	1%	1%
	Retro-Commissioning	0	0.00	$0	$0.00	$0.00	N/A	0%	0%
	Schools Facilities	0	0.00	$0	$0.00	$0.00	N/A	0%	0%
	CHP Joint Program - Pilot	7,956	0.99	$74,800	$0.00	$0.01	$75	5%	0%
	Subtotal	69,269	33.44	$10,850,947	$0.009	$0.16	$327	45%	46%
Behavior	Home Energy Reports	10,359	0.95	$400,706	$0.04	$0.04	$424	7%	2%
	Behavioral Comprehensive Program	10,425	1.17	$819,289	$0.01	$0.08	$698	7%	3%
	Subtotal	20,784	2.12	$1,219,996	$0.012	$0.06	$575	13%	5%
Support Programs	Education and Outreach	0	0.00	$383,917	N/A	N/A	N/A	0%	2%
	Residential Energy Financing	0	0.00	$781,646	N/A	N/A	N/A	0%	3%
	Codes Support	0	0.00	$49,335	N/A	N/A	N/A	0%	0%
	Program Development, Analysis and Reporting Software	0	0.00	$805,238	N/A	N/A	N/A	0%	3%
	Subtotal	0	0.00	$2,020,136	N/A	N/A	N/A	0%	8%
Total	Total	155,325	47.32	$23,612,678	$0.015	$0.15	$499	100%	100%

Table 3-7 presents 2011 portfolio costs, by program, segmented by the amount projected to be spent on incentives, program delivery, program marketing, utility program administration, evaluation costs and program development, analysis and reporting software.

Table 3-7. 2011 Summary Portfolio Implementation Costs

		2011							
		Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
Residential	Efficient Products	$1,155,000	$413,013	$235,202	$49,296	$74,100	$1,926,611	$12,595,412	5.9
	Appliance Recycling	$189,000	$560,713	$59,977	$14,085	$32,951	$856,725	$1,239,078	1.9
	Res. New Construction	$1,176,000	$771,497	$389,499	$14,085	$94,043	$2,445,125	$3,798,641	1.7
	Existing Homes and Audit Direct Instal	$1,541,200	$622,697	$324,585	$14,085	$75,077	$2,577,643	$357,658	1.1
	Shade Tree	$200,000	$78,853	$13,943	$14,085	$12,275	$319,155	$422,753	1.6
	Low Income Weatherization	$525,000	$48,568	$5,736	$14,085	$17,802	$611,190	$90,137	1.2
	Multi-Family	$0	$0	$0	$0	$0	$0	$0	N/A
	Residential Direct Load Control - Pilot	$0	$655,000	$98,250	$12,750	$19,150	$785,150	$17,382	1.0
	Subtotal	$4,786,200	$3,180,340	$1,127,192	$132,366	$325,398	$9,521,496	$18,521,061	2.2
Commercial	C&I Comprehensive Program	$2,165,375	$1,125,568	$329,094	$28,169	$145,928	$3,794,134	$15,153,775	3.2
	Commercial Direct Load Control	$1,452,000	$1,225,283	$0	$10,563	$50,000	$2,737,846	$5,738,163	5.5
	Small Business Direct Install	$2,298,982	$654,855	$443,076	$14,085	$136,440	$3,547,437	$7,449,330	2.5
	Commercial New Construction	$279,310	$59,695	$33,900	$14,085	$15,480	$402,469	$1,813,959	5.6
	Bid for Efficiency - Pilot	$210,000	$34,160	$31,741	$7,042	$11,318	$294,261	$519,632	2.4
	Retro-Commissioning	$0	$0	$0	$0	$0	$0	$0	N/A
	Schools Facilities	$0	$0	$0	$0	$0	$0	$0	N/A
	CHP Joint Program - Pilot	$0	$68,000	$6,800	$0	$0	$74,800	$7,719,904	8.0
	Subtotal	$6,405,667	$3,167,560	$844,611	$73,944	$359,165	$10,850,947	$38,394,761	3.5
Behavior	Home Energy Reports	$247,500	$85,913	$16,671	$35,211	$15,412	$400,706	-$19,100	1.0
	Behavioral Comprehensive Program	$422,900	$300,794	$50,000	$14,085	$31,511	$819,289	$2,513,531	3.9
	Subtotal	$670,400	$386,706	$66,671	$49,296	$46,923	$1,219,996	$2,494,431	2.9
Support Programs	Education and Outreach*	$0	$350,000	$16,530	$9,859	$7,528	$383,917	$0	N/A
	Residential Energy Financing*	$332,889	$366,135	$57,496	$14,085	$11,042	$781,646	$0	N/A
	Codes Support*	$0	$41,250	$6,188	$0	$1,898	$49,335	$0	N/A
	Program Development, Analysis and Reporting Software*	$0	$805,238	$0	$0	$0	$805,238	-$805,238	N/A
	Subtotal	$332,889	$2,562,623	$80,214	$23,944	$20,467	$2,020,136	-$805,238	N/A
Total	Total	$12,195,156	$9,297,230	$2,118,686	$279,882	$751,954	$23,612,678	$58,605,017	2.7
	Percent of Cost by Category	52%	39%	9%	1%	3%	100%		

* Lifetime Net Benefits are adjusted to $0. Benefits are likely to equal costs; however at this time they are not quantified

Table 3-8 on the following page presents a detailed explanation of activities represented in each budget category including incentives; program delivery; program marketing; utility program administration; evaluation; and program development, analysis and reporting software.

Table 3-8. Budget Item Definitions

Incentives	**Costs for approved customer incentives including but not limited to:** • Direct customer incentives; • Agency payments for low-income weatherization program • Agency payments for shade trees; and • Contractor payments for direct-install programs.
Program Delivery	**Costs associated with implementing approved programs including but not limited to:** • Implementation contractor labor, travel and expenses; • Testing equipment and IC Contractor database modifications; • Energy efficiency education and technical assistance; • Engineering analysis to support custom incentives; • Development and distribution of technical consumer educational materials; • Field inspections and testing; • Data entry and validation; • Sales, oversight and management of programs and budgets; • Training, technical assistance and problem resolution; • Travel and expenses; and • Administration, review and recommended modifications.
Program Marketing	**Direct program marketing costs related to marketing programs and increasing DSM consumer awareness as opposed to general consumer education including but not be limited to:** • Agency and internal costs to develop materials; • Production costs for radio, television, or internet ads; • Internal labor costs to develop materials and marketing plan; and • Costs for ad placement and reproduction and mailing.
Utility Program Administration	**Internal costs for management and reporting, including but not limited to:** • Tracking program activity; • Developing ACC DSM and compliance reports; • Preparing data requests; • Avoided costs evaluation; • Request for proposal ("RFP") and contractor selection; • Contractor and contract management; and • Financial monitoring and compliance.
Evaluation	**Costs for Measurement, Evaluation, and Research by an independent contractor including but not limited to:** • Identification of baseline efficiency levels and the market potential; • Process and impact evaluations; • Verification of installed energy efficient measures; • Validation of reported energy savings; and • Research into new and emerging technologies.
Program Development, Analysis and Reporting Software	**Costs for program design, development and resources necessary to meet reporting requirements of the EE Standard:** • Measure and program research and benefit-cost analysis; • Codes and Standards research and analysis; • Education and training on new technologies; • Incremental cost studies; • Program design, development and analysis; • Software for tracking and reporting to remain in compliance with EEES

C. 2012 Portfolio Results

This section presents a detailed review of the 2012 projected savings and costs. TEP's proposed portfolio of new and expanded programs is projected to meet the 2012 cumulative EE goal of 3% with 111% of required savings. As noted earlier, TEP expects to meet the 2012 EE goal and has accounted here for the inevitabilities associated with new program implementation.

Table 3-9. 2012 Savings Goal

	2011 Electricity Sales (MWh)	Percent Savings	Program Savings (MWh)
Target	9,335,237	1.75%	163,367
2012 Savings Forecast		1.93%	180,603
Difference		0.18%	17,237
Percent of Target Reached			111%

Table 3-10 presents a detailed review of 2012 portfolio savings, costs, and detail in terms of program level costs per first year and lifetime energy and demand savings.

Table 3-10. 2012 Annual and Lifetime Portfolio Savings and Costs

		2012							
		Annual Energy Savings at Generator (MWh)	Coincident Demand Savings at Generator (MW)	Total Program Budget	Program Cost per Lifetime kWh Saved ($/kWh)	Program Cost per First Year kWh Saved ($/kWh)	Program Cost per kW Saved ($/kW)	Percent of MWh Savings by Program	Percent of Budget by Program
Residential	Efficient Products	48,173	5.62	$2,431,495	$0.008	$0.05	$433	27%	9%
	Appliance Recycling	7,229	0.87	$859,533	$0.020	$0.12	$986	4%	3%
	Res. New Construction	3,749	2.07	$2,720,648	$0.024	$0.73	$1,317	2%	10%
	Existing Homes and Audit Direct Install	3,808	2.38	$3,576,038	$0.066	$0.94	$1,503	2%	13%
	Shade Tree	978	0.16	$325,582	$0.017	$0.33	$2,075	1%	1%
	Low Income Weatherization	215	0.11	$616,451	$0.143	$2.86	$5,724	0%	2%
	Multi-Family	1,193	0.06	$169,738	$0.021	$0.14	$2,845	1%	1%
	Residential Direct Load Control - Pilot	0	1.28	$184,816	$0.000	$0.00	$144	0%	1%
	Subtotal	65,346	12.54	$10,884,305	$0.020	$0.17	$868	36%	40%
Commercial	C&I Comprehensive Program	32,631	6.20	$4,285,856	$0.01	$0.13	$692	18%	16%
	Commercial Direct Load Control	16,337	44.20	$2,751,959	$0.00	$0.17	$62	9%	10%
	Small Business Direct Install	24,414	6.37	$4,069,211	$0.02	$0.17	$639	14%	15%
	Commercial New Construction	2,006	0.27	$406,319	$0.01	$0.20	$1,492	1%	1%
	Bid for Efficiency - Pilot	2,431	0.22	$503,092	$0.02	$0.21	$2,266	1%	2%
	Retro-Commissioning	1,105	0.10	$175,520	$0.02	$0.16	$1,739	1%	1%
	Schools Facilities	697	0.08	$157,941	$0.02	$0.23	$1,867	0%	1%
	CHP Joint Program - Pilot	7,956	0.99	$75,956	$0.00	$0.01	$76	4%	0%
	Subtotal	87,579	58.44	$12,425,855	$0.00	$0.14	$213	48%	46%
Behavior	Home Energy Reports	16,575	1.51	$673,790	$0.04	$0.04	$445	9%	2%
	Behavioral Comprehensive Program	11,107	1.25	$1,420,279	$0.02	$0.13	$1,133	6%	5%
	Subtotal	27,682	2.76	$2,094,069	$0.02	$0.08	$757	15%	8%
Support Programs	Education and Outreach	0	0.00	$384,724	N/A	N/A	N/A	0%	1%
	Residential Energy Financing	0	0.00	$792,262	N/A	N/A	N/A	0%	3%
	Codes Support	0	0.00	$75,490	N/A	N/A	N/A	0%	0%
	Program Development, Analysis and Reporting Software	0	0.00	$829,395	N/A	N/A	N/A	0%	3%
	Subtotal	0	0.00	$2,081,871	N/A	N/A	N/A	0%	8%
Total	Total	180,603	73.74	$29,486,097	$0.01	$0.16	$378	100%	100%

Table 3-11 presents 2012 portfolio costs, by program, segmented by the amount projected to be spent on incentives, program delivery, program marketing, utility program administration, and evaluation costs. Please refer to Table 3-8 for an explanation of activities included in each cost category.

Table 3-11. 2012 Summary Portfolio Implementation Costs

		2012							
		Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
Residential	Efficient Products	$1,571,232	$417,639	$298,331	$50,775	$93,519	$2,431,495	$12,308,341	4.1
	Appliance Recycling	$189,000	$562,822	$60,146	$14,507	$33,059	$859,533	$1,236,270	1.9
	Res. New Construction	$1,329,600	$838,317	$433,583	$14,507	$104,640	$2,720,648	$4,332,460	1.7
	Existing Homes and Audit Direct Install	$2,308,180	$698,233	$450,962	$14,507	$104,156	$3,576,038	$849,664	1.2
	Shade Tree	$200,000	$84,336	$14,217	$14,507	$12,522	$325,582	$416,325	1.5
	Low Income Weatherization	$525,000	$53,207	$5,782	$14,507	$17,955	$616,451	$84,875	1.2
	Multi-Family	$40,950	$94,234	$13,518	$14,507	$6,528	$169,738	$260,777	2.5
	Residential Direct Load Control - Pilot	$40,000	$105,370	$21,806	$13,133	$4,508	$184,816	$657,716	5.5
	Subtotal	$6,203,962	$2,954,158	$1,298,346	$150,950	$376,889	$10,484,305	[illegible]	[illegible]
Commercial	C&I Comprehensive Program	$2,557,394	$1,162,607	$372,000	$29,014	$164,841	$4,285,856	$20,050,503	3.5
	Commercial Direct Load Control	$1,452,000	$1,259,079	$0	$10,880	$30,000	$2,751,959	$12,748,060	10.8
	Small Business Direct Install	$2,713,450	$676,286	$508,460	$14,507	$156,508	$4,069,211	$9,378,490	2.6
	Commercial New Construction	$279,310	$62,676	$34,199	$14,507	$15,628	$406,319	$1,810,109	5.6
	Bid for Efficiency - Pilot	$330,000	$85,253	$53,983	$14,507	$19,350	$503,092	$775,882	2.3
	Retro-Commissioning	$110,000	$24,141	$20,121	$14,507	$6,751	$175,520	$419,165	3.0
	Schools Facilities	$78,158	$52,287	$6,914	$14,507	$6,075	$157,941	$341,881	3.2
	CRP Joint Program - Pilot	$0	$53,133	$5,313	$17,510	$0	$75,956	$7,718,749	7.9
	Subtotal	$7,520,312	$3,375,461	$1,000,990	$125,940	$399,152	$12,425,855	[illegible]	4.0
Behavior	Home Energy Reports	$513,200	$69,283	$29,124	$36,268	$25,915	$673,790	$53,980	1.1
	Behavioral Comprehensive Program	$602,380	$698,765	$50,000	$14,507	$54,626	$1,420,279	$2,129,394	2.5
	Subtotal	$1,115,580	$768,048	$79,124	$50,775	$80,541	$2,094,068	$2,183,374	2.0
Support Programs	Education and Outreach*	$0	$350,000	$17,026	$10,155	$7,544	$384,724	$0	N/A
	Residential Energy Financing*	$332,889	$375,415	$58,259	$14,507	$11,192	$792,262	$0	N/A
	Codes Support*	$0	$56,180	$8,427	$7,979	$2,903	$75,490	$0	N/A
	Program Development, Analysis and Reporting Software	$0	$829,395	$0	$0	$0	$829,395	-$829,395	N/A
	Subtotal	$332,889	$1,610,990	$83,712	$32,641	$21,639	$2,081,871	-$829,395	N/A
Total	Total	$15,172,743	$8,708,658	$2,462,171	$364,306	$878,220	$27,086,097	[illegible]	[illegible]
	Percent of Cost by Category	56%	31%	9%	1%	3%	100%		

* Lifetime Net Benefits are adjusted to $0. Benefits are likely to equal costs; however at this time they are not quantified

D. Review of Different Benefit-Cost Tests and Results

As required in the Cost Effectiveness section of the EE Standard (R14-2-2412), TEP must ensure that the incremental benefits to society of the overall DSM portfolio exceed the incremental costs to society using the Societal Cost Test. For a full description of inputs to conduct a Societal Cost Test ("SCT") please refer to the "Benefit/Cost Analysis of DSM Programs – A Guide for Arizona Investor Owned Utilities" included in Exhibit 1. This paper was developed in cooperation with Arizona Public Service Corporation ("APS") and a collaborative group of stakeholders in 2010 and presented to Commission Staff as the utility requested methodology for application of the SCT. For the analysis of program benefits, a software program we call *NAVdesign* was developed by Navigant Consulting, Inc. for use by TEP. *NAVdesign* applies avoided cost savings generated by each measure or program across the entire portfolio. Measure and program level benefit-cost details are available in the appendices.

Program Development

Program development involves selecting the technologies to include in each program as well as estimating participation levels and program costs. Though the DSM portfolio must be cost-effective, there are a number of perspectives on cost effectiveness. Some of these alternative perspectives are described below.

Types of Benefit-Cost Tests

As detailed in Table 3-12, there are five major benefit-cost tests commonly utilized in the energy efficiency industry, each of which addresses different perspectives. The Arizona EEES established that the societal cost test should be used as the key perspective for judging the cost-effectiveness of the energy efficiency measures and programs. Regardless of which perspective is used, benefit-cost ratios greater than or equal to 1.0 are considered beneficial. While various perspectives are often referred to as tests, the following list of criteria demonstrates that decisions on program development go beyond a pass/fail test.

Table 3-12. Comparative Benefit-Cost Tests

	SOCIETAL TEST	TOTAL RESOURCE COST TEST	UTILITY RESOURCE COST TEST	PARTICIPANT COST TEST	RATE IMPACT MEASURE TEST
BENEFITS					
Reduction in Customer's Utility Bill				X	
Incentive Paid by Utility/Program Administrator				X	
Any Tax Credit Received		X		X	
Avoided Supply Costs	X	X	X		X
Avoided Participant Costs	X	X		X	
Participant Payment to Utility (if any)			X		X
External Benefits	X				
COSTS					
Utility Admin Costs	X	X	X		X
Participant Costs	X	X		X	
Incentive Costs			X		
External Costs	X				
Lost Revenues					X

Although TEP is only required to analyze its programs using the SCT, the Company evaluated the cost-effectiveness of its measures, programs, and overall portfolio based on all of the following standard tests.

Utility Resource Cost Test

The Utility Resource Cost Test ("UCT"), also referred to as the Program Administrator Test("PAT"), measures the net benefits of a DSM program as a resource option based on the costs and benefits incurred by the utility (including incentive costs) and excluding any net costs incurred by the customer participating in the efficiency program. The benefits are the avoided supply costs of energy and demand, the reduction in transmission, distribution, generation and capacity valued at marginal costs for the periods when there is a load reduction. The costs are the program costs incurred by the utility, the incentives paid to the customers, and the increased supply costs for the periods in which load is increased.

Total Resource Cost

The Total Resource Cost ("TRC") is a test that measures the total net resource expenditures of a DSM program from the point of view of the utility and its ratepayers. Resource costs include changes in supply

and participant costs. A DSM program that passes the TRC test (i.e., has a ratio greater than 1) is viewed as beneficial to the utility and its customers because the savings in electric costs outweigh the DSM costs incurred by the utility and its customers.

Participant Cost Test

The Participant Cost Test ("PCT") illustrates the relative magnitude of net benefits that go to participants compared to net benefits achieved from other perspectives. The benefits derived from this test reflect reductions in a customer's bill and energy costs plus any incentives received from the utility or third parties, and any tax credit. Savings are based on gross revenues. Costs are based on out-of-pocket expenses from participating in a program, plus any increases in the customer's utility bill(s).

Rate Impact Measure Test

The Rate Impact Measure ("RIM") Test measures the change in utility energy rates resulting from changes in revenues and operating costs. Higher RIM test scores indicate there will be less impact on increasing energy rates. While the RIM results provide a guide as to which technology has more impact on rates, generally it is not considered a pass/fail test. Instead, the amount of rate impact is usually considered at a policy level. The policy level decision is whether the entire portfolio's impact on rates is so detrimental that some net benefits have to be forgone.

Societal Cost Test

The SCT is similar to the TRC test, but it is also intended to account for the effects of externalities (such as reductions in carbon dioxide ("CO_2"), nitrogen oxides ("NOx"), and sulfur dioxide ("SO_2"). One additional difference between the TRC and the SCT is that the SCT uses a societal discount rate in the analysis. The SCT is the regulated benefit cost analysis required in the EEES and TEP has provided a SCT that accounts for the societal discount rate. TEP is however, unable to provide a true societal test given the uncertain values of environmental externalities. As required by the Commission, TEP will work in 2011 with stakeholders to develop appropriate metrics for and to monetize the costs of water, SOx, PM10, and NOx emissions savings as part of the societal cost test in program filings. Until a true market value is available for CO_2, the Company will not separately monetize this gas. In compliance with Commission Decision No. 72028 (December 12, 2010), TEP will re-file the societal costs with the results of the stakeholder meetings. Table 3-13 summarizes results of the various program level cost effectiveness tests.

Table 3-13. Comparative Benefit-Cost Test Results

		2011 - 2012				
		Societal Cost Test	Total Resource Cost Test	Utility Cost Test	Participant Cost Test	Ratepayer Impact Test
Residential	Efficient Products	4.8	4.2	6.3	11.0	0.6
	Appliance Recycling	1.9	1.7	2.6	5.0	0.6
	Res. New Construction	1.7	1.1	2.5	1.0	1.1
	Existing Homes and Audit Direct Insta	1.1	0.8	1.1	1.4	0.7
	Shade Tree	1.5	1.1	2.7	1.7	0.7
	Low Income Weatherization	1.2	0.9	0.4	2.1	0.3
	Multi-Family	2.5	2.2	2.2	15.0	0.5
	Residential Direct Load Control - Pilot	1.7	1.4	1.3	N/A	0.2
	Subtotal	2.2	1.7	2.7	3.8	0.6
Commercial	C&I Comprehensive Program	3.4	2.6	4.8	4.6	0.7
	Commercial Direct Load Control	8.1	7.3	7.3	N/A	0.2
	Small Business Direct Install	2.5	2.0	2.9	4.0	0.6
	Commercial New Construction	5.6	4.1	5.0	8.2	0.7
	Bid for Efficiency - Pilot	2.3	1.9	2.4	4.6	0.5
	Retro-Commissioning	3.0	2.5	3.0	5.9	0.6
	Schools Facilities	3.2	2.5	2.5	8.0	0.6
	CHP Joint Program - Pilot	8.0	5.7	84.4	7.7	0.8
	Subtotal	3.8	3.0	4.9	9.9	0.4
Behavior	Home Energy Reports	1.0	1.0	1.0	4.0	0.3
	Behavioral Comprehensive Program	3.0	2.6	2.6	10.3	0.5
	Subtotal	2.4	2.1	2.1	7.8	0.5
Support Programs	Education and Outreach	N/A	N/A	N/A	N/A	N/A
	Residential Energy Financing	N/A	N/A	N/A	N/A	N/A
	Codes Support	N/A	N/A	N/A	N/A	N/A
	Program Development, Analysis and Reporting Software	N/A	N/A	N/A	N/A	N/A
	Subtotal	N/A	N/A	N/A	N/A	N/A
Total	Portfolio Total	2.8	2.2	3.4	6.8	0.5

Table 3-14 summarizes the benefit cost ratio of the DSM portfolio using the societal cost test as well as showing results of several other methods of calculating cost effectiveness.

Table 3-14. DSM Portfolio Cost Effectiveness

Year	Societal Cost Test	Total Resource Cost Test	Utility Cost Test	Participant Cost Test	Ratepayer Impact Test
2011 - Portfolio	2.7	2.2	3.3	6.4	0.5
2012 - Portfolio	2.9	2.3	3.5	7.2	0.4
2011-2012 Total	2.8	2.2	3.4	6.8	0.5

E. Environmental Benefits

TEP estimates that implementation of the proposed portfolio will result in significant reductions in CO_2, NOx and SO_2 from fossil fuel power plant emissions over the lifetime of the installed efficiency measures. Table 3-15 details both annual and lifetime environmental benefits of the 2011 and 2012 portfolio.

Table 3-15. Environmental Benefits

	2011-2012 Total					
Year	Annual CO2 Savings (Metric Tons)	Annual NOx Savings (Metric Tons)	Annual SOx Savings (Metric Tons)	Lifetime CO2 Savings (Metric Tons)	Lifetime NOx Savings (Metric Tons)	Lifetime SOx Savings (Metric Tons)
2011 - Portfolio	130,678	173	150	1,618,229	2,185	1,895
2012 - Portfolio	153,094	201	175	2,230,094	3,011	2,612
2011-2012 Total	283,772	375	325	3,848,322	5,195	4,507

IV. Residential Programs

The following section presents a summary of TEP's residential programs including new programs, enhancements to existing programs consistent with the requirements of Section R-14-2-2407 of Decision No. 71436 (December 18, 2009), and existing programs where no changes are anticipated. Detailed program descriptions and cost-effectiveness results for each new program are included in the appendices.

A. Efficient Products

TEP is requesting budget approval and approval to offer the additional measures shown in Table 4-1 beginning in 2012.

Program Description

This is an existing program previously approved by the Commission in Decision No. 70383 (June 13, 2010). The Efficient Products Program (formerly called CFL Buy-Down Program) is being re-named to recognize that it will serve as the delivery channel to address other efficient products beyond CFLs, and rebated through the major retail channels. This program promotes the purchase of energy efficient retail products through in-store buy-down promotions. Starting in 2012 the promotion of energy efficient pool pumps, pool timers, residential LED lighting, and advanced power strips will be implemented.

Program Objectives and Rationale

The new measures will offer residential customers additional opportunities to reduce their energy consumption and further the market transformation process through retail partnerships, training of retail staff, and increased stocking and selection of efficient retail products.

New Measures for 2011-2012

Table 4-1 presents new measures to be rebated by the program in 2011 and 2012.

Table 4-1. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
Pool Pump Timer	no timer	Pool Pump Timers	$75/unit	-	1,500	4.03
Variable Speed Pool Pump	single speed baseline	Variable Spd Pool Pump	$200/unit	-	1,500	2.08
Residential LED light (A19 type bulb)	64W Incd/Halogen	10 W LED	$30/bulb	-	6,000	1.04
Advanced Power Strips - Load Sensor	standard strips	Smart Strips - Load Sensor	$10/sensor	-	1,500	2.12

*Additional detail on measure level saving, societal benefits/costs, and environmental benefits of both new and existing measure is included in Appendix J.

TEP is not proposing any significant changes in implementation approach or delivery strategy except for the addition of new measures starting in 2012. Delivery channels for the new measures will continue to be via a combination of both buy-downs and possible mail-in rebates with participating retailers.

Program marketing is primarily through mass-market channels (e.g., radio, newspaper, website, etc.) and through education and training of participating retailers.

Measurement, Evaluation, and Research Plan

The Measurement, Evaluation, Research ("MER") plan is consistent with the Company's previously filed strategy; however, it will incorporate review of the new measures and delivery tactics.

B. Appliance Recycling

TEP is requesting budget approval for a new Appliance Recycling program in 2011. A full program description and benefit-cost analysis is included in Appendix A.

Program Description

This is a new program, starting in 2011, which will be an ongoing element of the program portfolio. The Program will target the removal and recycling of operable second refrigerators and freezers. An appliance recycling contractor will provide implementation services that include verification of customer eligibility, scheduling of pick-up appointments, appliance pick-up, and recycling services.

Program Objectives and Rationale

The objective of the program is to produce long-term electric energy savings in the residential sector by permanently removing operable second refrigerators and freezers from the power grid and recycling them in an environmentally safe manner.

New Measures for 2011-2012

The following table presents new measures to be rebated by the program in 2011 and 2012.

Table 4-2. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure Name	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
Refrigerator Recycling	2nd fridge plugged in	remove 2nd refrigerator	$35/unit	4,860	4,860	4.04
Freezer Recycling	2nd freezer plugged in	remove 2nd freezer	$35/unit	540	540	3.07

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits of new measures is included in Appendix A.

Delivery and Marketing Strategy

The program delivery strategy consists of a third party implementation contractor who will provide implementation services, including eligibility verification and scheduling of pick-ups and delivery to proper disposal and recycling centers. The implementation contractor will also coordinate prompt processing of incentive payments.

Program marketing will be primarily through mass-market channels (e.g., radio, newspaper, website, etc.) and through brochures. Materials will carry a strong consumer education message and leverage the ENERGY STAR® brand. The program will be marketed at retail point-of-sale to increase customer awareness of the program.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix A.

C. Residential New Construction

TEP is requesting budget approval to continue this program with no additional modifications.

Program Description

This program is a continuation of the existing program design that was approved by Decision No. 71638 (April 4, 2010) for the "Zero Net Energy Homes" residential new construction program. The Program is designed with an incentive schedule that awards larger incentives for more efficient homes. To qualify for an incentive, homes must be tested by an approved energy rater, and meet one of the three tiers in the program based on a Home Energy Rating System ("HERS") Index score. On the HERS index scale, a score of 100 is considered the average efficiency of baseline new construction. A HERS index score of 0 represents a home that produces all of its energy through on-site generation from renewable energy. Therefore, the lower the HERS score, the more efficient the home. Tier 1 requires a minimum of a HERS that is <= 85, Tier 2 requires a minimum of HERS <= 70, and Tier 3 requires a minimum of HERS <=45.

Program Objectives and Rationale

The objectives of the residential new construction program are to advance energy efficient building practices through builder training, and customer awareness of the benefits of energy efficient construction, combined with application of and renewable technologies, such a solar photovoltaic and solar hot water systems consistent with achieving the goals of Arizona Renewable Portfolio Standard.

New Measures for 2011-2012

No new measures in particular are anticipated for 2011 or 2012.

Delivery and Marketing Strategy

Program delivery is provided by TEP staff, and participation of independent RESNET approved home energy raters ("HERs"). The contractor provides outreach to targeted builders, conduct builder training on marketing ENERGY STAR® homes and on the ENERGY STAR® performance standard, and coach and mentor participating builders and raters.

The program is marketed to select builders primarily through direct business-to-business contacts. The program is marketed to consumers at home shows, parade of homes, and other events focused on home-building as advertised through mass market and targeted media outlets.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the Company's previously filed strategy.

D. Existing Homes and Audit Direct Install

TEP is requesting budget approval to continue this program with no additional modifications.

Program Description

The Existing Homes and Audit Direct Install Program is a newly approved a program that replaces the former Residential HVAC Program. The program was approved by Decision No.72028 (December 10, 2010). The Program is targeted to all existing homes in need of energy efficiency improvements. The program has two components, an initial energy audit with direct install of CFLs and advanced power strips, followed by identification of actionable, larger scale home energy efficiency improvements and referral to local Building Performance Institute ("BPI") certified contractors to implement major home energy improvements such as insulation, air-sealing, HVAC, et cetera.

TEP plans to submit the Existing Home Program to EPA with a request to utilize EPA labeling as Home Performance with ENERGY STAR®.

Program Objectives and Rationale

The program achieves energy and demand savings from the installation of energy efficient measures and contributes toward transforming the industry to emphasize best practice building science principles. The program invests in training and mentorship of participating contractors to understand the "house as a system" building science and to achieve BPI certification. TEP has included a Residential Financing Pilot Program in this Plan for 2011-2012 which will be used to enhance participation in this program.

Delivery and Marketing Strategy

TEP provides program management oversight and marketing. A third party implementation contractor will be responsible for recruitment, training, and mentorship of participating contractors and trained energy auditors, data tracking, rebate processing and technical support. Auditors will provide referrals to BPI certified contractors and referral information will be reported to TEP. Measure installation to residential customers will be provided by participating independent contractors. In 2011-2012 program delivery will be coordinated with APS and Southwest Gas Corporation ("Southwest Gas") to address programming overlap among the utilities.

TEP provides program marketing and customer awareness-building through website promotion, community interest groups, mass-market channels (e.g. radio, newspaper, etc.), brochures and bill inserts, high bill inquiries, trade ally marketing efforts, contractor enrollment and training.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the Company's previously filed strategy.

E. Shade Tree

TEP is requesting budget approval to continue this program with no additional modifications.

Program Description

The Shade Tree program is an ongoing element of the program portfolio, approved in Decision No. 70455 (August 6, 2008). The Program promotes energy conservation and environmental benefits by motivating customers to plant desert-adapted trees in targeted locations where the trees will provide shade to habited dwellings, thus reducing HVAC load. TEP partners with Tress for Tucson, a local non-profit organization that manages and administers the program.

Program Objectives and Rationale

The objectives of the program are to promote the strategic planting of trees to provide shade, thereby reducing the cooling load of homes and associated energy usage and to educate school-age children and the public on the conservation and environmental benefits of planting trees.

New Measures for 2011-2012

No new measures included in the program for 2011 and 2012.

Delivery and Marketing Strategy

TEP provides DSM funds for the planting of trees within the guidelines that provide kWh savings. In addition, funds are, and will continue to be used for the Community and the Schools tree planting projects that meet the planting criteria outlined for planting residential trees. TEP's funds are leveraged with a significant in-kind contribution of labor, material and technical support from individuals and the community to make this program a success. Under TEP service territory, TEP partners with Trees for Tucson for program delivery.

Due to the popularity of the program, DSM revenues are not normally allocated for advertising and promotion. TEP employees currently inform customers about the program during speaking engagements and outreach presentations. Other efforts entail website promotion, newspaper advertising, planting and care brochure, presentations at schools, tree tours, and tree care workshops.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the Company's previously filed strategy.

F. Low Income Weatherization

TEP is requesting budget approval to continue this program and approval to modify income eligibility from 150% of poverty level to match the poverty level set by Low-Income Home Energy Assistance Program ("LIHEAP") as it may change from time to time. The current level set by LIHEAP is 200% of poverty level.

Program Description

The Low Income Program is an ongoing element of the Program Portfolio and was approved by Decision No. 70456 (August 6, 2008). The Program helps conserve energy and lower utility bills for TEP households with limited incomes by funding the weatherization of eligible homes. Weatherization measures fall into four major categories of duct repair, pressure management/infiltration control, attic insulation, and repair or replacement of non-functional or hazardous appliances. Weatherization is conducted in accordance with the Weatherization Assistance Program ("WAP"), a program funded by the U.S. Department of Energy. Household income and participation guidelines will be consistent in an on-going manner with current policy criteria used by the Arizona Energy Office, a division of the Arizona Department of Commerce.

Program Objectives and Rationale

The objectives of the program are to coordinate with the Arizona Energy Office to follow approved state WAP rules when using funding from TEP, to lower the average household energy consumption for low-income customers and to increase the number of homes weatherized annually. The program funding provides up to $3,000 per residence for energy efficient weatherization measures, equipment replacement and/or repair, etc. for low-income customers within the TEP service area. Agencies are allowed to use up to 25% of their annual budget for Health and Safety related repairs. Agencies may request a waiver of the $3,000 limitation on a case-by-case basis;

New Measures for 2011-2012

No new measures included in the program for 2011 and 2012. However, TEP requests approval to adjust the qualifying customer income levels to consistently match those set by LIHEAP. The Current Income Threshold is 200% of the Federal Poverty Level. This change will benefit additional low income customers and streamline the process to determine eligibility by the agencies.

Delivery and Marketing Strategy

The program is delivered by Tucson Urban League ("TUL") and Pima County Community Services ("PCCS"), who are State-approved weatherization agencies, providing program administration, planning, program promotion, coordination, participant eligibility and priority, labor, materials, equipment and entering results into tracking software. Funding is provided to TUL and PCCS from TEP upon documentation of work completed.

Due to the popularity of the program, DSM revenues are not allocated for advertising and promotion. Program promotion occurs mainly through community action agency partners that deliver presentations to community organizations, and/or by leaving information at neighborhood community and recreation

centers, and by responding to calls directed from TEP. TEP also provides website promotion and information during speaking engagements and outreach presentations.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the Company's previously filed strategy.

G. Residential Direct Load Control – Pilot

TEP is requesting budget approval to continue this program with no additional modifications.

Program Description

The Residential Direct Load Control Program is an ongoing element of the residential portfolio approved in Decision No. 71846 (August 25, 2010). This two-year pilot program, scheduled to be fielded in 2011, with the second year proposed as a contingency in the event that the first-year evaluation is not sufficient to adequately assess the functionality of the load control or communications technologies. If the pilot program proves to be successful, TEP plans to expand to a full program rollout.

The Residential and Small Commercial Direct Load Control ("DLC") Program will enable TEP to better manage peak demand and to mitigate system emergencies through direct load control of residential and small commercial central air-conditioners ("AC"). The program uses two-way communication that sends load control signals to equipment at the home or business and also provides interval consumption data back to TEP for all participants. Participants receive either 1) a free thermostat that can be programmed manually or remotely via the internet or 2) a load control device placed on their outdoor air conditioning unit. In exchange, customers permit TEP to cycle AC units or raise thermostat temperature settings for a limited number of hours or events per year. It is expected that TEP will call roughly 8 to 10 load control events each year. Customers will have the option to change thermostat settings or override cycling strategies during a control event.

Program Objectives and Rationale

The Residential DLC Program pilot program is intended to confirm the feasibility and effectiveness of direct load control of residential and small commercial air conditioners during peak hours as a cost-effective means to reduce peak system load. Load impact results and customer feedback gained through the pilot program will enable a better assessment of cost-effectiveness of DLC and inform program enhancements for a broader rollout.

Delivery and Marketing Strategy

The program's delivery strategy includes a third party implementation contractor, whose responsibilities include: provision of load control equipment and "head-end" control software that can be used by TEP to call and monitor load control events, training on software and assistance in designing effective load control strategies, recruitment of participants, participant tracking, technology installation, marketing, and call center/customer satisfaction.

For the pilot program, recruitment is based on specific criteria to ensure participants represent the population of eligible customers. Participants are required to have functioning broad band connection and receive a $50 incentive to each customer at the end of the 2-Year Pilot for participating. Customers also receive an internet-enabled programmable thermostat that will be installed by a qualified contractor at no-cost to the customer.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

H. Multi-Family

TEP is requesting budget approval for a new Muli-Famly program in 2012. A full program description and benefit-cost analysis is included in Appendix D.

Program Description

This is a new program offering for the 2011-2012 TEP program portfolio and will target multi-family buildings with 5 dwelling units or greater. The Program will recruit multi-family building owners to participate in a direct-install campaign to install CFLs and low-flow water devices in individual units. Multi-family facility managers will also be referred to the Small Business Direct Install program to encourage measure installation for the common areas.

Program Objectives and Rationale

The energy efficiency potential in the multifamily housing market remains largely untapped and represents significant efficiency potential for the TEP program portfolio. Due to various market barriers, such as split incentives, capital constraints, and lack of awareness, energy efficiency improvements typically fall far below other types of improvements on the priority list. Although the current rebate programs offer some opportunities for energy efficiency improvements in this market, primarily through the Efficient Products Program, there is not a comprehensive offering that addresses the unique needs of this market. Through the direct installation, and renovation/rehabilitation implementation framework, this program seeks to fill this important gap in the TEP program portfolio and provide substantial energy savings.

The objectives of the program are to reduce peak demand and overall energy consumption in the multifamily housing market segment; to promote energy efficiency retrofits of both dwelling units and common areas in this market segment; and to increase overall awareness about the importance and benefits of energy efficiency improvements to the landlord and property ownership community

New Measures for 2011-2012

Table 4-3 presents new measures to be rebated by the program in 2011 and 2012.

Table 4-3. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure Name	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
ES Integral CFL	61W Incd/Halogen	14 W CFL	$2/bulb	-	6,250	21.55
Low Flow Showerheads – Electric only	4 GPM	1.5 GPM with hot water sensor	$40/shower	-	625	3.56
Faucet Aerators – - Electric WH only	2.2 GPM	1.5 GPM	$2/faucet	-	625	20.10

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits of new measures is included in Appendix D.

Delivery and Marketing Strategy

In order to encourage energy efficiency upgrades in new construction, major renovation and rehabilitation projects, as well as, energy efficiency retrofits of existing structures, the program will initially offer the following delivery tracks:

- A direct installation of selected low cost energy efficiency improvements in existing complexes.

- Common area energy efficiency improvements in existing complexes will be handled through the Small Business Direct Install Existing Facilities Program.

As the program develops and matures, TEP will examine a third track for encouraging more comprehensive dwelling unit energy efficiency improvements in existing complexes that are not part of major renovation/rehabilitation projects.

Marketing and communications strategies will include notifying apartment managers and owners through updates to website, local newspapers and radio, bill messages and bill inserts, training seminars, call center on-hold messages, direct mail promotion, outreach to rental housing industry associations, and work with contractors and industry specialists. A primary emphasis will be placed on larger and older, less efficient complexes.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix D.

V. Commercial & Industrial Programs

The following section presents a summary of TEP's Commercial and Industrial ("C&I") programs including new programs, enhancements to existing programs consistent with the requirements of Section R-14-2-2407 of Decision No. 71436, and existing programs where no changes are anticipated. Detailed program descriptions and cost-effectiveness results for each new program are included in the appendices.

Tables 5-1 through 5-7 present the average incentive levels anticipated for the new measures. We specifically note that incentive levels are averaged as they represent the weighted result of the average incentive for a measure, which varies depending on the tons or horsepower of the equipment being rebated. Actual incentives implemented may vary slightly depending again on the size of the equipment under consideration. Overall, incentive levels are designed to not exceed 75% of incremental costs, except for direct-install measures which are rebated at up to 90% to 100% of incremental cost.

A. Small Business Direct Install

TEP is requesting budget approval to continue this program with the addition of these measures:

- Shade Screens
- Window Films
- Induction Lighting
- LED Channel Signs
- Outdoor CFL
- Reduced LPD
- T8 to T8
- Premium T8 Lighting
- Beverage Controls
- Snack Ctrls ("vending miser")
- Refrigerated Display
- Automatic Door Closers
- Refrigerated Display Gaskets
- Advanced Power Strips - Occupancy Sensors
- Advanced Power Strips - Timer Plug Strip
- Advanced Power Strips - Load Sensor

Program Description

The Small Business Direct Install Program is an existing program that was approved by the Commission in Decision No. 70457 (August 6, 2008). The program offers incentives for a select group of retrofit ("RET") and replace-on-burnout ("ROB") energy efficiency measures in existing facilities. Eligible customers include customers who qualify for TEP's Rate 10 – Small General Service pricing plan (typically an aggregate monthly demand of 200 kW or less). The program offers incentives for the installation of energy efficiency measures including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air and refrigeration measures.

Program Objectives and Rationale

The Small Business Direct Install program is designed to address the barriers to this market segment, including limited investment capital, limited awareness of energy cost savings, and required short-term payback. The program's purpose is to persuade small business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the program.

New Measures for 2011-2012

The following table presents new measures to be rebated by the program in 2011 and 2012.

Table 5-1. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure Name	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
Shade Screens	no screens	shading coeff: 0.24	$2/sq ft	750	750	3.29
Window Films	no film	shading coeff: 0.578	$2/sq ft	1,000	1,000	4.51
Induction Lighting	229 W Metal Halide	96 W Induction lamp	$141/lamp	8	8	3.37
LED Channel Signs	6W/ft Neon	1.2 W/ft LED	$9/linear ft	150	150	1.05
Outdoor CFL	112 W incand.	27 W CFL	$2/lamp	1,500	643	10.78
Reduced LPD	1.21 W/sqft	1.09 W/sqft	$1,371/building	-	-	3.23
T8 to T8	Standard T8	premium T8	$24/fixture	150	150	2.58
Premium T8 Lighting	T12 Lamps	Premium T8	$33/fixture	40,000	48,000	2.22
Beverage Controls ("Vending Miser")	no controls	occupancy sensors	$150/sensor	11	11	5.53
Snack Ctrls ("vending miser")	no controls	occupancy sensors	$75/sensor	50	50	2.15
Refrigerated Display Automatic Door Closers	standard doors	Automatic Door Closers	$40/door	15	15	7.13
Refrigerated Display Gaskets	no action	Replace Gaskets	$8/linear ft	75	75	1.47
Advanced Power Strips - Occupancy Sensors	standard strips	Smart Strips - Occupancy Sensors	$10/sensor	-	100	1.61
Advanced Power Strips - Timer Plug Strip	standard strips	Smart Strips - Timer Plug Strip	$10/sensor	-	100	9.22
Advanced Power Strips - Load Sensor	standard strips	Smart Strips - Load Sensor	$10	-	100	3.07

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits, of both new and existing measures is included in Appendix J.

Delivery and Marketing Strategy

The program is operated as an "up-stream" market program, meaning incentives are offered to pre-qualified contractors that can provide turn-key installation services to customers. These measures are intended to reduce the measure payback to one year or less. The program also includes consumer and trade ally educational and promotional pieces designed to provide decision makers in the small business market with the information necessary to make informed choices (and increase awareness).

The marketing strategy includes education seminars tailored to the small business market, major media advertising, website promotion, outreach and presentations at professional and community forums, and direct outreach to customers with monthly demands of 200 kW or less.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the Company's previously filed strategy.

B. C&I Comprehensive

TEP is requesting budget approval to continue the program and approval of these additional measures:

- Heat Pump Water Heaters - Tier 1
- CO Sensors
- CO2 Sensors
- Cooling Tower Subcooling
- Economizers
- High Perf Glazing
- PTAC/PTHP
- Shade Screens
- Window Films
- EMS - Lighting Schedule
- Induction Lighting
- LED Channel Signs
- LED Pedestrian Signals
- LED Traffic Lights
- LED Street and Parking Lights
- Outdoor CFL
- T8 to T8
- Green Motor Rewind
- Beverage Ctrls ("vending miser")
- Snack Ctrls ("vending miser")
- Efficient Compressors
- Efficient Condensers
- Floating Head Pressure Controls
- Refrigerated Display Automatic Door Closers
- Refrigerated Display Gaskets
- Coin Operated Washers - Tier 1 (Existing)
- Coin Operated Washers - Tier 2 (Existing)
- Advanced Power Strips - Occupancy Sensors
- Advanced Power Strips - Timer Plug Strip
- Advanced Power Strips - Load Sensor

Program Description

The C&I Comprehensive Program is an existing program, approved previously by the Commission in Decision No. 70403 (July 3, 2008) under the name of Non-Residential Existing Facilities Program. The Program provides prescriptive incentives to large commercial customers who are under TEP's Rate 13 and Rate 14 pricing plans (typically an aggregate monthly demand exceeding 200 kW) for the installation of energy-efficiency measures including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air and refrigeration measures. Prescriptive incentives are offered for a schedule of measures in each of these categories. Customers can also propose innovative energy efficiency solutions by offering a custom energy efficiency measure.

Program Objectives and Rationale

The C&I Comprehensive Program is designed to address the barriers to this market segment, including limited awareness and lack of knowledge about the benefits and cost of energy efficiency improvements, performance uncertainty associated with energy efficiency projects and the required short-term payback.

The program's purpose is to persuade large business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the program and provide turn-key installation services to small business customers.

New Measures and Program Enhancements for 2011-2012

Table 5-2 presents new measures to be rebated by the program in 2011 and 2012.

Table 5-2. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure Name	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
Heat Pump Water Heaters - Tier 1	EF = .86	EF = 2.35	$800/unit	4	4	4.28
CO Sensors	no sensors	sensors	$250/sensor	4	4	6.93
CO2 Sensors	no sensors	sensors	$200/sensor	4	4	3.60
Cooling Tower Subcooling	no subcooling	subcooling	$200/ton	700	700	1.58
Economizers	no economizer	use of economizers	$40/ton	40	40	2.51
High Perf Glazing	standard window glazing	SHGC = .27	$1/sq ft	1,750	1,750	2.08
PTAC/PTHP	10 EER	11 EER	$4/ Per kBtu/h	1,000	1,000	2.79
Shade Screens	no screens	shading coeff: 0.24	$2/sq ft	1,000	1,000	3.29
Window Films	no film	shading coeff: 0.578	$2/sq ft	2,000	2,000	4.51
EMS - Lighting Schedule	No EMS	use of EMS	$1/Connected watt	8,000	8,000	0.99
Induction Lighting	229 W Metal Halide	96 W Induction lamp	$140/Lamp	150	150	3.37
LED Channel Signs	6W/ft Neon	1.2 W/ft LED	$8/Linear ft	1,750	1,750	1.35
LED Pedestrian Signals	69 W incand.	6 W LED	$75/Signal	150	150	1.08
LED Traffic Lights	100 W Incandescent	8 W LED	$50/Lamp	150	150	2.28
Premium T8	Standard T12	Premium T8	$23/Lamp	24,000	24,000	2.1
Outdoor CFL	112 W incand.	27 W CFL	$2/Lamp	150	155	10.78
T8 to T8	standard T8	premium T8	$8/Lamp	150	150	5.10
Green Motor Rewind	94.7% effy	95.2% Effy	$1/HP	6	6	1.95
Beverage Ctrls ("vending miser")	no controls	occupancy sensors	$75/sensor	20	20	5.58
Snack Ctrls ("vending miser")	no controls	occupancy sensors	$75/sensor	35	35	2.17
Efficient Compressors	1.85 COP	2.2 COP	$80/Ton	20	20	6.97
Efficient Condensers	no condensers	use of condensers	$20/Ton	20	20	3.89
Floating Head Pressure Controls	no controls	Floating Head Pressure Controls	$20/Ton	20	20	17.68
Refrigerated Display Automatic Door Closers	standard doors	Automatic Door Closers	$40/Door	10	10	7.13
Refrigerated Display Gaskets	no action	Replace Gaskets	$4/Linear ft	100	100	1.47
Coin Operated Washers - Tier 1 (Existing)	1.26 MEF	1.8 MEF	$250/machine	21	21	1.27
Coin Operated	1.26 MEF	2 MEF	$250/machine	21	21	1.33

Washers - Tier 2 (Existing)						
Advanced Power Strips - Occupancy Sensors	standard strips	Smart Strips - Occupancy Sensors	$10/sensor	-	-	1.61
Advanced Power Strips - Timer Plug Strip	standard strips	Smart Strips - Timer Plug Strip	$10/sensor	-	-	9.22
Advanced Power Strips - Load Sensor	standard strips	Smart Strips - Load Sensor	$10/sensor	-	-	3.07

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits of both new and existing measures is included in Appendix J.

TEP is requesting to change the custom incentive to 75% of the incremental costs (currently at 50%), to 12 cents per kWh (currently at 10 cents per kWh). This would align the custom incentives with other incentive available to C&I customers. This step is necessary to move the markets to other non-traditional measures that provide deeper saving to meet the future energy efficiency standard.

Delivery and Marketing Strategy

The program is delivered by a third party implementation contractor who provides program administration, application review, participation tracking and reporting, project quality control, and technical support.

In addition to the implementation contractor, key partnering relationships and marketing outreach include: the local architectural and engineering community, electrical, mechanical and building contractors, equipment manufacturers, distributors and vendors, professional and trade service associations, and the Arizona Energy Office. Marketing also includes consumer educational and promotional pieces designed to assist facility operators and decision makers with the information necessary to improve the energy efficiency of their facilities.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the Company's previously filed strategy.

C. C&I Direct Load Control

TEP is requesting budget approval to continue this program with no additional modifications.

Program Description

The C&I Direct Load Control Program is an existing program, approved previously by the Commission in Decision No. 71787 (July 12, 2010). This is a commercial and industrial load curtailment program. Customers will be compensated with incentives for their participation at negotiated levels that will vary depending on multiple factors including the size of the facility, amount of kW under load control, and the frequency with which the resource can be utilized.

Program Objectives and Rationale

Commercial and industrial load represents a total of approximately 22% of system demand during peak hours in the late afternoon and evening during summer months. Modification of controls for chillers, rooftop AC units, lighting, fans, and other end uses is capable of significantly reducing power demand at peak times. The program anticipates enrolling enough customers to provide up to 40 MW of summer peak demand reduction, available for up to 80 hours per year, with a typical load control event lasting 3-4 hours.

In addition, the program may be used to support standard benefits of demand-response programs which include avoided firm capacity required to meet reserve requirements, reduced or avoided open-market

power purchases during periods of high energy prices, and greater grid stability and reduction in outages due to reduced grid demand.

Delivery and Marketing Strategy

The program will be delivered on a turn-key basis by a third-party implementation contractor, who will negotiate load reduction agreements with multiple customers and "aggregate" these customers to provide TEP a confirmed and guaranteed load reduction capacity available upon request. It is anticipated that the contract between TEP and the demand response ("DR") aggregator will be similar to a power purchase agreement in that the contracted party will be obligated to provide megawatts of load curtailment while maintaining a degree of flexibility in how the curtailments are achieved.

Recruitment will be targeted to help ensure that customers invited to participate are able to provide reliable and significant load control reductions. Consequently, it is not anticipated that mass media, such as radio and television will be used. Rather, the DR aggregator will conduct direct marketing according to an approach approved by TEP for purposes of ensuring a consistent message with TEP's public communications.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the Company's previously filed strategy.

D. Bid for Efficiency – Pilot

TEP is requesting budget approval for a new Bid for Efficiency ("BFE") program in 2011. A full program description and benefit-cost analysis is included in Appendix E.

Program Description

TEP proposes to implement the program as a pilot during the 2011 through 2013 timeframe. Pilot results will be evaluated in 2013. If the market response and measure savings indicate the program is cost effective, TEP will include the full program offering in its 2014 EE Plan.

The Bid for Efficiency Pilot Program is designed to take an innovative approach to energy efficiency by using elements of competition and the potential for high rewards to enhance customer interest. The BFE concept involves creating a pool of funds that are bid on through unique proposals which include costs, savings and incentives that are unique to that project. TEP selects winning applicants based on specified criteria. The BFE concept is an innovative approach that is being successfully deployed in other jurisdictions. There are several market specific conditions that will determine the effectiveness for TEP and so TEP is proposing the BFE as a two year pilot program.

BFE participants and project sponsors may include commercial customers, ESCOs or other aggregators who organize proposals that involve multiple sites. The Pilot addresses customer market barriers such as small savings levels at multiple sites, longer payback periods and organizing implementation contractors and it offers a simplified application process. Results will be verified through Measurement and Verification ("M&V") activity.

Program Objectives and Rationale

BFE encourages customers and project sponsors to think creatively and to develop projects designed to optimize system energy use rather than considering the energy usage of each individual piece of equipment. The program will foster customer-driven project activity (e.g., customers will select appropriate measures and professionals to implement measures), and will encourage the implementation of comprehensive, multi-measure projects.

New Measures for 2011-2012

Table 5-3 presents new measures to be rebated by the program in 2011 and 2012.

Table 5-3. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure Name	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
Bid for Efficiency	Baseline building	Bid projects	$60,000/ customer	4	6	3.16

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits of new measures is included in Appendix E.

Delivery and Marketing Strategy

The program will be delivered through an implementation contractor. TEP will promote the Bid for Efficiency Pilot Program through direct promotion to key customers and aggregators. Particular emphasis will be paid to key market sectors that have historically been difficult to reach such as grocery and convenience stores. TEP, and/or its implementation contractor, also may conduct informational meetings with potential participants and project sponsors to explain the program rules and encourage participation.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix E.

E. Commercial New Construction

TEP is requesting budget approval to continue this program and approval to add high performance glazing to this measure.

Program Description

The Efficient Commercial Building Design Program is being re-branded as the Commercial New Construction Program. It is an existing program, approved previously by the Commission in Decision No. 70459 (August 6, 2008). The program is intended to assist customers in designing and constructing energy efficient buildings. It is a performance based program that includes design assistance for the design team, performance based incentives for the building owner/developer, and energy design information resources. Design assistance involves efforts to integrate energy-efficiency into a customer's building plan to influence equipment/systems selection and specifications as early in the design process as possible. The performance based incentives for the building owner/developer is based on improved efficiency compared to a baseline design. The building's energy use is modeled against code based standards to determine projected energy savings. Rebate amounts are based on the estimated energy savings over a one year period.

The program also provides consumer educational and promotional pieces designed to assist building owners/developers with the information necessary to understand various energy efficiency options, encourage them to explore these options with their design professionals as early in the design process as possible, and improve the efficacy while reducing the energy use of their buildings.

Program Objectives and Rationale

The primary goal of the program is to encourage more energy efficient new building design for new non-residential projects in TEP's service area. This objective is reached through providing incentives to building owners/developers to design and build more energy efficient buildings and offering assistance to

design teams to offset the additional cost and time of exploring more energy efficient design. The program helps overcome market barriers, such as increased upfront cost of an integrated design approach, lack of awareness and knowledge about the benefits, and the cost and the performance of energy efficient measures. It encourages building owners/developers and the design community to consider energy efficiency options as early in the design process as possible.

New Measures for 2011-2012

Table 5-4 presents new measures to be rebated by the program in 2011 and 2012.

Table 5-4. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
High Perf	Standard window glazing	SHGC = .27	$1/sq ft	--	--	2.08

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits of measures is included in Appendix J.

Delivery and Marketing Strategy

There are no significant changes in implementation approach, delivery or marketing strategy for the items in this program.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

F. Combined Heat and Power – Pilot

TEP is requesting budget approval for a new Combined Heat and Power Pilot program in 2011. A full program description and benefit-cost analysis is included in Appendix I.

Program Description

The TEP Distributed Generation Pilot Program is a proposed Joint Utility Program to be implemented in cooperation with Southwest Gas. Distributed Generation ("DG") is defined in A.A.C. R14-2-2401 as "the production of electricity on the customer's side of the meter, for use by the customer, through a process such as CHP." R14-2-2401 goes on to define CHP as "combined heat and power, which is using a primary energy source to simultaneously produce electrical energy and useful heat." TEP proposes this program as a pilot to assist in developing methods and procedures for future joint utility programs with Southwest Gas or other utilities.

- TEP proposes to provide support for the existing Southwest Gas DG Program (Decision No. 69917 (September 27, 2007)) by sharing costs for marketing and outreach, training, and design. Specifically, TEP would pay up to 10% of the design costs for a CHP installation. This design assistance would only apply to installed projects.
- TEP will cooperate with Southwest Gas on marketing and outreach strategy to maximize marketing and outreach expenses.
- TEP proposes a 2011 budget of $74,800 for marketing and outreach, training, and design assistance for the Program.

Program Objectives and Rationale

The primary goal of the program is to provide support for the existing Southwest Gas DG program, and specifically for CHP projects. The market potential for CHP is substantial and could contribute significantly to energy conservation in Arizona, and could accrue significant societal and customer benefits as well. CHP is an affordable, clean, and reliable piece of the puzzle for meeting Arizona's energy needs and should be considered a key component to economic strategies.

New Measures for 2011-2012

Table 5-5 presents new measures to be rebated by the program in 2011 and 2012.

Table 5-5. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
CombinedHeat and Power			$0 from TEP, Southwest Gas to Pay Incentive	1	1	8.5

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits of new measures is included in Appendix I.

Delivery and Marketing Strategy

Program delivery, incentives, and administration, as well as the marketing and communications strategy will be provided by Southwest Gas through its DG Program. TEP will assist with marketing and outreach, design assistance, and interconnection design expertise. TEP will assign an in-house program manager to coordinate joint program delivery with Southwest Gas.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix I.

G. School Facilities

TEP is requesting budget approval for a new School Facilities program in 2012. A full program description and benefit-cost analysis is included in Appendix G.

Program Description

The TEP School Facilities Program is a new program open to participation by all existing school facilities in the TEP service territory, including charter schools, beginning in 2012. The proposed program will utilize the same delivery method and pay incentives for the same DSM measures as the existing TEP Small Business Direct Install and TEP C&I Comprehensive Programs, but with a separate budget reserved for schools. Incentives for the program will be paid at a higher level than for the Efficiency Program.

- The program will offer incentives for a select group of retrofit and replace-on-burnout ("ROB") energy efficiency measures in existing school facilities. The efficiency measures offered include high-efficiency lighting equipment upgrades, high-efficiency HVAC equipment, lighting controls, programmable thermostats, and selected refrigeration measures.
- The direct install component will utilize an on-line proposal generation and project tracking application to reduce the transaction costs. Proposed incentives for DSM measures are identical to the incentive structure in the TEP Small Business Direct Install and TEP C&I Comprehensive Programs; however TEP proposes to pay up to 100% of incremental costs for schools. The Program will have a separate incentive budget of $83,787 starting in 2012 which is reserved

exclusively for school use. If schools oversubscribe the budget, they will be allowed to request participation in the TEP Small Business Direct Install Program which only pays up to 85% of incremental cost.

Program Objectives and Rationale

The primary goal of the program is to encourage schools in TEP's service territory to install energy efficiency measures in existing facilities. More specifically, the program is designed to:

- Encourage schools to install high-efficiency lighting equipment and controls, HVAC equipment, and energy-efficient refrigeration system retrofits in their facilities.
- Encourage contractors to promote the program and provide turn-key installation services to schools.
- Assure that the participation process is clear, easy to understand and simple.
- Increase the awareness and knowledge of school facility managers and other decision-makers on the benefits of high-efficiency equipment and systems.

Since 2008, participation by schools in the TEP Small Business Direct Install and TEP C&I Comprehensive programs has been modest. In order to increase participation in energy efficiency retrofits by schools, TEP has developed this program, which proposes to fund up to 100% of installed costs while engaging the contractor community to provide turn-key services. This is a 15% increase from the 85% allowed in the TEP Small Business Direct Install Program. The Schools Program will follow the design of the TEP Small Business Direct Install Program because the direct-install concept has a proven track record of high participation and cost-effective life cycle savings for hard-to-reach markets, including schools.

New Measures for 2011-2012

Table 5-6 presents new measures to be rebated by the program in 2012.

Table 5-6. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure Name	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
Custom Measures	no action	custom actions	$6,530/ customer	-	6	3.16
14 SEER Packaged and Split Air Conditioners	SEER 13	SEER 14	$438/unit	-	-	1.52
14 SEER Packaged and Split Heat Pumps	SEER 13	SEER 14	$438/unit	-	-	2.04
15 SEER Packaged and Split Air Conditioners	SEER 13	SEER 15	$878/unit	-	-	1.04
15 SEER Packaged and Split Heat Pumps	SEER 13	SEER 15	$878/unit	-	-	1.80
16 SEER Packaged and Split Air Conditioners	SEER 13	SEER 16	$1,319/unit	-	-	1.09
16 SEER Packaged and Split Heat Pumps	SEER 13	SEER 16	$1,319/unit	-	-	1.54
Programmable Thermostats	non-programmable	programmable	$20/unit	-	20	13.48
Shade Screens	no screens	shading coeff: 0.24	$4/sq ft	-	-	3.29

Window Films	no film	shading coeff: 0.578	$3/sq ft	-	-	4.51
Daylighting controls	no controls	daylighting controls	$749kW base load	-	-	2.95
Delamping	T8s and T12s	Remove T8s and T12s	$6/fixture	-	200	62.43
Energy efficient exit signs	Incandescent/CFL sign	LED sign	$55/fixture	-	200	13.99
Hard Wire CFL	73 W Incandescent bulb	16 W CFL	$15/bulb	-	-	1.91
HIDs to T8/T5	400W Metal Halide	220 W T5/T8s	$93/fixture	-	50	6.13
Induction Lighting	229 W Metal Halide	96 W Induction lamp	$194/lamp	-	-	3.34
Integral Screw In CFL	71 W Incandescent bulb	16.6 W CFL	$11/bulb	-	-	4.67
Occupancy sensors	no sensors	occupancy sensors	$95/sensor	-	30	3.73
Outdoor CFL	112 W incand.	27 W CFL	$9/lamp	-	-	10.78
Reduced LPD	1.21 W/sqft	1.09 W/sqft	$3,460/ building	-	-	3.23
Screw in cold cathode CFL	30 W Incandescent bulb	6W CFL	$12/bulb	-	-	1.34
T 8 Lighting	T12 Lamps	T8 Lamps	$26/fixture	-	40	0.98
T8 to T8	standard T8	premium T8	$20/lamp	-	-	5.06
Premium T8	Standard T12	Premium T8	$57/lamp	-	160	2.1
Beverage Ctrls ("vending miser")	no controls	occupancy sensors	$195/sensor	-	25	5.52
Snack Ctrls ("Vending Miser")	no controls	occupancy sensors	$100/sensor	-	-	2.14
Advanced Power Strips - Occupancy Sensors	standard strips	Smart Strips - Occupancy Sensors	$75/sensor	-	-	1.62
Advanced Power Strips - Timer Plug Strip	standard strips	Smart Strips - Timer Plug Strip	$19/sensor	-	10	9.27
Advanced Power Strips - Load Sensor	standard strips	Smart Strips - Load Sensor	$32/sensor	-	-	3.08

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits of measures is included in Appendix G.

Delivery and Marketing Strategy

TEP will assign an in-house program manager to oversee the program, provide guidance on program activities consistent with TEP's goals and customer service requirements, and provide a contact point for schools that are interested in or have concerns about the program. The implementation contractor will be responsible for application and incentive processing, monitoring the activities of the installing contractors, participation tracking and reporting, and overall quality control and management of the delivery process.

The marketing and communications strategy will be designed to inform schools of the availability and benefits of the program and how they can participate. The strategy will include specific outreach to schools and to contractors who typically do retrofits in schools. An important part of the marketing plan will be content and functionality on the TEP website, which will direct schools to information about the Program.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix G.

H. Retro-Commissioning

TEP is requesting budget approval for a new Retro-Commissioning ("RCx") program in 2012. A full program description and benefit-cost analysis is included in Appendix F.

Program Description

The Retro-Commissioning program would use a systematic approach to identify building equipment and processes that are not achieving optimal performance or results in existing facilities. Eligible program applicants will receive free screening energy audits. Participants will also receive training to ensure proper operating and maintenance practices over time.

Program Objectives and Rationale

The program seeks to generate significant savings for DSM portfolio objectives by tapping into energy savings opportunities in existing commercial and industrial facilities. The program will deliver customer benefits by lowering energy bills and improving building performance and occupant comfort while reducing maintenance calls. The program will also facilitate the development of an RCx contractor pool, and will enable TEP to develop relationships with commercial and industrial customers leading to other areas of participation in TEP's portfolio of DSM programs. RCx programs in other utility service territories have been shown to deliver average facility savings in the range of 5-15% per facility, and measures implemented as a result of program activity typically pay for themselves in savings in less than two years.

New Measures for 2011-2012

Table 5-7 presents new measures to be rebated by the program in 2011 and 2012.

Table 5-7. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
Retro Commissioning	baseline building	custom actions	$22,000/ 100k sq ft	-	5	4.3

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits is included in Appendix F.

Delivery and Marketing Strategy

The program will be marketed using traditional forms of media (print, web, newsletters, etc.), as well as targeted direct mail and outreach to engineering and trade associations. TEP and the implementation contractor will also reach out directly to contractors who currently are, or could be, practicing in this area. The TEP website will also be updated to include information and links for participation in this initiative. Account managers will also be called upon to reach out to larger customers to encourage participation.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix F.

VI. Behavioral Comprehensive Programs "Tucson Energy Partnership"

The following section presents a summary of TEP's Behavioral Suite programs including new programs, enhancements to existing programs consistent with the requirements of Section R-14-2-2407 of Decision No. 71436, and existing programs where no changes are anticipated. Detailed program descriptions and cost-effectiveness results for each new program are included in the appendices.

TEP is requesting budget approval for a new Behavioral Comprehensive program in 2011. A full program description and benefit-cost analysis is included in Appendix H.

Program Description

The Behavioral Comprehensive program is a new program offering in the 2011-2012 program portfolio. This program is meant to work in concert with TEP's Home Energy Report program, which was filed with the Commission on August 25, 2010.

The Behavioral Comprehensive program is meant to address the fact that technology-based energy efficiency achieves only a finite amount of efficiency potential. The barriers to wider-spread implementation of energy efficiency are sociological not technological. Capturing full energy efficiency potential requires behavior change thus all energy efficiency programs need to integrate behavior change strategies into their DSM portfolios in order to fully realize their potential. Behavioral initiatives apply to all TEP customers. The focus for this effort is on behavioral change within residences.

The types of behaviors to be influenced include:

- Habitual behaviors
  - » Adjust thermostat setting
  - » Turn off unnecessary lights
- Small purchasing and maintenance behaviors
  - » Purchase and install faucet aerators and low flow shower heads
  - » Purchase and install compact fluorescent light bulbs
  - » HVAC maintenance
- Larger purchasing decisions
  - » Purchase an ENERGY STAR appliance
  - » Purchase higher EE heating and cooling system through participation in a TEP DSM program

The Behavioral Comprehensive program is made up of a suite of programs that will use six delivery mechanisms to achieve efficiency objectives, as shown in Table 6-1.

Table 6-1. Summary of Behavioral Programs

Behavioral Programs		
1	Home Energy Reports	Comparison of energy use to that of neighbors
2	Behavior Comprehensive	
2a	Direct Canvassing	Door to door awareness and direct install campaign
2b	K-12 Education	Classroom education including take home direct install kits
2c	Community Education	"Train the trainer" approach and give away direct install kits
2d	In Home Energy Use Monitors	A sub-pilot of the smart meter program, displays provide near real time usage information
2e	CFL Giveaway	CFL bulb giveaways at outreach events

Program Objectives and Rationale

The main objective of the behavioral programs is to provide customers with more information to allow them to better understand and manage their energy usage. Several approaches are being implemented and will be assessed to determine the effectiveness and benefits of making this information available. Some of the program's major objectives include:

- Generating significant savings for DSM portfolio objectives.
- Developing relationships with TEP customers leading to other areas of participation in TEP's portfolio of DSM programs.
- Promoting efficient building operations.
- Lowering energy bills for the consumer.

New Measures for 2011-2012

Table 6-2 presents new measures to be implemented by the program in 2011 and 2012, description of base and high efficiency, and the schedule for implementation as noted by the year in which the initiatives will be rolled out.

Table 6-2. Measure Efficiencies, Incentive Level, and Participation, Benefit-Cost

Measure Name	Base Efficiency	High Efficiency	Avg. Incentive Per Unit	2011 Est. Units	2012 Est. Units	Measure Level Societal Cost Test
K-12 Education Kit	no action	2 CFLs, Faucet Aerator, LED nightlight, Refrigerator thermometer	$20/home	6,000	6,000	2.86
Community Education Kit	no action	2 CFLs, Showerhead, Faucet Aerator, LED nightlight, Refrigerator thermometer	$56/home	400	400	2.29
Direct Canvassing Kit	no action	2 CFLs	$3/home	-	41,000	7.28
CFL Giveaway (23W)	no action	23W CFLs	$2/home	150,000	-	10.46
CFL Giveaway (18W)	no action	18W CFLs	$2/home	-	150,000	6.67
In Home Energy Display Pilot	no action	Home Energy Display results in 2.5% savings	$70/home	600	600	1.13

*Additional detail on measure level savings, societal benefits/costs, and environmental benefits of new measures is included in Appendix H.

Delivery and Marketing Strategy

All TEP residential customers will be eligible for this program. Delivery will be offered to various groups of customers as selected by TEP and those who attend events. Delivery will be made through implementation contractors and TEP resources. Selection of contractors will be made through a request for proposal process.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix H.

A. Home Energy Reports

Program Description

TEP's Home Energy Report Program was filed with the Commission on August 25, 2010. Assuming Commission approval of this program, TEP is requesting budget approval to continue the Home Energy Reports program with no additional modifications. The Home Energy Reports program will now join "Behavioral Comprehensive" as part of TEP's comprehensive "Behavioral Energy Efficiency Programs" plan.

The Home Energy Report program is designed to affect: (1) habitual behaviors like turning off the lights or adjusting the thermostat; (2) maintenance behaviors such as changing furnace filters and cleaning refrigerator coils; and (3) purchasing behaviors such as buying efficient light bulbs and appliances as well as participation in DSM programs. The program influences behavioral change in customers to reduce their energy consumption through targeted and comparative education and awareness of their energy consumption compared to others. The Home Energy Report does so through monthly or quarterly direct-mail reports on energy consumption and tips on how to save energy, at no cost to the customer. Making customers aware of their energy consumption patterns, especially in comparison with those of the other customers, has been shown to inspire behavioral changes toward energy efficiency.

The pilot program will be offered to a select group of residential customers and phased in at four levels. TEP expects the target group of customers to be chosen based on their historical energy use (higher than average energy use). TEP expects this group to include customers who display an annual consumption of 15,000 kilowatt hours ("kWh") or more for Phase 1 (25,000 customers with a control group). In phase 2, first year program participation will be evaluated and the program refined according to findings, while in phase 3 (2nd program year), participation is planned to increase to 40,000 customers. Finally, in phase 4, an independent MER evaluation is planned.

Program Objectives and Rationale

The major objectives from this program are to: generate significant savings for DSM portfolio objectives; educate and empower customers to take advantage of other DSM programs; promote efficient building operations; and lower energy bills for consumers.

New Measures for 2011-2012

There are no new measures proposed since the August filing.

Delivery and Marketing Strategy

The implementation contractor will deliver the program with responsibility for all aspects of customer selection, report generation, energy savings quantification, customer communications, and reporting.

All Home Energy Report products will be automatically mailed to the target market by the implementation contractor. Thus, no direct marketing is anticipated for this program. TEP will, however, jointly develop the marketing message contained in the Home Energy Reports with the contractor. The program will also be included in the integrated marketing approach developed and used for all DSM measures.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

VII. Support Programs

Support programs cut across the other program areas and provide technical and financial support for the effective implementation of all other programs.

A. Education and Outreach

TEP is requesting budget approval to continue this program with no additional modifications.

Program Description

The Education and Outreach ("E&O") Program is an ongoing program previously approved in Decision No. 70402 (July 3, 2008). The program is intended to increase participation in the Company's other DSM/EE programs, but is also intended to effect a broader market transformation that includes changes in customer's behavior. The program includes three basic educational components and a budget for program evaluation. The Academic Education section of the E&O program is included in Section VI, Behavioral Comprehensive (K-12 Education). Among the E&O program components are the following:

- General Energy Efficiency advertising component to cover seasonal ad's that encourage energy savings through energy saving tips, marketing the on-line energy audit, and marketing other energy efficiency programs to customers;
- On-Line Energy Audits and Carbon calculator from Aclara for inclusion on TEP website. After approval of the Home Energy Reports Program, on-line audits will be included in Section 6.2 Behavioral Comprehensive (Home Energy Report – Opt In clause);
- Time-of-Use education to teach residential and small commercial customers about the benefits of TOU rates and enable customers to maximize savings through load shifting;
- Program evaluation.

Program Objectives and Rationale

The program consists of education and marketing intended to inform customers about the benefits of energy conservation and to inform those customers on how to achieve energy savings. Because the aim of this program is to change behavior it is difficult to objectively assess cost effectiveness or measure actual energy or environmental savings.

New Measures for 2011-2012

There are no new measures in this program for 2011-2012. The program includes only existing items approved in Decision No. 70402 (July 3, 2008) and because it consists only of education and marketing, the program did not require a cost-effectiveness test.

Delivery and Marketing Strategy

There are no significant changes in implementation approach or delivery strategy for the items in this program.

Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

B. Codes Support - Pilot

TEP is requesting budget approval for a new Codes Support Pilot program in 2011. A full program description is included in Appendix C.

Program Description

The Energy Codes Enhancement Program ("ECEP") will be an ongoing element of the TEP portfolio. The Program will strive to maximize energy savings through adherence to local building energy codes across the local jurisdictions within TEP service area. The program will employ a variety of tactics aimed at: 1) improving levels of compliance with existing building energy codes; and 2) supporting and informing periodic updates to energy codes as warranted by changing market conditions. Specific program activities will depend on the market needs expressed by local code officials and are likely to include a combination of efforts to:

- Better prepare code officials and building professionals to adhere to existing standards;
- Provide data and market insight to document the specific local benefits of code enforcement, and inform energy code changes over time;
- Ensure utility incentive programs align well with local energy codes;
- Collaborate with relevant stakeholders to help build a more robust community working to advance strong and effective building energy codes across the local jurisdictions within TEP, UNS Electric and UNS Gas service territories; and
- Advocate for energy code updates over time.

Program Objectives and Rationale

The ECEP's objective is to increase energy savings in new construction and renovated buildings in both the residential and commercial sectors through efforts to: 1) improve levels of compliance with existing building energy codes; and 2) support and inform periodic energy code updates as warranted by changing market conditions.

New Measures for 2011-2012

No new measures included in the program for 2011 and 2012.

Delivery and Marketing Strategy

Program activities will be selected based on research into effective approaches implemented in leading jurisdictions (e.g., California and Massachusetts), as well as feedback from local code officials, and municipal leaders in locations that currently lack building codes. Once program activities are selected, program staff will maintain a consistent level of activity and engagement with relevant stakeholders. Activities might include: participation in energy code adoption committees, technical support (calculations, research, information) to code adoption committees, public testimony in support of code adoption before city councils, ensuring that ongoing DSM programs align well with energy code requirements, and funding for local code agencies to enforce and improve energy code over time.

Marketing strategy will include website promotion, direct outreach to local code officials and networks of municipal leaders who are members of committees conducting activities related to building code enhancement and communications with other TEP energy efficiency program implementation staff.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix C.

C. Residential Energy Financing

TEP is requesting budget approval for a new Residential Energy Financing pilot program in 2011. A full program description is included in Appendix B.

Program Description

TEP anticipates starting the Residential Energy Financing Program with a two year pilot program which will allow sufficient time to evaluate the program, including participation, default rates, and overall value to customers. The program will offer energy efficiency loans to TEP customers who are seeking financing for the energy efficiency improvements to their homes. Loan proceeds can be used for energy efficiency measures that have been approved by the Commission as part of the Existing Homes/ Direct Install Program. The program may also offer classroom training sessions for contractors, and building professionals who will offer the financing program to customers, collaborate with the SWEEP and other regional groups to support research on utility financing programs; and work together with APS and Southwest Gas to determine a plan to 'partner' on financing programs offered in joint territories with different financing partners.

Program Objectives and Rationale

The Residential Financing Program's objective is to offer low interest unsecured loans for up to $15,000 for energy efficiency measures installed in existing homes. The Financing Program will provide customers with the capital needed to make cost-effective energy efficiency upgrades to their homes and is anticipated to improve customer participation as well as expand the pool of customers that can afford to participate in energy efficiency programs.

New Measures for 2011-2012

This program is a financing program used to support other program measure adoption. Therefore, there are no measures under this program.

Delivery and Marketing Strategy

A utility program manager will coordinate between the Lender and TEP on all fund transfers, provide overall management, marketing oversight, planning and tracking of customer and contractor participation and coordinate all activities necessary to develop application forms and contractor training. Partnerships with community interest groups, HVAC, insulation, and air sealing contractors trained in program procedures and Arizona Energy Office or other industry experts to provide training, education and awareness.

TEP will provide program marketing and customer outreach and awareness through a range of strategies including: website promotions, brochures, training and seminars for participating trade allies and contractors, and promotions through contractors and community interest groups.

Measurement, Evaluation, and Research Plan

An overview of the MER plan for this program is included as part of the larger program design filing, detailed in Appendix B.

VIII. Portfolio Management

TEP will serve as the overall program administrator for delivery of the Energy Efficiency Portfolio. To expedite a quick launch of the programs, and to take advantage of cutting-edge program implementation experience from other parts of the country, TEP plans to implement programs through a combination of third-party implementation contractors and utility staff. TEP designs programs on the most cost-effective basis utilizing implementation contractors where they provide the lowest cost per kWh and likewise utilizing TEP staff when appropriate. Contractors will be selected through a competitive request for proposal process for delivery of programs.

TEP anticipates providing high-level administrative, contract management, program design and marketing oversight of the selected implementation contractors. A portfolio of this proposed size and scope will require careful management oversight. TEP will have a small and dedicated group of energy efficiency program staff overseeing third-party implemented programs and promotion of cross-sector education and awareness activities.

TEP will also develop a comprehensive tracking database to ensure accurate and comprehensive recording of all program participation Additionally, the database will allow TEP to research and track participation by customer class and geographic area, and to identify trends and untapped opportunities to advance program goals. TEP staff will also take primary responsibility for general energy efficiency education and awareness strategies and activities, including the corporate Web site, online energy audit software, mass-market general education and efficiency awareness promotions.

In summary, TEP will provide comprehensive program contract oversight, strategic planning, including management, financial planning and budgeting, as well as:

- High-level guidance and direction to the implementation contractors, including review and revision of proposed annual implementation plans and proposed milestones, and, additionally, engage with the contractor team on a daily basis when working through strategy and policy issues.
- Review and approval of implementation contractor invoices and ensure program activities are within investment and on schedule.
- Review of implementation contractor operational databases for accuracy, ensuring incorporation of data into TEP's comprehensive portfolio tracking database to be used for overall tracking and regulatory reporting.
- Review of measure saving estimates maintained by the implementation contractor.
- Oversight and coordination of evaluation, measurement, and verification contractors.
- Public education and outreach to community groups, trade allies and trade associations.
- Provide guidance and direction on new initiatives or strategies proposed by the implementation contractors.
- Communicate to implementation contractors other TEP initiatives that may provide opportunities for cross-program promotion.
- Review and approve printed materials and advertising plans from Implementation Contractors
- Create and provide collateral material for advertising on program delivered by the utility.
- Evaluate portfolio and program effectiveness and recommend modifications to programs and approach as needed.

- Perform periodic review of program metrics, conduct investment analysis, and review evolving program design.

A. Marketing and Outreach Strategy

The marketing and outreach strategy for this portfolio of programs will encourage participation among customers, key market players and trade allies. The objective of the marketing and communications strategy is to make customers and key market actors aware of program offerings and benefits, and to influence their decision making when purchasing or installing energy systems or equipment in favor of more energy efficient options.

The specifics of the marketing strategy will depend on the program and the demographics of the group being engaged. Depending on the market to be reached, marketing will generally include a mix of broadcast, Internet, print media, radio, direct contact, direct mail, bill inserts, or presentations. The program descriptions describe the proposed marketing approach for each program.

Additionally, TEP will work with regional, state, and national programs and partners to optimize cooperative marketing programs and campaigns. Marketing efforts will be designed to dovetail with other statewide or regional efficiency programs and campaigns, including those offered by APS.

B. Tracking and Reporting

TEP plans to build a comprehensive internal tracking and reporting system to record all activities from the energy optimization portfolio of programs. Data tracking systems are being used successfully in numerous other states, and TEP intends to benefit from the learning that has occurred there. Implementation contractors will be responsible for tracking and reporting energy efficiency program activities by entering details of each project into the comprehensive data tracking system. The system will allow customized reporting to meet any reporting requirements in a quick, transparent and accurate manner.

C. Midstream Adjustments

While this plan presents detailed information on approach, energy efficiency measures and proposed incentive levels, unforeseen changing market conditions, will require regular review and revisions of portions of this plan to reflect new information. As such, adjustments to these programs will likely be necessary. When this is the case, the Commission will be updated in a timely manner and given opportunity to provide input.

D. Inter-Utility Coordination

TEP will work with APS, Southwest Gas, and other utilities to maximize the effectiveness of the programs; in particular, where gas and electric services overlap, regular communication and coordination will be necessary. This collaboration will involve working together to identify savings opportunities, as well as providing consistent messaging and parallel programs to reduce confusion and difficulty for customers and trade allies. TEP intends to continue to collaborate with others to send cohesive marketing messages, as well as designing incentive programs, forms and incentive levels that are easily transferable with adjacent utilities.

E. Leveraging Other Efficiency Initiatives

Within Arizona, several entities are promoting energy efficiency including: the state government; SWEEP; U.S. Environmental Protection Agency and U.S. Department of Energy's "ENERGY STAR®" brand; as well as Federal tax credits. TEP and its implementation contractors will work diligently to remain aware and up to date, and to cooperate with efficiency efforts being directed at Arizona energy users. Wherever feasible, co-marketing efforts will be employed in an attempt to send a clear and consistent message on the benefits of energy efficiency and the resources available to help achieve it.

Additionally, TEP is planning to benefit from experiences in other areas of the country by joining the Consortium for Energy Efficiency ("CEE") and E-Source, which will provide TEP program managers information and contacts to assist with continuous program design and delivery improvements of the portfolio.

F. Trade Ally Coordination

Trade allies are essential to effective implementation of energy efficiency programs. Trade allies are considered program partners and will be treated accordingly. Relationships with trade allies will be cultivated and nurtured through numerous methods to ensure effective communication in both directions. Trade allies will be regularly informed of program progress. Changes and feedback from trade allies about "what is working and what is not" in the field are essential. To ensure good two-way communication, we will emphasize coordination, "listening sessions," and frequent communications with these key partners to advance program goals. A schedule of meetings, workshops, educational seminars, program update breakfasts, and clear and concise program descriptions will be distributed to the trade allies at the program kick off meetings. Ongoing training and program updates also will be a key part of program delivery.

IX. Measurement, Evaluation & Research

TEP is required by the Commission to carry out MER activities as a means to verify program savings impacts and monitor program performance.[2] Evaluation activities will also benefit TEP's DSM program efforts by documenting actual program level savings being delivered, identifying areas for improvement and helping to maximize the efficiency and effectiveness energy efficiency investments. The evaluation principles discussed in this section, and the detailed program-specific plans that will be presented in a separate research plan, are informed by the leading guidance documents in the DSM evaluation field. These documents include:

- U.S. EPA's Model Energy Efficiency Impact Evaluation Guide: A Resource of the National Action Plan for Energy Efficiency (2007);
- Efficiency Evaluation Organization's International Performance Measurement and Verification Protocol (2009);
- California Public Utility Commission's California Energy Efficiency Evaluation Protocols: Technical, Methodological, and Reporting Requirements for Evaluation Professionals (2006); and
- EPRI's End-Use Performance Monitoring Handbook.

What is referred to as MER in Arizona is often called program evaluation, measurement, and verification (EM&V) elsewhere. Effective EM&V ensures that expected results are measurable, achieved results are robust and defensible, program delivery is effective in maximizing participation, and the overall portfolio is cost-effective.

A. Definition of Evaluation, Measurement, and Verification

Evaluation encompasses process, impact and market evaluation activities as defined below.

Process Evaluations

Process evaluations address whether the programs were implemented as designed, examining perceived market barriers and opportunities, measuring participant satisfaction, documenting the program process, and exploring opportunities for efficiency improvements.

Impact Evaluations

Impact evaluations validate the energy and demand savings produced by a program. These evaluations validate program-reported savings by verifying the type, quantity and efficiency of measures installed, examining the measures replaced by the program for retrofit applications, or estimating the normal or standard baseline equipment for new construction applications.

Market Evaluations

Market evaluations examine program and market assessment "indicators" developed for each program and assess how these indicators change over time. The indicators are typically derived from a program logic formulation developed during program design and early implementation. The program logic model is a simple representation of the program and the underlying hypotheses that are expected to account for the program's success in the market. Typically, program logic models are organized around the program inputs, processes, and outputs. From this formulation, a set of key market indicators that can be tracked over time is developed (and modified over time, as needed).

[2] Arizona Corporation Commission Decision No. 71436 (December 18, 2009) and A.A.C. R14-2-2415.

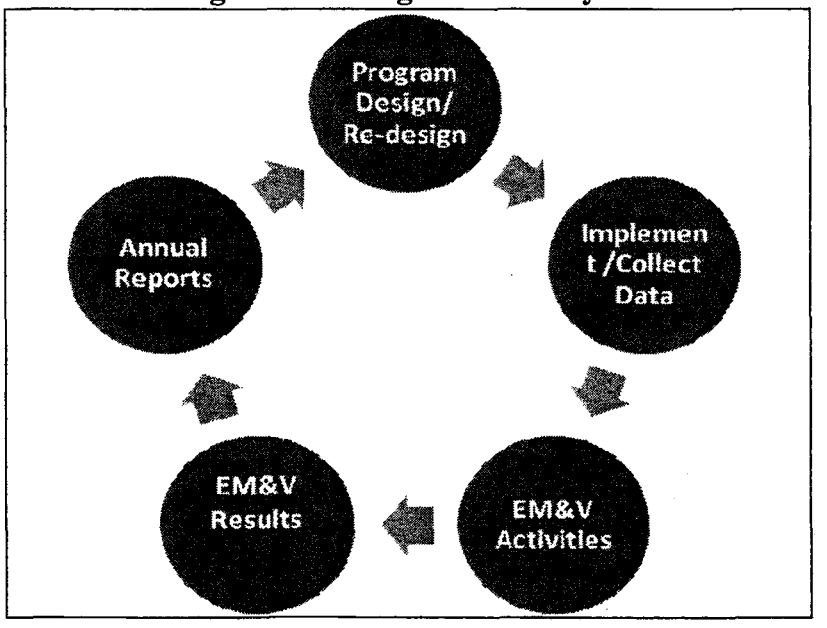
- *Monitoring* includes developing a program data tracking system to support the evaluation effort; i.e., monitoring of results and verifying the installation and retention of measures and equipment promoted by the DSM program where appropriate.
- *Verification* includes a review, audit, and verification of claimed program savings and recommendations for improvement.

B. Approach to Evaluation

The overall evaluation approach is based on an integrated cross-disciplinary model that includes evaluators as members of "project teams" involved in the various stages of program planning, design, monitoring and evaluation. This is a cost-effective method that has proven successful for other utilities.

Figure 9-1 below shows the program evaluation cycle. As shown, the stages of the program lifecycle inform one another. Findings from MER activities provide valuable inputs into program redesign, and the MER process plays an important role in enhancing program effectiveness and improving outcomes.

Figure 9-1. Program MER Cycle



This approach ensures the program evaluation effort is fair and objective. MER planning must consider a variety of factors in determining the timing and scope of evaluation activities to be conducted in a given year. These factors include distribution of regulatory requirements, savings across programs, available evaluation resources, and the stage of each program's implementation.

Approximately 4% of overall portfolio program costs will be allocated to the following activities. TEP plans to invest an appropriate level of resources into the impact evaluation tasks to comply with regulatory requirements, but to ensure that sufficient resources are available to conduct market research. Allocating resources to process evaluation and market research is important because findings from this research will inform the future direction of the programs going forward.

C. Examples of EM&V Related Activities

Implementation and/or evaluation support contractors will assist in the development of key program and evaluation related components. These include:

- Compilation and review of the savings estimates used for prescriptive measures including measure savings assumptions, including base efficiency, high efficiency, measure size, measure life, free ridership, and spillover estimates.
- Review the portfolio tracking system database that captures measure and/or project data, develops initial estimates of savings, and retains participant information to assist with subsequent EM&V activities.
- Direct market baseline research and market characterization to support improved Plan implementation.
- Review program and measure cost-effectiveness

D. Project Savings Verification and Due Diligence

TEP will work with implementation contractors to develop and implement quality assurance/control, inspection, and due diligence procedures for those programs for which deemed savings are not appropriate. These procedures will vary by program and are necessary to assure customer eligibility, completion of installations, and the reasonableness and accuracy of savings. The activities that TEP will undertake in performing MER procedures may include, but are not limited to, the following:

- Review custom rebate applications and project proposals for eligibility and completeness
- Inspect and verify a statistically valid sample of installations for purposes of ensuring compliance with program requirements
- Prepare and facilitate MER plans where needed based on the project, and assure adherence to IPMVP protocols

E. Independent Program Evaluations

Preliminary descriptions of proposed evaluations for each program are included in the program plans.

The key components of the process and impact evaluations include:

- Evaluations conducted by an independent, DSM evaluation consultant. Verification, by an appropriate sample, that efficiency measures are installed as expected;
- In-field measure performance measurement and data collection;
- Energy and demand savings analysis to compute the results that are being achieved;
- Cost-effectiveness analysis by program and overall DSM portfolio;
- Process evaluation to indicate how well programs are working to achieve objectives; and
- Identification of important opportunities for improvement.

F. Assessment of Annual Impacts

TEP's MER contractor will prepare an annual report of energy efficiency program results, which will incorporate findings from evaluation activities completed that year, changes to programs, and new programs implemented, as well as gross and net savings and costs and cost-effectiveness results by program and portfolio. It is anticipated that the MER contractor's work, as well as participation in the process by the implementation contractor, will result in numerous areas where improvements and refinements are necessary.

TEP will require implementation contractors or staff to routinely contact or visit a sample of participating customers to assess the quality of program delivery and the installation of measures for which incentives were claimed.

G. Coordinate Evaluation Activities with Other Players

As noted above, wherever it is practical and appropriate, evaluation activities will be conducted in conjunction with other utilities and agencies in the state to leverage funding and help ensure consistency.

X. DSM Tariff

A.A.C R14-2-2405(A) requires TEP to file its initial EE Implementation Plan within 30 days of the effective date of the Electric Energy Efficiency Standard (by January 31, 2011). A.A.C. R14-2-2405(A) also requires that subsequent plans be filed on June 1 of each odd year, making TEP's next EE Plan due June 1, 2013. In order to inform the Commission of TEP's plan to meet the 2012 EEES, TEP is filing a two year implementation plan here (2011-2012). TEP will file its EE Plan for 2013 on June 1, 2012, and will follow with its 2014-2015 EE Plan in June of 2013.

So that the Company can continue its effective implementation of the EEES, TEP requests that the DSMS as filed be reviewed and implemented by June 1, 2011. This expedited review and implementation of the DSMS will keep the Company's recovery of program costs on track with the previously implemented DSM Surcharge. Moreover, it will ensure no gaps in implementation or program delivery between the previously approved DSM Plan and the newly filed EE Plan, which is critical to the Company's recovery of program costs and is in the best interest of rate payers.

TEP seeks to recover three components within its DSM Surcharge: (i) program cost recovery; (ii) performance incentive recovery; and (iii) authorized revenue requirement true-up ("ARRT"). While there are three popular models for recovery of DSM/EE costs (capitalization of DSM expenses, fixed payment for each kWh (DSM Surcharge), and increased rate of return), the Commission chose the DSM surcharge as the appropriate mechanism to provide program cost recovery and recovery of performance incentives (see Decision No. 70628 (December 1, 2008)). Given the Commission's preference of this adjustor, TEP proposes use of the DSM Surcharge to also recover shortfalls in the recovery of authorized revenue requirement until the time that decoupling can be implemented in the Company's next general rate case.

TEP recognizes that A.A.C. R14-2-2410(J) states "[t]he Commission shall review and address financial disincentives, recovery of fixed costs, and recovery of net lost income/revenue, due to Commission-approved DSM program" in the Company's rate case. But TEP has frozen rates and cannot file its next rate case until July 1, 2012 (see the Company's Proposed Settlement Agreement approved in Decision No. 70628 (December 1, 2008) in Dockets E-01933A-05-0650 and E-01933A-07-0402). By the time decoupling could be implemented for TEP, the Company will have had to meet the EE Standard for 2011, 2012, and 2013 with no mitigation of the degradation to authorized rate recovery.

TEP believes that the Commission issued Policy Statement Regarding Utility Disincentives to Energy Efficiency and Decoupled Rate Structures ("Policy Statement") (see Docket No. E-000005-08-0314) acknowledged the inability of utilities in this position to comply with the EE Standard. Specifically, the Policy Statement states "[t]he Commission believes it is critical that utility disincentives to demand side management programs and energy efficiency be addressed. As stakeholders recognized, it is unlikely that the EES can be met without addressing financing disincentive and impacts to utilities' revenues and earnings." Policy Statement page 27.

Given the foregoing, TEP believes that the Commission may implement the ARRT here. In the alternative, TEP believes that the Commission may grant it a waiver of the EE Standard(s) until such time as the Company can implement decoupling in its next rate case. Because TEP's preference would be to maintain compliance with the EES, TEP proposes cost recovery through the ARRT as a component of the DSM Surcharge as outlined in the attached EE Plan. TEP believes that the ARRT is a reasonable interim solution for the Company, and that its implementation is in the public interest.

A. Program Cost Recovery

TEP is requesting approval to collect $51.1 Million in total DSM Program Costs. Pursuant to A.A.C. R14-2-2410(A), a utility may recover the costs that it incurs in planning, designing, implementing, and evaluating a DSM program or measure. R14-2-2410 (D) also allows utilities to recover DSM costs concurrently, on an annual basis, with spending for a DSM program or DSM measure. Table 10-1 shows the total projected spending for this 2-year plan. This 2011-2012 DSM filing will not include a true-up for the 2010 DSM filing due to the timing changes resulting from implementation of the Energy Efficiency Standard. The timing requirements of the EE Standard will result in changing the DSM filing date from April 1 to January 31 for 2011. Thus, the 2010 DSM filing reflected costs associated with the calendar year 2010 with a specified recovery period beginning June 1, 2010 and ending May 31, 2011. The 2011-2012 DSM filing is being filed prior to May 31, 2011 (the end date for the recoveries associated with the 2010 expenses) and cannot reflect a reconciliation of the revenues recovered during the twelve months ending May 31, 2011 to the twelve months of costs incurred in the calendar year 2010. That reconciliation will occur when the 2013-2014 DSM filing is made.

Table 10-1. Total Projected Spending for 2011-2012

Cost Category	Costs
2011 - 2012 Program Costs	$49,464,139
Program Development, Analysis & Reporting Software	$1,634,633
Grand Total	$51,098,772

B. DSM Performance Incentive

Performance Incentive Summary

TEP is requesting approval to collect $16.4 Million in pre-tax DSM Performance Incentives. The Commission has adopted the most stringent EE Standard in the country and utility Performance Incentives are widely recognized as a critical element to encourage utilities to extend efforts to meet or even exceed stringent EE Standards. Regulators recognize the need for utility DSM Performance Incentives that:

- properly align all stakeholders' interest; and
- are recovered at the same time or closely following investment in EE Programs.

The EEES as described in R14-2-2411 allows utilities to propose a utility performance incentive. TEP is requesting in this docket to update the current performance incentive structure approved by the Commission in Decision No. 70628 (December 1, 2008). The current utility performance incentive is structured using a shared incentive method based on a 10% share of "net" benefits (SCT measured) and with a 10% cap on spending. TEP is proposing a new structure for the 2011-2012 EE Plan.

2010 Performance Incentive

The current TEP performance incentive was approved in Decision No. 70628 (December 1, 2008). The 2010 performance incentive is calculated from 10% of net benefits capped at 10% of DSM expenditures (less LIW and Education and Outreach) and was to be collected through the 2011 DSM Adjustment Surcharge. The expected net benefits from 2010 are estimated at $43,856,831. The DSM expenditures for 2010 were $12,918,196. Thus the 2010 performance incentive to be recovered is $1,110,901.

2011 and 2012 Proposed Performance Incentive

TEP is proposing to continue using shared incentives based on "net" benefits but proposes to modify the performance incentive structure. This proposal reduces the percent share of net-saving and places a hard dollar cap based on 10% of net benefits rather than a cap on percent of spending. The hard dollar cap for

2011 and 2012 is proposed at $13,154,667 (after-tax). This structure is preferred over the percent spending cap because it encourages cost savings rather than spending to increase the performance incentive. The proposed tiered performance incentive, shown in Table 10-2, encourages performance over and above the established Energy Efficiency Standard and rewards utilities for this performance if accomplished at a lower cost. This model creates an atmosphere where utilities will place more emphasis on programs with the best cost-effectiveness and the highest net-benefits. This proposed tier structure is currently approved for APS and TEP supports the tiers shown in the table below. To truly capture the performance incentive TEP is requesting approval for an after-tax Performance Incentive.

Table 10-2. Tiered Performance Incentive Model

Achievement of EE Goals	% of Lifetime Net Benefits
<85%	5%
85% - 95%	6%
96% - 105%	7%
106% - 115%	8%
116% - 125%	9%
>125%	10% (cap below)
Dollar Cap (2011 and 2012)	$13,154,667

- The performance incentive is calculated from the net benefits on the estimated annual energy reduction relative to the previous year's annual MWh sales as established in the EEES with the above spending cap.
- TEP is requesting approval to recover the estimated after tax 2011 and 2012 Performance Incentive through an incremental increase in the EE adjustor mechanism. The Performance Incentive will be trued-up to actual costs and benefits from the 2011 and 2012 program years when TEP files the 2013 and 2014 adjusted DSM Surcharge, respectively.
- The net-benefit ratio for all support programs including general Education and Outreach programs, Financing Programs, Codes and Standards, and for Low Income Programs is assumed to be 1.

The after-tax performance incentive for 2011 is $4,040,611; for 2012 it is $5,167,656. Both figures are based on TEP meeting 100% of the 2011 and 2012 EEES. Table 10-3 shows the expected net benefits by program in 2011 and 2012.

Table 10-3. Net Benefits in 2011 and 2012

		2011			2012		
		Societal Benefit	Societal Cost	Net Societal Benefits	Societal Benefit	Societal Cost	Net Societal Benefits
Residential	Efficient Products	$15,149,022	$2,553,611	$12,595,412	$16,228,105	$3,919,764	$12,308,341
	Appliance Recycling	$2,554,803	$1,315,725	$1,239,078	$2,554,803	$1,318,533	$1,236,270
	Res. New Construction	$9,505,611	$5,706,970	$3,798,641	$10,701,009	$6,368,549	$4,332,460
	Existing Homes and Audit Direct Insta	$3,785,225	$3,427,567	$357,658	$5,701,168	$4,851,503	$849,664
	Shade Tree	$1,186,908	$764,155	$422,753	$1,186,908	$770,582	$416,325
	Low Income Weatherization	$522,302	$432,165	$90,137	$522,302	$437,426	$84,875
	Multi-Family	$0	$0	$0	$430,515	$169,738	$260,777
	Residential Direct Load Control - Pilot	$802,532	$785,150	$17,382	$802,532	$144,816	$657,716
	Subtotal	$33,506,403	$14,985,343	$18,521,061	$38,127,342	$17,980,913	$20,146,429
Commercial	C&I Comprehensive Program	$22,060,628	$6,906,852	$15,153,775	$28,015,561	$7,965,058	$20,050,503
	Commercial Direct Load Control	$7,024,009	$1,285,846	$5,738,163	$14,048,019	$1,299,959	$12,748,060
	Small Business Direct Install	$12,579,900	$5,130,569	$7,449,330	$15,269,496	$5,891,006	$9,378,490
	Commercial New Construction	$2,204,201	$390,243	$1,813,959	$2,204,201	$394,092	$1,810,109
	Bid for Efficiency	$883,893	$364,261	$519,632	$1,388,974	$613,092	$775,882
	Retro-Commissioning	$0	$0	$0	$631,352	$212,187	$419,165
	Schools Facilities	$0	$0	$0	$500,568	$158,687	$341,881
	CHP Joint Program - Pilot	$8,829,704	$1,109,800	$7,719,904	$8,829,704	$1,110,956	$7,718,749
	Subtotal	$53,582,335	$15,187,571	$38,394,764	$70,887,875	$17,645,036	$53,242,839
Behavior	Home Energy Reports	$425,606	$444,706	-$19,100	$680,970	$626,990	$53,980
	Behavioral Comprehensive Program	$3,374,820	$861,289	$2,513,531	$3,591,673	$1,462,279	$2,129,394
	Subtotal	$3,800,426	$1,305,996	$2,494,431	$4,272,643	$2,089,269	$2,183,374
Support Programs	Education and Outreach*	N/A	$383,917	$0	N/A	$384,724	$0
	Residential Energy Financing*	N/A	$448,758	$0	N/A	$459,373	$0
	Codes Support*	N/A	$49,335	$0	N/A	$75,490	$0
	Program Development, Analysis and Reporting Software	$0	$805,238	-$805,238	$0	$829,395	-$829,395
	Subtotal	N/A	$1,687,248	-$805,238	N/A	$1,748,982	-$829,395
Total	Portfolio Total	$90,889,164	$33,166,157	$57,723,007	$113,287,860	$39,464,201	$73,823,660

* Net Benefits are adjusted to $0. Benefits are likely to equals costs; however at this time they are not quantified

The combined net benefits from 2011 and 2012 are well over one hundred million dollars at $131,546,667. Thus the 2011-2012 after tax performance incentive at seven percent of the net benefits is $9,208,267, which is less than the $13,154,667 cap as shown in Table 10.4.

Table 10-4. Performance Incentive After Tax for 2011 and 2012

	2011	2012	Total
Total Lifetime Net Benefits	$57,723,007	$73,823,660	$131,546,667
Calculated Performance Incentive*	$4,040,611	$5,167,656	$9,208,267
Proposed Performance Incentive Cap (10% of Lifetime Net Benefits)	$5,772,301	$7,382,366	$13,154,667
Performance Incentive (after-tax)	$4,040,611	$5,167,656	$9,208,267

*Assuming 100% of savings goal is reached, incentive is calcualted as 7% of lifetime net benefits

TEP is requesting to collect $16,394,598 in the 2011 and 2012 surcharge. This includes $9,208,267 from Table 10-4 multiplied by the gross revenue conversion factor from the last rate case (1.66) to determine the pre-tax amount added to the 2010 Performance Incentive already approved.

Table 10-5 shows the total of the 2010 Performance Incentive due TEP with the requested 2011 and 2012 Performance incentives at a pre-tax level.

Table 10-5. Performance Incentive for 2011 and 2012 Surcharge

	Performance Incenitve
2010	$1,110,901
2011 (pre-tax)	$6,706,524
2012 (pre-tax)	$8,577,172
Total	$16,394,598

C. Authorized Revenue Requirement True-up

TEP is requesting approval to collect $18.2 million in Authorized Revenue Requirement True-up ("ARRT").

Successful implementation of cost-effective DSM programs will ultimately result in utility loss of authorized revenue from reduced kWh sales until those reduced sales are reflected in TEP's base rates. This occurs any time a variable energy-based (per kWh) charge is used to collect non-fuel fixed utility costs. The EEES did not provide a mechanism whereby utilities are guaranteed compensation for the loss of authorized revenue that occurs when volumetric sales decline due to energy efficiency measures.

TEP is therefore requesting approval to implement a mechanism to address this issue in the 2011 EE Plan. TEP proposes use of the DSM Surcharge as the appropriate mechanism to recover shortfalls of its authorized revenue requirement until the time that decoupling is implemented during TEP's next general rate case. TEP views this methodology as an 'interim' solution to be applied only for the years until TEP's rate settlement stay-out provision expires and revenue decoupling is approved by the Commission in TEP's next general rate case.

In implementing the ARRT, TEP proposes a straightforward authorized revenue requirement true-up mechanism that would remain in effect until approval of the next future rate case, anticipated in 2013, where revenue decoupling can be addressed. Implementation of the ARRT is critical to the Company's ability to maintain compliance with the EE Standard and as described above, the Company believes the Commission could issue a waiver to TEP for the 2011 and 2012 EE Standard to mitigate the fact the TEP cannot implement decoupling until 2013 at the earliest.

TEP proposes recovery via the Authorized Revenue Requirement True-up be calculated using the following method:

STEP 1 – Develop Monthly Energy Savings by Rate Class

The energy savings forecast was compiled by analyzing TEP historical program participation by rate class and by program. The historical numbers were used to determine the participation percentages of each rate class within the programs. The 2011and 2012 customer energy savings were determined by evaluating each program's potential participation levels by month. The monthly expected participation was then used along with the monthly deemed savings to determine the total energy savings by month. The total load reduction was then spread across the rate classes based on the actual historical participation by rate class.

The 2011 and 2012 forecasted total energy savings is the energy savings required to meet the Arizona Corporation Commission Energy Efficiency standard. It does not include energy efficiency savings from

prior years. The impact by rate class was again determined by applying the historical percentages by rate class to the forward energy savings requirement.

STEP 2 – Determine Authorized Revenue Requirement True-up by Rate Class

An Authorized Revenue Requirement True-up is equal to the non-fuel-related variable rate approved by the Commission in TEP's 2007 rate case. The Authorized Revenue Requirement True-up was derived by multiplying the monthly energy savings, as described above, to the unbundled delivery charges excluding meter services, meter reading, billing and collection and service drop for each participating rate schedule. The delivery charges excluded are charges associated with any applicable pricing plan customer charge and will be collected from all program participants and must therefore be removed from this calculation. The TEP non-fuel fixed costs items approved in the costs of service in the 2009 rate case are as follows:

- Delivery Charges consisting of meter services, meter reading, billing and collection, service drop.
- Generation capacity including fixed must-run
- Transmission capacity
- Distribution capacity
- Ancillary services consisting of system control and dispatch, reactive supply and voltage control, regulation and frequency response, spinning reserve service, and supplemental reserve service.
- System benefits defined as Uncollectible

The following classes and rate schedules are included in the Authorized Revenue Requirement True-up calculation.

- Residential - Rate R-01,
- Small General Service - Rate C-10 and Time-of-Use C-76,
- Large General Service – Rate I-13 and Time-of-Use I-85,
- Industrial I-14, and
- Other - Public Authority Rate O-40 and Lighting P-47.

The Authorized Revenue Requirement True-up, attached as Exhibit 4, shows the monthly and annual results of this calculation by rate class for calendar years 2011 and 2012. These projections are based on TEP's best estimates of market penetration for each program. TEP will recover the ARRT through the DSM Surcharge and will be reset coincident with the effective date of applicable changes to the Utility's rates or eliminate this incremental portion of the DSM Surcharge in conjunction with the approval of revenue decoupling in a manner that will not leave a gap or result in double recovery. A summary of the AART by rate class is shown in Table 10-6 for years 2011-2012.

Table 10-6. ARRT by Rate Class

	Residential	Small General Service	Large General Service	Industrial	Other	Total
Total	$10,397,500	$5,968,052	$1,009,779	$652,873	$222,063	$18,250,267

D. Total Demand-Side Management Surcharge

The total DSMS requested in this EE Plan is comprised of: 1) Program Cost Recovery; 2) Utility Performance Incentive; and 3) Authorized Revenue Requirement True-Up. TEP is requesting approval to collect costs as shown in Table 10-7.

Table 10-7. DSM Surcharge Total

Cost Category	2011	2012		Total
Program Budget	$23,612,677	$27,486,095		$51,098,772
Performance Incentive (2010)	$1,110,901	NA		$1,110,901
Performance Incentive	$6,706,524	$8,577,172		$15,283,696
ARRT	$4,402,226	$13,848,041		$18,250,267
Total	$35,832,328	$49,911,308		$85,743,636
Requested Surcharge				$0.005675
Current Surcharge				$0.001249
Incremental Change				$0.004426

The total DSMS for 2011-2012 will be $.005675/kWh compared to the 2010 DSMS of $.001249. The total 2011-2012 surcharge will contribute $4.99 per month to the average residential customer bill compared to $1.10 from the 2010 DSMS.

XI. Other Administrative Requests

Flexibility

In an effort to maintain participation in its highly successful EE programs, TEP requests Commission approval to shift approved funds between programs, and to moderately increase the budgets outlined in the 2011-2012 EE Plan where it would be cost-effective to do so. Flexibility of this sort has proven itself valuable in the implementation of the REST and TEP believes it is equally important here. In order to effectively and smoothly implement the EEES, utilities must be able to accept applications for customer inclusion in each energy efficiency program even though an individual program may, at the time, be oversubscribed. This type of flexibility is also necessary to maximize participation in the highly successful Commercial and Residential programs that TEP administers. In order to facilitate this type of flexibility, TEP respectfully requests Commission approval of the following language in its EE Plan approving Decision:

> *"TEP will be allowed to shift up to 25% of approved funds from Residential to Commercial or from Commercial to Residential programs as deemed necessary based on program activity, and TEP will be allowed the option of increasing up to 25% of the total Energy Efficiency budget where cost-effective, to continue participation until approval of the next regularly scheduled Energy Efficiency Implementation plan."*

In addition, TEP would agree to evaluate program progress and requirements to shift funds from one program to another and to provide updates to the Commission at any interval requested by the Commission.

Reporting

Pursuant to A.A.C. R14-2-2409(D), TEP requests that the reporting requirements in the EEES supersede the Company's existing reporting requirements as found in the Company's Proposed Settlement Agreement approved in Decision No. 70628 (December 1, 2008) in Dockets E-01933A-05-0650 and E-01933A-07-0402. Specifically, TEP requests that the reporting requirements contained in R14-2-2409 replace (i) TEP's April 1st surcharge filing requirement as found in Section 9.5 of the Proposed Settlement Agreement; and (ii) TEP's requirement to file semi-annual reports on March 1st and September 1st of each year as found in Section 9.6 of the Proposed Settlement Agreement.

EXHIBIT 1

Memorandum

To: DSM Collaborative

From: UniSource Energy & APS

Date: October 1, 2010

RE: Arizona Benefit/Cost Analysis of DSM Programs Memo No. 1

Introduction:

The attached white paper presents recommendations from APS, UniSource Energy, and various DSM Collaborative group stakeholders on the interpretation of inputs and methodologies to be used when developing the societal benefit-cost test (SCT) as prescribed in the rulemaking on electric energy efficiency[1]. This document is intended to provide a consistent, efficient, and transparent method to assess the cost effectiveness of both planned and implemented DSM activities.

Key recommendations in the white paper include;

1. Avoided cost of energy will be stated as levelized costs and will be developed using the assumptions for the forecasted marginal production costs included in the integrated resource planning (IRP) model, with adjustments as appropriate for the impacts of the energy savings planned through the energy efficiency standard.
2. Until such time that the financial and legislative impacts of carbon mitigation are developed, the marginal production costs for energy will include an estimated cost of carbon that is imbedded in the marginal production cost of energy included in the IRP filed by each individual utility. As the IRP Rule sets forth, any interested party may provide, for the Commission's consideration, analyses and supporting data pertaining to environmental impacts.
3. Avoided cost of generation capacity will be stated as annual levelized costs based primarily on the cost of the next marginal unit identified in the IRP generation plan. Utilities may also use an approach that combines the next marginal unit cost and the cost of short term market capacity where appropriate.
4. The avoided cost of generation capacity will include the value of both principal and interest payments over the term of the debt incurred in installing these resources.
5. A societal discount rate will be used that will be based on the yield for U.S. Treasury securities up to a cap of 4%.
6. Administrative costs for energy efficiency measures will be applied at the level of program cost-effectiveness analysis and do not enter into the screening of individual DSM measures. Individual measure screening will be based on savings and measure incremental costs only.
7. The net-to-gross ratio will be assigned a value of 1 in cases where free ridership, spillover, and market influence effects cannot be measured or estimated with a reasonable degree of confidence.

This document is the result of DSM Collaborative meetings held on February 5th and May 18th, 2010, to begin the process of establishing a common framework between APS, TEP, and ACC for calculating benefit-costs of DSM activities. The results of the discussions were compiled and circulated for comment to all of the interested parties by Navigant Consulting. Comments, feedback and suggestions were then incorporated into this white paper guide.

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[1] Referenced in docket number RE-00000C-09-0427, the rulemaking on electric energy efficiency.

Benefit/Cost Analysis of DSM Programs: A Guide for Arizona Investor Owned Utilities

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I. Objective

This white paper presents the interpretation of inputs and methodologies to be used when developing the societal benefit-cost tests prescribed in docket number RE-00000C-09-0427[2], the proposed rulemaking on electric energy efficiency. The recommended inputs and methodologies are supported by APS and Unisource Energy and will allow Arizona IOUs to apply a consistent approach in screening the cost effectiveness of new energy efficiency measures and program offerings, and also in assessing the cost effectiveness of measures and programs already deployed. This document seeks to accomplish the following;

1. Provide a common approach between the utilities and Staff to conduct benefit cost analysis of DSM measures and programs being considered for implementation or being assessed after implementation;
2. Provide a screening process that is easy to use so that both the utilities and Staff can prepare their evaluations without delaying the implementation of programs to meet the Commission's aggressive savings targets;
3. Recognizes that benefit-cost assessment is ongoing, and that more refined analysis of cost effectiveness will be conducted during the monitoring and evaluation phase. Part of the data gathering process in the monitoring and evaluation phase will be devoted to getting better information on factors which are often uncertain in the initial measure screening phase and;
4. Provide synchronization between utility IRP and DSM activities.

The document is structured to provide a brief definition of the Societal Cost Test (SCT), followed by specific recommendations on benefit-cost test inputs and methodologies. A summary of key recommendations is then presented, followed by a glossary of terms.

II. Definition of the Societal Cost Test

The Arizona Corporation Commission (ACC) in Decision No. 71436 directed the public utilities in the state to design cost-effective Demand-Side Management (DSM) programs to meet the state's energy efficiency and load management objectives. The decision further states that the Societal Cost Test shall be used to determine cost effectiveness.

The SCT is structurally similar to the Total Resource Cost Test (TRC) but goes beyond the TRC test in that it attempts to quantify the change in the total resource costs to society as a whole rather than to only the service territory (the utility and its ratepayers). The main difference between the SCT and TRC Tests are the use of a societal discount rate and the capability to include the value of other societal benefits such as avoided environmental externalities (avoided pollution costs), non-energy benefits, reliability benefits, and fuel diversity. The ACC has chosen the term "Non-Market Benefits" to describe these benefits and has adopted the following definition:

> '"Non-market benefits" means the incremental improvements in social welfare that are not bought or sold.'

When expressed in terms of net present value, it is the ratio of the discounted total benefits of the program to the discounted total costs over some specified time period. The equation and terms of the SCT are defined as follows:

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[2] This document specifically pertains to sections R14-2-2401 and R14-2-2412 of the proposed standard

$$BCR_{SC} = (UAC_{NPV} + NMB_{NPV}) \div (PRC_{NPV} + PC_{N\text{-}NPV} + UIC_{NPV})$$

Where:

BCR_{SC} = Societal Benefit/Cost Ratio

UAC_{NPV} = Net Present Value of Utility Avoided Cost

NMB_{NPV}= Net Present Value of Non-Market Benefits (societal benefits) including environmental and other non-energy benefits

PRC_{NPV} = Net Present Value of Program Administrator Program Costs

$PC_{N\text{-}NPV}$ = Net Present Value of Net Participant Costs

UIC_{NPV} = Net Present Value of Utility Increased Supply Costs

Utility avoided costs (UAC) are defined as follows:

$$UAC = \Delta E_N \times ACE + \Delta D_N \times ACC + AECC$$

Where:

ΔE_N = Net energy savings

ACE = Avoided cost of energy

ΔD_N = Net demand savings

ACC = Avoided cost of capacity

AECC = Utility avoided environmental regulation compliance costs (e.g., carbon dioxide allowances, pollution control equipment).

III. Recommended Societal Cost Test Inputs and Methodologies

The following discussion provides recommendations on inputs and methodologies for each of the terms in the Societal Cost Test as defined above. The net present value of utility increased supply costs (UIC_{NPV}) is not addressed in this white paper because the rulemaking on electric energy efficiency is not intended to define the cost benefits of fuel switching programs, and because the SCT test cannot be applied meaningfully to load building programs.

A. Societal Discount Rate

The SCT allows for the use of a societal discount rate (SDR). The SDR is a reflection of a society's relative valuation on today's well-being versus well-being in the future. While no single method for determining the value of the SDR is agreed upon among industry practitioners, most agree that the value of the SDR is lower than rate of return selected for commercial investment decisions. The SDR used in evaluating energy efficiency programs and measures will be defined as follows;

- The SDR will be based on the yield from U.S. Treasury securities with a cap of 4%.
- The maturity of the Treasury security used to establish the SDR should be the same as the investment horizon of the discount rate used in the utility IRP. For example an IRP using a 20 year investment period would use the yield of the 20 year Treasury bond as the appropriate SDR.
- The date when the yield on the Treasury security is selected should be as close as possible to the date used to establish the discount rate used in the utility IRP.

B. Utility Avoided Cost (UAC)

Net Energy Savings (ΔE_N)

- Net Energy Savings will be defined by the following equation;

  $\Delta E_N = \Delta E_G \times (1 + ELLF) \times NTGR$

  Where:

  ΔE_N = Net energy savings

  ΔE_G = Gross energy savings (at the customer meter, not including NTG effects)

  NTGR = Net To Gross Ratio

- The value for the energy line loss factor (ELLF) will be determined by the most recent IRP.
- The calculation of the NTGR will include an estimation of free ridership, spillover and market influence factor (MIF) effects. Spillover is further defined as internal spillover and external spillover.
- The calculation of the net-to-gross ratio is conducted as follows:

  NTGR = 1 – FRF + SPF + MIF

  Where:

  FRF = Free ridership factor

  SPF = Spillover factor. This effect is comprised of two components defined as follows;

  - Internal spillover is typically defined as other measures installed in the same facility.
  - External spillover is typically defined as measures installed in other related facilities.

  MIF = Market influence factor. This factor is comprised of three components defined as follows;

  - Market Development Factor – The influence of programs on developing infrastructure, pipeline of products and service in the market, trade and professional expertise from training and education.
  - Market Maintenance Factor – The influence of programs in maintaining energy efficiency expertise and products and services in the market through ups and downs of business and economic cycles.
  - Market Transformation Factor -- The influence of programs on transforming the market over time.

- The NTGR will be assigned a value of 1 in cases where free ridership, spillover, and market influence effects cannot be measured or estimated with a reasonable degree of confidence.
- NTGR will be updated and reported through the MER process.

Avoided Cost of Energy (ACE):

- Avoided cost of energy will be stated as levelized costs and will be developed using the assumptions for the forecasted marginal production costs (MPC) included in the integrated resource planning model, with adjustments as appropriate for the impacts of the energy savings planned through the energy efficiency standard.
- The utilities should state if the energy efficiency standard was incorporated within the MPC model and how this was done.
- The period over which the levelized costs are presented will match the useful life of the measure or program being evaluated. For instance, if the measure life is 15 years, the value for the avoided cost of energy will be based on the levelized costs for a same 15 year period.
- The definition of summer and winter seasons, and also peak and off peak should be generally consistent with definitions used in TOU pricing structures and will be based on mutual agreement between staff and each utility and can vary by measures. At a minimum, avoided cost of energy values will be provided to ACC Staff in the following format:

On-Peak Summer	Determined from On-Peak Summer TOU hours
Off-Peak Summer	Determined from Off-Peak Summer TOU hours
On-Peak Winter	Determined from On-Peak Winter TOU hours
Off-Peak Winter	Determined from Off-Peak Winter TOU hours

Avoided Cost of Carbon:

- Until such time that the financial and legislative impacts of carbon mitigation are developed, the marginal production costs for energy will include an estimated cost of carbon that is imbedded in the marginal production cost of energy included in the IRP filed by each individual utility. As the IRP Rule sets forth, any interested party may provide, for the Commission's consideration, analyses and supporting data pertaining to environmental impacts.
- It is recognized that compliance costs associated with CO_2 emissions remains uncertain, and that factors such as pending legislation or developing markets that establish alternative values for CO_2 emissions may require this approach be revised.

Net Demand Savings (ΔD_N)

- Net Demand Savings will be def$_{in}$ed by the following equation;

$$\Delta D_N = \Delta D_G \times (1 + DLLF + CRF) \times NTGR$$

- The value for the line capacity reserve factor (CRF) will be determi$_{ne}$d by the most recent IRP
- The value for the demand line loss factor (DLLF) will be determined by the most recent IRP.
- The value for NTGR will be the same as defined for avoided net energy savings

Avoided Cost of Generation Capacity (ACC):

- Avoided cost of generation capacity will be stated as annual levelized costs based primarily on the cost of the next marginal unit identified in the IRP generation plan. Utilities may also use an approach that combines the next marginal unit cost and the cost of short term market capacity where appropriate.
- The avoided cost of generation capacity will include the value of both principal and interest payments over the term of the debt incurred in installing new capacity resources.

C. Program Administrator Program Costs (PRC)

Program administrative costs are all non-incentive costs incurred by the utility in the process of operating and delivering DSM programs. These costs include management, administration, marketing, training, implementation services, and measurement and evaluation. For the purposes of cost-effectiveness analysis of DSM programs and measures, administrative costs are applied at the level of program cost-effectiveness analysis and do not enter into the screening of individual DSM measures. Costs included in the screening of individual DSM measures are limited to customer incremental or installed costs. This distinction is made in the application of costs because administrative costs are incurred at the program level and may be allocated arbitrarily, or may not be distributed uniformly across individual DSM measures and applications.

Thus, for program level cost-effectiveness screening the following formulation of the SCT applies:

$$BCR_{SC,\,PROGRAM} = (UAC + NMB) \div (PRC + PC_N + UIC)$$

However, for cost-effectiveness screening at the individual measure level the administrative cost term is omitted and the following formulation applies:

$$BCR_{SC,\,MEASURE} = (UAC + NMB) \div (PC_N + UIC)$$

D. Non-Market Benefits (NMB)

The SCT allows for the inclusion of 'non-market benefits and costs to society'[3] Non-market benefits includes items such as reliability benefits (e.g. avoided blackouts as the result of less strain on distribution systems), non-energy benefits (e.g. secondary economic impacts from low income programs), fuels diversity benefits (e.g. potential to reduce risks of supply disruption or mitigating the effects of price volatility). In addition, the non-market benefits included in the SCT test are intended to value the broader societal benefits from avoided environmental externalities such as avoided pollution or reduced risk of climate change. This viewpoint differs from the inclusion of the potential financial risks of CO_2 emissions discussed previously in that it also considers a broader societal perspective[4]. If non-market benefits are used in the SCT for measure or program evaluations they will be indentified and defined.

E. Net Participant Costs (PC_N)

- The net participant costs typically include all equipment costs, installation, operation and maintenance, cost of removal (less salvage value) paid by participants.
- The majority of participant costs are typically the incremental costs or full installed costs incurred by customers in the process of installing the DSM measure. The term 'net' implies that all relevant customer costs are included in this value, and generally includes either one of two types of costs;
    1. 'Incremental costs' that are the difference in cost between a standard efficiency and high efficiency device. Incremental costs are typically used when a device has failed and is going to be replaced anyway ('replace on burn-out'), or in the case of new construction projects.

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[3] Decision No. 71436, R14-2-2401 Definitions, Page 4.

[4] The societal discount rate is a reflection of a society's relative valuation on today's well-being versus well-being in the future. Choices about the SDR of environmental protection projects, such as funding the reduction of global warming, place a greater valuation on future generations, employing a low time preference that places more emphasis than average on their well-being in the further future.

2. 'Full installed costs' that are typically defined as the cost of replacing a working system with a higher-efficiency system. In general full installed costs include both the full cost of the material being installed and also the cost of the labor to install the measure.

- All incremental costs, including other expenses such as additional costs for designing a more efficient building, will be considered on a case by case basis as part of the measure screening process.
- Net participant costs will be updated and reported through the MER process.

IV. Summary of Key Recommendations

Key recommendations in the white paper include;

1. Avoided cost of energy will be stated as levelized costs and will be developed using the assumptions for the forecasted marginal production costs included in the integrated resource planning (IRP) model, with adjustments as appropriate for the impacts of the energy savings planned through the energy efficiency standard.
2. Until such time that the financial and legislative impacts of carbon mitigation are developed, the marginal production costs for energy will include an estimated cost of carbon that is imbedded in the marginal production cost of energy included in the IRP filed by each individual utility. As the IRP Rule sets forth, any interested party may provide, for the Commission's consideration, analyses and supporting data pertaining to environmental impacts.
3. Avoided cost of generation capacity will be stated as annual levelized costs based primarily on the cost of the next marginal unit identified in the IRP generation plan. Utilities may also use an approach that combines the next marginal unit cost and the cost of short term market capacity where appropriate.
4. The avoided cost of generation capacity will include the value of both principal and interest payments over the term of the debt incurred in installing these resources.
5. A societal discount rate will be used that will be based on the yield for U.S. Treasury securities up to a cap of 4%.
6. Administrative costs for energy efficiency measures will be applied at the level of program cost-effectiveness analysis and do not enter into the screening of individual DSM measures. Individual measure screening will be based on savings and measure incremental costs only.
7. The net-to-gross ratio will be assigned a value of 1 in cases where free ridership, spillover, and market influence effects cannot be measured or estimated with a reasonable degree of confidence.

Glossary of Terms

The factors included in the formulas above are further defined as follows.

- **Avoided Costs**: the generation, transmission, distribution, and fuel costs that that the utility avoids making though investing in DSM resources.
- **Free ridership: program** participants who would have installed DSM measures anyway without the influence of the program.
- **Gross demand savings:** DSM measure demand savings at the customer meter not including NTG effects (i.e., whether the measure installation was caused by the program isn't considered).
- **Gross energy savings:** DSM measure energy savings at the customer meter not including NTG effects (i.e., whether the measure installation was caused by the program isn't considered).

- **Levelized Costs:** the process of calculating levelized costs involves taking a string of costs and calculating a uniform annual cost value over the duration of the measure life. This reduces the curve to a single, levelized cost that can be used in a present value calculation. This is referred to in this memo as the levelized cost model. Levelized costs can potentially hide the volatility of fossil fuel prices (and perhaps other costs) and that, consequently, the hedge value of stably-priced energy efficiency is neglected.
- **Net demand savings:** the amount of demand savings at the generator actually attributable to the DSM program including line loss factor, capacity reserve factor and NTG effects.
- **Net energy savings:** the amount of energy savings at the generator actually attributable to the DSM program including line loss factor and NTG effects.
- **Net-to-gross ratio:** net savings/gross savings.
- **Non-market benefits**: benefits to society or reduced environmental emissions and other non-energy benefits that are not recovered through utility rates.
- **Program administrator program costs:** all non-incentive costs required to operate and deliver the program including management, administration, marketing, implementation services and measurement and evaluation.
- **Spillover:** customers who installed DSM measures due to the influence of a DSM program but did not participate in the program. This effect includes both **internal** and **external spillover**. **Internal spillover** is typically defined as other measures installed in the same facility, while **external spillover** is typically defined as measures installed in other related facilities.

EXHIBIT 2

CLEAN

A UniSource Energy Company

Rider R-2
Demand Side Management Surcharge (DSMS)

APPLICABILITY

The Demand Side Management Surcharge ("DSMS") applies to all customers, except those customers who take service under the Residential Lifeline Discount or Residential Lifeline/Medical Life-Support Discount pricing plans, in all territory served by the Company as mandated by the Arizona Corporation Commission, unless otherwise specified. Lifeline and Lifeline Medical customers are exempt from the DSM Surcharge.

RATE

The following DSM Surcharge will be effective June 1, 2011 through December 31, 2012. The DSMS shall be applied to all monthly net bills except lifeline customers at the following rate:

All kWhs @ $0.005675 per kWh

REQUIREMENTS

The TEP DSMS will be calculated and filed with the Arizona Corporation Commission (ACC) for approval on or before June 1st. The ACC will approve the surcharge to be billed to all applicable pricing plans for twelve (12) months beginning each January 1.

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file from time to time with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.

REDLINE

A UniSource Energy Company

Rider R-2
Demand Side Management Surcharge (DSMS)

APPLICABILITY

The Demand Side Management Surcharge ("DSMS") applies to all customers, except those customers who take service under the Residential Lifeline Discount or Residential Lifeline/Medical Life-Support Discount pricing plans, in all territory served by the Company as mandated by the Arizona Corporation Commission, unless otherwise specified. Lifeline and Lifeline Medical customers are exempt from the DSM Surcharge. ~~s effective June 1, 2009.~~

RATE

The following DSM Surcharge will be effective June 1, 2011 through December 31, 2012. The DSMS shall be applied to all monthly net bills except lifeline customers at the following rate:

All kWhs @ $0.0056751~~249~~ per kWh

REQUIREMENTS

The TEP DSMS will be calculated and filed with the Arizona Corporation Commission (ACC) for approval on or before ~~April~~ June 1st. The ACC will approve the surcharge to be billed to all applicable pricing plans for twelve (12) months beginning each ~~June~~ January 1.

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file from time to time with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.

EXHIBIT 3

Table 1: 2010 Expenditures and 2011-2012 Proposed Budgets

DSM Support Programs	2010 Expenditures	2010 Approved Budget	2011 Budget	2012 Budget	Combined 2011-2012 Budget
Education and Outreach	$508,714	$510,880	$383,917	$384,724	**$768,641**
Residential Energy Financing	NA	NA	$781,646	$792,262	**$1,573,908**
Codes Support	NA	NA	$49,335	$75,490	**$124,825**
Support Programs Subtotal	$508,714	$510,880	$1,214,898	$1,252,476	**$2,467,374**
Behavioral Programs					
Home Energy Reports	NA	NA	$400,706	$673,790	**$1,074,496**
Behavioral Comprehensive Program	NA	NA	$819,289	$1,420,279	**$2,239,568**
Behavioral Subtotal	$0	$0	$1,219,995	$2,094,069	**$3,314,064**
Residential Energy Efficiency Programs					
Low-Income Weatherization	$350,735	$396,392	$611,190	$616,451	**$1,227,641**
Appliance Recycling	NA	NA	$856,725	$859,533	**$1,716,258**
Residential New Construction	$1,965,718	$3,663,824	$2,445,125	$2,720,648	**$5,165,773**
Existing Home (was Efficient Home Cooling)	$1,573,715	$530,450	$2,577,643	$3,576,038	**$6,153,681**
Shade Tree Program	$160,917	$160,000	$319,155	$325,582	**$644,737**
Efficient Products (CFL)	$1,751,870	$1,535,444	$1,926,611	$2,431,495	**$4,358,106**
Multi-Family Direct Install	NA	NA	NA	$169,738	**$169,738**
Residential Subtotal	$5,802,955	$6,286,110	$8,736,449	$10,899,485	**$19,435,934**
Non-Residential Energy Efficiency Programs					
Bid For Efficiency	NA	NA	$294,261	$503,092	**$797,353**
C&I Comprehensive Program	$2,282,897	$2,116,735	$3,794,134	$4,285,856	**$8,079,990**
Small Business Direct Install	$2,309,324	$2,116,735	$3,547,437	$4,069,211	**$7,616,648**
Commercial New Construction	$153,683	$848,720	$402,469	$406,319	**$808,788**
CHP Joint Program (Pilot)	NA	NA	$74,800	$75,956	**$150,756**
C&I Schools Program	NA	NA	NA	$157,941	**$157,941**
Retro-Commissioning	NA	NA	NA	$175,520	**$175,520**
Non-Residential Subtotal	$4,745,903	$5,082,190	$8,113,101	$9,673,895	**$17,786,996**
Demand Response Programs					
Residential & Small Commercial DLC	$914,481	$1,090,950	$785,150	$184,816	**$969,966**
C & I DLC	$35,254	$809,000	$2,737,846	$2,751,959	**$5,489,805**
Demand Response Subtotal	$949,735	$1,899,950	$3,522,996	$2,936,775	**$6,459,771**
Program Totals	**$12,007,307**	**$13,779,130**	**$22,807,439**	**$26,656,700**	**$49,464,139**
Program Development, Analysis & Reporting Software[1]	$650,024	NA	$805,238	$829,395	**$1,634,633**
Baseline Study	$260,864	$274,000	NA	NA	NA
Sub-total	**$910,888**	**$274,000**	**$805,238**	**$829,395**	**$1,634,633**
Total[2]	**$12,918,196**	**$14,053,130**	**$23,612,677**	**$27,486,095**	**$51,098,772**

1. Expenses are necessary for compliance and reporting reqirements of EEES.

2. 2010 Expenditures are preliminary. Final 2010 Expenditures will be reported in the Semi-annual report due March 1, 2011.

Table 2: 2010 Performance Incentive Calculations

DSM Program	Program Cost	Societal Benefits	Societal Costs	Net Benefits
Residential				
Low-Income Weatherization[1]	$ 350,735	$ 350,735	$ 370,080	$ -
Guarantee Home Program	$ 1,965,718	$ 5,943,906	$ 2,283,584	$ 3,660,322
Shade Tree Program	$ 160,917	$ 643,916	$ 178,405	$ 465,511
ENERGY STAR® Lighting (CFL)	$ 1,751,870	$ 22,738,687	$ 1,931,620	$ 20,807,066
Efficient Home Cooling	$ 1,573,715	$ 1,834,423	$ 5,341,594	$ (3,507,170)
Total for Residential	**$ 5,802,955**	**$ 31,511,667**	**$ 10,105,284**	**$ 21,425,729**
Non-Residential				
Non-Residential Existing Facilities	$ 2,282,897	$ 19,795,752	$ 4,329,899	$ 15,465,853
Small Business	$ 2,309,324	$ 11,029,955	$ 3,550,506	$ 7,479,449
Efficient Commercial Building Design	$ 153,683	$ 548,951	$ 152,262	$ 396,689
Total for Non-Residential	**$ 4,745,903**	**$ 31,374,658**	**$ 8,032,667**	**$ 23,341,991**
Portfolio Totals	**$ 10,548,858**	**$ 62,886,326**	**$ 18,137,951**	**$ 44,767,720**
Measurement, Evaluation & Research (MER)	$ 650,024	$ -	$ 650,024	$ (650,024)
Baseline Study	$ 260,864	$ -	$ 260,864	$ (260,864)
TOTAL	**$ 11,459,747**	**$ 62,886,326**	**$ 19,048,839**	**$ 43,856,831**
Performance Incentive Calculation:				
Total Spending[2] / Total Net Benefits	$ 11,109,012			$ 43,856,831
10% of Spending / Net Benefits	$ 1,110,901			$ 4,385,683
Performance Incentive for 2010	$ 1,110,901			

1. Consistent with Commission Staff's analysis in Arizona Corporation Commission Decision No. 70456 (August 6, 2008), the societal benefits for low-income weatherization are equal to or greater than the societal costs when taking the environmental benefits into account.

2. Total spending does not include Low-Income Weatherization per Arizona Corporation Commission Decision No. 70628 (December 1, 2008), which approved the TEP Performance incentive calculation. The Performance Incentive allowed is capped at 10% of Net Benefits or 10% of total spending, whichever is less.

Table 3: DSMS Rate Calculation

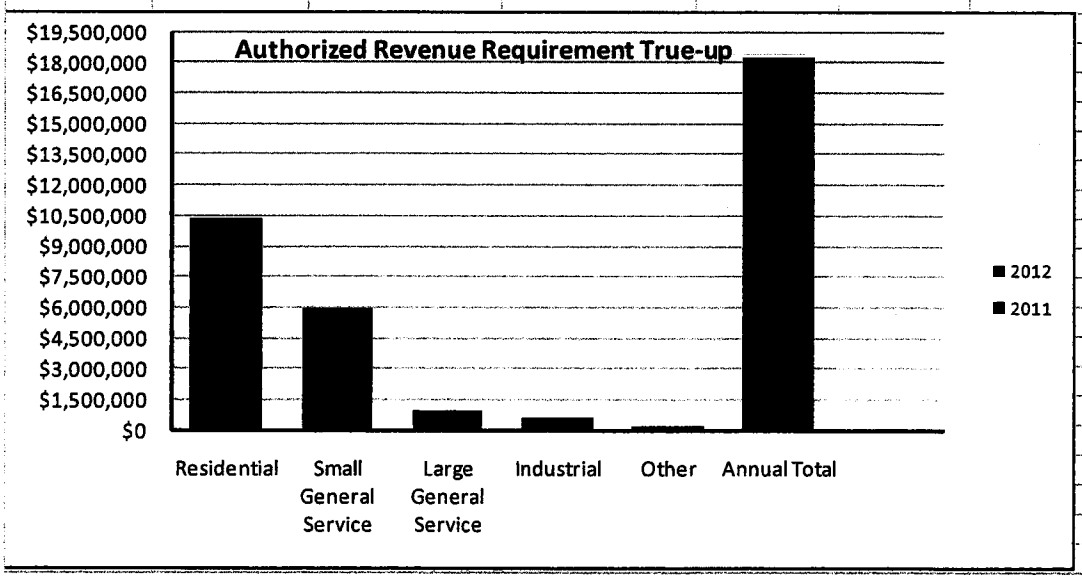
TEP	DSM Budget	19MoForecast	Rate/kWh
Total Expense	$51,098,772	15,107,305,597	**$0.003382**
Performance Incentive	$16,394,597	15,107,305,597	**$0.001085**
ARRT	$18,250,267	15,107,305,597	**$0.001208**
	$85,743,636		**$0.005675**

EXHIBIT 4

TUCSON ELECTRIC POWER, INC.

Authorized Revenue Requirement True-up

Month	Residential	Small General Service	Large General Service	Industrial	Other	Annual Total
1/1/2011	$21,957	$16,342	$2,582	$1,526	$625	
2/1/2011	42,683	32,624	5,360	3,374	1,250	
3/1/2011	99,710	48,892	7,596	4,346	1,875	
4/1/2011	125,282	65,355	11,090	7,344	2,500	
5/1/2011	156,176	88,205	14,729	9,234	3,214	
6/1/2011	203,768	105,418	18,209	11,958	3,856	
7/1/2011	251,595	123,404	20,970	13,506	4,499	
8/1/2011	287,884	140,932	23,965	15,435	5,142	
9/1/2011	323,480	158,430	27,314	17,936	5,784	
10/1/2011	347,107	175,482	30,469	20,126	6,427	
11/1/2011	357,775	180,024	31,640	22,012	6,875	
12/1/2011	430,293	196,290	32,344	20,506	7,500	
Total	$2,647,710	$1,331,398	$226,268	$147,303	$49,547	$4,402,226
1/1/2012	$464,410	$210,356	$33,234	$19,642	$8,045	
2/1/2012	461,645	213,768	35,123	22,106	8,190	
3/1/2012	458,940	292,378	45,432	25,983	11,212	
4/1/2012	462,993	324,109	55,001	36,421	12,398	
5/1/2012	495,073	407,122	67,986	42,616	14,833	
6/1/2012	580,032	427,053	73,767	48,441	15,622	
7/1/2012	684,512	476,614	80,990	52,162	17,376	
8/1/2012	732,517	512,044	87,072	56,081	18,681	
9/1/2012	800,666	470,939	81,191	53,317	17,194	
10/1/2012	782,380	495,173	85,982	56,793	18,136	
11/1/2012	809,967	432,045	75,934	52,827	16,499	
12/1/2012	1,016,655	375,053	61,799	39,182	14,330	
Total	$7,749,790	$4,636,654	$783,511	$505,570	$172,516	$13,848,041



APPENDIX A:

TEP APPLIANCE RECYCLING PROGRAM

Program Description

Tucson Electric Power Company's ("TEP" or "Company") Appliance Recycling Program ("Program") is designed to remove and responsibly recycle inefficient but operable refrigerators or freezers from the power grid which are currently being used as secondary appliances or potentially could become secondary units. The Program will offer residential customers a $35 incentive, free pick-up, and free recycling of their inefficient refrigerators or freezers. The Program will utilize an experienced appliance recycling contractor to market the Program, verify customer's eligibility, coordinate and process incentives, schedule and pick-up eligible appliances, and responsibly recycle the appliances. TEP believes this Program will reduce energy consumption in its service territory and help keep inefficient appliances out of the used appliance market. The approach utilized by this Program has been successfully implemented in many other states and TEP believes it will be successful in its service territory.

Program Objectives and Rationale

The objective of the Program is to permanently remove operable inefficient refrigerators and freezers from the power grid and recycle them in an environmentally safe manner. This will produce long-term electric energy savings in TEP's residential sector.

The Program's rationale is to incent customers with a $35 rebate, free pick-up, and responsible recycling of their operable inefficient refrigerators and freezers. The Program will provide the consumers with an energy savings alternative to selling or donating these inefficient units to the used appliance market or utilizing the unit themselves. Additionally it saves consumers the burden of disposing of the appliance and the $35 municipal fee required to do so.

Table 1-1. Market Barriers and Program Elements

Market Barrier	Program Element
• Lack of awareness about operating costs for older inefficient refrigerators and freezers • Inconvenience of removing old units. • Cost of disposal. • Environmental impact of disposal.	• Marketing materials with operating cost estimates. • Free pick-up/removal from customer site plus incentive. • Free disposal. • Using an environmentally responsible recycling contractor for disposal.

Target Market

The Program is targeted at residential customers who are currently operating inefficient refrigerators and/or freezers in their homes, or may be considering selling, donating or keeping a recently acquired inefficient unit as a secondary appliance.

Program Eligibility

The Program is available to all residential utility customers with operable inefficient refrigerators or freezers that are between 10 and 30 cubic feet. The Program will limit the rebate to two units per year per household.

Current Baseline Conditions

National studies have found that approximately 20% of customers have at least one secondary inefficient refrigerator or freezer in their home. Most of these units are ten years old or more.

Products and Services

The products and services provided by the Program include:

- free pick-up and recycling of operable inefficient refrigerators or freezers;
- a $35 customer incentive;
- education and promotional efforts to inform customers about the energy saving benefits of recycling their older inefficient refrigerators or freezers, including brochures, promotional material, and utility website content;
- refrigerator and freezer recycling in accordance with established U.S. Environmental Protection Agency ("EPA") best practice industry standards to ensure optimal levels of recycled material and environmental compliance;
- working with retailers to distribute information about the Program and the energy saving benefits of recycling inefficient refrigerators and freezers
- removal and proper disposal of the chlorofluorocarbons ("CFCs") (a potent greenhouse gas used as a blowing agent in older foam insulation products) contained in many older appliances - a significant additional environmental benefit of the program; and
- customer outreach achieved when the recycling contractor leaves behind additional literature and information about other energy efficiency Demand-Side Management programs and opportunities.

Delivery Strategy, Incentive Processing, and Administration

The strategy for Program delivery, incentive processing, and administration is as follows:

- Appliance pick-up/recycling: an implementation contractor will be selected to provide comprehensive turnkey implementation services, from eligibility verification and scheduling of pick-ups, to proper disposal and recycling of turned-in appliances.
- Incentive coordination and processing: the implementation contractor will coordinate prompt processing of incentive payments. A prompt incentive payment is essential to retailer/customer satisfaction, thus the implementation contractor will establish protocols and service level requirements that expedite payment.

Implementation-related administrative requirements will be handled by the third-party implementation contractor. The implementation contractor will be responsible for:

- management of the scheduling, pick-up, and appliance recycling processes;
- marketing strategy and messaging;
- development and placement of promotional materials and advertising;
- incentive processing;
- data tracking and reporting;
- investment tracking and reporting;
- contact (call) center services;
- managing public relations; and

- customer satisfaction/problem resolution.

The Program will use marketing messages targeted at customers with inefficient refrigerators/freezers. Mass marketing will emphasize the cost of operating inefficient refrigerators/freezers and the environmental benefits of proper disposal. The Program will be marketed at retail point-of-sale providing retailers with a responsible disposal service for those customers replacing their current inefficient refrigerator or freezer.

Program Marketing and Communication Strategy

The marketing and communications strategy will include but is not limited to the following components:

- Direct marketing to customers on the savings benefits of removing and recycling an inefficient refrigerator or freezer on the utility website and with bill inserts.
- A Web site link to the EPA's new "ENERGY STAR® Recycle My Old Fridge Campaign" at http://www.energystar.gov/index.cfm?c=recycle.pr_refrigerators, which includes calculators to estimate savings.
- Media advertising which may include local newspapers or other selected print media, press releases, radio and/or television.
- Information provided through TEP's Customer Care Center.
- Marketing materials which may include brochures and other collateral pieces to promote the benefits and energy savings of recycling an inefficient refrigerator/freezer. TEP will also design a thank you note and leave behind materials describing other residential and small business programs available to customers.

All marketing materials will carry a strong consumer education message emphasizing the cost of operating an inefficient refrigerator or freezer and the importance of properly recycling and disposal of older units. Marketing materials will also leverage the ENERGY STAR® brand and the savings associated with purchasing ENERGY STAR® appliances.

Program Implementation Schedule

Upon Program approval by the Arizona Corporation Commission, TEP plans to immediately engage an implementation contractor selected through a request for proposals process to deliver the Program. TEP's goal is to recycle a total of 5,400 units per year for 2011, 2012, and 2013 respectively.

Measurement, Evaluation, and Research Plan

All evaluation activities will be conducted by TEP's measurement, evaluation, and research contractor. An integrated evaluation approach will be taken that includes the following components:

- addressing evaluation at the onset of Program design and collecting evaluation data as part of Program administration;
- assessing and documenting baseline conditions;
- establishing tracking metrics;
- developing and refining deemed savings measure databases; and
- conducting primary and secondary research as part of the impact and process evaluations.

The overall goal of the impact evaluation will be to validate/calibrate the deemed savings values of the Program, and to determine its cost-effectiveness. Primary impact metrics are savings per unit, Program participants, net-to-gross ratio, and Program cost-effectiveness.

Validation/calibration of deemed savings values will be determined by an analysis of Program records and by testing a sample of equipment picked up for recycling. Primary research may be conducted to determine the impact of variables such as size of refrigerator, effective life of the equipment, and owner utilization. Self-report surveys with both participants and non-participants will be used to assess Program awareness, barriers to participation, participant satisfaction, and other process efficiency issues. Interviews will also be conducted with Program managers and the implementation contractor. These surveys will be enhanced by collecting market data and assessing trends.

The process evaluation will be conducted during the first Program year and then coordinated with impact evaluation work. Wherever it is practical and appropriate, evaluation activities will be conducted in conjunction with other utilities and agencies in the state to efficiently utilize resources and help ensure consistency.

Quality Assurance and Control

- Refrigerators and freezers will be checked for functionality before removal as only operating units will be picked up.
- Only operable inefficient refrigerators and freezers will be picked up.
- All refrigerators will be decommissioned by the implementation contractor, or accredited third party, in accordance with applicable local state and federal standards for proper handling of refrigerants.
- Customer satisfaction surveys will be sent to a random sample of customers.
- All Program data tracking will be performed by the Program implementer and reported to the utility monthly.
- The Program evaluation process (described above) will provide an additional level of quality assurance for the Program.

Program Costs and Benefits

Proposed budget for Program delivery for 2011-2012 is detailed in Table 1-3.

Table 1-2. Measure Savings, Incentive Level, and Participation, Benefit-Cost

Measure	Annual Energy Savings (kWh) /Unit	Peak Demand Savings (kW)/ Unit	Avg. Incentive / Unit	2011 Units	2012 Units	Measure Level Societal Test Result
Refrigerator Recycling	1,242	0.15	$120/unit	4,860	4,860	4.04
Freezer Recycling	942	0.11	$120/unit	540	540	3.07

Table 1-3. Program Budgets

	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
2011	$189,000	$560,713	$59,977	$14,085	$32,951	$856,725	$1,239,078	1.9
2012	$189,000	$562,822	$60,146	$14,507	$33,059	$859,533	$1,236,270	1.9

Table 1-4. Environmental Benefits

	Annual CO2 Savings (Metric Tons)	Annual NOx Savings (Metric Tons)	Annual SOx Savings (Metric Tons)	Lifetime CO2 Savings (Metric Tons)	Lifetime NOx Savings (Metric Tons)	Lifetime SOx Savings (Metric Tons)
2011	6,411	8.65	7.51	38,464	52	45
2012	6,411	8.65	7.51	38,464	52	45

Measure Analysis Sheet

Appliance Recycling Program

Incentive Calculations
Appliance Recycling Program (Residential)
Remove Existing Secondary Refrigerator or Freezer

PROGRAM DATA	
Measure Life (yrs)*:	6
Program Life (yrs):	5
Demand AC ($/kW):	$72.41
Summer On-pk Energy AC ($/kWh):	$0.09
Summer Off-pk Energy AC ($/kWh):	$0.05
Winter On-pk Energy AC ($/kWh):	$0.06
Winter Off-pk Energy AC ($/kWh):	$0.04
Administrative Cost ($/unit)	$161.30
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
Refrigerator NTG Ratio	100%
Freezer NTG Ratio	100%

RATE DATA	
Rate:	Res
$/kW:	0.00
$/kWh, On-Peak:	$0.09954
$/kWh, Off-Peak:	$0.09954

OPERATING DATA	
On-Pk Op. Hours:	50%
Off-Pk Op. Hours:	50%
Summer Ratio:	50%
Winter Ratio:	50%
Hourly Load Factor:	4%
In-Service Rate	100%
Coincidence Factor	100%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	Removal
Cost Basis:	Removal

	DEMAND/ ENERGY SAVINGS					INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Unit Type	Annual Energy Savings (KWh)	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive ($)	Recommended Incentive %PV	PV Program Cost ($)	NPV ($)	Incr. Cost** ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
Refrigerator	1242	0.142	0.142	621	621	420	477	35	8%	281	139	120	124	1.0	0.69	90%	29%	1.7
Freezer	942	0.108	0.108	471	471	319	362	35	11%	281	38	120	94	1.3	0.91	10%	29%	1.3
Weighted Average		0.138	0.138	606	606	410	466	35	9%	281	129	120	121	1.0	0.71	100%	29%	1.7
Weighted Average Check		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Kema, "Residential Refrigerator Recycling Ninth Year Retention Study", Study ID's 546B, 563; prepared for SCE, 7/22/2004; available from Calmac web site as study # SCE0130.01
**Based on IC cost to pick up refrigerator/ freezer.

File Name: ApplianceRecycling_MAS_Res_TEP_2011_01_12

APPENDIX B:

TEP RESIDENTIAL ENERGY EFFICIENCY FINANCING PILOT PROGRAM

Program Description

Tucson Electric Power Co. ("TEP" or the "Company") has designed a proposed Energy Efficiency Residential Financing Pilot Program ("Program") to provide customers with the capital needed to make cost-effective energy efficiency upgrades to their homes. TEP believes that a two year pilot program will allow sufficient time for the Company to evaluate the Program, including participation, default rates, and overall value to customers. TEP's proposed Program elements include:

- Loan commitment of $2,000,000 per year for two years; this will provide approximately 424 loans per year based on an average $4,722 loan amount;
- Loans available only on energy efficiency measures meeting the Commission-required cost-effectiveness test;
- Low interest rates provided by a combination of an interest rate buy-down and a 10% loan loss reserve account;
- Limited customer exposure to default risk (10% of the loan commitment);
- Funding provided through an approved Demand-Side Management ("DSM") surcharge charged to residential customers;
- Affordable residential financing for energy efficient measures;
- Convenient customer access to and repayment of the financing;
- Standard finance product offering for all eligible, approved borrowers;
- Leveraged financing;
- Accurate Truth-in-Lending notifications and billing to customers provided by an experienced third party lender; and
- Community involvement in forming and marketing the Program.

TEP requests Commission direction on the level of impact for residential customers. Depending on the Commission direction, TEP proposes to increase DSM surcharge for residential customers by one of three levels during the first year of the two year pilot program.

- $2,000,000 in funding with no interest rate buy-down would require $0.0001 per kWh to fund the Program. The average annual cost to each residential customer would be $1.48;
- $2,000,000 in funding with a 2% interest rate buy-down would require $0.0002 per kWh to fund the Program. The average annual cost to each residential customer would be $2.13;
- $2,000,000 in funding with a 3% interest rate buy-down would require $0.0002 per kWh to fund the Program. The average annual cost to each residential customer would be $2.44.

Of note, UNS Gas, Inc. ("UNS Gas") (a related entity to TEP), requested a program nearly identical to the one requested herein for TEP. The UNS Gas program was approved in Arizona Corporation Commission ("Commission") Decision No. 72062 (January 6, 2011). In that decision, the Commission opted for the 2% interest rate buy-down option. Based on that decision, TEP recommends the 2% buy-down option, yet provides throughout this application all three buy-down options for the Commission's consideration.

Program Objectives and Rationale

TEP believes that the Program's financing options to help cover the costs of energy efficiency measures will improve customer participation in energy efficiency programs and expand the pool of customers that can afford to participate in those programs. Although other vendors offer financing for their own individual products, the Program's comprehensive approach to home energy upgrades cuts across several potential products and includes efficiency measures not traditionally financed, such as air and duct sealing.

Prior to designing the Program, TEP developed key objectives for the Company's implementation of a financing program. Three objectives stood out from the rest as fundamental in order for TEP to provide a financing option:

- The program design must eliminate the utility from any Truth-in-Lending Law regulation implications;
- The program must provide a reasonable amount of funds at a reasonable interest rate and with a low initial investment; and
- Energy efficiency measures that qualify for TEP financing must have met the Commission's cost-effectiveness test.

With these objectives, TEP hired Harcourt Brown Energy and Finance ("Harcourt Brown") to assist with the evaluation, negotiations, and design of the Program. TEP, with guidance from Harcourt Brown, selected a Third Party Financing model secured by a combination of a 10% loan loss reserve account and an interest rate buy-down, all funded from the DSM Surcharge, as the best program offering.

Target Market

The target market for this Program is any residential customer in TEP's service territory who owns their home. Financing is available for installation of approved and cost effective DSM energy efficiency measures.

Program Eligibility

Eligible properties include single-family (1 to 4 unit), owner-occupied homes.

Current Baseline Conditions

The primary program available for comparison is offered through Fannie Mae. Fannie Mae utilizes an unsecured loan program structured in a similar manner to TEP's. Fannie Mae's base interest rate is 14.99% compared to the 7.99% to 9.99% available through the TEP Program. The programs offered by Arizona Public Service Company ("APS") and Southwest Gas Corporation ("Southwest Gas") are expected to have base interest rates of 6.5% to 8.5%.

Products and Services

Harcourt Brown evaluated the following parameters before recommending the most beneficial program to TEP:

- sources of capital;
- interest rates;
- loan terms;
- loan types and amounts;
- risk management;
- program integration;
- ease of use;
- repayment billing; and
- equitable funding.

TEP and Harcourt Brown considered several financing models and completed discussions with numerous entities nationwide before determining the most beneficial financing model for customers. The model selected by TEP uses AFC First ("AFC" or "Lender") as the third party lender. Capital resources are provided by the Pennsylvania Treasury ("PA Treasury") with loans leveraged by a loss reserve account as well as the possibility of a small interest rate buy-down. All funding will be provided by a DSM Surcharge applied to residential customers of TEP.

The Program will offer energy efficiency loans to TEP customers who are seeking financing for the energy efficiency improvements to their homes. Loan proceeds can be used for energy efficiency measures that have been approved by the Commission.

The Program is designed to provide an equitable and comprehensive approach to the financing of energy efficiency improvements in existing homes. TEP is proposing $2,000,000 in overall loan commitments to this Program for two consecutive years as a pilot program. TEP believes the size of this loan commitment is sufficient based on the number of customers in its service territory and the limited DSM energy efficiency measures available for gas customers. In order for this Program to be viable, TEP needs Commission approval of its currently pending Existing Homes and Residential Energy Assessment Programs.

TEP evaluated the customer impact of three levels of funding, as shown in Table 1-1 below. TEP assumed an average loan size of $4,722 and a maximum term of 12 years in these calculations. Actual amounts will vary by loan size and terms.

Table 1-1. Funding Levels and Cost to Customer

TEP - Impact of Residential Financing Program with Buy-Down Options (Res Only) - Year 1					
Total Loan Amount Available (ResRate 10 Only)	*Estimated # of Loans	DSM Funding for Reserve (10%)	Buy-Down Percentage	**DSM Funding for Buy-Down	Total Program Budget (Year 1)
$2,000,000	424	$200,000	0%	$ -	$509,604
$2,000,000	424	$200,000	2%	$225,314	$734,918
$2,000,000	424	$200,000	3%	$332,889	$842,493

TEP - Impact of Residential Financing Program with Buy-Down Options (Res Only) - Year 2					
Total Loan Amount Available (ResRate 10 Only)	*Estimated # of Loans	DSM Funding for Reserve (10%)	Buy-Down Percentage	**DSM Funding for Buy-Down	***Total Program Budget (Year 2)
$2,000,000	424	$200,000	0%	$ -	$465,596
$2,000,000	424	$200,000	2%	$225,314	$690,910
$2,000,000	424	$200,000	3%	$332,889	$798,485

* Assumes average loan size $4,722

** Assumes maximum 12 year term

*** Year 2 costs reduced due to lower cost for marketing materials and contractor training

Total 2-Year DSM Budget	
No Buydown	$ 975,201
2% Buydown	$1,485,829
3% Buydown	$1,640,978

Note: TEP proposes that the DSM Surcharge necessary to fund this program be collected only from residential customers, as the loan instruments described are restricted to residential customers.

Table 1-2. Cost to Customer – Buy Down Options

TEP - Impact of Residential Financing Program with Buy-Down Options (Res Only)					
Total Program Budget	Actual kWh 2009	Surcharge Increase/ kWh	Total # of Customers EOY 2009 (Less Lifeline)	Average kWh per Customer	Average Annual Cost
$ 509,604	3,726,945,671	$ 0.0001	345,445	10,789	$ 1.48
$ 734,918	3,726,945,671	$ 0.0002	345,445	10,789	$ 2.13
$ 842,493	3,726,945,671	$ 0.0002	345,445	10,789	$ 2.44

Program Funding and Terms

The proposed Program operates as follows:

1. AFC will be the Lender that originates and services the Program loans. AFC has committed to make loans according to basic underwriting terms, including approving borrowers with a Fair Isaac Corporation ("FICO") credit score of 640 or higher. Borrowers may be granted up to 12 years repayment; though interest rates are currently to be determined, TEP has secured a verbal commitment that rates will be between 7.99% and 9.99%. Interest rates will not vary due to loan size, term, or credit score and there will be no prepayment penalty.
2. Additional terms will be contractually delineated between AFC and TEP. Final rates and availability will be determined prior to Program commencement.
3. PA Treasury will contract with AFC to purchase the Program loans from AFC. The interest rates, loan terms, underwriting criteria and other relevant characteristics of the loans that PA Treasury will purchase will be contractually delineated.
4. TEP will set aside funds through a loan loss reserve account (10% of committed loan value) and/or an interest rate buy-down account. The loss reserve agreement will be negotiated with the PA Treasury.
5. AFC's loan capital will be replenished from the proceeds of TEP's sale of Program loans to the PA Treasury, thereby enabling AFC to make new loans.
6. The PA Treasury will sell the Program loans to its investors. The proceeds from these sales will enable the PA Treasury to make additional loan purchases from AFC.
7. TEP's role in this process will be to provide the loan loss reserve account, to support lending, and potentially to buy-down interest rates. Funding will be collected through the DSM surcharge from TEP residential customers. TEP will not service or originate the loans.

Interest Rate Buy-down

The interest rate buy-down referenced above may be necessary to offer a rate competitive with those rates offered in other utility financing programs in the State. The programs offered by APS and Southwest Gas have interest rates ranging from 6.5% to 8.5%. Because the interest rate buy-down will result in an additional cost that will be covered through the DSM Surcharge, TEP seeks Commission guidance on the final product offering. As previously stated, TEP recommends the 2% buy-down option based on the Commission's decision in the UNS Gas Residential Energy Efficiency Financing Pilot Program Decision No. 72062 (January 6, 2011), yet provides the data for all three options for the Commission's consideration in this matter. The cost of the interest rate buy-down will depend on (1) the market interest rate, (2) the target interest rate, (3) the loan amounts, and (4) the loan term. Table 1-3 illustrates two potential scenarios regarding the interest rate buy-down cost on a per-loan basis. Additional details are shown in Table 1-2 above.

Table 1-3. Interest Rate Buy-Down Costs

Average Loan Size of $4,722		
Buydown %	**7-Year Term**	**12-Year Term**
0.02	322	532
0.03	479	786

Loan Terms

TEP has worked with many lenders to develop the best loan terms for its customers. Optimal repayment terms, interest rates, fees, and application processes have been at the forefront of discussions. However, TEP cannot dictate to any lender the package of terms they must offer. The terms must be negotiated and beneficial to both the lender and the customer, and meet various standards set forth by bank regulators. The loan terms available under the Program are as follows:

Table 1-4. Loan Terms, Rates and Payment Range

Financing Amount	Terms	Interest Rates	Payment Range on $4,722.00 Ave. Loan
$1,000 - $15,000 w/o Buydown	up to 144 Mos.	7.99% - 9.99%	$51 - $56
$1,000 - $15,000 w/2% Buydown	up to 144 Mos.	5.99% - 7.99%	$46 - $51
$1,000 - $15,000 w/3% Buydown	up to 144 Mos.	4.99% - 6.99%	$44 - $49

As demonstrated in Table 1-4, the payment amount based on the estimated average loan size does not fluctuate greatly between an interest rate of 4.99% and 9.99% ($44 to $56 per month). As the loan size increases to the maximum ($15,000), the payment spread widens from $139 per month to $179 per month at these same rates. TEP is looking for guidance from the Commission to decide whether or not the benefit of the payment savings to these individual customers offsets the buy-down fee charged to all residential customers. As with other DSM Programs, low-income customers will be excluded from the DSM Surcharge.

Credit Underwriting

Limited credit standards will be used by the Lender in its underwriting process. Loan approval is granted based on FICO credit scores of 640 and above, debt-to-income ratios of 50% or less, and proof of income. These lower credit scores allow far greater participation for TEP residential customers than products offered by most other lenders.

Application and Approval Process

The application and approval process is designed to be simple, easily accessible and convenient to all, as shown below.

- Customers can call a 1-800 telephone number to apply and receive loan approval; or
- Applications can be filled out during the visit with the contractor; or
- Loan applications will be available on the TEP website; and
- Loan approvals will occur within 20 minutes to 48 hours of making the application.

With the help of community-action groups as well as contractor marketing and TEP marketing, the Company believes that Program loan funds will be fully used each year. At this time, the only approved residential energy efficiency measures for the TEP territory is the high-efficiency air conditioner and heat pump exchange, duct sealing, air sealing, ceiling insulation and window film/shade screens. The anticipated participation discussed herein is based on the assumed participation in the Existing Homes Program approved by the Commission in Decision No. 72028 (December 10, 2010).

While loan sizes are likely to vary, TEP estimates that 800 customers will choose to participate in the Existing Homes Program. TEP further estimates that only a percentage of those participants will install each energy efficiency measure. Details of the TEP methodology to determine the average loan size are

demonstrated in Table 1-5. With the $2,000,000 loan commitment each year available through the Program, approximately 424 loans could be made in the service territory assuming an average loan size of $4,722. If the average loan size is smaller than this estimate, the number of loans will increase proportionately.

Table 1-5. Determination of Average Loan Size

TEP ESTIMATE OF LOAN SIZE					
Participants	800				
Category	Annual kWh	%	Total Lost Therm	Estimated Cost of Measure	Total Financing Requirement
Duct Seal	1,030	0.6	494,400	$ 935	$ 448,800
Air Seal	415	0.4	132,800	$ 370	$ 118,400
Insul & Air Seal	1,075	0.3	258,000	$1,165	$ 279,600
Equipment & Ducts	1,300	0.4	416,000	$7,700	$2,464,000
Shade Screens	1,060	0.6	508,800	$ 708	$ 339,840
Attic Insulation Only	660	0.2	105,600	$ 795	$ 127,200
TOTALS			1,915,600		$3,777,840
Average Loan Size per Customer					$4,722

Delivery Strategy, Incentive Processing and Administration

The strategy for Program delivery and administration is as follows:

- Coordination between the Lender and TEP on all fund transfers will be managed in-house by a single TEP Program Manager;
- The Program Manager will also provide overall management, marketing oversight, planning and tracking of customer and contractor participation; and
- The Program Manager will coordinate all activities necessary to develop application forms and contractor training.

Key partnering relationships will include:

- Community interest groups;
- HVAC, insulation, and air sealing contractors trained in Program procedures; and
- The Arizona Energy Office, Pima Community College, or other industry experts to provide training, education and awareness.

The Program will use contractors initially recruited for the Existing Homes Program, encouraging them to promote TEP financing when working with customers. TEP will provide an orientation of the Program which will outline Program requirements and contractors responsibilities as well as discuss reporting and data collection procedures. Contractors interested in participating in the Program must attend the orientation.

Program Marketing and Communication Strategy

TEP will provide Program marketing and customer outreach and awareness through a range of strategies including:

- Promotions on the TEP website about the benefits of purchasing high-efficiency equipment and home performance measures;
- Promotion through contractors and through community interest groups;
- Providing information through TEP's customer care center;
- Developing marketing pieces including brochures and other collateral pieces to promote the benefits of qualifying equipment, air sealing and duct sealing, and the financing program available to fund those measures; and
- Training and seminars for participating trade allies and contractors.

The advertising campaign will communicate that high-efficiency systems and home performance measures will help reduce customer energy bills, provide equal or better comfort conditions, and are beneficial for the environment.

Program Implementation Schedule

The PA Treasury has assured Harcourt Brown that funding for the Program is available.TEP will continue working with AFC and the PA Treasury on preparation of contracts, agreements, and other documents as we await Commission approval. TEP estimates the Program could commence within 30 to 60 days of receiving Commission approval.

Measurement, Evaluation and Research Plan

TEP will adopt an integrated data collection strategy designed to provide a quality data resource for Program tracking, management, and evaluation. This approach will entail the following primary activities:

- Database management: As part of Program operation, TEP will request the Lender to provide the necessary data elements to populate the tracking database and provide periodic reporting; and
- Data collection: TEP will establish systems to collect the data needed to support effective Program management, transfer of funds from TEP to the loan loss reserve accounts, reporting, and evaluation.

Quality Assurance and Control

Due to the risks inherent with this type of program, quality assurance and control will be a daily function of the Program Manager. In order to protect its customer's interests, TEP plans to collect loan information prior to and after each loan closing, as it believes the best time to correct a mistake or avoid fraud is prior to the loan being funded. The information collected will not be used by TEP to approve the credit-worthiness of a borrower, but will be reviewed to: 1) ensure that each loan falls within what has been approved by the Commission; 2) that Commission-approved measures are the only items being financed by the loan; and 3) that the loan proceeds are for work being performed by an approved contractor. Additionally, each signed Promissory Note and Disbursement Sheet along with a copy of the disbursement check will be collected to verify the loan was closed and funded as presented to TEP.

Additional steps to keep a tight control on the portfolio are the requirements of daily, weekly and monthly reporting. Daily reporting will include daily viewing access to the Loan Loss Reserve Account, and notification of any defaults and charge offs. Lender will also provide TEP a past-due report on a weekly basis. Monthly reporting will be more extensive, with a full portfolio report provided to TEP. The monthly portfolio report will include the information TEP will need for accurate reporting and control of the Program. A monthly reconciled statement for the Loan Loss Reserve Account will also be required.

Program Costs and Benefits

Three possible budgets are detailed in Table 1-6 Potential budgets depend on whether or not a buy-down approach is used. An estimate of lost revenue resulting from installation of energy efficiency measures installed as a result of the Program has been included as a component of the Annual Budget.

Table 1-6. Two Year Pilot Program Budget

ALL CALCULATIONS ASSUME AVERAGE LOAN SIZE $4,722 AND TERMS 12 YEARS			
Description at $2,000,000 Loan Commitment - 0% Buy-Down	2011	2012	Total
Loan Loss Reserve Amount	$ 200,000	$200,000	$400,000
DSM Funds for Interest Buy-Down	$ 0	$ 0	$ 0
Loss Default Recovery Expected 2023 @ 3% of 2011 commitment	$ 0	$ 0	$ 0
TEP Internal Administration 1/3 FTE	$40,000	$41,200	$81,200
Reporting	$10,000	$10,300	$20,300
Marketing Materials	$50,000	$25,000	$75,000
Joint Utility Coordination Transfers	$50,000	$50,000	$100,000
Contractor Training Classes	$25,000	$10,000	$35,000
TEP Loss Revenue Recovery	$60,847	$60,847	$121,695
Budget Total	$435,847	$397,347	$833,195
Includes Estimated Lost Revenue for $2,000,000 Residential Loans			

Description at $2,000,000 Loan Commitment - 2% Buy-Down	2011	2012	Total
Loan Loss Reserve Amount	$200,000	$200,000	$400,000
DSM Funds for Interest Buy-Down	$225,314	$225,314	$450,628
Loss Default Recovery Expected 2023 @ 3% of 2011 commitment	$ -	$ -	$ -
TEP Internal Administration 1/3 FTE	$ 40,000	$41,200	$81,200
Reporting	$10,000	$10,300	$20,300
Marketing Materials	$50,000	$ 25,000	$75,000
Joint Utility Coordination Transfers	$50,000	$50,000	$100,000
Contractor Training Classes	$25,000	$10,000	$35,000
TEP Loss Revenue Recovery	$60,847	$60,847	$121,695
Budget Total	$661,161	$622,661	$1,283,823
Includes Estimated Lost Revenue for $2,000,000 Residential Loans			

Description at $2,000,000 Loan Commitment - 3% Buy-Down	2011	2012	Total
Loan Loss Reserve Amount	$200,000	$200,000	$400,000
DSM Funds for Interest Buy-Down	$332,889	$332,889	$665,777
Loss Default Recovery Expected 2023 @ 3% of 2011 commitment	$ -	$ -	$ -
TEP Internal Administration 1/3 FTE	$40,000	$41,200	$81,200
Reporting	$10,000	$10,300	$20,300
Marketing Materials	$50,000	$25,000	$75,000
Joint Utility Coordination Transfers	$50,000	$50,000	$100,000
Contractor Training Classes	$25,000	$10,000	$35,000
TEP Loss Revenue Recovery	$60,847	$60,847	$121,695
Budget Total	$768,736	$730,236	$1,498,972
Includes Estimated Lost Revenue for $2,000,000 Residential Loans			

Upon maturity of the first set of loans (maximum of 12 years into the Program), the amount collected through the DSM surcharge for the next year will be reduced. At that point, the loan loss reserve account associated with the loans from the first year will be returned to the Program. The amount returned will equal the initial amount funded into the loan loss reserve account, plus interest accrued on the account, less any loan losses sustained.

There is no direct benefit or savings from a residential financing program, but the total DSM Portfolio Cost for TEP will increase as a result of offering the Program. However the indirect benefit and savings is measured at the program level where individual energy efficiency measures are included. TEP believes the availability of financing for the Existing Homes Program will increase participation, and thus increase the resulting societal benefits and savings reported in the program.

To compare the estimated annual savings to the estimated annual payments for the three buy-down scenarios (no buy-down, 2% buy-down and 3% buy-down) TEP provided examples of the customer benefit and savings from two likely scenarios from participation in the Existing Homes Program. This information is included in Table 1-7. As set forth in Example 1 of Table 1-7, anticipated savings would be less than estimated loan payments using a 2% or 3% buy-down. However, Example 2 demonstrates that with a lower loan size, the savings would be greater than the annual loan payments. This example demonstrates how the Program could result in cost savings to some customers, but that TEP cannot guarantee cost savings to all customers.

According to Commission Staff, societal cost tests are not applicable to a residential financing program.

Table 1-7. Examples of Estimated Savings, Costs and Payments

Category	Annual kWh Savings	Annual Customer Savings $0.10/kWh	Estimated Job Cost
Duct Seal	1030	$103	$935
Air Seal	415	$42	$370
Insul & Air Seal	1075	$108	$1,165
Equipment & Ducts	1300	$130	$7,700
Shade Screens	1060	$106	$708
Attic Insulation Only	660	$66	$795
TOTALS			

Example 1:

Customer Chooses Envelope AND Efficient Equipment	Annual kWh Savings	Annual Customer Savings @$0.10/kWh	Estimated Job Cost	Annual Pmt 12 Year 0%	Annual Pmt 12 Year 2%	Annual Pmt 12 Year 3%
Equipment & Ducts	1,300	$130	$7,700			
Insulation & Air Sealing	1,075	$108	$1,165			
Totals	2,375	$238	$8,865	$1,262	$1,149	$1,104

Example 2:

Customer Chooses Envelope AND Efficient Equipment	Annual kWh Savings	Annual Customer Savings @$0.10/kWh	Estimated Job Cost	Annual Pmt 12 Year 0%	Annual Pmt 12 Year 2%	Annual Pmt 12 Year 3%
Duct Sealing Only	1,030	$103	$935			
Insulation & Air Sealing	1,075	$108	$1,165			
Totals	2,105	$211	$2,100	$299	$272	$261

APPENDIX C:

TEP ENERGY CODES ENHANCEMENT PROGRAM

Program Description

Building energy codes are widely recognized as a relatively simple, cost-effective means of achieving substantial energy savings that will accrue over the lifetime of new and renovated buildings. However, barriers to the effective implementation of improved building energy codes in Arizona exist. Tucson Electric Power Company ("TEP" or "Company") believes the Energy Codes Enhancements Program ("ECEP" or "Program") will reduce energy consumption in its service territory and help improve compliance with existing building energy codes.

Program Objectives and Rationale

The objective of the ECEP is to increase energy savings in new construction and renovated buildings in both the residential and commercial sectors through efforts to: 1) improve levels of compliance with existing building energy codes, and 2) support and inform periodic energy code updates as warranted by changing market conditions.

As a "home rule" state, building codes vary greatly across local jurisdictions. Many code officials lack the time, knowledge and resources necessary to effectively enforce existing codes, and to stay current on market trends that may warrant gradual code updates over time. These challenges are particularly pronounced during current economic conditions. Building design and construction professionals also may be confused about certain code requirements and could likely benefit from additional education and training.

In jurisdictions that currently lack a building code of any sort, public officials could benefit from information and assistance in developing and advocating the adoption of a building code.

Following is a list of the primary barriers in this market and the program elements addressing those barriers:

Table 1-1. Market Barriers and Program Elements

Market Barrier	Program Element
▪ Lack of knowledge and resources to facilitate compliance with existing codes	▪ Participation on committees and collaboration with relevant stakeholders to promote exchange of information
▪ Inconsistency in codes across the state	▪ Trainings for code officials and the building community
▪ Lack of resources to advocate for adoption of new codes	▪ Advocacy in support of adopting new codes, as appropriate

Target Market

Program staff will collaborate with: 1) local entities responsible for energy code compliance and enforcement, and approving code changes (e.g., public officials, committees, city councils, etc.), and 2) regional and national organizations that track market trends and can inform provide insight into best practices for energy code improvements and enforcement. Trainings to promote code compliance would target local code officials, building design professionals (e.g., engineers, architects and specifiers, builders and contractors.)

Program Eligibility

A calculation methodology to apportion energy savings attribution from energy codes will be developed that satisfies the Arizona Corporation Commission ("Commission") requirements.[1]

Current Baseline Conditions

Arizona is a "home rule" state with no mandatory state-wide energy efficiency code. However, many counties and cities have adopted an energy efficiency code, most often the 2006 International Energy Conservation Code ("IECC").

Products and Services

The ECEP will strive to maximize energy savings through adherence to local building energy codes across the local jurisdictions within the utility service area. The program will employ a variety of tactics aimed at: 1) improving levels of compliance with existing building energy codes, and 2) supporting and informing periodic updates to energy codes as warranted by changing market conditions. Specific program activities will depend on the market needs expressed by local code officials. Activities are likely to include a combination of efforts to:

- Better prepare code officials and building professionals to adhere to existing standards;
- Provide data and market insight to document the specific local benefits of code enforcement, and inform energy code changes over time;
- Ensure utility incentive programs align well with local energy codes;
- Collaborate with relevant stakeholders to help build a more robust community working to advance strong and effective building energy codes across the local jurisdictions within TEP, UNSE and UNSG; and
- Advocate for energy code updates over time.

Delivery Strategy, Incentive Processing and Administration

Program activities will be selected based on research into effective approaches implemented in leading jurisdictions (e.g., California and Massachusetts), as well as feedback from local code officials, and municipal leaders in locations that currently lack building codes. Once program activities are selected, program staff will maintain a consistent level of activity and engagement with relevant stakeholders.

Key elements of the implementation strategy may include:

- Supporting local energy code adoption through participation in energy code adoption committees for both minimum energy code requirements, and voluntary "stretch codes" (such as LEED and other sustainable/green codes
- Providing technical support to code adoption committees (e.g., benefit cost analysis of potential code updates, research and information sharing related to the market penetration of particular energy efficient technologies)
- Providing public testimony in support of code adoption before city councils
- Ensuring that ongoing DSM programs align well with energy code requirements

[1] Arizona Corporation Commission; Docket No. RE-00000C-09-0427, Decision No. 71436 (December 16, 2009), p. 8.

- Providing funding and/or other resources to better equip local code agencies to enforce and improve energy code compliance over time. Program staff may select a set of jurisdictions to receive a higher level of assistance on an annual basis. This will help increase the level of impact on those target communities with a high likelihood for producing the greatest amount of incremental savings. Support provided to these target jurisdictions may include activities such as:

  - » classroom training sessions for code officials, and building professionals (architects, engineers, specifiers, builders and contractors);
  - » brown bag training sessions for code officials, and building professionals a their places of business via a circuit rider;
  - » field training sessions for code officials and building professionals;
  - » purchasing energy code books for officials that currently lack such resources;
  - » supporting energy code-related certifications for code officials;
  - » conducting energy code compliance assessments by 2017 to fulfill ARRA requirements to demonstrate 90% energy code compliance (this could be done in coordination with energy efficiency program Measurement, Evaluation, and Research ("MER") activities); and
  - » Collaborating with the Southwest Energy Efficiency Project and other regional groups to support research on and adoption of building codes and equipment standards.

TEP staff will be responsible for administering the program. Staff required to implement the program include one-quarter of a full-time-equivalent ("FTE") staff person at a middle management level, and one-quarter FTE junior staff person. Responsibilities for these staff will include coordination, planning and implementation of all program activities. MER activities would be conducted by a third-party contractor.

Program Marketing and Communication Strategy

Key elements of the marketing strategy will include:

- Direct outreach to local code officials and to other local officials drawing on industry association contact lists (e.g., the International Code Council), and networks of municipal leaders;
- Participation in committees conducting activities related to building code enhancement;
- Communications with other TEP energy efficiency program implementation staff in order to cross-market across programs; and
- Easy-to-locate information posted on TEP websites.

Program Implementation Schedule

Upon Program approval by the Commission, TEP plans to immediately engage stakeholders in assessing code requirements and compliance status, as well as indentifying best avenues for code enhancement throughout the service territory.

Measurement, Evaluation, and Research Plan

All evaluation activities will be conducted by TEP's MER contractor. An integrated evaluation approach will be taken that includes the following components:

» addressing evaluation at the onset of Program design and collecting evaluation data as part of Program administration;

» assessing and documenting baseline conditions;

» establishing tracking metrics, especially baseline code compliance per major local jurisdiction;

» developing and refining deemed savings methodologies for estimating program savings from code enhancement and adoption activities; and

» conducting primary and secondary research as part of the impact and process evaluations.

The overall goal of the impact evaluation will be to develop savings methodologies for estimating savings from more stringent code adoption and increased code compliance rates in both the residential and commercial sectors.

Process related evaluation activities will review utility code promotion implementation strategies and seek to identify ways to improve program delivery and market adoption of more aggressive residential and commercial codes. Self-report surveys with key stakeholders (code officials, builders, architects, etc.) as well as on-site verification of a sample of new construction projects will be used to assess program awareness, barriers to participation, participant satisfaction, and other process efficiency issues. Interviews will also be conducted with Program managers and the implementation contractor. These surveys will be enhanced by collecting market data and assessing trends. Wherever it is practical and appropriate, evaluation activities will be conducted in conjunction with other utilities and agencies in the state to efficiently utilize resources and help ensure consistency.

Quality Assurance and Control

- The codes enhancement program will seek to be an additional informational resource to assist code officials, architects, builders, and other stakeholders with technical guidance with respect to code adoption and compliance activities.
- Utility staff will seek to further strengthen existing contacts with code officials, builders, architects to advance code upgrades and greater levels of code compliance, which will include occasional on-site verification visits, especially for those projects receiving utility incentives for efficiency upgrades.
- For any utility sponsored code training classes, participant satisfaction surveys will be issued as a standard feature of the class.
- All Program data tracking will be performed by the Program implementer and reported to the utility monthly.
- The Program evaluation process (described above) will provide an additional level of quality assurance for the Program.

Program Costs and Benefits

Table 1-2. Program Budgets

	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
2011	$0	$41,250	$6,188	$0	$1,898	$49,335	0	N/A
2012	$0	$56,180	$8,427	$7,979	$2,903	$75,490	0	N/A

Energy savings from this program will be determined after the impact evaluation is approved and completed. The overall goal of the impact evaluation will be to develop savings methodologies for estimating savings from more stringent code adoption and increased code compliance rates in both the residential and commercial sectors.

APPENDIX D:

TEP MULTI-FAMILY HOUSING EFFICIENCY PROGRAM

Program Description

Multi Family housing has traditionally been a difficult sector to reach for utility Demand-Side Management ("DSM") programs. These buildings represent huge efficiency potential and also substantial barriers to implementation. The major barriers include split incentives, lack of capital, and lack of knowledge/awareness of the benefits of energy efficiency improvements. Further complicating matters, multifamily housing is defined differently by different entities. Properties with 2-4 dwelling units typically fall under residential financing guidelines and the decisions makers are usually individuals. Larger properties with 5 dwelling units or more typically fall under commercial lending guidelines and decision-makers (at least for larger complexes) are typically corporate, institutional, or trusts (e.g., Real Estate Investment Trusts). As such, the decision making process and access to capital varies between these two market segments. With this distinction in mind, the 2-4 unit market segment can be best served by the residential Home Performance with ENERGY STAR® Program, and the 5+ Multifamily Housing market segment will be served by the new commercial Multifamily Efficiency Program.

In order to encourage energy efficiency upgrades in new construction, major renovation and rehabilitation projects, as well as, energy efficiency retrofits of existing structures, the program will initially offer the following delivery tracks:

- A direct installation of selected low cost energy efficiency improvements in existing complexes.
- Common area energy efficiency improvements in existing complexes will be handled through the Small Business Direct Install Existing Facilities Program.

As the program develops and matures, Tucson Electric Power Company ("TEP" or "Company") will examine a third track for encouraging more comprehensive dwelling unit energy efficiency improvements in existing complexes that are not part of major renovation/rehabilitation projects.

With these delivery options to choose from property owners and managers have a variety of solutions to fit their needs.

Program Objectives and Rationale

Other utilities around the country are offering energy efficiency programs in an effort to capture some of the savings potential in the multifamily housing market including San Diego Gas and Electric, Southern California Edison, Pacific Gas and Electric, Austin Energy, Puget Sound Energy and others. Many of these programs offer similar incentives and delivery options to the program proposed by TEP, and the major renovation/rehabilitation track is well aligned with the ENERGY STAR® Multifamily Homes program. By delivering this program with a focus on reducing key market barriers and targeting key decision makers, this program can contribute significantly to the achievement of TEP's DSM program energy savings goals by lowering energy usage in multifamily housing complexes.

The objectives of the program are to:

- Reduce peak demand and overall energy consumption in the multifamily housing market segment
- Promote energy efficiency retrofits of both dwelling units and common areas in this market segment
- Increase overall awareness about the importance and benefits of energy efficiency improvements to the landlord and property ownership community
- Help meet the energy savings targets of the TEP DSM program portfolio

Target Market

The Multifamily Housing Efficiency Program ("Program") will be promoted to residential rental properties with five or more units. The focus of marketing, outreach and incentives will be the property owners or managers. A primary emphasis will be placed on larger and older, less efficient complexes. This Program is being designed to mimic the Arizona Public Service Company ('APS") program as many of the large rental property owners are the same in Phoenix as in Tucson

Program Eligibility

All existing multifamily housing complexes and new construction projects within TEP service territory with 5 dwelling units or more are eligible for the program. The program promotes energy efficiency improvements in both dwelling units and common areas. Eligible projects include new construction, acquisition renovation and rehabilitation projects, and energy efficiency retrofits to existing facilities. Eligible facilities include apartment complexes, and common areas of apartment and condominium complexes. All TEP customers who are property owners of existing residential multifamily complexes or developers of new complexes with five or more dwelling units are eligible for the program.

Current Baseline Conditions

The energy efficiency potential in the multifamily housing market remains largely untapped and represents significant efficiency potential for the TEP program portfolio. Due to various market barriers, such as split incentives, capital constraints, and lack of awareness, energy efficiency improvements typically fall far below other types of improvements on the priority list. Thus, multifamily housing units are often very energy inefficient. Although the current rebate programs offer some opportunities for energy efficiency improvements in this market, primarily through the Consumer Products and Residential HVAC Programs, there is not a comprehensive offering that addresses the unique needs of this market. Through the direct installation, and renovation/rehabilitation implementation framework, this program seeks to fill this important gap in the TEP program portfolio and provide substantial energy savings.

Products and Services

This program will be delivered a direct installation approach in order to encourage energy efficiency upgrades in existing complexes:

- Delivery to be through a direct installation effort, focusing on the implementation of CFL lighting, faucet aerators, and low flow showerheads in existing dwelling units. The installation will be no cost to the owner, and the program will pay the full cost of product installation. The installation can be completed either through the facility's existing maintenance or management personnel or via a program authorized installation contractor. Common area energy efficiency improvements in existing complexes will be handled through the Solutions For Business Existing Facilities Program.

As the program develops and matures, TEP will examine a third track for encouraging more comprehensive dwelling unit energy efficiency improvements in existing complexes that are not part of major renovation/rehabilitation projects.

Program Marketing and Communication Strategy

Marketing and communications strategies will include notifying apartment managers and owners through updates to website; local newspapers and radio; bill messages and bill inserts; training seminars; call center on-hold messages; direct mail promotion; outreach to rental housing industry associations; and work with contractors and industry specialists.

Program Implementation Schedule

To be implemented beginning in 2012

Delivery Strategy Incentive Processing, and Administration

The direct installation and rehabilitation/new construction components of the program will be delivered by an implementation contractor. Installation contractors will be managed and quality assurance will be maintained by the implementation contractor.

Measurement Evaluation and Research Plan

The Measurement, Evaluation, and Research ("MER") team will develop a MER research plan and conduct annual evaluation research on the achievements of this program.

Quality Assurance and Control

On-site inspections of at least 10% of all participating facilities will be made by the implementation contractors.

Program Costs and Benefits

Table 1-1. Measure Savings, Incentive Level, and Participation, Benefit-Cost

Measure Name	Annual Energy Savings (kWh) /Unit	Peak Demand Savings (kW)/ Unit	Avg. Incentive / Unit	2011 Units	2012 Units	Measure Level Societal Test Result
ES Integral CFL	139	0.005	$2/bulb	-	6,250	21.55
Low Flow Showerheads – Electric Only	256	0.03	$40/shower	-	625	3.56
Faucet Aerators – Electric Only	77	0.01	$2/faucet	-	625	20.10

Table 1-2. Program Budgets

	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
2011	$0	$0	$0	$0	$0	$0	$0	N/A
2012	$40,940	$94,234	$13,518	$14,507	$6,528	$169,738	$260,777	2.5

Table 1-3. Environmental Benefits

	Annual CO2 Savings (Metric Tons)	Annual NOx Savings (Metric Tons)	Annual SOx Savings (Metric Tons)	Lifetime CO2 Savings (Metric Tons)	Lifetime NOx Savings (Metric Tons)	Lifetime SOx Savings (Metric Tons)
2011	-	-	-	-	-	-
2012	1,058	-	-	-	-	-

Resources

1. San Diego Gas and Electric- http://www.sdge.com/documents/residential/2009applicationmultifamily.pdf

2. Southern California Edison - http://www.sce.com/NR/rdonlyres/49780CB4-30CB-4E03-9DF0-586B0AD6DEDF/0/2009_MultifamilyRebateApp.pdf

3. Southern California Edison. Multifamily Energy Efficiency Rebate Program. Program 2502, 2006.

4. Pacific Gas and Electric Company- http://www.pge.com/includes/docs/pdfs/shared/saveenergymoney/rebates/08_residential_appliance.pdf

5. U.S. EPS ENERGY STAR® Program - http://www.energystar.gov/index.cfm?c=multifam_housing.bus_multifam_housing

6. Austin Energy - http://www.austinenergy.com/Energy%20Efficiency/Programs/Rebates/Commercial/Multi-Family%20Properties/index.htm

7. *Puget Sound Energy* http://www.pse.com/solutions/forbusiness/Pages/comMulifamilyWeather.aspx

Measure Analysis Sheets

Incentive Calculations
Energy Efficient Aerators

Multi-Family DI

PROGRAM DATA	
Kitchen Faucet Aerator Measure Life*:	10
Bathroom Kitchen Faucet Aerator Measure Life*:	10
Program Life (yrs):	5
Kitchen Faucet Aerator Demand AC ($/kW):	$77.23
Kitchen Faucet Aerator Summer On-pk Energy AC ($/kWh):	$0.10
Kitchen Faucet Aerator Summer Off-pk Energy AC ($/kWh):	$0.05
Kitchen Faucet Aerator Winter On-pk Energy AC ($/kWh):	$0.06
Kitchen Faucet Aerator Winter Off-pk Energy AC ($/kWh):	$0.04
Bathroom Faucet Aerator Demand AC ($/kW):	$77.23
Bathroom Faucet Aerator Summer On-pk Energy AC ($/kWh):	$0.10
Bathroom Faucet Aerator Summer Off-pk Energy AC ($/kWh):	$0.05
Bathroom Faucet Aerator Winter On-pk Energy AC ($/kWh):	$0.06
Bathroom Faucet Aerator Winter Off-pk Energy AC ($/kWh):	$0.04
Kitchen Faucet Aerator Gas AC ($/therm):	$0.78
Bathroom Faucet Aerator Gas AC ($/therm):	$0.78
Administrative Cost:	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	0.00
$/kWh, On-Peak:	$0.10
$/kWh, Off-Peak:	$0.10

OPERATING DATA	
Faucet Aerator On-Pk Op. Ratio:	30%
Faucet Aerator Off-Pk Op. Ratio:	70%
Summer Ratio:	50%
Winter Ratio:	50%
Faucet Aerator Coincidence Factor:	80%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Margin:	0%
Application	Retrofit
Cost Basis:	Full Install

	DEMAND/ ENERGY SAVINGS						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Unit Type	Annual Energy Savings (KWh)	Non Coin Demand Savings (kW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	Gas Energy Savings (Therms)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** % PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback w/o Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factors (%)	(%)	BC Ratio
1.5 GPM Kitchen Faucet Aerator	100	0.021	0.017	30	71	0	52	63	2.42	5%	2	49	2.42	10.00	0.2	0.00	50%	100%	25.9
1.5 GPM Bathroom Faucet Aerator	54	0.011	0.009	16	38	0	28	34	2.42	9%	2	25	2.42	5.39	0.4	0.00	50%	100%	13.9
Weighted Average	77	0.016	0.013	23	54	0	40	48	2.42	7%	2	37	2.42	7.69	0.3	0.00	100%	100%	19.[illegible]

*DEER 2008.
**Incentive based on 2011 UES Program Planning.

File Name: Aerators_MAS_MultiFamily_TEP_2010_12_09

Multi-Family DI

Incentive Calculations
ES Integral CFL

PROGRAM DATA	
Measure Life (yrs)**:	6
Program Life (yrs):	5
Demand AC ($/ kW):	72.41
Summer On-pk Energy AC ($/ kWh):	0.09
Summer Off-pk Energy AC ($/ kWh):	0.05
Winter On-pk Energy AC ($/ kWh):	0.06
Winter Off-pk Energy AC ($/ kWh):	0.04
Program Admin. Costs ($/ bulb):	NA
Discount Rate:	8.03%
Social Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/ kW:	0.00
$/ kWh, On-Peak:	0.10
$/ kWh, Off-Peak:	0.10

OPERATING DATA	
On-Pk Op. Hours:	1,657
Off-Pk Op. Hours:	1,215
Total Hours:	2,872
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor***:	0.08
HVAC Interaction Factor (Demand)*:	0.41
HVAC Interaction Factor (Energy)*:	0.13

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
Line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

DEMAND/ ENERGY SAVINGS							INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	%Incent	Socie
Fixture Type	Inc. Fixture Watts	CFL Fixture Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
Screw In	40	9	0.033	0.003	44	32	24	27	2	8%	2	22	2	8	0.2	0.0	14%	100%	14.9
	60	14	0.049	0.004	65	47	36	41	2	6%	2	34	2	11	0.2	0.0	19%	100%	18.7
	60	15	0.048	0.004	63	46	35	40	2	6%	2	33	2	11	0.2	0.0	10%	100%	18.3
	75	18	0.060	0.005	80	59	45	51	3	6%	3	42	3	14	0.2	0.0	3%	100%	19.1
	75	20	0.058	0.005	77	57	43	49	3	6%	3	40	3	13	0.2	0.0	11%	100%	18.5
	100	23	0.081	0.007	108	79	60	68	2	4%	2	58	2	19	0.1	0.0	10%	100%	28.0
	100	26	0.078	0.006	104	76	58	66	2	4%	2	55	2	18	0.1	0.0	2%	100%	26.9
	100	27	0.077	0.006	103	75	57	65	2	4%	2	55	2	18	0.1	0.0	32%	100%	26.5
Weighted Average			0.061	0.005	80	59	45	51	2	5%	2	42	2	14	0.18	0.00	100%	100%	22.0
Weighted Average Check			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*HVAC Interaction Factors based on 2010 MER Report.
**Measure Life and Incentive based on 2011 UES Program Planning.
***Coincidence Factor based on Building America Performance Analysis and Navigant Load Shape study.

File Name: ScrewInCFL_MAS_MultiFamily_TEP_2011_01_12

Appendix D

Incentive Calculations

Energy Efficient Showerheads

Multi-Family DI

PROGRAM DATA	
Showerhead Measure Life*:	10
Program Life (yrs):	5
Showerhead Demand AC ($/ kW):	$77.23
Showerhead Summer On-pk Energy AC ($/ kWh):	$0.10
Showerhead Summer Off-pk Energy AC ($/ kWh):	$0.05
Showerhead Winter On-pk Energy AC ($/ kWh):	$0.06
Showerhead Winter Off-pk Energy AC ($/ kWh):	$0.04
Showerhead Gas AC ($/ therm):	$0.78
Administrative Cost:	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/ kW:	0.00
$/ kWh, On-Peak:	$0.10
$/ kWh, Off-Peak:	$0.10

OPERATING DATA	
Showerhead On-Pk Op. Ratio:	20%
Showerhead Off-Pk Op. Ratio:	80%
Summer Ratio:	50%
Winter Ratio:	50%
Showerhead Coincidence Factor:	31%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Margin:	0%
Application	Retrofit
Cost Basis:	Full Install

	DEMAND/ ENERGY SAVINGS						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Unit Type	Annual Energy Savings (KWh)	Non Coin Demand Savings (kW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	Gas Energy Savings (Therms)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factors (%)	(%)	BC Ratio
1.5 GPM Showerhead	256	0.082	0.025	50	206	0	117	141	40	34%	40	77	40	25	1.6	0.0	100%	100%	3.5
Weighted Average	256	0.082	0.025	50	206	0	117	141	40	34%	40	77	40	25	1.6	0.0	100%	100%	3.5

*DEER 2008.

**Incentive based on 2011 UES Program Planning.

File Name: Showerheads_MAS_MultiFamily_TEP_2010_12_09

APPENDIX E:

TEP BID FOR EFFICIENCY PILOT PROGRAM

Appendix E

Program Description

Tucson Electric Power Company's ("TEP" or "Company") Bid for Efficiency Pilot Program ("Pilot" or "Program") is designed to take an innovative approach to energy efficiency ("EE") by using elements of competition and the potential for high rewards to enhance customer interest. The Bid for Efficiency ("BFE") concept involves the following steps: 1) customers or project sponsors develop projects aimed at aggregating savings ; 2) applicants submit bids identifying projected energy savings and specifying the requested incentive in $/kWh; 3) TEP selects winning applicants based on specified criteria. The BFE concept is an innovative approach that is being successfully deployed in other jurisdictions. There are several market specific conditions that will determine the effectiveness for TEP and so TEP is proposing the BFE as a two year pilot program.

BFE participants and project sponsors may include commercial customers, ESCOs or other aggregators who organize proposals that involve multiple sites. The Pilot addresses customer market barriers such as small savings levels at multiple sites, longer payback periods and organizing implementation contractors and it offers a simplified application process. Results will be verified through Measurement and Verification ("M&V") activity.

Program Objectives and Rationale

BFE encourages customers and project sponsors to think holistically regarding energy systems, and to develop projects designed to optimize system energy use rather than considering the energy usage of each individual piece of equipment. Customers or project sponsors develop their project and then bid competitively for incentives within broad program guidelines developed by TEP.

By encouraging a systems approach to energy efficiency, the Pilot would provide an incentive for participants to use potentially multiple EE approaches at one or several sites simultaneously. TEP will encourage customers to think outside the box in submitting bids for EE projects. TEP's implementation goals for the Program are as follows:

- Ensure projects are submitted, approved, implemented and verified in a timely manner;
- Allow each project to be customer-driven; responsibility will be placed on customer (or project sponsor) to select appropriate trade and professional allies to design and implement the project and to prepare the incentive application;
- Encourage implementation of multi-measures for comprehensive projects.
- Encourage aggregated applications that involve implementation at multiple sites.

Target Market

Initially, the Pilot's outreach will focus on market segments with significant savings potential, unique load or energy savings characteristics, and those that require specialized delivery or support services. The target market consists primarily of larger customers and customer groups that may include grocery stores, convenience stores, or data centers, business sectors that have historically been hard to reach.

Electric loads may be aggregated among multiple facilities to meet the kWh threshold. The minimum target electric energy reduction amount per proposal is 200,000 kWh in first-year savings.

Program Eligibility

Any entity, customer, or project sponsor meeting the application requirements of achieving the minimum target electric energy reduction amount per proposal of 200,000 kWh in first-year savings may participate. Eligible project sponsors may include, but are not limited to TEP customers, Energy Service Companies, and engineering firms. Any third-party project sponsor must submit their application with the consent and support of the indentified TEP customer.

To provide participants maximum flexibility in identifying potential projects, the Program will not explicitly specify eligible measures. However, measures must meet the following requirements:

- Produce a measurable and verifiable reduction in energy consumption;
- Produce savings through an increase in energy efficiency or better utilization of energy through improved production equipment or controls;
- Be installed in a retrofit application;
- Have a useful life of five years or greater; and
- Prove cost-effective using the Societal Cost Test (applies to total project including all measures).

Examples of eligible measures are listed in the following table. Project sponsors are free to propose measures not included in the table, as long as the above requirements are met.

Table 1-1. Examples of Potentially-Eligible Measures

• Replacing motors with NEMA Premium® efficiency motors
• Variable-speed drive installations
• Lighting system upgrades
• Compressed air system improvements
• Energy management and control systems
• HVAC system improvements
• Chiller and refrigeration system improvements
• Heat recovery systems
• Efficient transformers
• Process changes that improve energy efficiency
• Industrial heat pumps
• Control upgrades resulting in improved energy efficiency

Current Baseline Conditions

Programs similar to the one proposed have been offered by other utilities including Mid-American Company, Iowa; San Diego Gas & Electric, California; WPPI Energy, Wisconsin; and Xcel Energy, Colorado and Minnesota. Experiences of those utilities to date indicate that the BIF concept has a high degree of effectiveness in producing energy savings.

Products and Services

The key "product" offered by the Program is a performance-based incentive offered to winning bidders. TEP will market the Program to customers and trade allies and will select winning bidders on a quarterly basis. TEP will provide pre- and post-installation metering. The sequence of implementation activities is presented in the following section.

Delivery Strategy, Incentive Processing, and Administration

The following implementation process is proposed for the program:

1. TEP, and or its implementation contractor, will advertise Bid for Efficiency Pilot to customers and trade allies.
2. Customers/trade allies will submit bids for their EE projects.
3. TEP/IC will evaluate projects and make awards.
4. TEP/IC will perform pre-installation metering.
5. Customer will implement proposed project.
6. TEP will pay 50% of the incentive amount prior to installation.
7. TEP/IC will perform post-installation metering.
8. TEP will pay the remaining incentive amount based on actual M&V energy savings (based on first year of operation).

Program Marketing and Communication Strategy

TEP will promote the Bid for Efficiency Pilot Program through direct promotion to key customers and aggregators. TEP, and/or its implementation contractor, also may conduct informational meetings with potential participants and project sponsors to explain the program rules and encourage participation.

Initially, program outreach will be focused on market segments with significant savings potential, unique load or energy savings characteristics and the need for specialized delivery or support services including:

- Grocery stores
- Convenience stores
- Data centers

Program Implementation Schedule

TEP proposes to implement the Program as a pilot during the 2011 through 2013 timeframe. Pilot results will be evaluated in 2013. If the market response and measure savings indicate the Program is cost effective, and achieving substantial savings, the Company will include the full program offering in its 2014 DSM Implementation Plan.

Measurement, Evaluation, and Research Plan

Upon receipt of a project's pre-installation report, the program implementation contractor will identify the appropriate M&V activities (using either the established protocols for common measures or through direct metering or billing analysis for unique projects) and assist the project sponsor in establishing the baseline prior to approving the submittal and granting permission to proceed with the installation of the measures.

Quality Assurance and Control

Pre- and post-installation metering and/or billing analysis will be required of all projects to ensure that savings estimates are in line with actual savings produced by projects. Metering activity will adhere to standard industry M&V protocols.

Program Costs and Benefits

TEP recommends a budget of $300K beginning in 2011 for Bid for Efficiency. While it is unknown exactly what types of projects participants may submit, TEP's analysis of likely energy savings projects based on an average incentive of $0.15/kWh saved results in the estimates shown in the table below. Actual results from the Pilot will be used to update these numbers as they become available.

Table 1-2. Measure Savings, Incentive Level, and Participation, Benefit-Cost

Measure Name	Annual Energy Savings (kWh) /Unit	Peak Demand Savings (kW)/ Unit	Avg. Incentive / Unit	2011 Units	2012 Units	Measure Level Societal Test Result
Bid for Efficiency	400,000	36.53	$60,000/ customer	4	6	3.16

Table 1-3. Program Budgets

	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
2011	$210,000	$34,160	$31,741	$7,042	$11,318	$294,261	$519,632	2.4
2012	$330,000	$85,253	$53,983	$14,507	$19,350	$503,092	$775,882	2.3

Table 1-4. Environmental Benefits

	Annual CO2 Savings (Metric Tons)	Annual NOx Savings (Metric Tons)	Annual SOx Savings (Metric Tons)	Lifetime CO2 Savings (Metric Tons)	Lifetime NOx Savings (Metric Tons)	Lifetime SOx Savings (Metric Tons)
2011	1,372	1.85	1.61	13,718	19	16
2012	2,156	2.91	2.52	21,556	29	25

Table 1-5. Program Cost and Savings Summary

	Per Project	Total Program
Savings versus Standard Design	20%	20%
Customer Incentive (Estimate)	$60,000	$75,000
Energy Savings per project (Estimate)	400,000 kWh	1,547,000 kWh
Non-Incentive Program Costs	$84,261	$294,261
Societal Cost-Benefit Ratio (Estimate)	3.2	2.4

Participating projects must demonstrate the capability to produce a minimum savings of 200,000 kWh during their first year of operation to be eligible for the Program. Individual projects are estimated to produce approximately 400,000 kWh of savings during their first year of operation. First-year program-wide savings are estimated to be 1,547,000 kWh.

The cost effectiveness of each project participating in the Program, and the Program as a whole will be assessed using the Societal Cost ("SC") test.

The cost effectiveness analysis requires estimation of:

- Net demand and energy savings attributable to the Program.
- Net incremental cost to the customer of completing the EE project, and of conducting quality installation and test and repair activities.
- Program administration costs; and
- The present value of Program benefits including utility avoided costs over the life of the measures.

Measure Analysis Sheets

Commercial & Industrial - Bid for Efficiency

Incentive Calculations
Bid for Efficiency

PROGRAM DATA	
Measure Life (yrs)**:	10
Program Life (yrs):	5
Demand AC ($/kW):	77.23
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Administrative Costs ($/unit):	0
IRP Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Res Ave	
$/kW:	0.00
$/kWh, On-Peak:	0.10
$/kWh, Off-Peak:	0.10

OPERATING DATA**	
Op Hours:	8,760
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	80%

OTHER FACTORS	
Line Loss Energy Factor:	9.5%
Line Loss Demand Factor:	9.5%
Capacity Reserve Factor:	0.0%
Application	RET
Cost Basis:	Full Installed

	DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal
Measure Type	Non-Coincident Demand Savings** (KW)	Coincident Demand Savings (kW)	OnPeak Energy Savings** (kWh)	OffPeak Energy Savings** (kWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive* ($)	Recommended Incentive* % PV	PV Program Cost ($)	NPV ($)	Incr. Cost** ($)	Cost Savings ($)	Payback w o/Inc. (yrs)	Payback w/Inc. (yrs)	Weighting Factor**	(%)	BC Ratio
Per Customer	45.66	36.53	200,000	200,000	206,760	250,262	60,000	29%	80,000	126,760	80,000	39,816	2.0	0.5	100%	75%	3.1
Weighted Average	45.66	36.53	200,000	200,000	206,760	250,262	60,000	29%	80,000	126,760	80,000	39,816	2.0	0.5	100%	75%	3.1

*Incentive based on 2011 UES Program Planning, $.15/kWh saved and 75% cap of incremental cost.
**Demand Savings, OnPk Off Pk Energy Savings, Operating Data, Weighting Factors, Incremental Costs, and Measure Life based on engineering assumptions based on past program data and program planning.

File Name: Bid4Eff_MAS_CI_TEP_2010_12_02

APPENDIX F:

TEP RETRO-COMMISSIONING PROGRAM

Program Description

Retro-commissioning ("RCx") involves using a systematic approach to identify building equipment or processes that are not achieving optimal performance or results in an existing facility. Buildings are not always commissioned correctly when first built. Existing buildings also tend to drift away from their design points with age, and periodic examination and resetting of those systems is required to run an efficient facilities portfolio. Once deficiencies are identified, necessary adjustments can be made to produce energy savings along with other key benefits such as improved occupant comfort. Facility improvements made in response to RCx efforts are commonly inexpensive to implement and typically offer paybacks of less than two years.

Program Objectives and Rationale

Some of the major objectives from the Program are to:

- Generate significant savings for DSM portfolio objectives by tapping into energy savings opportunities present in existing commercial and industrial facilities
- Develop relationships with commercial and industrial customers leading to other areas of participation in TEP's portfolio of DSM programs.
- Develop the RCx contractor base
- Promote efficient building operations
- Lower energy bills for the consumer
- Longer equipment service life
- Fewer service and maintenance calls

A 2009 study of retro-commissioning by Lawrence Berkeley National Labs[1] ("LBNL") looked at 561 RCx projects on existing buildings representing almost 100 million square feet of floor space. Median savings were 16 percent of the whole building energy costs. ENERGY STAR® recognizes RCx as a crucial first step in increasing energy efficiency in facilities. The Leadership in Energy & Environmental Design (LEED) certification also recognizes the value in retro-commissioning and offers points towards LEED for Existing Buildings: Operations and Maintenance ("LEED-EBOM") certification for existing building commissioning activities.

Documented benefits of RCx include, but are not limited to the following:

- Up to 15% energy savings
- Reduced occupant complaints and improved occupant comfort
- Increased equipment life
- Increased documentation
- Facility staff training

[1] "Building Commissioning A Golden Opportunity for Reducing Energy Costs and Greenhouse Gas Emissions" LBNL, July, 2009

Target Market

The Program will target large facilities who receive electric service from Tucson Electric Power Company ("TEP" or 'Company"). Large office, small office, and large retail represent the largest commercial users with lighting, cooling, and ventilation representing the largest end uses. This approach is aimed at that market of large commercial customers.

Program Eligibility

The following eligibility requirements will apply to the RCx Program:

- The Program is available to commercial and/or industrial customers of TEP; and
- For each site there must be at least one meter that is on an eligible rate schedule.

In order to qualify for the Program, a facility must meet the following criteria:

- Have 100,000 square feet or more of conditioned area; and
- Have a dedicated facility staff.

Preference will be given to facilities with central heating and cooling plants.

Current Baseline Conditions

The primary barriers to more widespread implementation of this cost effective strategy are lack of education and information by building operators, lack of qualified workforce and the upfront cost of the audit and associated equipment optimization.

Programs similar to the proposed pilot are being offered by a number of utilities across the nation with reputations for achieving success in energy efficiency program offerings. The strategy is proving to be an effective means for tapping into energy saving opportunities in existing facilities.

Products and Services

In order to maximize the benefits of the Program, the process has been broken down into phases for this program. Qualified applicants will be screened for participation prior to being accepted into the program. Selected participants will then undergo a three part RCx study.

- The first phase is centered on a basic operations and maintenance review to establish the Current Facility Requirements ("CFR") and identify operations and maintenance-related facility improvement measures. Facilities may then be accepted into the second phase of investigations that are centered on commissioning the systems to ensure that they are able to meet the CFR.
- The second phase is accomplished through functional performance testing and diagnostics of the major energy systems serving the facility.
- The final phase of the process involves optimizing the existing systems. The activities in this phase are centered on determining the potential for introducing advanced control strategies or other approaches that make full use of building system controls.

Delivery Strategy, Incentive Processing, and Administration

TEP offers will offer a streamlined application process that will be simple for applicants to complete. Customers will be able to apply for participation in the RCx Program by submitting the RCx Application on line at the TEP web site. Much of the data collection required to identify good candidates will be collected by the Program staff during the Screening Energy Audit Phase. Eligible applicants will be contacted for scheduling of the Screening Energy Audit by Program personnel, and Program staff will be available during normal business hours to facilitate the application process.

Applicants that do not meet the eligibility requirements will receive written notification explaining why the applicant doesn't qualify.

Details of each phase of the implementation process are presented below.

Screening Energy Audits

Screening Energy Audits are provided free of charge to all eligible applicants. The screening audit will provide the applicant with a basic energy audit, identifying basic equipment upgrades and control strategies that would result in energy savings for the customer. The facilities audited will also be provided with ENERGY STAR® Portfolio Manager ratings to benchmark the facility versus similar facilities in their area. The energy audit will also be used to screen applicants for participation in the RCx Program.

Operations and Maintenance Review Phase

The Operations and Maintenance ("O&M") Review Phase of the RCx study will be dedicated to performing a review of energy related operational procedures and determining the state of maintenance practices related to major equipment. The end result of this review will be a list of facility improvement measures with estimated savings and cost values. The O&M Review phase is provided at no cost to the customer.

The initial task of the O&M review will be to establish the CFR. The CFR is a guiding document that determines the parameters by which all systems will be evaluated. It is established based on input from the facilities team or owners rep regarding the key requirements that the facility must meet. Any variance between what has been identified in the CFR and the actual facility's performance is identified as a deficiency. After appropriate investigation, recommendations are made to resolve identified deficiencies in the form of facility improvement measures ("FIM"). The CFR has quantitative values for HVAC, comfort, scheduling, and air quality requirements. The CFR may also include qualitative information for facility performance and Company priorities. The CFR is intended to be a living document that is updated as needed and kept as a reference for future projects and training.

With the CFR established the commissioning team will review settings in the building automation system and established operational practices for compliance with the CFR. Deficiencies will be identified and either have an FIM established for the deficiency or be marked for further investigation in subsequent phases.

A basic maintenance review will be conducted to identify any limitations of the systems to meet the CFR due to maintenance issues. The maintenance review will identify if there are any simple repairs that can be performed to save energy. The review will also determine if the equipment is in sufficient condition to merit moving forward into the systems commissioning phase or if capital improvement should be implemented instead. Systems reviewed may include chillers, boilers, air handling units, air dampers,

pumps, fans and other equipment. The maintenance review will also identify any gaps in predictive or preventative maintenance procedures that could lead to an inability to meet the CFR.

Customers will receive a report of O&M-based FIMs. Customers will also receive training at the end of this phase on maintaining the CFR, O&M best practices and how to maintain the facility improvements identified in this phase.

Systems Commissioning Phase

The Systems Commissioning Phase of the RCx Program utilizes performance testing, trending and metering to ensure that the major energy using systems are capable of meeting the CFR. For larger systems sampling of similar components will be encouraged to contain costs. The trending capability of the building automation system in conjunction with portable data loggers will be used to verify that systems are able to operate efficiently within the CFR, and to identify FIMs that will allow the systems to do so.

Measures identified during these investigations correspond with repairs, upgrades, and capitol planning that will allow existing systems to operate within the required parameters. At the end of this phase, customers will receive training on maintaining the systems commissioning and how to maintain the identified facility improvements. The Systems Commissioning Phase commissioning services costs will be paid by the Program for selected customers who implement recommendations identified during the O&M Review phase.

Systems Optimization Phase

The Systems Optimization Phase of the RCx Program involves introducing more complex high performance building operation strategies to the current systems. This phase builds on the work done in the prior phases by introducing the cutting edge practices that have been developed for today's high performance buildings. The commissioning professionals will help the owner identify new control strategies to allow the facility to reach full potential. At the end of this phase, the customer will be provided with training on how to maintain the control strategies identified in this phase. Such strategies may include the use of alarms, and Building Automation Systems ("BAS") trending. Commissioning services for this phase are paid by the Program for selected customers who implement recommendations identified during the Systems Commissioning Phase.

Program Marketing and Communication Strategy

The Pilot will be marketed using traditional forms of media (print, web, newsletters, etc.), as well as targeted direct mail and outreach to engineering and trade associations. The TEP website will also be updated to include information and links for participation in this initiative. Program administrators and implementation contractors will also be called upon to reach out to larger customers to encourage participation.

Program Implementation Schedule

The RCx Pilot Program would begin accepting applications for participation in September 2011. Subsequent program year budgets and plans will be made available towards the end of the existing program year 2011.

Measurement, Evaluation, and Research Plan

The Measurement, Evaluation, and Research ("MER") team will develop a MER research plan and conduct annual evaluation research on the achievements of this program.

Quality Assurance and Control

Quality assurance and Control are provided at several steps throughout the program application and implementation process as outlined in the sections above. Savings verification plans are required of all applicants.

Program Costs and Benefits

Program funding is subject to limitation. As a result, only a finite number of facilities will be allowed into the Pilot.

Table 1-1. Measure Savings, Incentive Level, and Participation, Benefit-Cost

Measure	Annual Energy Savings (kWh) /Unit	Peak Demand Savings (kW)/ Unit	Avg. Incentive / Unit	2011 Units	2012 Units	Measure Level Societal Test Result
Retro-Commissioning	200,000	18.26	$22,000/100k sq ft	-	5	4.30

Table 1-2. Program Budgets

	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
2011	$0	$0	$0	$0	$0	$0	$0	N/A
2012	$110,000	$24,141	$20,121	$14,507	$6,751	$175,520	$419,165	3.0

Table 1-3. Environmental Benefits

	Annual CO2 Savings (Metric Tons)	Annual NOx Savings (Metric Tons)	Annual SOx Savings (Metric Tons)	Lifetime CO2 Savings (Metric Tons)	Lifetime NOx Savings (Metric Tons)	Lifetime SOx Savings (Metric Tons)
2011	-	-	-	-	-	-
2012	980	1.32	1.15	9,798	13	11

Measure Analysis Sheets

Incentive Calculations
Custom Measures

Commercial & Industrial - Retrocommissioning

PROGRAM DATA	
Measure Life (yrs)**:	10
Program Life (yrs):	5
Demand AC ($/kW):	77.23
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Administrative Costs ($/unit):	0
IRP Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Res Ave	
$/kW:	0.00
$/kWh, On-Peak:	0.10
$/kWh, Off-Peak:	0.10

OPERATING DATA**	
Op Hours:	8,760
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	80%

OTHER FACTORS	
Line Loss Energy Factor:	9.5%
Line Loss Demand Factor:	9.5%
Capacity Reserve Factor:	0.0%
Application	RET
Cost Basis:	Full Installed

	DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal
Measure Type	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (kW)	OnPeak Energy Savings** (kWh)	OffPeak Energy Savings** (kWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive* ($)	Recommended Incentive* % PV	PV Program Cost ($)	NPV ($)	Incr. Cost** ($)	Cost Savings ($)	Payback w o/Inc. (yrs)	Payback w /Inc. (yrs)	Weighting Factor**	(%)	BC Ratio
Per 100K sqft	22.83	18.26	100,000	100,000	103,380	125,131	22,000	21%	29,333	74,046	29,333	19,908	1.5	0.4	100%	75%	4.3
Weighted Average	22.83	18.26	100,000	100,000	103,380	125,131	22,000	21%	29,333	74,046	29,333	19,908	1.5	0.4	100%	75%	4.3

*Incentive based on 2011 UES Program Planning, $.10/kWh saved and 75% cap of incremental cost.
**OnPk Off Pk Energy Savings, Operating Data, Weighting Factors, Incremental Costs, and Measure Life based on engineering assumptions based on past program data and program planning.

File Name: Retro_MAS_CI_TEP_2010_12_02

APPENDIX G:

SCHOOL FACILITIES PROGRAM

Program Description

The Tucson Electric Power Company ("TEP") School Facilities Program ("Program") is open to participation by all existing school facilities in the TEP service territory, including charter schools. The proposed Program will utilize the same delivery method and pay incentives for the same Demand-Side Management ("DSM") measures as the existing TEP C&I Comprehensive Program, but with a separate budget reserved for schools. Incentives for the Program will also be paid at a higher level than for the Efficiency Program.

- The Program will offer incentives for a select group of retrofit and replace-on-burnout ("ROB") energy efficiency measures in existing school facilities. The efficiency measures offered include high-efficiency lighting equipment upgrades, high-efficiency HVAC equipment, lighting controls, programmable thermostats, and selected refrigeration measures.
- The direct install component will utilize an on-line proposal generation and project tracking application to reduce the transaction costs. Proposed incentives for DSM measures are identical to the incentive structure in the TEP C&I Comprehensive Program; however TEP proposes to pay up to 100% of incremental costs for schools. The Program will have a separate incentive budget of $83,787 starting in 2012 which is reserved exclusively for school use. If schools oversubscribe the budget, they will be allowed to request participation in the TEP C&I Comprehensive Program which only pays up to 85% of incremental cost.

Program Objectives and Rationale

The primary goal of the Program is to encourage schools in TEP's service territory to install energy efficiency measures in existing facilities. More specifically, the Program is designed to:

- Encourage schools to install high-efficiency lighting equipment and controls, HVAC equipment, and energy-efficient refrigeration system retrofits in their facilities. Encourage contractors to promote the Program and provide turn-key installation services to schools.
- Assure that the participation process is clear, easy to understand and simple.
- Increase the awareness and knowledge of school facility managers and other decision-makers on the benefits of high-efficiency equipment and systems.

Since 2008, participation by schools in the TEP C&I Comprehensive Program has been modest. In order to increase participation in energy efficiency retro-fits by schools, TEP has developed this Program, which proposes to fund up to 100% of installed costs while engaging the contractor community to provide turn-key services. This is a 15% increase from the 85% allowed in the TEP C&I Comprehensive Program. The Schools Program will follow the design of the TEP C&I Comprehensive Program because the direct-install concept has a proven track record of high participation and cost-effective life cycle savings for hard-to-reach markets, including schools.

Target Market

The target market for this Program is all kindergarten through twelfth grade ("K-12") public schools, including charter schools, in the TEP service territory.

Program Eligibility

Customers must receive electric service from TEP to be eligible for participation. For the purposes of this Program, school is defined as a "school entity." In the case of traditional public schools, a school entity is a public school district. In the case of a charter school, a school entity is one that has a state charter.

Current Baseline Conditions

Schools represent a market segment that has historically been underserved. This Program has been designed explicitly to increase the participation of schools in the TEP DSM programs. Incentive levels and Program structure have been customized to address and overcome market barriers.

Products and Services Provided

The Program has an upstream market incentive design that provides incentives directly to installing contractors for the installation of energy efficiency measures. More specifically, the Program offers the following products and services:

- Educational and promotional pieces designed to assist contractors with marketing the Program to schools; and
- Education and promotional efforts for schools and contractor allies on how the Program functions, what energy efficiency technologies are offered, what incentives are provided and the benefits of the measures.

The lighting measures to be included in the Program are:

- T8 retrofits – retrofit of T12 fluorescent lighting with T8 lighting.
- Screw-in compact fluorescent light ("CFL") retrofits – replacement of incandescent lamps with screw-in fluorescent lamps.
- Exit sign retrofits – retrofit of incandescent and CFL exit signs with LED or electroluminescent exit signs lighting.
- Occupancy sensors – installation of occupancy sensor controls on lighting systems.
- De-lamping – de-lamping of lower efficiency fluorescent lighting fixtures or overlit areas.
- Reduced lighting power density ("LPD") – bringing lighting levels down to appropriate levels.
- High intensity discharge ("HID") lamps – to T8 or T5.
- Standard T8 to premium T8

The HVAC measures to be included in the Program are:

- High-efficiency AC/HP – installation of high-efficiency packaged air conditioners and heat pumps.
- Programmable thermostats – replacement of standard thermostats with programmable set-back thermostats.
- Shade screens and window films to reduce solar insolation.

The Program will also utilize variable speed drive motors to optimize performance, vending miser sensors, which turn off or turn down refrigeration and lighting on vending machines when not in use, and smart strips to better control plug loads. Whole Building custom incentive applications will also be considered where appropriate. Additionally, see Table 1-1 for a summary of the incentives offered for each of the Program measures.

Table 1-1. School Facilities Efficiency Incentive Summary

LIGHTING MEASURES	COST PER FIXTURE
Replace T12 Systems & Magnetic Ballasts w/ T8 Systems & Electronic Ballasts	$55/fixture
Energy Efficient Integral Compact Fluorescent Lighting	$11/lamp
Replace Incandescent and CFL Exit Signs	$55/sign
Install Occupancy Sensors on Lighting Fixtures	$96/sensor
Daylighting controls	$751/kW base load
Hard Wire CFL	$15/bulb
HIDs to T8/T5	$96/fixture
Induction Lighting	$196/lamp
Outdoor CFL	$9/lamp
Reduced LPD	$4,472/customer
Screw in cold cathode CFL	$12/bulb
T8 to T8	$21/lamp
Delamping	$6/fixture
HVAC MEASURES	
Programmable Thermostats	$204/thermostat
High-Efficiency Packaged AC and Heat Pumps (<65,000 Btuh)	$440 to $1,321 (depending on size and SEER rating)
Shade Screens	$4/sq. ft.
Window Films	$3/sq. ft.
MOTORS	
Variable speed drives	$377/HP
PLUG LOADS	
Beverage Controls ("Vending Miser")	$199/sensor
Snack Controls ("Vending Miser")	$103/sensor
Advanced Power Strips - Load Sensor	$32/strip
Advanced Power Strips - Occupancy Sensors	$90/strip
Advanced Power Strips - Timer Plug Strip	$19/strip
WHOLE BUILDING	
Custom measures	$6,535/customer

Program Delivery Strategy, Incentive Processing, and Administration

The Program is an upstream market incentive program that will utilize contractors to provide turn-key installation services to schools. The Program will be implemented by employing the same implementation contractor that delivers the TEP C&I Comprehensive Program. Incentives will be paid directly to contractors and are designed to offset up to 100% of project installation costs. The participation process will be facilitated by an internet-based system that will provide an analysis of project savings, cost and cost savings and automated proposal preparation.

TEP will assign an in-house program manager to oversee the Program, provide guidance on program activities that is consistent with TEP's goals and customer service requirements, and provide a contact point for schools that are interested in or have concerns about the Program. The implementation contractor will be responsible for program administration, application and incentive processing, monitoring the activities of the installing contractors, participation tracking and reporting, and overall quality control and management of the delivery process. As part of the implementation plan, the implementation contractor will conduct outreach to contractors, marketing and promotion to schools, and education and training on the benefits and functioning of the program.

The installing contractors will promote the program directly to schools, provide turn-key installation services and have access to the internet processing system to prepare proposals.

Program Marketing and Communications Strategy

The marketing and communications strategy will be designed to inform schools of the availability and benefits of the Program and how they can participate. The strategy will include specific outreach to schools and to contractors who typically do retrofits in schools. An important part of the marketing plan will be content and functionality on the TEP website, which will direct schools to information about the Program. More specifically, the marketing and communications plan will include:

- Direct outreach to schools within the TEP service territory;
- Direct outreach to existing trade allies that specifically target schools for the Program;
- Website content at uesaz.com providing Program information resources, contact information, and links to other relevant service and information resources;
- Customer care representatives will be available to answer any questions regarding the Program; and
- Presentations by the Program Manager and Implementation Contractor specifically targeted to schools.

Program Implementation Schedule

The Program will be implemented immediately upon Arizona Corporation Commission approval.

Measurement, Evaluation, and Research

TEP will adopt a strategy that calls for integrated data collection that is designed to provide a quality data resource for program tracking, management and evaluation. This approach will entail the following primary activities:

- Database management - As part of program operation, TEP will collect the necessary data elements to populate the tracking database and provide periodic reporting.
- Integrated implementation data collection - TEP will work with the Implementation Contractor to establish systems to collect the data needed to support effective program management and evaluation through the implementation and customer application processes. The database tracking system will be integrated with implementation data collection processes.
- Field verification - TEP will conduct field verification of the installation of a sample of measures throughout the implementation of the Program.
- Tracking of savings using deemed savings values - TEP will develop deemed savings values for each measure and technology promoted by the Program and periodically review and revise the savings values to be consistent with program participation and accurately estimated the savings being achieved by the Program.

This approach will provide TEP with ongoing feedback on program progress and enable program management to adjust or correct the program so as to be more effective, provide a higher level of service, and be more cost beneficial. Integrated data collection will also provide a high quality data resource for evaluation activities.

Quality Assurance and Control

Training on program rules and installation guidelines will be provided to interested contractors.
Contractors will be made aware that their work may be inspected pre or post installation and that customer feedback on their performance will be solicited. The implementation contractor will randomly inspect at least 10% of all jobs to verify fixture counts, hours of use and functionality of the installed equipment.

Program Costs and Benefits

Table 1-2. Measure Savings, Incentive Level, and Participation, Benefit-Cost

Measure Name	Annual Energy Savings (kWh) /Unit	Peak Demand Savings (kW)/ Unit	Avg. Incentive / Unit	2011 Units	2012 Units	Measure Level Societal Test Result
Custom Measures	32,674	2.98	$6,535/customer	-	6	3.16
14 SEER Packaged and Split Air Conditioners	489	0.20	$440/unit	-	-	1.52
14 SEER Packaged and Split Heat Pumps	764	0.23	$440/unit	-	-	2.04
15 SEER Packaged and Split Air Conditioners	912	0.10	$880/unit	-	-	1.04
15 SEER Packaged and Split Heat Pumps	1,525	0.30	$880/unit	-	-	1.80
16 SEER Packaged and Split Air Conditioners	1,283	0.27	$1,321/unit	-	-	1.09
16 SEER Packaged and Split Heat Pumps	2,129	0.27	$1,321/unit	-	-	1.54
Programmable Thermostats	5,688	0.00	$204/unit	-	20	13.48
Shade Screens	16	0.003	$4/sq ft	-	-	3.29
Window Films	8	0.003	$3/sq ft	-	-	4.51
Daylighting controls	1,824	0.60	$751/kW base load	-	-	2.95
Delamping	266	0.08	$6/fixture	-	200	49.81
Energy efficient exit signs	668	0.08	$55/fixture	-	200	12.49
Hard Wire CFL	188	0.06	$16/bulb	-	-	1.56
HIDs to T8/T5	1,007	0.21	$196/fixture	-	50	6.13
Induction Lighting	451	0.15	$196/lamp	-	-	3.34
Integral Screw In CFL	374	0.07	$11/bulb	-	-	4.10
Occupancy sensors	461	0.06	$96/sensor	-	30	3.73
Outdoor CFL	382	0.001	$9/lamp	-	-	10.78
Reduced LPD	12,508	3.43	$3,464/ building	-	-	3.23
Screw in cold cathode CFL	194	0.001	$12/bulb	-	-	1.34
Standard T8 Lighting	72	0.02	$27/fixture	-	40	1.27

Premium T8 Lighting	152	0.06	$59/fixture	-	160	2.20
T8 to T8	22	0.01	$20/lamp	-	-	1.35
Variable Speed Drives	2,312	0.00	$377/HP	-	-	5.11
Beverage Ctrls ("vending miser")	1,610	0.15	$199/sensor	-	25	5.52
Snack Ctrls ("Vending Miser")	322	0.03	$103/sensor	-	-	2.14
Advanced Power Strips - Occupancy Sensors	170	0.04	$10/sensor	-	-	1.62
Advanced Power Strips - Timer Plug Strip	213	0.05	$10/sensor	-	10	9.27
Advanced Power Strips - Load Sensor	118	0.03	$10/sensor	-	-	3.08

Table 1-3. Program Budgets

	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
2011	$0	$0	$0	$0	$0	$0	$0	N/A
2012	$78,158	$52,287	$6,914	$14,507	$6,075	$157,941	$341,881	3.1

Table 1-4. Environmental Benefits

	Annual CO2 Savings (Metric Tons)	Annual NOx Savings (Metric Tons)	Annual SOx Savings (Metric Tons)	Lifetime CO2 Savings (Metric Tons)	Lifetime NOx Savings (Metric Tons)	Lifetime SOx Savings (Metric Tons)
2011	-	-	-	-	-	-
2012	618	0.83	0.72	7,828	11	9

Measure Analysis Sheets

Incentive Calculations

Replacing Electric Water Heaters with Heat Pump Water Heaters

Schools - New Hot Water

PROGRAM DATA	
Measure Life (yrs):	13
Program Life (yrs):	5
Demand AC ($/kW):	93.60
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/kWh, saved)	NA
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	-8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours Ratio:	35%
Off-Pk Op. Hours Ratio:	65%
Summer Ratio:	46%
Winter Ratio:	54%
Coincidence Factor:	98%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	ROB
Cost Basis:	Incremental

			DEMAND/ ENERGY SAVINGS								INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	%Incent	Societal
Measure Type	COP	Market Sector	Baseline Efficiency (%)	Baseline Energy (kWh)	EE Efficiency (%)	EE Energy (kWh)	Non-Coincident Demand Savings (kWh)	Coincident Demand Savings (kWh)	On-pk Energy Savings (kWh)	Off-pk Energy Savings (kWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor*	(%)	BC Ratio
HP Water Heater	2.35	Education	86%	6,153	235%	2,252	0.276	0.269	1,364	2,537	2,284	2,891	1,910.00	84%	1,910	981	1,910.00	246	7.8	0.0	50%	100%	1.5
	2.51	Education	86%	6,153	251%	2,108	0.286	0.279	1,415	2,630	2,368	2,997	2,775.00	117%	2,777	220	2,776.66	255	10.9	0.0	50%	100%	1.1
Weighted Average			86%	6,153	243%	2,180	0.281	0.274	1,389	2,584	2,326	2,944	2,343	100%	2,343	600	2,343.33	251	9.3	0.0	100%	100%	1.3
Weighted Average Check			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Weighting Factor based on engineering assumptions.

**Incentive based on UES 2011 Program Planning.

File Name: HPWaterHeaters_MAS_Schools_TEP_2011_01_14

Appendix G

Schools Program - New HVAC

Incentive Calculations
NonRes Split and Packaged AC SEER-rated
13 SEER Baseline

PROGRAM DATA	
Conservation Life (yrs):	15
Program Life (yrs):	5
Demand AC ($/kW):	97.13
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/unit):	NA
IRP Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate Class:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk EFLH:	709
Off-Pk EFLH:	1133
On-Pk Ratio:	38%
Off-Pk Ratio:	62%
Summer Ratio:	78%
Winter Ratio:	22%
Coincidence Factor:	0.89
Equipment pk hr load factor:	1.00

OTHER FACTORS	
Line Loss Demand Factor:	9.5%
Line Loss Energy Factor:	9.5%
Capacity Reserve Factor:	0.0%
Application:	ROB
Cost Basis:	Incremental

						DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	%Incent	Societal
Unit Type	Unit Size (Tons)	EE SEER	EE EER*	Base SEER	Base EER	Non-Coin Demand Savings Per Unit (KW)	Coin Demand Savings Per Unit (kWh)	On-pk Savings Per Unit (KWh)	Off-pk Savings Per Unit (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive (Per Unit)** ($)	Recommended Incentive (Per Unit)** %PV	PV Cost Per Unit ($)	NPV ($)	Incr. Cost Per Unit ($)	Cost Savings Per Ton ($)	Payback wo/Inc. (yrs)	Payback w/Inc. (yrs)	Weighting Factor*** (%)	%	BC Ratio
Packaged and Sp	2	14	11.6	13	11.0	0.113	0.101	93	149	253	329	360	143%	364	-112	364.19	25	14.3	0.2	0%	99%	0.90
Air Conditioners	2.5	14	11.6	13	11.0	0.141	0.126	117	187	316	411	380	120%	383	-67	382.97	32	12.0	0.1	5%	99%	1.07
14 SEER	3	14	11.6	13	11.0	0.169	0.151	140	224	379	493	400	106%	402	-23	401.74	38	10.5	0.0	15%	100%	1.23
	3.5	14	11.6	13	11.0	0.197	0.176	164	261	442	575	420	95%	421	22	420.51	45	9.4	0.0	20%	100%	1.37
	4	14	11.6	13	11.0	0.226	0.201	187	299	505	657	435	86%	439	66	439.28	51	8.6	0.1	25%	99%	1.50
	5	14	11.6	13	11.0	0.282	0.251	234	374	631	822	475	75%	477	155	476.82	64	7.5	0.0	35%	100%	1.72
Weighted Average						0.227	0.202	188	301	508	662	438	89%	440	68	440.22	51	8.9	0.0	100%	99%	1.50
Packaged and Sp	2	15	11.3	13	11.0	0.058	0.052	175	279	348	453	725	208%	728	-381	728.39	31	23.2	0.1	0%	100%	0.62
Air Conditioners	2.5	15	11.3	13	11.0	0.072	0.065	218	349	435	566	765	176%	766	-331	765.93	39	19.5	0.0	5%	100%	0.74
15 SEER	3	15	11.3	13	11.0	0.087	0.077	262	418	522	679	800	153%	803	-282	803.47	47	17.1	0.1	15%	100%	0.84
	3.5	15	11.3	13	11.0	0.101	0.090	305	488	609	792	840	138%	841	-232	841.02	55	15.3	0.0	20%	100%	0.94
	4	15	11.3	13	11.0	0.116	0.103	349	558	696	905	875	126%	879	-183	878.56	63	14.0	0.1	25%	100%	1.03
	5	15	11.3	13	11.0	0.145	0.129	436	697	870	1,132	950	109%	954	-84	953.64	79	12.1	0.0	35%	100%	1.19
Weighted Average						0.117	0.104	351	561	700	911	878	129%	880	-180	880.44	63	14.3	0.0	100%	100%	1.03
Packaged and Sp	2	16	11.8	13	11.0	0.148	0.132	245	392	543	707	1,090	201%	1,093	-550	1,092.58	51	21.4	0.1	0%	100%	0.65
Air Conditioners	2.5	16	11.8	13	11.0	0.185	0.165	307	490	679	883	1,145	169%	1,149	-470	1,148.90	64	18.0	0.1	5%	100%	0.77
16 SEER	3	16	11.8	13	11.0	0.222	0.198	368	588	814	1,060	1,205	148%	1,205	-391	1,205.21	77	15.7	0.0	15%	100%	0.88
	3.5	16	11.8	13	11.0	0.259	0.231	429	686	950	1,236	1,260	133%	1,262	-311	1,261.52	90	14.1	0.0	20%	100%	0.98
	4	16	11.8	13	11.0	0.296	0.264	491	784	1,086	1,413	1,315	121%	1,318	-232	1,317.84	102	12.9	0.0	25%	100%	1.07
	5	16	11.8	13	11.0	0.370	0.330	614	980	1,357	1,766	1,430	105%	1,430	-73	1,430.47	128	11.2	0.0	35%	100%	1.23
Weighted Average						0.298	0.265	494	789	1,093	1,422	1,319	124%	1,321	-228	1,320.65	103	13.2	0.0	100%	100%	1.08

*EE EER value based on Efficient Home Cooling MER Report 2010
**Incentives based on UES 2011 Program Planning.
***Weighting Factors based on engineering assumptions.

File Name: AC SEER_MAS_Schools_TEP_2011_01_14

Appendix G

Schools - New HVAC

Incentive Calculations
NonRes Split and Packaged HP SEER-rated
13 SEER Baseline

PROGRAM DATA	
Conservation Life (yrs):	15
Program Life (yrs):	5
Demand AC ($/ kW):	97.13
Summer On-pk Energy AC ($/ kWh):	0.10
Summer Off-pk Energy AC ($/ kWh):	0.06
Winter On-pk Energy AC ($/ kWh):	0.07
Winter Off-pk Energy AC ($/ kWh):	0.05
Program Admin Costs ($/ unit):	NA
IRP Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate Class:	
$/ kW:	8.78
$/ kWh, On-Peak:	0.06
$/ kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk EFLH Cooling:	709
Off-Pk EFLH Cooling:	1133
On-Pk EFLH Heating:	485
Off-Pk EFLH Heating:	776
Summer Ratio:	54%
Winter Ratio:	46%
Coincidence Factor:	0.89
Equipment pk hr load factor:	1.00

OTHER FACTORS	
Line Loss Demand Factor:	9.5%
Line Loss Energy Factor:	9.5%
Capacity Reserve Factor:	0.0%
Application:	ROB, NEW
Cost Basis:	Incremental

								DEMAND/ ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Unit Type	Unit Size (Tons)	EE SEER	EE EER*	Base SEER	Base EER	EE HSPF	Base HSPF	Non-Coin Demand Savings Per Unit (KW)	Coin Demand Savings Per Unit (kW)	On-pk Savings Per Unit (KWh)	Off-pk Savings Per Unit (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive (Per Unit)** ($)	Recommended Incentive (Per Unit)** %PV	PV Cost Per Unit ($)	NPV ($)	Incr. Cost Per Unit ($)	Cost Savings Per Unit ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor*** (%)	(%)	BC Ratio
Packaged and Split	2	14	11.7	13	11.0	8.30	8.00	0.131	0.116	146	234	339	442	360	106%	364	-25	364.19	35	10.4	0.1	0%	99%	1.21
Heat Pump	2.5	14	11.7	13	11.0	8.30	8.00	0.163	0.145	183	292	424	552	380	90%	383	41	382.97	44	8.8	0.1	5%	99%	1.44
14 SEER	3	14	11.7	13	11.0	8.30	8.00	0.196	0.174	219	350	509	663	400	79%	402	107	401.74	52	7.7	0.0	15%	100%	1.65
	3.5	14	11.7	13	11.0	8.30	8.00	0.228	0.204	256	409	594	773	420	71%	421	173	420.51	61	6.9	0.0	20%	100%	1.84
	4	14	11.7	13	11.0	8.30	8.00	0.261	0.233	292	467	679	883	435	64%	439	240	439.28	70	6.3	0.1	25%	99%	2.01
	5	14	11.7	13	11.0	8.30	8.00	0.326	0.291	365	584	848	1,104	475	56%	477	372	476.82	87	5.5	0.0	35%	100%	2.32
Weighted Average								0.263	0.234	294	470	683	889	438	66%	440	243	440.22	70	6.4	0.0	100%	99%	2.02
Packaged and Split	2	15	11.9	13	11.0	8.70	8.00	0.165	0.147	292	466	600	781	725	121%	728	-128	728.39	60	12.2	0.1	0%	100%	1.07
Heat Pump	2.5	15	11.9	13	11.0	8.70	8.00	0.206	0.184	365	583	750	976	765	102%	766	-16	765.93	75	10.3	0.0	5%	100%	1.27
15 SEER	3	15	11.9	13	11.0	8.70	8.00	0.248	0.221	438	699	900	1,171	800	89%	803	97	803.47	90	9.0	0.0	15%	100%	1.46
	3.5	15	11.9	13	11.0	8.70	8.00	0.289	0.257	510	816	1,050	1,367	840	80%	841	209	841.02	104	8.1	0.0	20%	100%	1.62
	4	15	11.9	13	11.0	8.70	8.00	0.330	0.294	583	932	1,200	1,562	875	73%	879	322	878.56	119	7.4	0.0	25%	100%	1.78
	5	15	11.9	13	11.0	8.70	8.00	0.413	0.368	729	1,165	1,500	1,952	950	63%	954	547	953.64	149	6.4	0.0	35%	100%	2.05
Weighted Average								0.332	0.296	587	938	1,208	1,572	878	75%	880	327	880.44	120	7.5	0.0	100%	100%	1.79
Packaged and Split	2	16	11.8	13	11.0	9.00	8.00	0.148	0.132	407	651	771	1,003	1,090	141%	1,093	-322	1,092.58	75	14.6	0.0	0%	100%	0.92
Heat Pump	2.5	16	11.8	13	11.0	9.00	8.00	0.185	0.165	509	813	964	1,254	1,145	119%	1,149	-185	1,148.90	93	12.3	0.0	5%	100%	1.09
16 SEER	3	16	11.8	13	11.0	9.00	8.00	0.222	0.198	611	976	1,157	1,505	1,205	104%	1,205	-49	1,205.21	112	10.8	0.0	15%	100%	1.25
	3.5	16	11.8	13	11.0	9.00	8.00	0.259	0.231	713	1,139	1,349	1,756	1,260	93%	1,262	88	1,261.52	131	9.7	0.0	20%	100%	1.39
	4	16	11.8	13	11.0	9.00	8.00	0.296	0.264	814	1,301	1,542	2,007	1,315	85%	1,318	224	1,317.84	149	8.8	0.0	25%	100%	1.52
	5	16	11.8	13	11.0	9.00	8.00	0.370	0.330	1,018	1,627	1,928	2,508	1,430	74%	1,430	497	1,430.47	187	7.7	0.0	35%	100%	1.75
Weighted Average								0.298	0.265	820	1,310	1,552	2,019	1,319	0.9	1,321	231	1,320.65	150	9.1	0.0	100%	100%	1.53

*EE EER value based on Efficient Home Cooling MER Report 2010
**Incentives based on UES 2011 Program Planning.
***Weighting Factor based on engineering assumptions.

File Name: HP SEER_MAS_Schools_TEP_2011_01_14

Incentive Calculations

Programmable Thermostats (Heating Setback / Cooling Setup)

Schools Program - New HVAC

PROGRAM DATA	
Measure Life (yrs)*:	11
Program Life (yrs):	5
Demand AC ($/kW):	78.64
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Admin Costs ($/unit):	NA
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate Class:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA**	
On-Pk Savings Ratio:	0%
Off-Pk Savings Ratio:	100%
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.00

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0%
Application:	RET
Cost Basis:	Full Installed

			DEMAND/ ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Unit Type	Bldg Type	Bldg Area (sq.ft.)	Non-Coin. Demand Savings Per Tstat (KW)	Coin. Demand Savings Per Tstat (KW)	On-pk Savings Per Tstat (KWh)	Off-pk Savings Per Tstat (KWh)	IRP PV Benefit Per Tstat ($)	Social PV Benefit Per T stat ($)	Incentive (Per Tstat)*** ($)	Incentive (Per Tstat)*** %PV	PV Cost Per Tstat ($)	NPV ($)	Incr. Cost Per Tstat ($)	Cost Savings Per Tstat ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor**	(%)	BC Ratio
Prog Therm	Education	374,999	0.00	0.00	0	5,688	2,221	2,730	200	9%	204	2,017	204	312	0.7	0.0	100%	97.8%	13.4
	Weighted Average	374,999	0.00	0.00	0	5,688	2,221	2,730	200	9%	204	2,017	204	312	0.7	0.0	100%	97.8%	13.4
Weighted Average Check			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Measure Lifetime based on DEER 2008 evaluations.

**Operating data, weighting factors based on engineering assumptions.

***Incentive based on 2011 Program Planning.

File Name: ProgTherm_MAS_Schools_TEP_2011_01_17

Appendix G

Schools - New HVAC

Incentive Calculations
Shade Screens

PROGRAM DATA	
Measure Life (yrs)*:	10
Program Life (yrs):	5
Demand AC ($/kW):	77.23
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Administrative Costs ($/kWh)	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Pea	0.06
$/kWh, Off-Pea	0.05

OPERATING DATA***	
On-Pk Op. Hours %	70%
Off-Pk Op. Hours %	30%
Summer Ratio:	100%
Winter Ratio:	0%
Coincidence Factor	100%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

	DEMAND/ ENERGY SAVINGS					INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Window Film	Shading Coefficient	Non-Coin. Demand Savings (kW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost/sq ft ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor*** (%)	(%)	BC Ratio
Electric Cool/ Heat																		
SunTex 80	0.29	0.002	0.002	10	4	10	13	4.00	38%	4.13	8.52	4.13	1.10	3.8	0.1	15%	97%	3.1
SunTex 90	0.19	0.003	0.003	12	5	12	14	4.00	34%	4.13	10.18	4.13	1.24	3.3	0.1	15%	97%	3.5
Textilene 80	0.30	0.002	0.002	10	4	10	12	4.00	39%	4.13	8.35	4.13	1.08	3.8	0.1	15%	97%	3.0
Textilene 90	0.19	0.003	0.003	12	5	12	14	4.00	34%	4.13	10.18	4.13	1.24	3.3	0.1	15%	97%	3.5
Electric Cool / Gas Heat																		
SunTex 80	0.29	0.002	0.002	10	4	11	13	4.00	38%	4.13	8.65	4.13	1.11	3.7	0.1	10%	97%	3.1
SunTex 90	0.19	0.003	0.003	12	5	12	15	4.00	33%	4.13	10.39	4.13	1.26	3.3	0.1	10%	97%	3.5
Textilene 80	0.30	0.002	0.002	10	4	10	13	4.00	38%	4.13	8.47	4.13	1.09	3.8	0.1	10%	97%	3.1
Textilene 90	0.19	0.003	0.003	12	5	12	15	4.00	33%	4.13	10.39	4.13	1.26	3.3	0.1	10%	97%	3.5
Weighted Average		0.003	0.003	11	5	11	13	4.00	36%	4.13	9.37	4.13	1.17	3.54	0.11	100%	97%	3.3
Weighted Average Check			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

* DEER 2008.
**Incentives based on UES 2011 Program Planning.
***Weighting Factors and Operating Data based on engineering assumptions.

File Name: ShadeScreens_MAS_Schools_TEP_2011_01_14

Appendix G

Incentive Calculations
Window Films

Schools - New HVAC

PROGRAM DATA	
Measure Life (yrs)*:	15
Program Life (yrs):	5
Demand AC ($/kW):	97.13
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Administrative Costs ($/kWh)	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Pea	0.06
$/kWh, Off-Pea	0.05

OPERATING DATA***	
On-Pk Op. Hours %	70%
Off-Pk Op. Hours %	30%
Summer Ratio:	100%
Winter Ratio:	0%
Coincidence Factor	100%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

			DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	%Incent	Societal
Window Film	Emissivity	Shading Coefficient	Non Coin Demand Savings (kW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor*** (%)	(%)	BC Ratio
Electric Cool/ Heat																			
VS60	0.67	0.52	0.003	0.003	6	3	10	14	2.55	24%	3	11	2.63	0.86	3.1	0.1	15%	97%	5.2
VS61	0.67	0.58	0.003	0.003	5	2	9	12	2.55	28%	3	9	2.63	0.74	3.5	0.1	15%	97%	4.5
VS70	0.66	0.56	0.003	0.003	6	2	9	12	2.55	27%	3	10	2.63	0.78	3.4	0.1	15%	97%	4.7
VS80BL	0.82	0.65	0.002	0.002	5	2	7	10	2.55	34%	3	7	2.63	0.61	4.3	0.1	15%	97%	3.7
Electric Cool Only																			
VS60	0.67	0.52	0.003	0.003	6	3	10	13	2.55	25%	3	11	2.63	0.84	3.1	0.1	10%	97%	5.1
VS61	0.67	0.58	0.003	0.003	5	2	9	12	2.55	29%	3	9	2.63	0.73	3.6	0.1	10%	97%	4.4
VS70	0.66	0.56	0.003	0.003	6	2	9	12	2.55	27%	3	9	2.63	0.77	3.4	0.1	10%	97%	4.6
VS80BL	0.82	0.65	0.002	0.002	4	2	7	10	2.55	35%	3	7	2.63	0.60	4.4	0.1	10%	97%	3.6
Weighted Average			0.003	0.003	5	2	9	12	2.55	29%	3	9	2.63	0.74	3.59	0.10	100%	97%	4.5
Weighted Average Check				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Based on average of 3M warranty periods http://solutions.3m.com/wps/portal/3M/en_US/Window_Film/Solutions/Resources/Links/Warranties/
**Incentive based on 2011 UES Program Planning.
***Weighting Factor and Operating Data based on engineering assumptions.

File Name: WindowFilms_MAS_Schools_TEP_2011_01_14

Appendix G

Schools - New Lighting

Incentive Calculations
Energy-Efficient Incandescent Fixtures – Retrofit Applications
Replace Incandescents with CFLs

PROGRAM DATA	
Measure Life (yrs)*:	2
Program Life (yrs):	5
Demand AC ($/kW):	50.92
Summer On-pk Energy AC ($/kWh):	0.07
Summer Off-pk Energy AC ($/kWh):	0.04
Winter On-pk Energy AC ($/kWh):	0.05
Winter Off-pk Energy AC ($/kWh):	0.03
Program Admin Costs ($/kWh):	0
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	1,317
Off-Pk Op. Hours:	1,585
Total Op. Hours:	2,902
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand):	1.18
HVAC Interaction Factor (Energy):	1.14

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

			DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	%Incent	Societal
Measure Type	CFL Fixt. Watts	Incand. Fixt. Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** % PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
Screw In/ Integral Screw In	19	79	0.071	0.066	90	109	25	26	11	47%	11	15	11	19	0.6	0.0	100%	99%	2.3
Plug In/ Hardwire	16	73	0.067	0.063	86	103	23	25	15	67%	16	9	16	18	0.9	0.0	100%	99%	1.6

Notes:
* Based on average manufacturer rated life and deemed annual usage hours.
**Based on 2011 UES Program Planning.

File Name: CFLs_MAS_Schools_TEP_2011_01_14

Incentive Calculations

Schools - New Lighting

ENERGY-EFFICIENT COLD CATHODE FLUORESCENT LIGHTING (CC CFL)

PROGRAM DATA	
Measure Life (yrs):	6
Program Life (yrs):	5
Demand AC ($/kW):	72.41
Summer On-pk Energy AC ($/kWh):	0.09
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Admin Costs ($/unit):	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	999
Off-Pk Op. Hours:	3,381
Total Hours	4,380
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.02

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full

	DEMAND/ ENERGY SAVINGS						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	%Incent	Societal
Fixture Type	Inc. Fixture Watts	Cold Cathode Fixture Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefti ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor*	(%)	BC Ratio
SCREW-IN	25	3	0.022	0.000	22	74	25	28	12.25	49%	12	12	12.46	8	1.6	0.0	10%	98%	2.3
	30	5	0.025	0.000	25	85	28	32	11.00	39%	11	17	11.01	9	1.3	0.0	2%	100%	2.9
	40	5	0.035	0.001	35	118	40	45	11.00	28%	11	29	11.01	12	0.9	0.0	30%	100%	4.1
	45	8	0.037	0.001	37	125	42	47	13.00	31%	13	29	13.15	13	1.0	0.0	2%	99%	3.6
	50	8	0.042	0.001	42	142	48	54	13.00	27%	13	34	13.15	15	0.9	0.0	2%	99%	4.1
	54	8	0.046	0.001	46	156	52	59	13.00	25%	13	39	13.15	16	0.8	0.0	2%	99%	4.5
	60	8	0.052	0.001	52	176	59	67	13.00	22%	13	46	13.15	18	0.7	0.0	40%	99%	5.1
	65	8	0.057	0.001	57	193	64	73	13.00	20%	13	51	13.15	20	0.7	0.0	2%	99%	5.6
	75	8	0.067	0.001	67	227	76	86	13.00	17%	13	63	13.15	23	0.6	0.0	10%	99%	6.5
Weighted Average			0.044	0.001	44	150	50	57	12.29	27%	12	38	12.40	15	0.87	0.01	100%	99%	4.6
Weighted Average Check			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Weighting Factor based on engineering assumption. Measure Life based on lifetime assumption of 25000 hours.

**Incentive based on UES 2011 Program Planning.

File Name: ColdCathode_MAS_Schools_TEP_2011_01_14

Appendix G

Incentive Calculations
Daylighting Controls

Schools - New Lighting

PRGORAM DATA	
Measure Life (yrs):	15
Program Life (yrs):	5
Demand AC ($/kW):	97.13
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/unit):	NA
Discount Rate:	8.03%
Social Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

INCENTIVE LEVEL**	
$ / connected kW	0.12

OPERATING DATA*	
On-Pk Op. Hours:	1,316
Off-Pk Op. Hours:	1,584
Total Hours:	2,900
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand):	0.20
HVAC Interaction Factor (Energy):	0.17

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
Line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET / NEW
Cost Basis:	Full Installed

	DEMAND/ ENERGY SAVINGS						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	%Incent	Societal
Control Type	Connected Load*** (Watts)	Dayl. Savings Fraction****	Non-Coin. Demand Savings Per kW (KW)	Coin. Demand Savings Per kW (KW)	On-pk Savings Per kW (KWh)	Off-pk Savings Per kW (KWh)	IRP PV Benefit Per kW ($)	Social PV Benefit Per KW ($)	Recommended Incentive ($)	Recommended Incentive %PV	PV Cost Per kW ($)	NPV ($)	Incr. Cost Per kW ($)	Cost Savings Per kW ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
SIDELIGHTING - ON/ OFF	1000	32%	0.384	0.357	493	593	1006	1309	775	1	775	230	775.41	101	7.7	0.0	10%	100%	1.7
SIDELIGHTING - STEP	1000	44%	0.528	0.491	678	815	1383	1799	775	1	775	607	775.41	139	5.6	0.0	10%	100%	2.3
SIDELIGHTING - CONTINUOU	1000	56%	0.672	0.625	862	1038	1760	2290	1,355	1	1358	402	1357.97	177	7.7	0.0	20%	100%	1.7
SKYLIGHTING - ON/ OFF	1000	52%	0.624	0.580	801	964	1634	2126	175	0	176	1458	175.58	165	1.1	0.0	15%	100%	12.1
SKYLIGHTING - STEP	1000	57%	0.684	0.636	878	1056	1791	2331	175	0	176	1616	175.58	180	1.0	0.0	15%	100%	13.3
SKYLIGHTING - CONTINUOU	1000	62%	0.744	0.692	955	1149	1948	2535	900	0	905	1044	904.79	196	4.6	0.0	30%	99%	2.8
Weighted Average	1000	54%	0.645	0.600	828	996	1689	2198	749	46%	751	938	750.78	170	4.5	0.0	100%	100%	2.9
Weighted Average Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*HVAC interaction factors from "Engineering Methods for Estimating the Impacts of DSM Programs, Volume 2: Fundamental Equations for Residential and Commercial End Uses," EPRI, 1993. This source shows a summer demand IC of 0.40.
**Incentives based on 2011 UES Program Planning.
***Connected load assumes 8 fixtures at 136 watts per fixture
****Daylighting Savings Fractions are sourced from Lawerence Berkely Labs Nomographs

File Name: Daylighting_MAS_Schools_TEP_2011_01_14

Schools - New Lighting

Incentive Calculations
Delamping
Removing lamps with no replacement

PROGRAM DATA	
Measure Life (yrs)*:	15
Program Life (yrs):	5
Demand AC ($/kW):	97.13
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/kWh):	0
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	1,447
Off-Pk Op. Hours:	1,741
Total Op. Hours:	3,187
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand):	1.22
HVAC Interaction Factor (Energy):	1.15

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application:	RET
Cost Basis:	Retrofit

		DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal
Measure Type	Wghtd Base Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
Delamping	72	0.088	0.082	121	145	241	314	6.25	3%	6	308	6.36	24	0.3	0.0	100%	98%	49.3

Notes:
* Based on DEER 2008 EUL of 70,000 (rate life of ballast)/ annual operating hours by building type or 15, whichever is lower.
**Based on 2011 UES Program Planning.

File Name: Delamping_MAS_Schools_TEP_2011_01_14

Appendix G

Schools - New Lighting

Incentive Calculations
Energy-Efficient Exit Signs – Retrofit Applications
Replace Inefficient Exit Signs with LED Exit Signs

PROGRAM DATA	
Measure Life (yrs)*:	16
Program Life (yrs):	5
Demand AC ($/kW):	98.92
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/kWh):	0
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	3,976
Off-Pk Op. Hours:	4,784
Total Op. Hours:	8,760
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	1.00
HVAC Interaction Factor (Demand):	1.24
HVAC Interaction Factor (Energy):	1.17

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

			DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	%Incent	Societal
Measure Type	EE Watts	Wghtd Base Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost*** ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
Exit Signs	5	70	0.081	0.081	303	365	517	682	55	11%	55	627	55.10	46	1.2	0.0	100%	100%	12.4

* Based on DEER 2008.
**Based on UES 2011 Program Planning.
***2010 MER Report.

File Name: ExitSigns_MAS_Schools_TEP_2011_01_14

Appendix G

Incentive Calculations
ENERGY-EFFICIENT HID FIXTURES
Replace HID Systems with Linear Fluorescent T8 and T5 Systems

Schools - New Lighting

PROGRAM DATA	
Conservation Life (yrs):	18
Program Life (yrs):	5
Demand AC ($/kW):	102.76
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/unit):	NA
IRP Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	999
Off-Pk Op. Hours:	3,381
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0.0%
Application	RET
Cost Basis:	Full Installed

				DEMAND/ENERGY SAVINGS								INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal
Base Fixture Type	Base Lamp Type	Base Lamp Watts	Base Fxt. Watts	EE Lamp Type***	EE Fixture Config***	EE Lamp Watts***	EE Fxt. Watts***	Non-Coincident Demand Savings (kW)	Coincident Demand Savings (kW)	On-pk Energy Savings (kWh)	Off-pk Energy Savings (kWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentives**** ($)	Recommended Incentives**** % PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/Inc. (yrs)	Payback w/Inc. (yrs)	Weighting Factor*	(%)	BC Ratio
HID SYSTEMS	MH	150	185	F54T5/HO	2-Lamp	54	117	0.07	0.06	68	230	260	562	80	31%	83	177	62.65	24	3.5	0.1	0%	97%	6.8
	MH	250	290	F54T5/HO	3-Lamp	54	179	0.11	0.10	111	375	424	917	100	24%	102	322	102.44	39	2.7	0.1	5%	98%	8.9
	MH	400	458	F54T5/HO	4-Lamp	54	234	0.22	0.21	224	757	857	1,850	105	12%	109	747	109.09	78	1.4	0.1	35%	96%	17.0
	MH	750	810	F54T5/HO	6-Lamp	54	351	0.46	0.43	459	1,552	1,755	3,791	165	9%	168	1,587	168.47	160	1.1	0.0	1%	98%	22.5
	MH	1000	1080	2xF54T5/HO	4-Lamp	54	468	0.61	0.57	612	2,069	2,340	5,054	215	9%	218	2,122	218.19	213	1.0	0.0	2%	99%	23.2
										0	0													
	MH	150	185	F32T8	2-Lamp	32	72	0.11	0.11	113	382	432	933	40	9%	42	390	41.95	39	1.1	0.0	0%	95%	22.2
	MH	250	290	F32T8	3-Lamp	32	114	0.18	0.16	176	595	673	1,453	55	8%	57	616	57.37	61	0.9	0.0	5%	96%	25.3
	MH	400	458	F32T8	6-Lamp	32	219	0.24	0.22	239	808	914	1,974	70	8%	74	840	74.03	83	0.9	0.0	20%	95%	26.7
	MH	750	810	2x F32T8	6-Lamp	32	438	0.37	0.35	372	1,258	1,423	3,072	145	10%	148	1,274	148.06	129	1.1	0.0	1%	98%	20.7
	MH	1000	1080	2xF32T8	6-Lamp	32	438	0.64	0.60	641	2,170	2,455	5,302	145	6%	148	2,307	148.06	223	0.7	0.0	1%	98%	35.8
										0	0													
	HPS	150	190	F54T5/HO	2-Lamp	54	117	0.07	0.07	73	247	279	603	80	29%	83	197	82.65	25	3.3	0.1	0%	97%	7.3
	HPS	250	295	F54T5/HO	3-Lamp	54	179	0.12	0.11	116	392	444	958	100	23%	102	341	102.44	40	2.5	0.1	5%	98%	9.4
	HPS	400	464	F54T5/HO	4-Lamp	54	234	0.23	0.21	230	778	880	1,899	105	12%	109	770	109.09	80	1.4	0.1	10%	96%	17.4
										0	0													
	HPS	150	190	F32T8	2-Lamp	32	72	0.12	0.11	118	399	451	974	40	9%	42	409	41.95	41	1.0	0.0	0%	95%	23.2
	HPS	250	295	F32T8	3-Lamp	32	114	0.18	0.17	181	612	692	1,495	55	8%	57	635	57.37	63	0.9	0.0	5%	96%	26.1
	HPS	400	464	F32T8	6-Lamp	32	219	0.25	0.23	245	828	937	2,023	70	7%	74	863	74.03	85	0.9	0.0	10%	95%	27.3
Weighted Average		395	452			45	222	0.23	0.21	230	777	879	1,898	93	11%	96	783	96.29	80	1.3	0.0	100%	96%	19.7

*Weighting Factors based on engineering assumptions.
** HVAC interaction factors from "Engineering Methods for Estimating the Impacts of DSM Programs, Volume 2: Fundamental Equations for Residential and Commercial End Uses," EPRI, 1993. This source shows a summer demand IC of 0.40.
***See Energy Assumptions tab for more details.
****Incentives based on 2011 UES Program Planning.

File Name: HID_MAS_Schools_TEP_2011_01_14

Appendix G

Schools - New Lighting

Incentive Calculations
ENERGY-EFFICIENT INDUCTION LIGHTING
Replace HID Systems with Induction Lighting Systems

PROGRAM DATA	
Measure Life (yrs):	18
Program Life (yrs):	5
Demand AC ($/kW):	102.76
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/unit);	NA
Discount Rate:	8.03%
Social Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA**	
On-Pk Op. Hours:	1,316
Off-Pk Op. Hours:	1,584
Total Hours:	2,900
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand)*:	0.20
HVAC Interaction Factor (Energy)*:	0.17

OTHER FACTORS	
Line Loss Factor (Demand):	9.5%
Line Loss Factor (Energy):	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

DEMAND/ENERGY SAVINGS												INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	%Incent	Societal
Base Lamp Type	Base Lamp Watts	Base Fixt. Watts	EE Lamp Type	EE Lamp Watts	EE Fixt. Watts	Delta Lamp Watts	Delta Fixture Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP Benefit ($)	Societal PV Benefit ($)	Recommended Incentive*** ($)	Recommended Incentive*** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
MH - 70W	70	94	Induction - 40 W	40	41	30	53	0.064	0.059	82	98	192	259	150	78%	153	39	152.74	17	9.1	0.2	6%	98%	1.7
MH - 100W	100	126	QL - 55W	55	56	45	70	0.084	0.078	108	129	252	341	145	58%	146	106	145.75	22	6.6	0.0	6%	99%	2.3
MH - 100W	100	126	ICETRON - 70W	70	71	30	55	0.065	0.061	84	101	196	266	145	74%	146	51	145.89	17	8.5	0.1	6%	99%	1.8
MH - 100W	100	126	QL - 85W	85	87	15	39	0.047	0.044	60	73	141	191	145	103%	146	-5	146.02	12	11.8	0.1	6%	99%	1.3
MH - 150W	150	185	QL - 55W	55	56	95	129	0.155	0.144	198	239	464	628	150	32%	151	313	151.40	41	3.7	0.0	6%	99%	4.2
MH - 150W	150	185	ICETRON - 70W	70	71	80	114	0.136	0.127	175	210	409	554	150	37%	152	258	151.54	36	4.2	0.0	6%	99%	3.7
MH - 150W	150	185	QL - 85W	85	87	65	98	0.118	0.110	151	182	354	479	150	42%	152	202	151.67	31	4.9	0.1	6%	99%	3.2
MH - 150W	150	185	ICETRON - 100W	100	102	50	63	0.099	0.092	128	154	299	404	155	52%	159	139	159.43	26	6.1	0.2	6%	97%	2.5
MH - 175W	175	210	QL - 85W	85	87	90	123	0.148	0.137	190	228	444	601	156	35%	156	288	155.86	39	4.0	0.0	6%	99%	3.9
MH - 175W	175	210	ICETRON - 100W	100	102	75	108	0.129	0.120	166	200	389	526	160	41%	164	225	163.62	34	4.8	0.1	6%	98%	3.2
MH - 250W	250	295	ICETRON - 150W	150	153	100	142	0.170	0.158	218	263	511	692	195	38%	200	311	199.77	45	4.5	0.1	6%	98%	3.5
MH - 250W	250	295	QL - 165W	165	169	85	126	0.152	0.141	195	234	456	617	205	45%	208	248	207.52	40	5.2	0.1	6%	99%	3.0
HPS - 150W	150	188	QL - 55W	55	56	95	132	0.158	0.147	203	244	475	643	250	53%	253	222	253.47	42	6.1	0.1	6%	99%	2.5
HPS - 150W	150	188	ICETRON - 70W	70	71	80	117	0.140	0.130	179	216	420	568	250	60%	254	166	253.61	37	6.9	0.1	6%	99%	2.2
HPS - 250W	250	295	QL - 85W	85	87	165	208	0.250	0.232	321	386	750	1,016	245	33%	249	501	248.97	66	3.8	0.1	6%	98%	4.1
HPS - 250W	250	295	ICETRON - 100W	100	102	150	193	0.231	0.215	297	357	695	941	255	37%	257	438	256.73	61	4.2	0.0	6%	99%	3.7
HPS - 400W	400	463	ICETRON - 150W	150	153	250	310	0.372	0.346	477	574	1,116	1,511	285	26%	288	829	287.89	98	2.9	0.0	6%	99%	5.2
HPS - 400W	400	463	QL - 165W	165	169	235	294	0.353	0.329	454	546	1,061	1,436	295	28%	296	766	295.64	93	3.2	0.0	6%	100%	4.9
Weighted Average								0.160	0.148	205	246	479	649	194	48%	196	283	195.97	42	5.6	0.1	100%	99%	3.3
Weighted Average Check								OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

* HVAC interaction factors from "Engineering Methods for Estimating the Impacts of DSM Programs, Volume 2: Fundamental Equations for Residential and Commercial End Uses," EPRI, 1993. This source shows a summer demand IC of 0.40.
**Operation hours are based on HID swap outs for interior applications such as warehouses, showrooms, and corridors. However, induction lighting is found in outdoor applications such as tunnels, parking lots, street lights, which affect operation hours. This is still being reseached.
***Incentive based on 2011 UES Program Planning.

File Name: Induction_MAS_Schools_TEP_2011_01_14

Incentive Calculations
LED Channel Lights

Schools - New Lighting

PROGRAM DATA	
Measure Life (yrs):	10
Program Life (yrs):	5
Demand AC ($/kW):	77.23
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Admin Costs ($/kWh, saved)	NA
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA*	
On-Pk Op. Hours:	730
Off-Pk Op. Hours:	4,380
Total Op. Hours:	5,110
Summer Ratio:	50%
Winter Ratio:	50%
Coincident Load Factor:	4%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Cost

DEMAND/ENERGY SAVINGS									INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal
Measure Name	Common Units	Base Lamp Type	Base Lamp Watts	LED Lamp Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** % PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/inc. (yrs)	Payback w/inc. (yrs)	Weighting Factor	(%)	BC Ratio
LED Channel Lights	per linear foot	Neon	6	1.2	0.005	0.003	3.5	21.1	11.2	13.5	13	116%	13.0	0.5	13	1.9	7.0	0.0	100%	100%	1.0
Weighted Average			6	1.2	0.005	0.003	3.5	21.1	11.2	13.5	13	116%	13.0	0.5	13	1.9	7.0	0.0	100%	100%	1.0
Weighted Average Check			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Hours of operation: Assume 12 hours of operation during night (off peak hours) and up to 2 hours a day during on peak times (to account for wintertime and storm events when lights are needed).
**Incentives based on 2011 UES Program Planning.

File Name: LEDChannel_MAS_Schools_TEP_2010_11_20

Schools - New Lighting

Incentive Calculations
Occupancy Sensors
Install Occupancy Sensors on Lighting and Outdoor Fixtures

PROGRAM DATA	
Measure Life (yrs):	12
Program Life (yrs):	5
Demand AC ($/kW):	80.30
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/unit):	NA
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	1,316
Off-Pk Op. Hours:	1,584
Total Op. Hours:	2,900
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand)*:	0.20
HVAC Interaction Factor (Energy)*:	0.17

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
Line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET / NEW
Cost Basis:	Full Installed

	DEMAND/ ENERGY SAVINGS									INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Space Type	Coverage Floor Area (SF)** per sensor	Lighting Power Density (Watts/ SF)	Connected Load (Watts) per sensor	Energy Savings Factor	Demand Savings Factor	Non-Coin. Demand Savings Per Snsr (KW)	Coin. Demand Savings Per Snsr (KW)	On-pk Savings Per Snsr (KWh)	Off-pk Savings Per Snsr (KWh)	IRP PV Benefit Per Snsr ($)	Social PV Benefit Per Snsr ($)	Recommended Incentive (Per Snsr)*** ($)	Recommended Incentive (Per Snsr)*** %PV	PV Costs Per Snsr ($)	NPV ($)	Incr. Cost Per Snsr ($)	Cost Savings Per Snsr ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor**	(%)	BC Ratio
Office (Open Plan)	300	1.3	390	26%	10%	0.05	0.04	154	185	209	261	95	45%	96	113	96.42	24	4.0	0.1	11%	99%	2.7
Office (Executive / Private)	150	1.5	225	31%	12%	0.03	0.03	107	129	146	182	95	65%	96	49	96.42	17	5.8	0.1	6%	99%	1.9
Corridor	200	0.7	140	39%	16%	0.03	0.02	84	101	114	143	95	83%	96	18	96.42	13	7.3	0.1	11%	99%	1.5
Classroom	500	1.6	800	32%	13%	0.12	0.12	398	479	541	675	95	18%	96	445	96.42	62	1.5	0.0	11%	99%	7.0
Restrooms	120	1.0	120	46%	18%	0.03	0.02	84	102	115	143	95	83%	96	18	96.42	13	7.3	0.1	11%	99%	1.5
Conference Room	300	1.5	450	37%	15%	0.08	0.07	257	309	349	435	95	27%	96	253	96.42	40	2.4	0.0	6%	99%	4.5
Warehouse	625	1.4	844	50%	20%	0.20	0.19	650	782	883	1101	95	11%	96	786	96.42	101	1.0	0.0	11%	99%	11.4
Mech / Elec Room	150	1.3	195	39%	16%	0.04	0.03	118	142	160	199	95	59%	96	63	96.42	18	5.2	0.1	11%	99%	2.1
Storage	150	1.1	165	48%	19%	0.04	0.03	121	145	164	205	95	58%	96	68	96.42	19	5.1	0.1	11%	99%	2.1
Copy Room	100	1.5	150	40%	16%	0.03	0.03	93	112	127	158	95	75%	96	30	96.42	15	6.6	0.1	11%	99%	1.6
Weighted Average	263	1.3	349	39%	16%	0.07	0.06	209	252	284	355	95	53%	96	188	96.42	33	5	0.1	100%	99%	3.7

*HVAC interaction factors from "Engineering Methods for Estimating the Impacts of DSM Programs, Volume 2: Fundamental Equations for Residential and Commercial End Uses," EPRI, 1993. This source shows a summer demand IC of 0.40.
**Coverage floor area, Weighting Factors from engineering judgment.
***Incentives based on UES 2011 Program Planning.

File Name: OccSensor_MAS_Schools_TEP_2011_01_14

Schools - New Lighting

Incentive Calculations
High Efficiency Outdoor Lighting

PROGRAM DATA	
Measure Life (yrs):	5
Program Life (yrs):	5
Demand AC ($/kW):	71.39
Summer On-pk Energy AC ($/kWh):	0.08
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Admin Cost ($/unit):	NA
Discount Rate:	8.03%
Social Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	999
Off-Pk Op. Hours:	3381
Total Hours:	4380
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.02

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
Line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

DEMAND/ENERGY SAVINGS								INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	%Incent	Societal
EE Measure Type	Base Measure Type	Base Fixture Watts	EE Fixture Watts	Non-Coin. Demand Savings (KW)	Coin. Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor*	(%)	BC Ratio
CFL (screw-in, spiral)	Incandescent	40	9	0.031	0.001	31	105	29	33	6.50	22%	7	23	6.56	11	0.6	0.0	5%	99%	5.0
CFL (screw-in, spiral)	Incandescent	60	13	0.047	0.001	47	159	44	49	6.50	15%	7	38	6.56	16	0.4	0.0	11%	99%	7.5
CFL (screw-in, spiral)	Incandescent	75	18	0.057	0.001	57	193	54	60	6.50	12%	7	47	6.56	20	0.3	0.0	21%	99%	9.1
CFL (screw-in, spiral)	Incandescent	100	23	0.077	0.001	77	260	73	81	6.50	9%	7	66	6.56	27	0.2	0.0	32%	99%	12.4
CFL (screw-in, spiral)	Incandescent	150	32	0.118	0.002	118	399	111	124	7.75	7%	8	103	7.89	41	0.2	0.0	21%	98%	15.7
CFL (screw-in, spiral)	Incandescent	250	55	0.195	0.003	195	659	184	205	24.75	13%	25	159	24.78	68	0.4	0.0	10%	100%	8.3
	Weighted Average			0.087	0.001	87	295	82	92	8.51	11%	9	74	8.59	30	0.3	0.0	100%	99%	10.7
Weighted Average Check				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Weighting Factor based on engineering assumptions.
**Incentive based on 2011 UES Program Planning.

File Name: OutdoorCFL_MAS_Schools_TEP_2011_01_14

Appendix G

Schools - New Lighting

Incentive Calculations
High Efficiency Outdoor Lighting

PROGRAM DATA	
Measure Life (yrs):	5
Program Life (yrs):	5
Demand AC ($/kW):	71.39
Summer On-pk Energy AC ($/kWh):	0.08
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Admin Cost ($/unit):	NA
Discount Rate:	8.03%
Social Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	999
Off-Pk Op. Hours:	3381
Total Hours:	4380
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.02

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
Line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

DEMAND/ENERGY SAVINGS								INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal
EE Measure Type	Base Measure Type	Base Fixture Watts	EE Fixture Watts	Non-Coin. Demand Savings (KW)	Coin. Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** % PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor*	(%)	BC Ratio
CFL (screw-in, spiral)	Incandescent	40	9	0.031	0.001	31	105	29	33	6.50	22%	7	23	6.56	11	0.6	0.0	5%	99%	5.0
CFL (screw-in, spiral)	Incandescent	60	13	0.047	0.001	47	159	44	49	6.50	15%	7	38	6.56	16	0.4	0.0	10%	99%	7.5
CFL (screw-in, spiral)	Incandescent	75	18	0.057	0.001	57	193	54	60	6.50	12%	7	47	6.56	20	0.3	0.0	20%	99%	9.1
CFL (screw-in, spiral)	Incandescent	100	23	0.077	0.001	77	260	73	81	6.50	9%	7	66	6.56	27	0.2	0.0	30%	99%	12.4
CFL (screw-in, spiral)	Incandescent	150	32	0.118	0.002	118	399	111	124	7.75	7%	8	103	7.89	41	0.2	0.0	20%	98%	15.7
CFL (screw-in, spiral)	Incandescent	250	55	0.195	0.003	195	659	184	205	24.75	13%	25	159	24.78	68	0.4	0.0	9%	100%	8.3
CFL (screw-in, flood)	Halogen PAR38	45	9	0.036	0.001	36	122	34	38	6.50	19%	7	27	6.56	13	0.5	0.0	1%	99%	5.8
CFL (screw-in, flood)	Halogen PAR38	60	14	0.046	0.001	46	156	43	48	6.50	15%	7	37	6.56	16	0.4	0.0	1%	99%	7.4
CFL (screw-in, flood)	Halogen PAR38	75	16	0.059	0.001	59	199	56	62	6.50	12%	7	49	6.56	21	0.3	0.0	1%	99%	9.5
CFL (screw-in, flood)	Halogen PAR39	100	23	0.077	0.001	77	260	73	81	6.50	9%	7	66	6.56	27	0.2	0.0	1%	99%	12.4
CFL (screw-in, flood)	Halogen PAR40	150	32	0.118	0.002	118	399	111	124	7.75	7%	8	103	7.89	41	0.2	0.0	1%	98%	15.7
CFL (screw-in, flood)	Halogen PAR41	250	56	0.194	0.003	194	656	183	204	24.75	14%	25	158	24.78	68	0.4	0.0	1%	100%	8.2
	Weighted Average			0.087	0.002	87	295	82	92	8.59	11%	9	74	8.66	30	0.3	0.0	100%	99%	10.6
Weighted Average Check				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Weighting Factor based on engineering assumptions.
**Incentive based on 2011 UES Program Planning.

File Name: OutdoorLighting_MAS_Schools_TEP_2011_01_14

Appendix G

Incentive Calculations
Energy-Efficient Fluorescent Fixtures
Replace Standard T12 and T8 Systems with Premium T8 Systems

Schools - New Lighting

PROGRAM DATA	
Present Year	2011
Baseline Change***	2017
Total Measure Life	15
Measure Life (yrs)*:	6
Program Life (yrs):	5
Demand AC ($/kW):	72.41
Summer On-pk Energy AC ($/kWh):	0.09
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Admin Costs ($/kWh, saved)	NA
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%
Measure Life (yrs)*:	15
Program Life (yrs):	5
Demand AC ($/kW):	97.13
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/kWh, saved)	NA
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	1,314
Off-Pk Op. Hours:	1,581
Total Op. Hours:	2,895
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand):	1.22
HVAC Interaction Factor (Energy):	1.15

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor	0%
Application	RET
Cost Basis:	Full Installed

		DEMAND/ENERGY SAVINGS																		INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	%Incent	Societal
Measure Type	Length	# of Lamps in Fixture	EE Lamp Type	EE Lamp Watts	EE Fixt. Watts****	2011-2017 Base Lamp Type	2011-2017 Base Lamp Watts	2011-2017 Base Fixt. Watts	2017+ Base Lamp Type	2017+ Base Lamp Watts	2017+ Base Fixt. Watts	2011-2017 NC Demand Savings (kW)	2011-2017 Coin. Demand Savings (kW)	2017+ NC Demand Savings (kW)	2017+ Coin. Demand Savings (kW)	2011-2017 On-Pk Energy Savings (kWh)	2011-2017 Off-Pk Energy Savings (kWh)	2017+ On-Pk Energy Savings (kWh)	2017+ Off-Pk Energy Savings (kWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive****** ($)	Recommended Incentive****** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost** ($)	Cost Savings ($)	Payback wo/Inc. (yrs)	Payback w/Inc. (yrs)	Weighting Factor*****	(%)	BC Ratio
T12 and Standard T8 to Premium T8*** Per Fixture	4-foot	4	F32T8 / ES	27	85	T12	34	144	F32T8	32	110	0.073	0.068	0.031	0.028	50	106	38	46	126	156	60	48%	62	94	61.93	19	3.3	0.1	33%	97%	2.5
		3	F32T8 / ES	27	64	T12	34	103	F32T8	32	84	0.048	0.045	0.024	0.022	59	72	30	36	68	111	60	88%	62	49	62.05	12	5.0	0.2	33%	97%	1.8
		2	F32T8 / ES	27	42	T12	37	81	F32T8	32	57	0.047	0.043	0.017	0.016	58	70	22	26	63	96	50	79%	52	44	51.58	12	4.3	0.1	33%	97%	1.9
		1	F32T8 / ES	27	23	T12	37	47	F32T8	32	30	0.029	0.027	0.009	0.008	36	43	11	13	37	54	45	120%	47	7	46.89	7	6.3	0.3	0%	96%	1.2
Weighted Average				27	64		35	109		32	83	0.056	0.052	0.024	0.022	69	83	30	36	86	121	57	72%	59	62	58.52	14	4.2	0.1	100%	97%	2.1
T12 and Standard T8 to Premium T8*** Per Lamp	4-foot	4	F32T8 / ES	27	21	T12	34	36	F32T8	32	27	0.018	0.017	0.008	0.007	23	27	9	11	31	39	15	48%	15	23	15.48	5	3.3	0.1	33%	97%	2.5
		3	F32T8 / ES	27	21	T12	34	34	F32T8	32	28	0.016	0.015	0.008	0.007	20	24	10	12	23	37	20	88%	21	16	20.68	4	5.0	0.2	33%	97%	1.8
		2	F32T8 / ES	27	21	T12	37	40	F32T8	32	29	0.023	0.022	0.009	0.008	29	35	11	13	32	48	25	79%	26	22	25.79	6	4.3	0.1	33%	97%	1.9
		1	F32T8 / ES	27	23	T12	37	47	F32T8	32	30	0.029	0.027	0.009	0.008	36	43	11	13	37	54	45	120%	47	7	46.89	7	6.3	0.3	0%	96%	1.2
Weighted Average				27	21		35	37			29	0.019	0.018	0.008	0.008	24	29	10	12	29	41	20	72%	21	21	20.65	5	4.2	0.1	100%	97%	2.0
Weighted Average Check								OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Measure life based on DSER 2008 EUL data.
** Incremental cost is total cost for a new T8 under the assumption that customers do not buy new T12 fixtures/lamps
***Definition of a Premium T8 as a 28W or 25W 4' lamp is based on the Consortium for Energy Efficiency's definition for Reduced Wattage T8 Systems.
****Based on EE Fixture Watts, 4-foot Premium T8s use an average of 78% of the wattage of 4-foot Regular T8s. Assumed that the same is true for 3-foot and 2-foot Premium T8s.
*****Weighting Factor based on engineering assumptions
******Incentives based on 2011 UES Program Planning.
******* Code change 2012 - inventory of T 12s will end in 2017 based on RUL approximation

File Name: PremiumT8_MAS_Schools_TEP_2011_01_14

Appendix G

Incentive Calculations
REDUCED LIGHTING POWER DENSITY

Schools - New Lighting

PROGRAM DATA	
Measure Life (yrs):	12
Program Life (yrs):	5
Demand AC ($/ kW):	80.30
Summer On-pk Energy AC ($/ kWh):	0.10
Summer Off-pk Energy AC ($/ kWh):	0.06
Winter On-pk Energy AC ($/ kWh):	0.06
Winter Off-pk Energy AC ($/ kWh):	0.05
Program Admin Cost ($/ unit):	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/ kW:	8.78
$/ kWh, On-Peak:	0.06
$/ kWh, Off-Peak:	0.05

INCENTIVE LEVEL	
$ / kW reduced:	350

OPERATING DATA	
On-Pk Op. Hours: (Short / Long)	1,316
Off-Pk Op. Hours: (Short / Long)	1,584
Total Hours:	2,900
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand)****:	0.20
HVAC Interaction Factor (Energy)****:	0.17

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy	9.5%
Capacity Reserve Factor:	0%
Application	NEW
Cost Basis:	Incremental

					DEMAND/ ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	%Incent	Societal
Building Type	Floor Area Sq.Ft.*	Baseline LPD** (Watts/ SF)	EE LPD (Watts/ SF)	LPD Savings Factor	Non-Coin. Demand Savings (KW)	Coin. Demand Savings (KW)	On-pk Savings (KWh)	Off-pk Savings (KWh)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive*** ($)	Recommended Incentive*** %PV	PV Costs Per Prjct ($)	NPV ($)	Incr. Cost Per Prjct ($)	Cost Savings Per Prjct ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor****	(%)	BC Ratio
School/University	25,600	1.2	1.08	10%	3.7	3.4	5,677	6,831	8,894	11,093	3,460	39%	3,464	5,429	3,464.46	1,089	3.2	0.0	100%	100%	3.2
Weighted Average	25,600	1.2	1.08	10%	3.7	3.4	5,677	6,831	8,894	11,093	3,460	39%	3,464	5,429	3,464.46	1,089	3.2	0.0	100%	100%	3.2
Weighted Average Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

* 2003 CBECS Detailed Tables, released June 2006, BECS Table B1. Summary Table: Total and Means of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003
**ANSI/ ASHRAE/ IESNA Standard 90.1-2004, Table 9.5.1 Lighting Power Densities Using the Building Area Method
***Incentives based on 2011 UES Program Planning.
****HVAC Interaction Factors and Weighting Factors based on engineering assumptions.

Appendix G

Schools - New Lighting

Incentive Calculations
Standard T8
Replace T12 Systems and Magnetic Ballasts with T8 Systems and Electronic Ballasts

PROGRAM DATA	
Measure Life (yrs)*:	6
Program Life (yrs):	5
Demand AC ($/ kW):	72.41
Summer On-pk Energy AC ($/ kWh):	0.09
Summer Off-pk Energy AC ($/ kWh):	0.05
Winter On-pk Energy AC ($/ kWh):	0.06
Winter Off-pk Energy AC ($/ kWh):	0.04
Program Admin Costs ($/ kWh):	0
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/ kW:	8.78
$/ kWh, On-Peak:	0.06
$/ kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	1,314
Off-Pk Op. Hours:	1,581
Total Op. Hours:	2,896
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand):	1.22
HVAC Interaction Factor (Energy):	1.15

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

				DEMAND/ ENERGY SAVINGS							INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Measure Type	Length (ft)	# of Lamps in Fixture	Ballast Type	Base Fixt. Watts	EE Lamp Watts	EE Fixt. Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** % PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
Standard T8s	2	1	Standard	30	17	27	0.003	0.003	4	5	4	4	25.00	666%	25	-21	25.34	1	29.6	0.4	0.13%	99%	0.2
		2	Standard	48	17	34	0.017	0.015	21	25	19	21	27.00	143%	28	-6	27.51	4	6.4	0.1	0.56%	98%	0.8
		2	High Power	48	17	35	0.015	0.014	19	23	17	20	28.00	161%	28	-8	28.16	4	7.1	0.0	0.28%	99%	0.7
		2	Low Power	48	17	32	0.019	0.018	24	29	22	25	27.00	123%	28	-3	27.69	5	5.5	0.1	0.01%	98%	0.9
	3	1	Standard	45	30	26	0.022	0.021	28	33	25	29	26.00	103%	27	2	26.57	6	4.6	0.1	0.02%	98%	1.1
		4	High Power	133	30	76	0.069	0.064	85	103	78	89	38.00	49%	38	50	38.35	18	2.2	0.0	0.03%	99%	2.3
	4	1	Standard	48	32	33	0.018	0.017	22	27	20	23	24.00	117%	25	-1	24.57	5	5.3	0.1	2.65%	98%	0.9
		1	High Power	48	32	39	0.011	0.010	14	16	12	14	24.00	194%	25	-11	24.98	3	8.8	0.3	0.28%	96%	0.6
		1	Low Power	48	32	33	0.019	0.018	23	28	21	24	24.00	112%	25	-1	24.90	5	5.1	0.2	0.10%	96%	1.0
		2	Standard	84	32	65	0.022	0.021	28	33	25	29	25.00	96%	26	3	25.97	6	4.5	0.2	57.79%	96%	1.1
		2	High Power	84	32	74	0.011	0.011	14	17	13	15	26.00	202%	27	-12	26.61	3	9.1	0.2	23.44%	98%	0.5
		2	Low Power	84	32	51	0.040	0.037	49	59	45	51	26.00	58%	26	25	26.14	10	2.5	0.0	2.17%	99%	2.0
		3	Standard	103	32	97	0.007	0.007	9	11	8	9	30.00	370%	30	-21	30.27	2	16.4	0.1	0.32%	99%	0.3
		3	High Power	103	32	100	0.003	0.003	4	5	4	4	32.00	892%	33	-28	32.51	1	39.8	0.6	0.07%	98%	0.1
		3	Low Power	103	32	65	0.046	0.043	57	69	52	59	34.00	65%	34	25	34.44	12	2.9	0.0	1.23%	99%	1.7
		4	Standard	144	32	101	0.052	0.048	65	78	59	67	28.00	47%	29	38	28.62	13	2.1	0.0	3.51%	98%	2.3
		4	High Power	144	32	106	0.046	0.043	57	69	52	59	30.00	57%	30	29	30.34	12	2.5	0.0	0.51%	99%	2.0
		4	Low Power	144	32	66	0.095	0.088	118	142	107	122	28.00	26%	29	93	28.63	24	1.2	0.0	4.08%	98%	4.3
	8	1	High Power	93	54	77	0.019	0.018	24	29	22	25	36.00	165%	36	-12	36.46	5	7.3	0.1	0.01%	99%	0.7
		2	Standard	184	54	119	0.079	0.074	99	119	90	102	40.00	44%	41	61	40.68	21	2.0	0.0	0.01%	98%	2.5
		2	Low Power	184	54	107	0.094	0.087	117	140	107	121	41.00	38%	41	80	41.03	24	1.7	0.0	2.70%	100%	2.9
		2	Standard	184	59	119	0.079	0.074	99	119	90	102	40.00	44%	40	62	40.23	21	2.0	0.0	0.07%	99%	2.5
		4	Standard	278	54	238	0.049	0.046	61	74	56	63	50.00	90%	51	13	50.52	13	4.0	0.0	0.01%	99%	1.3
Weighted Average				90	32	69	0.026	0.024	33	39	30	34	26.08	118%	27	7	26.87	7	5.3	0.2	100%	97%	1.3

* Measure life based on DEER 2008 EUL data, new codes standard.
**Incentive based on UES 2011 Program Planning.

File Name: T8_MAS_Schools_TEP_2011_01_14

Appendix G

Schools - New Lighting

Incentive Calculations
Energy-Efficient Fluorescent Fixtures
Replace Standard T8 Systems with Premium T8 Systems

PROGRAM DATA	
Measure Life (yrs)*:	15
Program Life (yrs):	5
Demand AC ($/kW):	97.13
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/kWh, saved)	NA
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	1,314
Off-Pk Op. Hours:	1,581
Total Op. Hours:	2,896
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.93
HVAC Interaction Factor (Demand):	1.22
HVAC Interaction Factor (Energy):	1.15

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

				DEMAND/ ENERGY SAVINGS									INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Measure Type	Length	# of Lamps in Fixture	Base Lamp Type	Base Lamp Watts	Base Fixt. Watts	EE Lamp Type	EE Lamp Watts	EE Fixt. Watts****	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive****** ($)	Recommended Incentive****** % PV	PV Program Cost ($)	NPV ($)	Incr. Cost** ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor*****	(%)	BC Ratio
Std T8 to	4-foot	4	F32T8	32	109.5	F32T8 / ES	27	85	0.031	0.028	38	46	78	102	60	77%	62	40	61.93	8	7.9	0.2	33%	97%	1.6
Prem T8***		3	F32T8	32	83.5	F32T8 / ES	27	64	0.024	0.022	30	36	62	80	60	97%	62	18	62.05	6	10.0	0.3	33%	97%	1.3
Per Fixture		2	F32T8	32	56.5	F32T8 / ES	27	42	0.017	0.016	22	26	45	58	50	112%	52	6	51.58	4	11.5	0.4	33%	97%	1.1
		1	F32T8	32	30	F32T8 / ES	27	23	0.009	0.008	11	13	22	28	45	206%	47	-18	46.89	2	21.2	0.9	0%	96%	0.6
Weighted Average				32	83		27	64	0.024	0.022	30	36	61	80	57	95%	59	21	58.52	6	9.8	0.3	100%	97%	1.4
Std T8 to	4-foot	4	F32T8	32	27.4	F32T8 / ES	27	21	0.008	0.007	9	11	20	25	15	77%	15	10	15.48	2	7.9	0.2	33%	97%	1.6
Prem T8***		3	F32T8	32	27.8	F32T8 / ES	27	21	0.008	0.007	10	12	21	27	20	97%	21	6	20.68	2	10.0	0.3	33%	97%	1.3
Per Lamp		2	F32T8	32	28.3	F32T8 / ES	27	21	0.009	0.008	11	13	22	29	25	112%	26	3	25.79	2	11.5	0.4	33%	97%	1.1
		1	F32T8	32	30.0	F32T8 / ES	27	23	0.009	0.008	11	13	22	28	45	206%	47	-18	46.89	2	21.2	0.9	0%	96%	0.6
Weighted Average				32	28		27	21	0.008	0.008	10	12	21	27	20	95%	21	6	20.65	2	9.8	0.3	100%	97%	1.3
Weighted Average Check				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Measure life based on DEER 2008 EUL data.
** Incremental cost is total cost for a new T8 under the assumption that customers do not buy new T12 fixtures/lamps
***Definition of a Premium T8 as a 28W or 25W 4' lamp is based on the Consortium for Energy Efficiency's definition for Reduced Wattage T8 Systems.
****Based on EE Fixture Watts, 4-foot Premium T8s use an average of 78% of the wattage of 4-foot Regular T8s. Assumed that the same is true for 3-foot and 2-foot Premium T8s.
*****Weighting Factor based on engineering assumptions
******Incentives based on 2011 UES Program Planning.

File Name: PremiumT8_MAS_Schools_TEP_2011_01_14

Appendix G

Schools - Existing Motors

Incentive Calculations
VSD's Installed on ODP Motors
1800 RPM

PROGRAM DATA	
Conservation Life (yrs):	15
Program Life (yrs):	5
Demand AC ($/kW):	97.13
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/unit):	NA
IRP Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

SAVINGS FACTOR ASSUMPTIONS	
VFD Efficiency:	95%
Peak Flow Ratio (Dem	0.95
Avg Flow Ratio (Energ	0.55

OPERATING DATA	
On-Pk Op. Hours:	2440
Off-Pk Op. Hours:	2643
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	0.95
Load Factor:	0.68
Demand Savings Factor:	0.0%
Energy Savings Factor:	76.9%

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
Line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0.0%
Application	RET / NEW
Cost Basis:	Full Installed

						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Inc.	Societal
Motor HP	Motor Eff.	Non Coin Demand Savings Per HP (KW)	Coin Demand Savings Per HP (kW)	On-pk Savings Per HP (KWh)	Off-pk Savings Per HP (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive (Per HP)* ($)	Recommended Incentive (Per HP)* %PV	PV Cost Per HP ($)	NPV ($)	Incr. Cost Per HP ($)	Cost Savings Per HP ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)	BC Ratio
1	80.4%	0.00	0.00	1,188	1,287	1,570	2,328	5,045	321.38%	5,045	-3,476	5,045.45	139	36.4	0.0	0.0%	100%	0.5
1.5	84.8%	0.00	0.00	1,126	1,220	1,488	2,207	3,430	230.51%	3,433	-1,945	3,433.25	131	26.1	0.0	0.0%	100%	0.6
2	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	2,615	177.55%	2,618	-1,146	2,618.34	130	20.1	0.0	0.0%	100%	0.8
3	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	1,795	121.87%	1,798	-325	1,797.96	130	13.8	0.0	5.0%	100%	1.2
5	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	1,125	76.38%	1,129	344	1,128.88	130	8.7	0.0	4.0%	100%	1.9
7.5	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	785	53.30%	786	687	785.94	130	6.0	0.0	2.0%	100%	2.8
10	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	610	41.42%	611	861	611.41	130	4.7	0.0	4.0%	100%	3.6
15	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	430	29.20%	433	1,040	432.95	130	3.3	0.0	9.0%	99%	5.0
20	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	340	23.08%	341	1,132	341.26	130	2.6	0.0	13.0%	100%	6.4
25	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	280	19.01%	285	1,188	284.62	130	2.2	0.0	23.0%	98%	7.7
30	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	245	16.63%	246	1,227	246.14	130	1.9	0.0	4.0%	100%	8.9
40	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	195	13.24%	196	1,276	196.50	130	1.5	0.0	9.0%	99%	11.1
50	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	165	11.20%	166	1,307	165.74	130	1.3	0.0	5.0%	100%	13.2
60	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	140	9.51%	145	1,328	144.58	130	1.1	0.0	2.0%	97%	15.1
75	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	120	8.15%	123	1,350	122.73	130	0.9	0.0	0.0%	98%	17.8
100	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	100	6.79%	100	1,373	100.04	130	0.8	0.0	4.0%	100%	21.8
125	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	85	5.77%	86	1,387	85.87	130	0.7	0.0	6.0%	99%	25.4
150	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	75	5.09%	76	1,397	75.92	130	0.6	0.0	0.0%	99%	28.8
200	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	60	4.07%	63	1,410	62.70	130	0.5	0.0	1.0%	96%	34.8
300	85.7%	0.00	0.00	1,115	1,207	1,473	2,185	48	3.26%	49	1,424	48.51	130	0.4	0.0	3.0%	99%	45.0
501-1000	92.3%	0.00	0.00	1,034	1,121	1,367	2,028	48	3.51%	49	1,318	48.51	121	0.4	0.0	3.0%	99%	41.8
1000+	92.3%	0.00	0.00	1,034	1,121	1,367	2,028	48	3.51%	49	1,318	48.51	121	0.4	0.0	3.0%	99%	41.8
Weighted Average		0	0	1,110	1,202	1,466	2,175	375	25%	377	1,090	376.88	130	2.9	0.0	100%	99%	5.8

*Based on 2011 UES Program Planning.

File Name: VSD_MAS_Schools_TEP_2011_01_14

Schools - New Plug Loads

Incentive Calculations
Advanced Power Strips

PROGRAM DATA	
Measure Life (yrs)*:	12
Program Life (yrs):	5
Demand AC ($/kW):	80.30
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/kWh, saved)	NA
Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours:	38%
Off-Pk Op. Hours:	62%
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	1.00

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET
Cost Basis:	Full Installed

		DEMAND/ ENERGY SAVINGS					INCENTIVE CALCULATIONS							CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Measure Type	Size	# of Smart Strips	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive** ($)	Recommended Incentive** %PV	Program Admin Costs ($)	PV Total Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor***	(%)	BC Ratio
Occupancy	8-outlet	1	0.044	0.044	65	105	116	145	75	65%	75	150	-5	75.00	14	5.3	0.0	100%	100%	1.0
	Weighted Average		0.044	0.044	65	105	116	145	75	65%	75	150	-5	75.00	14	5.3	0.0	100%	100%	1.0
Load Sensor	6-outlet	1	0.023	0.023	36	59	64	80	30	47%	30	60	20	30.00	8	3.9	0.0	31%	100%	1.3
	7-outlet	1	0.023	0.023	37	61	66	82	31	47%	32	63	19	31.50	8	4.0	0.1	8%	98%	1.3
	8-outlet	1	0.026	0.026	42	69	74	93	32	43%	32	64	29	32.00	9	3.6	0.0	31%	100%	1.4
	10-outlet	1	0.034	0.034	57	93	100	124	34	34%	34	68	56	34.00	12	2.8	0.0	31%	100%	1.8
	Weighted Average		0.027	0.027	45	73	78	98	32	42%	32	64	34	31.96	9	3.5	0.0	100%	100%	1.5
Timer Plug	8-outlet	1	0.047	0.047	81	132	140	175	19	14%	19	38	137	19.00	17	1.1	0.0	100%	100%	4.6
	Weighted Average		0.047	0.047	81	132	140	175	19	14%	19	38	137	19.00	17	1.1	0.0	100%	100%	4.6

*Measure life based on information in *Final Report Electronics and Energy Efficiency: A Plug Load Characterization Study* SCE0284. Prepared for Southern California Edison by Research Into Action. January 29, 2010.
**Incentives based on 2011 UES Program Planning.
***Weighting Factor based on engineering assumptions.

File Name: AdvancedStrips_MAS_Schools_TEP_2011_01_14

Incentive Calculations

Occupancy Sensor Vending Machine and Reach-in Cooler Controls

Schools - New Refrigerators

PROGRAM DATA	
Measure Life (yrs):	12
Program Life (yrs):	5
Demand AC ($/kW):	80.30
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.05
Program Admin Costs ($/unit):	NA
Discount Rate:	8.03%
Social Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	8.78
$/kWh, On-Peak:	0.06
$/kWh, Off-Peak:	0.05

OPERATING DATA	
On-Pk Op. Hours Fraction:	24%
Off-Pk Op. Hours Fraction:	76%
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	100%
Demand Load Factor**:	0.60

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
Line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0%
Application	RET, NEW
Cost Basis:	Installed

		DEMAND/ ENERGY SAVINGS							INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent	Societal
Measure Description	Type	Base Annual kWh	Demand Savings Fraction*	Energy Savings Fraction*	Non-Coin. Demand Savings Per Unit (KW)	Coin. Demand Savings Per Unit (KW)	On-pk Savings Per Unit (KWh)	Off-pk Savings Per Unit (KWh)	IRP PV Benefit Per Unit ($)	Social PV Benefit Per Unit ($)	Recommended Incentive (Per Unit)*** ($)	Recommended Incentive (Per Unit)*** % PV	PV Cost Per Unit ($)	NPV ($)	Incr. Cost Per Unit ($)	Cost Savings Per Unit ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor**	(%)	BC Ratio
Reach-in Cooler Controls	CoolerMiser	4,000	15%	30%	0.11	0.11	293	907	651	813	195	30%	199	452	199	79	2.5	0.1	33%	98%	4.1
Beverage Case Controls	VendMiser	3,500	23%	46%	0.15	0.15	393	1,217	874	1,090	195	22%	199	675	199	105	1.9	0.0	33%	98%	5.5
Snack Machine Controls	SnackMiser	700	23%	46%	0.03	0.03	79	243	175	218	100	57%	103	72	103	21	4.9	0.1	33%	97%	2.1
Weighted Average		2,733	20%	41%	0.10	0.10	255	789	567	707	163	36%	167	400	167	68	3.1	0.1	100%	98%	4.2
Weighted Average Check			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

*Personal correspondence with USA technologies/ verifiable through "Evaluation of the LiteVend Program" Ecos 2004: http://calmac.org/publications/Final_Report_063004.pdf

**Demand Load Factor and Weighting Factor based on engineering assumptions.

***Incentives based on UES 2011 Program Planning.

File Name: VendingMiser_MAS_Schools_TEP_2011_01_14

Schools - Custom Measures

Incentive Calculations
Custom Measures

PROGRAM DATA	
Measure Life (yrs)**:	10
Program Life (yrs):	5
Demand AC ($/kW):	77.23
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.05
Winter On-pk Energy AC ($/kWh):	0.06
Winter Off-pk Energy AC ($/kWh):	0.04
Program Administrative Costs ($/unit):	0
IRP Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Res Ave	
$/kW:	0.00
$/kWh, On-Peak:	0.10
$/kWh, Off-Peak:	0.10

OPERATING DATA**	
Op Hours:	8,760
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	80%

OTHER FACTORS	
Line Loss Energy Factor:	9.5%
Line Loss Demand Factor:	9.5%
Capacity Reserve Factor:	0.0%
Application	RET
Cost Basis:	Full Installed

	DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal
Measure Type	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (kW)	OnPeak Energy Savings** (kWh)	Off Peak Energy Savings** (kWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive* ($)	Recommended Incentive* % PV	PV Program Cost ($)	NPV ($)	Incr. Cost** ($)	Cost Savings ($)	Payback w o/Inc. (yrs)	Payback w /Inc. (yrs)	Weighting Factor**	(%)	BC Ratio
Per Customer	3.73	2.98	16,337	16,337	16,889	20,442	6,530	39%	6,535	10,354	6,534.76	3,252	2.0	0.0	100%	100%	3.1
Weighted Average	3.73	2.98	16,337	16,337	16,889	20,442	6,530	39%	6,535	10,354	6,534.76	3,252	2.0	0.0	100%	100%	3.1

*Incentive based on 2011 UES Program Planning.
**OnPk Off Pk Energy Savings, Operating Data, Weighting Factors, Incremental Costs, and Measure Life based on engineering assumptions based on past program data and program planning.

File Name: Custom_MAS_Schools_TEP_2011_01_14

APPENDIX H:

BEHAVIORAL COMPREHENSIVE PROGRAM

Program Description

In its desire to increase savings yields from Demand-Side Management ("DSM") programs, Tucson Electric Power Company ("TEP") is taking several approaches: introducing new programs and measures to existing programs, and increasing participation in existing programs. Behavior based programs have elements of all of these approaches.

Behavioral programs are designed to affect habitual behaviors like turning off lights or adjusting the thermostat, purchasing behaviors such as buying efficient lights and appliances and the behavior of participating in utility DSM programs. The new Behavioral Comprehensive programs target specific and relevant efficiency recommendations to each customer, including information about key energy efficiency programs, making it easier for each customer to take action on the recommendations and programs most relevant to them.

The types of behaviors to be influenced include:

- Habitual behaviors
  - » Adjust thermostat setting
  - » Adjust water heater set point
  - » Unplug appliances or use smart strips
  - » Turn off unnecessary lights
  - » Run dishwasher only when full
  - » Wash clothes in cold water
  - » Line dry laundry
- Small purchasing and maintenance behaviors
  - » Purchase install and program a programmable thermostat
  - » Purchase and install faucet aerators and low flow shower heads
  - » Purchase and install compact fluorescent light bulbs
  - » Request home energy audit to improve EE
  - » HVAC maintenance
  - » Clean refrigerator coils
- Larger purchasing decisions
  - » Purchase an ENERGY STAR appliance
  - » Install extra insulation and implement air sealing to make home more EE
  - » Install EE windows and doors
  - » Purchase higher EE heating and cooling system

TEP will influence these behaviors through a suite of initiatives including:

- Home energy reports (filed previously);
- Direct canvassing – a grass roots, door to door approach;
- K-12 education, harnessing the enthusiasm of kids and the community focal point of schools to mobilize for energy efficiency;

- In home energy displays (pilot) providing customers feedback on their energy use; and
- Community Education – enhancing the efforts of community organizations with hands on training for efficiency mentors and community members.

Program Objectives and Rationale

Technology-based energy efficiency achieves only a fraction of total efficiency potential. The barriers to wider spread implementation of energy efficiency are sociological not technological. In fact, in recent Federal testimony, the American Council for an Energy-Efficient Economy ("ACEEE") stated that recent studies suggest that:

"...the potential behavior-related energy savings in the residential sector alone represent roughly 25 percent of current residential sector energy consumption."

Capturing a larger fraction of energy efficiency potential requires behavior change. Recognition of behavior change as efficiency potential is essential to the evolution of utility energy efficiency programs. Efficiency programs will need to integrate behavior change strategies into their DSM portfolios in order to fully realize their achievable potential.

There is much utility interest in behavior based initiatives as is evidenced by significant increase in the number and attendance of events taking place in this nascent field. Data is accumulating that show the real and measurable savings to be had through behavior based initiatives. That being said, some behavior based programs represent a divergence from the historical approach to energy efficiency program design, implementation and evaluation and care must be taken to design programs that will generate verifiable savings that will sustain the rigor of evaluation protocol.

Behavioral science-based marketing, data analytics, and cutting-edge software are the tools being applied in this program to broadly and deeply engage utility customers. Utility based behavior initiatives can be categorized into 4 broad categories: Mass Media/Social Media, Community Based Social Marketing, Feedback and Competitions. TEP's proposed plan includes aspects of all of these.

The primary barriers to wider spread implementation of this approach are:

- Efficiency is invisible;
- Most people when asked if they want to save energy will say yes. Often they think they are already doing what they can to be energy efficient;
- Not knowing what to do, or what to do first;
- Not knowing where to obtain energy efficient products and services;
- Perceptions of cost, financial constraints;
- Doubt regarding the ability to make a significant difference in energy use/cost;
- Methodologies to measure savings through behavioral initiatives are not widely known; and
- Questions regarding the persistence of savings from behavioral initiatives.

Some of the major objectives from this program are to:

- Generate significant savings for DSM portfolio objectives;
- Develop relationships with TEP customers leading to other areas of participation in TEP's portfolio of DSM programs;
- Promote efficient building operations;
- Lower energy bills for the consumer; and
- Plant seeds for future energy users through school and community outreach.

Target Market

Behavioral initiatives apply to all TEP customers. They can be targeted at homes and/or businesses. The focus for this effort is on behavioral change within residences.

Program Eligibility

All TEP residential customers will be eligible for the overall program. Some measures however are targeted specifically for certain groups. As an example Direct Canvassing is designed primarily as an outreach program for neighborhoods difficult to reach with traditional messaging.

Current Baseline Conditions

While consumer attitudes and awareness regarding the impacts of our energy use and the potential of energy efficiency are increasing, and an ever increasing percentage of people express a willingness to take action, there is often confusion about energy efficiency terms, what concrete steps can be taken and how much of an impact they will have. Awareness of and favorable attitudes toward energy efficiency in general do not necessarily correlate with intentions to purchase specific energy efficient products or take particular energy efficient actions. There is also typically a significant gap between awareness and action that must be addressed through specific targeted actionable messages. Many people believe they are "doing all they can" while the reality is they could easily do more.

"Consumers have been conditioned to think that their driving habits are the best way to help the environment. They have not realized that the biggest thing they can do is use less electricity and be more energy efficient" —Shelton Research Group

Products and Services

Behavior programs are made up of the Home Energy Reports Program, filed separately and the Behavior Comprehensive Program which is made up of several unique initiatives as follows:

- Direct Canvassing
- K-12 Education
- In Home Energy Display – Pilot
- Community Education
- CFL Give-Away

Each initiative is described in some detail in the succeeding sections.

Delivery Strategy, Incentive Processing and Administration

Doug McKenzie-Mohr, PhD, is an environmental psychologist and a leading expert in the design of programs to promote sustainable behavior. Dr. McKenzie-Mohr, a noted pioneer and expert in behavior based energy efficiency initiatives, suggests the following steps in designing a successful behavior based campaign:

- Identify barriers and benefits
- Develop strategies using behavior change tools
- Pilot the initiative as a carefully designed experiment and refine according to findings
- Implement
- Evaluate

As outlined throughout this section, this plan follows that path. In addition to being new, behavior based programs are relatively unique and require specialized expertise to implement. Accordingly, TEP put out an RFP for behavior based implementation providers and all of the five behavior based approaches are being delivered by separate implementation contractors. At the writing of this filing, all implementation contractors had not yet been selected.

I.A.1.1 Home Energy Reports

This approach, Home Energy Reports, a part of the Behavioral suite of programs, was filed separately.

I.A.1.2 Direct Canvassing

The direct canvassing initiative is a grass-roots, door to door approach to inducing behavior change for energy efficiency. Volunteers from local community organizations are trained and deployed to go door to door and talk to customers about energy efficiency. Two CFL bulbs are left behind with the customers as well as program materials for appropriate TEP DSM programs. This approach capitalizes on the sociological research which shows people are more likely to take action when the information is delivered by a trusted source, such as a member of their own community.

I.A.1.3 K-12 Education

The K-12 Education approach is an extension of the existing TEP education program. In this approach, in addition to energy based class room curriculum, students will be instructed in energy saving approaches that can be implemented in their homes. Students will be provided a take home kit which includes several energy saving devices such as CFL's, refrigerator thermometers and educational materials regarding actions that can be taken to reduce energy use.

I.A.1.4 In-Home Display Pilot

The In-Home Display Pilot Program works by providing a digital display that show customers their individual current cost of energy in cents per hour and their cumulative cost for the month. The program makes customers aware of their energy consumption with instant, easy to access information. It also allows them to monitor changes in household energy usage as they choose behavioral modifications suitable for their individual lifestyle. The concept is simple: once customers are able to identify energy savings after making behavioral modifications, sociological instincts take over and customers are induced to use less energy. Providing feedback in this and other forms such as home energy reports have been demonstrated to provide real and measurable savings. TEP will evaluate and report any reduction in energy consumption and will recommend continuation of the program pending positive results showing this as a cost-effective option producing measurable energy savings.

I.A.1.5 Community Education

The Community Education Program will engage community groups and work with public entities with "train the trainer" hands-on energy efficiency seminars. Community trainers will be given a broad based review of energy, efficiency and comfort principles. This creates a level of understanding which dovetails into identifying specific actions and behaviors to reduce energy consumption at home, work or play. Community groups such as the Metropolitan Energy Commission, the Sonoran Environmental Research Organization, and other neighborhood organizations are engaged both to identify mentors to be trained and to schedule sessions led by these mentors for community members on a grass roots level. The seminars include hands-on training with a wide sample of materials such as weather stripping, low flow showerheads, caulk or foam sealant, CFL's, etc. provided to participants. Energy savings are attributed to the direct install items included in the seminar materials for neighborhood participants. Efforts to coordinate neighborhood sessions with school curriculum activities or to reinforce direct canvassing initiatives will aid the adoption and retention of energy efficient behaviors.

I.A.1.6 CFL Give-Away

The Compact Florescent Light Give-Away program will complement TEP's presence at community events, its overall education and outreach efforts, and efficiency messaging. Free compact fluorescent light bulbs will be made available at community events and to community organizations such as those involved in our Community Education Program. Flexibility to add methods and develop partnerships to aid in the distribution of these bulbs is a program design element which will enhance program effectiveness over its lifespan.

Program Marketing and Communication Strategy

Marketing of the behavior approaches will be handled by the implementation contractors and coordinated with TEP's overall messaging to reinforce the effectiveness of the behavior programs. The Behavioral Comprehensive program will be a key part of our overall consumer awareness campaign and be marketed through both traditional and non-traditional channels. Each approach will also involve a unique strategy:

- Home energy reports will be offered in an opt out approach; in other words, participants will be chosen at random. The program is a tool to educate and encourage behaviors like participating in other programs.
- The recipients of the direct canvassing approach will be chosen by TEP based on criteria regarding which demographic group is wished to be reached. Those who receive direct canvassing will be limited to the demographic group or geographic area designated by TEP. The program will be marketed for widespread community awareness in advance.
- The K-12 Education approach involves sending students home with energy conservation kits. Those who receive the kits will be those who receive the energy curriculum provided by the implementation contractor. The program will not be marketed through traditional channels. Effort will be made when possible to coordinate the school program with other outreach efforts in the same neighborhood.
- The in home display pilot program will take an additional advantage of the web portal displays provided to 600 participants in the direct load control program, 200 customers in this group will also receive a separate in home display which is always available for the family to look at. These customers will be chosen at random. The program will not be marketed through traditional channels.
- Community education seminars will be channeled through public and social organizations in order to maximize the effectiveness of the energy efficiency outreach efforts of those organizations. The program will not be marketed through traditional channels.

- The CFL Give-Away program will provide up to 150,000 free compact fluorescent light bulbs per year to TEP customers at community events, through community organizations and additional efforts. Marketing messages are anticipated in conjunction with other programs and through traditional channels.

Program Implementation Schedule

Table 1-1shows the estimated timeline for key program activities by quarter.

Table 1-1. Implementation Schedule

Program Activities	2011				2012			
Submit program for approval								
Program approval (estimated)								
Selection of implementation contractors								
Create marketing materials, hire staff, set up AZ office								
Program kick-off and implementation								

Measurement, Evaluation, and Research Plan

TEP will conduct an evaluation of Program participants to assess the effectiveness of behavior program initiatives. TEP will determine how effective the initiatives have been in encouraging customers to make behavioral changes that save energy and how effective the initiatives have been in encouraging participation in other available EE programs. TEP will also measure energy savings of to determine which of the initiatives are most effective. Results will be analyzed and Program design refined according to findings. Other similar behavioral applications may also be analyzed in the future to take advantage of new found insights.

In recognition of the fact that behavior based initiatives must provide a highly reliable evaluation protocol, we have proactively designed one that gets at the key issues of:

- Boomerang effect: Low-energy users may respond to the usage feedback and neighbor comparison by increasing energy consumption.
- Growth/decay effect: Over time the treatment effect may evolve, perhaps growing (energy savings increases), perhaps decaying.
- Treatment persistence: Energy savings may persist after termination of treatment.
- Rebound effect: After an extended period without treatment a household may respond to renewed treatment with a savings "bounce".

In order to accomplish this, the pilot design for Home Energy Reports includes setup of test and control groups:

- Divide targeted population into two statistically equivalent groups
- Verify Groups: Verify no historical difference in usage between test and control groups Deploy the strategy to test group only, no action taken with control group
- Measure Impact: Compare average energy use pre and post reports for both groups

TEP will evaluate the energy savings from other behavioral initiatives by using a third party evaluator experienced in evaluating behavioral initiatives.

Quality Assurance and Control

The initiatives will be delivered by implementation contractors. Implementation contractors each have internal QC protocols appropriate to their specific approach. The implementation contractors will be managed and quality assurance will be maintained by the program administrator. Customers will be surveyed and spot checks made to assure quality program delivery

Program Costs and Benefits

Table 1-2. Measure Savings, Incentive Level, and Participation, Benefit-Cost

Measure	Annual Energy Savings (kWh) /Unit	Peak Demand Savings (kW)/ Unit	Avg. Incentive / Unit	2011 Units	2012 Units	Measure Level Societal Test Result
K-12 Education Kit	142	0.01	$20/home	6,000	6,000	2.86
Community Education Kit	183	0.01	$56/home	400	400	2.29
Direct Canvassing	68	0.01	$3/home	-	41,000	7.28
In Home Energy Displays	268	0.03	$70/home	600	600	1.13
CFL Giveaway (23 W CFL)	56	0.01	$2/home	150,000	-	10.46
CFL Giveaway (18 W CFL)	41	0.005	$2/home	-	150,000	6.67

Table 1-3. Program Budgets

	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
2011	$422,900	$300,794	$50,000	$14,085	$31,511	$819,289	$2,513,531	3.9
2012	$602,380	$698,765	$50,000	$14,507	$54,626	$1,420,279	$2,129,394	2.5

Table 1-4. Environmental Benefits

	Annual CO2 Savings (Metric Tons)	Annual NOx Savings (Metric Tons)	Annual SOx Savings (Metric Tons)	Lifetime CO2 Savings (Metric Tons)	Lifetime NOx Savings (Metric Tons)	Lifetime SOx Savings (Metric Tons)
2011	9,244	12.48	10.83	55,308	75	65
2012	9,849	13.30	11.53	58,938	80	69

Measure Analysis Sheets

Behavioral Programs

Incentive Calculations
CFL Give-Away

PROGRAM DATA	
18 W Measure Life (yrs):	5
23 W Measure Life (yrs):	6
Program Life (yrs):	20
18 W Demand AC ($/kW):	$71.39
18 W Summer On-pk Energy AC ($/kWh):	$0.08
18 W Summer Off-pk Energy AC ($/kWh):	$0.05
18 W Winter On-pk Energy AC ($/kWh):	$0.06
18 W Winter Off-pk Energy AC ($/kWh):	$0.04
23 W Demand AC ($/kW):	$72.41
23 W Summer On-pk Energy AC ($/kWh):	$0.09
23 W Summer Off-pk Energy AC ($/kWh):	$0.05
23 W Winter On-pk Energy AC ($/kWh):	$0.06
23 W Winter Off-pk Energy AC ($/kWh):	$0.04
Admin Costs per Bulb:	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	0.00
$/kWh, On-Peak:	$0.10
$/kWh, Off-Peak:	$0.10

OPERATING DATA	
On-Pk Op. Hours:	274
Off-Pk Op. Hours:	577
Summer Ratio:	41%
Winter Ratio:	59%
Coincidence Factor:	0.08
In-Service Rate	75%
Leakage Rate	0%
HVAC Interaction Factor (Demand):	0.41
HVAC Interaction Factor (Energy):	0.13

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	ROB
Cost Basis:	Incremental

DEMAND/ENERGY SAVINGS								INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	%Incent
Kit Contents	Number per Kit	Inc. Fixture Watts	CFL Fixture Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive ($)	Recommended Incentive %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/Inc. (yrs)	Payback w/Inc. (yrs)	Weighting Factor	(%)
23 Watt Twist	1	100	23	0.081	0.007	18	38	17	19	2	11%	2	15	2	6	0.3	0.0	100%	100%
18 Watt Twist	1	75	18	0.060	0.005	13	28	11	12	2	20%	2	8	2	4	0.5	0.0	100%	100%

File Name: CFLGiveAway_MAS_Res_TEP_2010_12_20

Incentive Calculations
Community Energy Education Program Kit

Education and Outreach - Community Education

PROGRAM DATA	
CFL 13 W Measure Life:	6
Faucet Aerator Life**:	10
Showerhead Measure Life**:	10
Night Light Measure Life:	16
Program Life (yrs):	5
CFL 13 W Demand AC ($/ kW):	$72.41
CFL 13 W Summer On-pk Energy AC ($/ kWh):	$0.09
CFL 13 W Summer Off-pk Energy AC ($/ kWh):	$0.05
CFL 13 W Winter On-pk Energy AC ($/ kWh):	$0.06
CFL 13 W Winter Off-pk Energy AC ($/ kWh):	$0.04
Faucet Aerator Demand AC ($/ kW):	$77.23
Faucet Aerator Summer On-pk Energy AC ($/ kWh):	$0.10
Faucet Aerator Summer Off-pk Energy AC ($/ kWh):	$0.05
Faucet Aerator Winter On-pk Energy AC ($/ kWh):	$0.06
Faucet Aerator Winter Off-pk Energy AC ($/ kWh):	$0.04
Faucet Aerator Gas AC ($/ therm):	$0.78
Showerhead Demand AC ($/ kW):	$77.23
Showerhead Summer On-pk Energy AC ($/ kWh):	$0.10
Showerhead Summer Off-pk Energy AC ($/ kWh):	$0.05
Showerhead Winter On-pk Energy AC ($/ kWh):	$0.06
Showerhead Winter Off-pk Energy AC ($/ kWh):	$0.04
Showerhead Gas AC ($/ therm):	$0.78
Night Light Demand AC ($/ kW):	$98.92
Night Light Summer On-pk Energy AC ($/ kWh):	$0.10
Night Light Summer Off-pk Energy AC ($/ kWh):	$0.06
Night Light Winter On-pk Energy AC ($/ kWh):	$0.07
Night Light Winter Off-pk Energy AC ($/ kWh):	$0.05
Administrative Cost:	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	0.00
$/ kW:	$0.10
$/ kWh, On-Peak:	$0.10
$/ kWh, Off-Peak:	

OPERATING DATA	
CFL On-Pk Op. Ratio:	23%
CFL Off-Pk Op. Ratio:	77%
Faucet Aerator On-Pk Op. Ratio:	30%
Faucet Aerator Off-Pk Op. Ratio:	70%
Showerhead On-Pk Op. Ratio:	20%
Showerhead Off-Pk Op. Ratio:	80%
Night Light On-Pk Op. Ratio*:	0%
Night Light Off-Pk Op. Ratio*:	100%
Summer Ratio:	50%
Winter Ratio:	50%
CFL 13 W Coincidence Factor:	8%
Faucet Aerator Coincidence Factor:	80%
Showerhead Coincidence Factor:	31%
LED Night Light Coincidence Factor:	0%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Margin:	0%
Application	Retrofit
Cost Basis:	Full Install

	DEMAND/ ENERGY SAVINGS						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	%Incent	Societal
Unit Type	Annual Energy Savings (KWh)	Non Coin Demand Savings (kW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	Gas Energy Savings (Therms)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive*** ($)	Recommended Incentive*** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factors for Program Cost	(%)	BC Ratio
2 CFLs (13 W)	91	0.099	0.008	21	70	N/ A	26	30	28	106%	28	-2	28	9	3.1	0.00	50%	100%	1.1
1 Bathroom Faucet Aerator	11	0.002	0.002	3	7	3	22	27	3	14%	3	19	3	1	3.1	0.00	6%	100%	8.4
1 Showerhead	50	0.016	0.005	10	40	15	35	39	15	44%	15	19	15	5	3.1	0.00	27%	100%	2.6
1 LED Night Light	32	0.007	0.000	0	32	N/ A	17	22	10	58%	10	7	10	3	3.1	0.00	17%	100%	2.3
Total Kit (Measure Level)	183	0.124	0.015	34	149	19	100	119	56	56%	56	44	56	18	3.1	0.00	100%	100%	2.1

* The ratios are our best engineering assumptions, pending detailed MER work.
**DEER 2008.
***Based on UES 2011 Program Planning.

File Name: CommunityEducation_MAS_Res_TEP_2011_01_09

Behavioral Programs

Incentive Calculations

Direct Canvass Program Kit

PROGRAM DATA	
Measure Life (yrs):	6
Program Life (yrs):	20
Demand AC ($/kW):	$72.41
Summer On-pk Energy AC ($/kWh):	$0.09
Summer Off-pk Energy AC ($/kWh):	$0.05
Winter On-pk Energy AC ($/kWh):	$0.06
Winter Off-pk Energy AC ($/kWh):	$0.04
Admin Costs per Bulb:	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	0.00
$/kWh, On-Peak:	$0.10
$/kWh, Off-Peak:	$0.10

OPERATING DATA	
On-Pk Op. Hours:	274
Off-Pk Op. Hours:	577
Summer Ratio:	41%
Winter Ratio:	59%
Coincidence Factor:	0.08
In-Service Rate	75%
Leakage Rate	0%
HVAC Interaction Factor (Demand):	0.41
HVAC Interaction Factor (Energy):	0.13

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Factor:	0%
Application	ROB
Cost Basis:	Incremental

		DEMAND/ ENERGY SAVINGS						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	% Incent
Kit Contents	Number per Kit	Inc. Fixture Watts	CFL Fixture Watts	Non-Coincident Demand Savings (KW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive ($)	Recommended Incentive %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factor	(%)
13 Watt Twist	2	60	13	0.099	0.008	22	46	21	24	3	16%	3	18	3	7	0.5	0.0	100%	100%

File Name: DirectCanvassing_MAS_Res_TEP_2010_12_20

Incentive Calculations
In Home Energy Display

PROGRAM DATA	
Measure Life (yrs):	5
Program Life (yrs):	1
Demand AC ($/kW):	$71.39
Summer On-pk Energy AC ($/kWh):	$0.08
Summer Off-pk Energy AC ($/kWh):	$0.05
Winter On-pk Energy AC ($/kWh):	$0.06
Winter Off-pk Energy AC ($/kWh):	$0.04
Weighted Energy AC ($/kWh):	$0.04
Administrative Costs ($):	0
Discount Rate:	8.03%
Societal Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	
$/kWh, On-Peak:	$0.10
$/kWh, Off-Peak:	$0.10

OPERATING DATA	
On-Pk Ratio:	32%
Off-Pk Ratio:	68%
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	100%

OTHER FACTORS	
Line Loss Factor-Demand:	9.5%
Line Loss Factor-Energy:	9.5%
Capacity Reserve Factor:	0.0%
Application	Existing
Cost Basis:	Retrofit

DEMAND/ ENERGY SAVINGS						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	Societal
Program Savings (%of Sales)	Customer Energy Savings (kWh/yr)	Non-Coin. Demand Savings (KW)	Coin. Demand Savings (KW)	On-pk Savings (KWh)	Off-pk Savings (KWh)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive ($)	Recommended Incentive %PV	PV Program Cost ($)	NPV ($)	Incr. Cost ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factors	BC Ratio
2.50%	268	0.031	0.031	86	182	70	78	70	100%	70	0	70	27	2.6	0.00	100%	1.1

Absent meaningful program data, savings are assumed to be spread throughout the day and year following the same trend as typical daily and annual loadshape for TEP.

File Name: InHomeEnergyDisplays_MAS_Res_TEP_2011_01_12

Incentive Calculations

School Energy Education Program Kit

Education and Outreach - School Education

PROGRAM DATA	
CFL 13 W Measure Life:	6
Faucet Aerator Measure Life**:	10
Night Light Measure Life**:	16
Refrigerator Therm Measure Life*:	3
Program Life (yrs):	5
CFL 13 W Demand AC ($/kW):	$72.41
CFL 13 W Summer On-pk Energy AC ($/kWh):	$0.09
CFL 13 W Summer Off-pk Energy AC ($/kWh):	$0.05
CFL 13 W Winter On-pk Energy AC ($/kWh):	$0.06
CFL 13 W Winter Off-pk Energy AC ($/kWh):	$0.04
Faucet Aerator Demand AC ($/kW):	$77.23
Faucet Aerator Summer On-pk Energy AC ($/kWh):	$0.10
Faucet Aerator Summer Off-pk Energy AC ($/kWh):	$0.05
Faucet Aerator Winter On-pk Energy AC ($/kWh):	$0.06
Faucet Aerator Winter Off-pk Energy AC ($/kWh):	$0.04
Faucet Aerator Gas AC ($/therm):	$0.78
Night Light Demand AC ($/kW):	$98.92
Night Light Summer On-pk Energy AC ($/kWh):	$0.10
Night Light Summer Off-pk Energy AC ($/kWh):	$0.06
Night Light Winter On-pk Energy AC ($/kWh):	$0.07
Night Light Winter Off-pk Energy AC ($/kWh):	$0.05
Refrigerator Demand AC ($/kW):	$74.32
Refrigerator Summer On-pk Energy AC ($/kWh):	$0.08
Refrigerator Summer Off-pk Energy AC ($/kWh):	$0.04
Refrigerator Winter On-pk Energy AC ($/kWh):	$0.05
Refrigerator Winter Off-pk Energy AC ($/kWh):	$0.03
Administrative Cost:	NA
Discount Rate:	8.03%
Societal Discount Rate:	4.00%
NTG Ratio:	100%

RATE DATA	
Rate:	
$/kW:	0.00
$/kWh, On-Peak:	$0.10
$/kWh, Off-Peak:	$0.10

OPERATING DATA	
CFL On-Pk Op. Ratio:	23%
CFL Off-Pk Op. Ratio:	77%
Faucet Aerator On-Pk Op. Ratio:	30%
Faucet Aerator Off-Pk Op. Ratio:	70%
Night Light On-Pk Op. Ratio*:	0%
Night Light Off-Pk Op. Ratio*:	100%
Refrigerator Therm On-Pk Op. Ratio*:	25%
Refrig Therm Off-Pk Op. Ratio*:	75%
Summer Ratio:	50%
Winter Ratio:	50%
CFL 13 W Coincidence Factor:	8%
Faucet Aerator Coincidence Factor:	80%
LED Night Light Coincidence Factor:	0%
Refrigerator Coincidence Factor:	93%

OTHER FACTORS	
Line Loss Factor - Demand:	9.5%
Line Loss Factor - Energy:	9.5%
Capacity Reserve Margin:	0%
Application	Retrofit
Cost Basis:	Full Install

	DEMAND/ ENERGY SAVINGS						INCENTIVE CALCULATIONS						CUSTOMER COST/ SAVINGS				WGT.	%Incent	Societal
Unit Type	Annual Energy Savings (KWh)	Non Coin Demand Savings (kW)	Coincident Demand Savings (KW)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	Gas Energy Savings (Therms)	IRP PV Benefit ($)	Societal PV Benefit ($)	Recommended Incentive*** ($)	Recommended Incentive*** %PV	PV Program Cost ($)	NPV ($)	Incr. Cost*** ($)	Cost Savings ($)	Payback wo/ Inc. (yrs)	Payback w/ Inc. (yrs)	Weighting Factors for Program Cost	(%)	BC Ratio
2 CFLs (13 W)	91	0.099	0.008	21	70	N/A	26	30	13	49%	13	13	13	9	1.4	0.00	64%	100%	2.3
1 Bathroom Faucet Aerator	11	0.002	0.002	3	7	3	22	27	1	7%	1	21	1	1	1.4	0.00	7%	100%	18.2
1 LED Night Light	32	0.007	0.000	0	32	N/A	17	22	4	27%	4	12	4	3	1.4	0.00	22%	100%	5.0
1 Refrigerator Thermometer	9	0.001	0.001	2	6	N/A	1	1	1	96%	1	0	1	1	1.4	0.00	6%	100%	1.1
Total Kit (Measure Level)	142	0.109	0.011	26	115	3	67	81	20	30%	20	47	20	14	1.4	0.00	100%	100%	4.0

* The ratios are our best engineering assumptions, pending detailed MER work.

**DEER 2008.

***Based on UES 2011 Program Planning.

File Name: SchoolEducation_MAS_Res_TEP_2011_01_03

APPENDIX I:

TEP COMBINED HEAT AND POWER PROGRAM

Program Description

The Tucson Electric Power Company ("TEP") Distributed Generation Pilot Program ("DG Program") is a proposed Joint Utility Program to be implemented in cooperation with Southwest Gas Corporation ("Southwest Gas"). Distributed Generation ("DG") is defined as "the production of electricity on the customer's side of the meter, for use by the customer, through a process such as CHP."[1] CHP is defined as "combined heat and power, which is using a primary energy source to simultaneously produce electrical energy and useful heat."[2] TEP proposes this Program as a pilot to assist in developing methods and procedures for future joint utility programs with Southwest Gas or other utilities.

- TEP proposes to provide support for the existing Southwest Gas DG Program (Decision No. 69917 (December 27, 2007)) by sharing costs for marketing and outreach, training, and design. Specifically, TEP would pay up to 10% of the design costs for a CHP installation. This design assistance would only apply to installed projects.
- TEP will cooperate with Southwest Gas on marketing and outreach strategy to maximize marketing and outreach expenses.
- TEP proposes a 2011 budget of $74,800 for marketing and outreach, training, and design assistance for the Program.

Program Objectives and Rationale

The primary goal of the Program is to provide support for the existing Southwest Gas DG Program, specifically for CHP projects. The market potential for CHP is substantial and could contribute significantly to energy conservation in Arizona, and could accrue significant societal and customer benefits as well. CHP is an affordable, clean, and reliable piece of the puzzle for meeting Arizona's energy needs and should be considered a key component to economic strategies.

Target Market

In order for a CHP project to be cost effective a CHP unit must generate the right electrical and thermal loads to meet a specific facility's energy needs. A facility utilizing boilers may be able to offset the natural gas used to operate the boilers by using the waste heat generated by a CHP unit. Typical facilities that are excellent candidates for a CHP application include:

- Hospitals with central boilers
- Hotels and apartment buildings with central boilers
- Manufacturing or processing facilities with central boilers or process heat needs
- Universities and colleges with central boilers for heating or domestic hot water

The program will focus on large commercial and industrial customers with the potential to utilize CHP applications.

Program Eligibility

Customers must receive electric service from TEP and natural gas service from Southwest Gas to be eligible for participation. To qualify for rebates, customers must complete a preliminary feasibility study. The preliminary feasibility study is necessary to identify those customers that are good candidates for a

[1] Arizona Administrative Code R14-2-2401

[2] ibid

CHP system. To help customers obtain the preliminary feasibility study, Southwest Gas and TEP will be working with the U.S. Department of Energy Intermountain Clean Energy Application Center, which offers the studies at no cost.

Products and Services

TEP will provide joint marketing and outreach in cooperation with Southwest Gas. In addition TEP will pay up to 10% of design costs for installed CHP projects, and will also provide engineering expertise for interconnection design.

Delivery Strategy, Incentive Processing, and Administration

Program delivery, incentives and administration will be provided by Southwest Gas through its DG Program. TEP will assist with marketing and outreach, design assistance, and interconnection design expertise. TEP will assign an in-house program manager to coordinate joint Program delivery with Southwest Gas.

Program Marketing and Communication Strategy

The marketing and communications strategy will be primarily designed by Southwest Gas through its existing DG Program. TEP will coordinate and assist with marketing and outreach as needed.

Program Implementation Schedule

The Program will be implemented immediately upon Arizona Corporation Commission approval.

Quality Assurance and Control

Quality assurance will be provided by Southwest Gas as part of its DG Program.

Measurement, Evaluation and Research

Measurement, evaluation and research will be provided by Southwest Gas as part of its DG Program.

Program Costs and Benefits

Table 1-1. Measure Savings, Incentive Level, and Participation, Benefit-Cost

Measure	Annual Energy Savings (kWh) /Unit	Peak Demand Savings (kW)/ Unit	Avg. Incentive / Unit	2011 Units	2012 Units	Measure Level Societal Test Result
Combined Heat and Power	7,200,000	900	$0/facility	1	1	8.53

Table 1-2. Program Budgets

	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Evaluation	Total Program Cost	Lifetime Net Benefits ($)	Program Level Societal Cost Test
2011	$0	$68,000	$6,800	$0	$0	$74,800	$7,719,904	8.0
2012	$0	$53,133	$5,313	$17,510	$0	$75,956	$7,718,749	7.9

Table 1-3. Environmental Benefits

	Annual CO2 Savings (Metric Tons)	Annual NOx Savings (Metric Tons)	Annual SOx Savings (Metric Tons)	Lifetime CO2 Savings (Metric Tons)	Lifetime NOx Savings (Metric Tons)	Lifetime SOx Savings (Metric Tons)
2011	7,055	9.52	8.26	141,095	190	165
2012	7,055	9.52	8.26	141,095	190	165

Measure Analysis Sheets

Incentive Calculations
CHP

Combined Heat & Power

PROGRAM DATA	
Measure Life (yrs)**:	20
Program Life (yrs):	5
Demand AC ($/kW):	113.36
Summer On-pk Energy AC ($/kWh):	0.10
Summer Off-pk Energy AC ($/kWh):	0.06
Winter On-pk Energy AC ($/kWh):	0.07
Winter Off-pk Energy AC ($/kWh):	0.05
Program Administrative Costs ($/unit):	0
IRP Discount Rate:	8.03%
Social Discount Rate	4.00%
NTG Ratio:	100%

RATE DATA	
Res Ave	
$/kW:	0.00
$/kWh, On-Peak:	0.10
$/kWh, Off-Peak:	0.10

OPERATING DATA**	
Op Hours:	8,760
Summer Ratio:	50%
Winter Ratio:	50%
Coincidence Factor:	100%

OTHER FACTORS	
Line Loss Energy Factor:	9.5%
Line Loss Demand Factor:	9.5%
Capacity Reserve Factor:	0.0%
Application	RET
Cost Basis:	Full Installed

	DEMAND/ENERGY SAVINGS				INCENTIVE CALCULATIONS						CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal
Measure Type	Non-Coincident Demand Savings** (KW)	Coincident Demand Savings (kW)	OnPeak Energy Savings** (kWh)	OffPeak Energy Savings** (kWh)	IRP PV Benefit ($)	Social PV Benefit ($)	Recommended Incentive* ($)	Recommended Incentive* % PV	PV Program Cost ($)	NPV ($)	Incr. Cost** ($)	Cost Savings ($)	Payback w o/Inc. (yrs)	Payback w /Inc. (yrs)	Weighting Factor**	(%)	BC Ratio
Per Customer	900.00	900.00	2,303,240	4,896,760	6,307,244	8,750,016	0	0%	1,035,000	5,272,244	1,035,000	716,696	1.4	1.4	100%	0%	8.5
Weighted Average	900.00	900.00	2,303,240	4,896,760	6,307,244	8,750,016	0	0%	1,035,000	5,272,244	1,035,000	716,696	1.4	1.4	100%	0%	8.5

*Incentive based on 2011 UES Program Planning.
**Demand Savings, OnPk Off Pk Energy Savings, Operating Data, Weighting Factors, Incremental Costs, and Measure Life based on engineering assumptions based on past program data and program planning.

File Name: CombinedHP_MAS_CI_TEP_2011_01_11

APPENDIX J:

MEASURE APPENDIX

TEP Measure Appendix - Appendix J

This information has been provided to ACC Staff via electronic copy on a separate excel file and is available upon request to interested parties.

Commercial	Existing	C&I Comprehensive Program	RET	Whole Bui	Custom Measures	per customer	no action	custom actions	70	80	10	3.73	2.98	16,357	16,357	$6,555	$4,901	75%	$20,629	$6,555	$14,094	3.16	28.97
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	14 SEER Packaged and Split AC's	Per Unit	SEER 13	SEER 14	4	4	15	0.28	0.21	194	294	$440	$200	45%	$678	$440	$238	1.54	0.43
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	14 SEER Packaged and Split HP's	Per Unit	SEER 13	SEER 14	7	7	15	0.26	0.25	304	460	$440	$200	45%	$923	$440	$482	2.10	0.68
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	15 SEER Packaged and Split AC's	Per Unit	SEER 13	SEER 15	11	11	15	0.12	0.11	363	550	$880	$275	31%	$921	$880	$41	1.05	0.01
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	15 SEER Packaged and Split HP's	Per Unit	SEER 13	SEER 15	4	4	15	0.38	0.31	607	919	$880	$275	31%	$1,626	$880	$746	1.85	1.35
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	16 SEER Packaged and Split AC's	Per Unit	SEER 13	SEER 16	11	11	15	0.50	0.28	510	773	$1,321	$350	27%	$1,446	$1,321	$125	1.09	1.14
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	16 SEER Packaged and Split HP's	Per Unit	SEER 13	SEER 16	-	-	15	0.50	0.28	847	1,282	$1,321	$350	27%	$2,084	$1,321	$763	1.58	1.89
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	17 SEER Packaged and Split AC's	Per Unit	SEER 13	SEER 17	-	-	15	0.50	0.28	640	970	$1,761	$425	24%	$1,729	$1,761	-$32	0.98	1.45
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	17 SEER Packaged and Split HP's	Per Unit	SEER 13	SEER 17	4	4	15	0.23	0.21	1,064	1,611	$1,761	$425	24%	$2,455	$1,761	$693	1.39	2.37
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	18 SEER Packaged and Split AC's	Per Unit	SEER 13	SEER 18	-	-	15	0.62	0.56	756	1,145	$2,201	$500	23%	$2,339	$2,201	$138	1.06	1.69
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	18 SEER Packaged and Split HP's	Per Unit	SEER 13	SEER 18	-	-	15	0.40	0.38	1,287	1,949	$2,201	$500	23%	$3,107	$2,201	$906	1.41	2.87
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	Air Cooled Chillers - 150 tons	Per ton	1.28 kW/ton	1.12 kW/ton	400	400	20	0.13	0.12	66	100	$141	$50	35%	$391	$141	$250	2.77	0.15
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	Air Cooled Chillers - 150 tons	Per ton	1.28 kW/ton	1.12 kW/ton	525	525	20	0.13	0.12	68	102	$113	$60	53%	$397	$113	$284	3.52	0.15
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	EER Rated Packaged AC (> 20tons ,10.9 EER)	Per Unit	9.5 EER	10.8 EER	11	11	15	3.67	3.45	2,688	4,070	$5,789	$2,800	74%	$9,969	$5,789	$6,180	2.68	5.89
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	EER Rated Packaged AC (11.5 - 20 tons ,11.24 EER)	Per Unit	9.3 EER	11.1 EER	14	15	15	3.41	3.20	2,498	3,784	$1,888	$859	46%	$9,267	$1,888	$7,379	4.91	5.57
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	EER Rated Packaged AC (5.4 - 11.25 tons ,11.36 EER)	Per Unit	10 EER	11.6 EER	42	42	15	1.48	1.39	1,081	1,637	$1,003	$481	48%	$4,009	$1,003	$3,006	4.00	2.41
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	EER Rated Packaged HP (- 20 tons ,11.11 EER)	Per Unit	9.5 EER	10.8 EER	4	4	15	3.67	3.45	3,591	5,135	$5,501	$3,900	71%	$11,256	$5,501	$5,752	2.12	7.56
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	EER Rated Packaged HP (11.25 - 20 tons ,11.02 EER)	Per Unit	9.5 EER	11.1 EER	-	-	15	3.41	3.20	2,944	4,458	$1,888	$625	33%	$10,025	$1,888	$8,157	5.31	6.54
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	EER Rated Packaged HP (5.4 - 11.25 tons ,11.31 EER)	Per Unit	10 EER	11.6 EER	-	-	15	1.48	1.39	1,320	1,999	$1,003	$625	62%	$4,454	$1,003	$3,451	4.42	2.94
Commercial	Existing	C&I Comprehensive Program	RET	HVAC	Programmable Thermostats	Per Unit	non-programmable	programmable	98	98	11	0.00	0.00	-	4,096	$204	$50	24%	$1,984	$204	$1,780	9.70	3.63
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	Variable Speed Screw Compressor	PerHp	single stage modulating	1 or 2 stage variable speed	-	-	15	0.10	0.10	109	159	$262	$50	19%	$336	$262	$74	1.28	0.24
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	Water Cooled Chillers : 200 tons	Per ton	0.79 kW/Ton	0.60 kW/Ton	-	600	20	0.15	0.14	104	158	$146	$45	31%	$836	$146	$690	5.67	0.23
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	Water Cooled Chillers > 400 tons	Per ton	0.64 kW/Ton	0.50 kW/Ton	5,000	5,000	20	0.11	0.11	79	119	$77	$55	45%	$405	$77	$328	5.26	0.18
Commercial	Existing	C&I Comprehensive Program	ROB	HVAC	Water Cooled Chillers 201 - 400 tons	Per ton	0.72 kW/Ton	0.51 kW/Ton	1,000	1,500	20	0.16	0.15	113	172	$107	$48	45%	$584	$107	$477	5.46	0.25
Commercial	Existing	C&I Comprehensive Program	RET	Lighting	Daylighting controls	Per kW base load	no controls	daylighting controls	-	-	15	0.65	0.60	885	940	$751	$120	16%	$2,238	$751	$1,487	2.98	1.62
Commercial	Existing	C&I Comprehensive Program	RET	Lighting	Delamping	Per fixture	T8s and T12s	Remove T8s and T12s	6,500	8,000	15	0.09	0.08	129	137	$6	$6	100%	$320	$6	$313	50.26	0.24
Commercial	Existing	C&I Comprehensive Program	RET	Lighting	Energy efficient exit signs	Per fixture	Incandescent/CFL sign	LED sign	1,500	2,000	16	0.06	0.06	324	345	$55	$25	45%	$670	$55	$615	12.15	0.59
Commercial	Existing	C&I Comprehensive Program	RET	Lighting	HIDs to T8 T5	Per Fixture	400W Metal Halide	250 W T5 T8s	1,072	2,000	18	0.29	0.21	230	777	$96	$75	78%	$1,201	$96	$1,105	12.51	0.09
Commercial	Existing	C&I Comprehensive Program	RET	Lighting	Integral Screw In CFL	Per Bulb	79.3 W Incandescent bulb	19.1 W CFL	4,400	6,000	2	0.07	0.07	97	103	$11	$2	17%	$27	$11	$16	2.83	0.18
Commercial	Existing	C&I Comprehensive Program	RET	Lighting	Occupancy sensors	Per sensor	no sensors	occupancy sensors	840	840	12	0.06	0.05	207	234	$98	$50	51%	$342	$98	$244	3.49	0.39
Commercial	Existing	C&I Comprehensive Program	RET	Lighting	Screw in cold cathode CFL	Per Bulb	50 W Incandescent bulb	6W CFL	200	200	6	0.04	0.00	44	150	$12	$4	28%	$57	$12	$45	4.63	0.17
Commercial	Existing	C&I Comprehensive Program	RET	Lighting	Standard T8 Lighting	Per Fixture	T12 Lamps	Standard T8 Lamps	6,000	6,000	6	0.05	0.02	35	37	$27	$11	40%	$35	$27	$8	1.28	0.06
Commercial	Existing	C&I Comprehensive Program	ROB	Motors	Energy efficient ODP motors	per HP	91.7 % effy	93.2% effy	195	98	15	0.01	0.01	34	36	$12	$3	22%	$74	$12	$62	6.39	0.00
Commercial	Existing	C&I Comprehensive Program	ROB	Motors	Energy Efficient TEFC Motors	per HP	91.7 % effy	93.2% effy	225	113	15	0.01	0.01	37	39	$33	$3	7%	$58	$33	$25	1.78	0.05
Commercial	Existing	C&I Comprehensive Program	RET	Motors	Variable Speed Drives	per HP	no VSD	VSD	2,500	3,500	15	0.00	0.00	1,110	1,502	$377	$100	27%	$1,926	$377	$1,549	5.11	2.05
Commercial	Existing	C&I Comprehensive Program	RET	Refrigerat	Anti sweat heater controls	Per Door	no controls	antisweat controls	800	800	12	0.06	0.06	85	247	$189	$130	69%	$389	$189	$66	1.35	0.29
Commercial	Existing	C&I Comprehensive Program	RET	Refrigerat	High Efficiency Evaporator Fan Motors	Per Unit	shaded pole motor	PCS or EC motor	884	885	15	0.32	0.32	750	2,110	$156	$40	26%	$2,886	$156	$2,582	16.27	2.52
Commercial	Existing	C&I Comprehensive Program	RET	Refrigerat	High Efficiency Ice Makers	Per Unit	Standard ice-maker	ACEEE Tier 2	6	9	12	0.12	0.12	269	779	$549	$50	9%	$740	$549	$191	1.35	0.93
Commercial	Existing	C&I Comprehensive Program	ROB	Refrigerat	High Efficiency Reach-in Refrigerators and Freezers	Per Unit	standard reach-in	Energy Star Reach-in	4	4	15	0.20	0.19	265	766	$183	$125	68%	$1,013	$183	$830	5.53	0.91
Commercial	Existing	C&I Comprehensive Program	RET	Refrigerat	Strip Curtains and Night Covers	Per linear feet	No curtains/covers	Curtains and Covers	781	781	4	0.01	0.01	84	331	$38	$10	27%	$81	$38	$43	2.15	0.37
Commercial	Existing	Commercial New Construction	NC	HVAC	EER Rated Packaged AC (> 20tons ,10.9 EER)	Per Unit	9.5 EER	10.8 EER	4	4	15	3.67	3.45	2,688	4,070	$5,789	$2,800	74%	$9,969	$5,789	$6,180	2.63	5.99
Commercial	Existing	Commercial New Construction	NC	HVAC	EER Rated Packaged AC (11.5 - 20 tons ,11.24 EER)	Per Unit	9.3 EER	11.1 EER	8	8	15	3.41	3.20	2,498	3,784	$1,888	$859	46%	$9,267	$1,888	$7,379	4.91	5.57
Commercial	Existing	Commercial New Construction	NC	HVAC	EER Rated Packaged AC (5.4 - 11.25 tons ,11.36 EER)	Per Unit	10.0 EER	11.6 EER	8	8	15	1.48	1.39	1,081	1,637	$1,003	$481	48%	$4,009	$1,003	$3,006	4.00	2.41
Commercial	Existing	Commercial New Construction	NC	Whole Bui	Performance Rebates From NC Design Assistance	Per Customer	Baseline Building Design	20% savings over baseline	11	11	20	17.81	17.81	46,800	109,200	$20,800	$15,600	75%	$187,102	$20,800	$166,302	9.00	138.35
Commercial	Existing	Small Business Direct Install	RET	HVAC	Programmable Thermostats	Per Unit	non-programmable	programmable	400	500	11	0.00	0.00	-	4,096	$204	$150	73%	$1,984	$204	$1,780	9.70	3.63
Commercial	Existing	Small Business Direct Install	ROB	HVAC	14 SEER Packaged and Split AC's	Per Unit	SEER 13	SEER 14	75	75	15	0.23	0.21	194	294	$371	$226	61%	$678	$371	$407	2.50	0.43
Commercial	Existing	Small Business Direct Install	ROB	HVAC	14 SEER Packaged and Split HP's	Per Unit	SEER 13	SEER 14	75	75	15	0.26	0.25	304	460	$333	$226	68%	$923	$333	$590	2.77	0.68
Commercial	Existing	Small Business Direct Install	ROB	HVAC	15 SEER Packaged and Split AC's	Per Unit	SEER 13	SEER 15	75	75	15	0.12	0.11	363	550	$542	$453	83%	$921	$542	$379	1.70	0.01
Commercial	Existing	Small Business Direct Install	ROB	HVAC	15 SEER Packaged and Split HP's	Per Unit	SEER 13	SEER 15	75	75	15	0.33	0.31	607	919	$666	$453	68%	$1,626	$666	$961	2.44	1.35
Commercial	Existing	Small Business Direct Install	ROB	HVAC	16 SEER Packaged and Split AC's	Per Unit	SEER 13	SEER 16	75	75	15	0.50	0.26	510	773	$813	$575	71%	$1,446	$813	$633	1.78	1.14
Commercial	Existing	Small Business Direct Install	ROB	HVAC	16 SEER Packaged and Split HP's	Per Unit	SEER 13	SEER 16	75	75	15	0.30	0.28	847	1,282	$998	$575	58%	$2,084	$998	$1,086	2.09	1.89
Commercial	Existing	Small Business Direct Install	RET	Lighting	Daylighting controls	Per kW base load	no controls	daylighting controls	-	5	15	0.65	0.60	885	940	$751	$120	16%	$2,238	$751	$1,487	2.98	1.62
Commercial	Existing	Small Business Direct Install	RET	Lighting	Delamping	Per fixture	T8s and T12s	Remove T8s and T12s	1,188	5,188	15	0.09	0.08	129	137	$6	$6	100%	$320	$6	$313	50.26	0.24
Commercial	Existing	Small Business Direct Install	RET	Lighting	Energy efficient exit signs	Per fixture	Incandescent/CFL sign	LED sign	1,264	1,264	16	0.06	0.06	324	345	$55	$25	45%	$670	$55	$615	12.15	0.59
Commercial	Existing	Small Business Direct Install	RET	Lighting	Hard Wire CFL	Per Bulb	73.4 W Incandescent bulb	16.6 W CFL	8,000	12,000	2	0.07	0.06	171	182	$16	$16	100%	$42	$16	$26	2.69	0.31
Commercial	Existing	Small Business Direct Install	RET	Lighting	HIDs to T8 T5	Per Fixture	400W Metal Halide	250 W T5 T8s	2,904	2,904	18	0.29	0.21	230	777	$96	$75	78%	$1,201	$96	$1,105	12.51	0.09
Commercial	Existing	Small Business Direct Install	RET	Lighting	Integral Screw In CFL	Per Bulb	79.3 W Incandescent bulb	19.1 W CFL	8,100	14,100	2	0.07	0.07	97	103	$11	$10	90%	$27	$11	$16	2.58	0.18
Commercial	Existing	Small Business Direct Install	RET	Lighting	Occupancy sensors	Per sensor	no sensors	occupancy sensors	540	540	12	0.06	0.05	207	234	$98	$66	68%	$342	$98	$244	3.49	0.39
Commercial	Existing	Small Business Direct Install	RET	Lighting	Screw in cold cathode CFL	Per Bulb	50 W Incandescent bulb	6W CFL	-	-	6	0.04	0.00	44	150	$12	$12	94%	$57	$12	$45	4.63	0.17
Commercial	Existing	Small Business Direct Install	RET	Lighting	Standard T8 Lighting	Per Fixture	T12 Lamps	Standard T8 Lamps	10,000	10,000	6	0.05	0.02	35	37	$27	$16	60%	$35	$27	$8	1.28	0.06
Commercial	Existing	Small Business Direct Install	ROB	Motors	Variable Speed Drives	per HP	no VSD	VSD	170	171	15	0.00	0.00	1,110	1,202	$377	$100	27%	$1,926	$377	$1,549	5.11	2.05
Commercial	Existing	Small Business Direct Install	RET	Refrigerat	Anti sweat heater controls	Per Door	no controls	antisweat controls	300	300	12	0.06	0.06	85	247	$189	$130	69%	$255	$189	$66	1.35	0.29
Commercial	Existing	Small Business Direct Install	RET	Refrigerat	Strip Curtains and Night Covers	Per linear feet	No curtains/covers	Curtains and Covers	225	225	4	0.01	0.01	84	331	$38	$15	40%	$81	$38	$43	2.15	0.37
Commercial	New	Bid for Efficiency - Pilot	RET	Whole Bui	Bid for Efficiency	per customer	baseline building	Bid projects	4	6	10	45.66	36.53	200,000	200,000	$80,000	$60,000	75%	$252,541	$80,000	$172,541	3.16	384.70
Commercial	New	Commercial Direct Load Control	RET	Whole Bui	Direct Load Control for Large Commercial	per MW savings	no action	load control measures	20	40	5	1000.00	1000.00	4,380,000	-	$0	$0	#DIV/0!	$351,200	$0	$351,200	#DIV/0!	3,885.92
Commercial	New	C&I Comprehensive Program	ROB	Hot Water	Heat Pump Water Heaters - Tier 1	Per Unit	EF = .86	EF = .2.35	4	4	15	3.10	3.01	2,575	4,915	$1,910	$800	42%	$8,183	$1,910	$6,273	4.28	0.64
Commercial	New	C&I Comprehensive Program	ROB	Hot Water	Heat Pump Water Heaters - Tier 2	Per Unit	EF = .86	EF = 2.51	-	-	15	3.21	3.12	2,467	5,096	$2,777	$0	0%	$8,484	$2,777	$5,707	3.06	0.88
Commercial	New	C&I Comprehensive Program	RET	HVAC	CO Sensors	Per Sensor	no sensors	sensors	4	4	8	5.82	2.30	13,876	13,876	$2,000	$250	13%	$13,860	$2,000	$11,860	6.93	24.61
Commercial	New	C&I Comprehensive Program	RET	HVAC	CO2 Sensors	Per Sensor	no sensors	sensors	4	4	15	1.81	1.70	966	454	$959	$200	21%	$3,424	$959	$2,474	3.60	1.26
Commercial	New	C&I Comprehensive Program	RET	HVAC	Cooling Tower Subcooling	Per Ton	no subcooling	subcooling	700	700	15	0.48	0.45	353	535	$828	$200	24%	$1,309	$828	$481	1.58	0.79
Commercial	New	C&I Comprehensive Program	RET	HVAC	Economisers	Per Ton	no economizer	use of economizers	40	40	15	0.00	0.00	92	139	$80	$40	50%	$200	$80	$120	2.51	0.21
Commercial	New	C&I Comprehensive Program	ROB	HVAC	High Perf Glazing	Per sq ft	standard window glazing	SHGC = .27	1,750	1,750	20	0.00	0.00	1	1	$2	$1	26%	$4	$2	$2	2.08	0.00
Commercial	New	C&I Comprehensive Program	RET	HVAC	PTAC,PTHP	Per kBtu/h	10 EER	11 EER	1,000	1,000	15	0.01	0.01	10	15	$11	$4	36%	$51	$11	$20	2.79	0.02
Commercial	New	C&I Comprehensive Program	RET	HVAC	Shade Screens	Per Sq Ft	no screens	shading coeff: 0.24	1,000	1,000	10	0.00	0.00	11	5	$4	$2	48%	$14	$4	$9	3.29	0.01
Commercial	New	C&I Comprehensive Program	RET	HVAC	Window Films	Per Sq Ft	no film	shading coeff: 0.578	2,000	2,000	15	0.00	0.00	3	2	$3	$2	76%	$12	$3	$9	4.51	0.01
Commercial	New	C&I Comprehensive Program	RET	Lighting	EMS - Lighting Schedule	Per connected W	No EMS	use of EMS	8,000	8,000	15	0.00	0.00	0	1	$1	$1	35%	$1	$1	$0	0.99	0.00
Commercial	New	C&I Comprehensive Program	RET	Lighting	Induction Lighting	Per Lamp	229 W Metal Halide	86 W Induction lamp	150	150	18	0.16	0.15	238	253	$196	$140	71%	$660	$196	$464	3.37	0.40
Commercial	New	C&I Comprehensive Program	RET	Lighting	LED Channel Signs	Per Linear Ft	6W/ft Neon	1.2 W/ft LED	1,750	1,750	10	0.00	0.00	4	21	$10	$8	74%	$14	$10	$4	1.35	0.02
Commercial	New	C&I Comprehensive Program	RET	Lighting	LED Pedestrian Signals	Per Signal	69 W incand	6 W LED	150	150	5	0.06	0.06	184	328	$134	$75	56%	$146	$134	$11	1.08	0.44
Commercial	New	C&I Comprehensive Program	RET	Lighting	LED Traffic Lights	Per Lamp	100 W Incandescent	8 W LED	150	150	7	0.04	0.04	131	361	$71	$50	71%	$161	$71	$90	2.28	0.35
Commercial	New	C&I Comprehensive Program	RET	Lighting	LED Street and Parking Lights	Per Lamp	250 W Metal Halide	33 W LED	-	-	11	0.22	0.00	217	751	$480	$75	9%	$524	$480	-$270	0.66	0.84
Commercial	New	C&I Comprehensive Program	RET	Lighting	Outdoor CFL	Per Lamp	112 W incand	27 W CFL	180	185	8	0.09	0.00	67	295	39	$5	20%	$93	$39	$54	10.78	0.34
Commercial	New	C&I Comprehensive Program	RET	Lighting	T8 to T8	Per Lamp	standard T8	premium T8	150	150	15	0.01	0.01	11	11	$29	$8	40%	$28	$29	$7	1.26	0.02
Commercial	New	C&I Comprehensive Program	RET	Lighting	Premium T8 Lighting	Per Fixture	T12 Lamps	Premium T8 Lamps	24,000	24,000	10	0.07	0.06	74	79	$59	$25	40%	$150	$59	$92	2.22	0.14
Commercial	New	C&I Comprehensive Program	ROB	Motors	Green Motor Rewind	Per HP	94.7% effy	95.2% Effy	6	6	5	0.00	0.00	9	9	$3	$1	41%	$6	$3	$3	1.95	0.02
Commercial	New	C&I Comprehensive Program	RET	Plug Load	Beverage Cicts ("vending miser")	Per Sensor	no controls	occupancy sensors	20	20	12	0.15	0.15	414	1,196	$199	$75	38%	$1,112	$199	$912	5.58	1.43
Commercial	New	C&I Comprehensive Program	RET	Plug Load	Snack Cicts ("vending miser")	Per Sensor	no controls	occupancy sensors	35	35	12	0.03	0.03	83	239	$105	$75	73%	$222	$105	$120	2.17	0.29
Commercial	New	C&I Comprehensive Program	ROB	Refrigerat	Efficient Compressors	Per Ton	1.85 COP	2.2 COP	20	20	15	0.35	0.22	493	1,437	$347	$80	32%	$1,722	$347	$1,475	6.97	1.70
Commercial	New	C&I Comprehensive Program	ROB	Refrigerat	Efficient Condensers	Per Ton	no condensers	use of condensers	20	20	10	0.03	0.03	67	194	$39	$20	51%	$153	$39	$114	3.89	0.23
Commercial	New	C&I Comprehensive Program	RET	Refrigerat	Floating Head Pressure Controls	Per Ton	no controls	Floating Head Pressure Controls	20	20	15	0.21	0.21	472	1,366	$93	$20	22%	$1,025	$93	$1,930	17.66	1.63
Commercial	New	C&I Comprehensive Program	RET	Refrigerat	Refrigerated Display Automatic Door Closers	Per Door	standard doors	Automatic Door Closers	10	10	5	0.40	0.39	908	2,627	$142	$40	28%	$1,012	$142	$870	7.13	3.18
Commercial	New	C&I Comprehensive Program	RET	Refrigerat	Refrigerated Display Gaskets	Per Linear Ft	no action	Replace Gaskets	100	100	3	0.01	0.01	27	77	$12	$4	30%	$17	$12	$5	1.47	0.00
Commercial	New	C&I Comprehensive Program	ROB	Washing	Coin Operated Washers - Advanced (Proposed)	Per Machine	1.26 MEF	2.6 MEF	-	-	11	0.00	0.09	289	424	$857	$0	0%	$681	$857	$144	1.27	0.00
Commercial	New	C&I Comprehensive Program	ROB	Washing	Coin Operated Washers - Tier 1 (Existing)	Per Machine	1.26 MEF	1.8 MEF	21	21	11	0.05	0.05	149	247	$346	$250	72%	$441	$346	$95	1.27	0.38
Commercial	New	C&I Comprehensive Program	ROB	Washing	Coin Operated Washers - Tier 1 (Proposed)	Per Machine	1.26 MEF	2 MEF	-	-	11	0.06	0.07	183	305	$211	$0	0%	$461	$211	$250	2.18	0.43
Commercial	New	C&I Comprehensive Program	ROB	Washing	Coin Operated Washers - Tier 2 (Existing)	Per Machine	1.26 MEF	2.2 MEF	21	21	11	0.06	0.07	183	305	$419	$250	60%	$658	$419	$239	1.53	0.43
Commercial	New	C&I Comprehensive Program	ROB	Washing	Coin Operated Washers - Tier 2 (Proposed)	Per Machine	1.26 MEF	2.2 MEF	-	-	11	0.06	0.08	212	352	$326	$0	0%	$566	$326	$240	1.73	0.50
Commercial	New	C&I Comprehensive Program	ROB	Washing	Coin Operated Washers - Tier 3 (Existing)	Per Machine	1.26 MEF	2.4 MEF	-	-	11	0.06	0.08	212	352	$492	$0	0%	$662	$492	$171	1.35	0.50
Commercial	New	C&I Comprehensive Program	ROB	Washing	Coin Operated Washers - Tier 3 (Proposed)	Per Machine	1.26 MEF	2.4 MEF	-	-	11	0.07	0.09	238	391	$307	$0	0%	$637	$307	$330	2.04	0.56
Commercial	New	C&I Comprehensive Program	RET	Plug Load	Advanced Power Strips - Occupancy Sensors	Per Sensor	standard strips	Smart Strips - Occupancy Sensors	-	-	12	0.04	0.04	65	185	$90	$10	11%	$148	$90	$58	1.61	0.15
Commercial	New	C&I Comprehensive Program	RET	Plug Load	Advanced Power Strips - Timer Plug Strip	Per Sensor	standard strips	Smart Strips - Timer Plug Strip	-	-	12	0.05	0.05	81	152	$19	$10	53%	$175	$19	$156	9.22	0.19
Commercial	New	C&I Comprehensive Program	RET	Plug Load	Advanced Power Strips - Load Sensor	Per Sensor	standard strips	Smart Strips - Load Sensor	-	-	12	0.03	0.03	45	73	$53	$10	31%	$98	$53	$46	3.07	0.10
Commercial	New	Commercial New Construction	ROB	HVAC	High Perf Glazing	Per sq ft	standard window glazing	SHGC = .27	-	-	20	0.00	0.00	1	1	$2	$1	26%	$4	$2	$2	2.08	0.00
Commercial	New	Retro-Commissioning	RET	HVAC	Retro-Commissioning	per 100K sqft	baseline building	custom actions	-	8	10	22.83	18.26	100,000	100,000	$29,355	$22,000	75%	$126,270	$29,355	$96,937	4.30	177.38
Commercial	New	Small Business Direct Install	RET	HVAC	Shade Screens	Per Sq Ft	no screens	shading coeff: 0.24	750	750	10	0.00	0.00	11	5	$4	$2	48%	$14	$4	$9	3.29	0.01
Commercial	New	Small Business Direct Install	RET	HVAC	Window Films	Per Sq Ft	no film	shading coeff: 0.578	1,000	1,000	15	0.00	0.00	5	2	$3	$2	76%	$12	$3	$9	4.51	0.01

This information has been provided to ACC Staff via electronic copy on a separate excel file and is available upon request to interested parties.

ORIGINAL

BEFORE THE ARIZONA CORPORATION COMMISSION

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SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-11-0055 **NOTICE OF FILING UPDATED INFORMATION IN SUPPORT OF 2011-2012 ELECTRIC ENERGY EFFICENCY IMPLEMENTATION PLAN**

Tucson Electric Power Company, through counsel undersigned, hereby files the attached Updated Information in Support of its 2011-2012 Electric Energy Efficiency Implementation Plan ("EE Plan") that was filed with the Arizona Corporation Commission on January 31, 2011. The updates to the EE Plan relate to the following topics:

EXHIBIT
TEP-6
ADMITTED

- Residential Financing Program
- Budget
- Portfolio Savings
- Authorized Revenue Requirement True-Up
- DSM Adjustor

RESPECTFULLY SUBMITTED this 22nd day of August 2011.

Tucson Electric Power Company

By _____ for

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Original and 13 copies of the foregoing
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By Mary Appolito

TUCSON ELECTRIC POWER

UPDATED INFORMATION IN SUPPORT OF 2011-2012 ELECTRIC ENERGY EFFICIENCY IMPLEMENTATION PLAN

DOCKET NO. E-01933A-11-0055

AUGUST 22, 2011

Summary of Updated Information

Tucson Electric Power Co. ("TEP" or "Company") has prepared this document in support of its proposed 2011-2012 Electric Energy Efficiency Implementation Plan ("EE Plan") that was filed with the Arizona Corporation Commission ("Commission") on January 31, 2011. The purpose of this document is to provide updated information that the Company believes is important in order for the Commission to complete its analysis prior to approving the EE Plan.[1]

There are five primary updates contained herein as follows:

I. RESIDENTIAL FINANCING PROGRAM

At the request of the Commission, TEP continued its efforts to locate a local lender for the Residential Financing Program and recently selected Vantage West Credit Union as the lending partner. The change in lending partners resulted in significant budget reductions from those filed in the original EE Plan filed with the Commission. Changes to this program are included in the red-lined filing of Exhibit 1. The comparison below shows the anticipated spending for 2011-2012.

Program Year	Original EE Plan Budget	Updated Budget
2011	$781,646	$142,815
2012	$792,262	$442,645
Total	$1,573,908	$585,460

II. BUDGET

The delay in timing for approval of new programs and additional program measures and continuing economic forces have altered the estimated budgets resulting in an $8 million reduction. TEP provides the following budget comparison for Commission review:

Program Year	Original EE Plan Budget	Updated Budget
2011	$23,612,678	$18,182,475
2012	$27,486,097	$24,739,193
Total	$51,098,774	$42,921,668

[1] When TEP filed its EE Plan on January 31, 2011, it anticipated Commission approval of the EE Plan in June 2011. The delay in the timing for approval has significantly altered anticipated participation in 2011 and has resulted in other changes as set forth herein. The changes set forth herein anticipate that the EE Plan will be approved by the Commission in time to be implemented on October 1, 2011. For the convenience of the Commission, TEP has provided (where appropriate) side-by-side comparisons of the original EE Plan to the updated information.

III. PORTFOLIO SAVINGS

The delay in timing has altered the estimated savings for 2011 and 2012 as shown below:

Program Year	Original EE Plan Savings (MWh)	Updated Savings (MWh)
2011	155,325	135,781
2012	180,603	175,365
Total	335,928	311,146

IV. AUTHORIZED REVENUE REQUIREMENT TRUE-UP ("ARRT")

Due to the reduction in savings, the calculation for the ARRT has also been reduced, as shown below:

Program Year	Original EE Plan ARRT	Updated ARRT
2011	$4,402,226	$3,877,937
2012	$13,848,041	$12,890,440
Total	$18,250,267	$16,768,378

V. DSM ADJUSTOR

The DSM adjustor must be modified due to: (i) the decrease in program budgets and ARRT and (ii) the reduced timing for collection. TEP has provided a summary of information on the DSM adjustor request in the table below:

Program Years	Original DSM Surcharge ($/kWh)	Updated DSM Surcharge ($/kWh)
2011-2012	0.005675	0.006343

This updated information does not alter any other component in the original EE Plan document and TEP respectfully requests that the Commission approve its EE Plan, as supplemented herein, as expeditiously as possible.

I. Residential Financing Program

TEP has designed a proposed Energy Efficiency Residential Financing Pilot Program ("Pilot Program") to provide customers with the funds needed to make cost-effective energy efficiency upgrades to their homes.

Initially, TEP planned to develop partnerships with Pennsylvania Treasury, as it appeared to be the only lending partner available to meet many requests that surfaced during the UNS Gas program development. After receiving requests from Commission Staff and local community members to continue investigation of alternative Arizona-based lenders for the TEP Program, and after resolving contract issues with the planned lending partner, suitable loan programs for all three companies were negotiated with Vantage West Credit Union. The loan programs for the three companies: (i) are nearly identical; (ii) are very similar to UNS Gas loan program approved by the Commission in Decision No. 72062 (01/06/2011); (iii) have improved functionality of loan loss reserve and interest rate buy-down accounts; and (iv) and have reduced costs.

Due to the later date now anticipated for Commission approval of the EE Plan, TEP has updated the estimated 2011 and 2012 budget to represent both the reduced costs associated with the Vantage West Credit Union partnership and the anticipated launch date for the Pilot Program. Updated budget details, a full Pilot Program description, and a red-line version of the original Financing Program are included in Exhibit 1.

II. Budget

As a result of the reduced costs associated with the re-design of the Pilot Program, and the delay in timing for approval of new programs and additional Pilot Program measures, TEP has reduced its 2011 EE Plan budget. TEP has also made some minor modifications to its participation estimates for 2012 due to continuing economic forces, resulting in some budget modifications for 2012. The combined result for 2011-2012 is an $8 million reduction from the original EE Plan. The changes in budget by Pilot Program are shown in Exhibit 2.

III. Portfolio Savings

Due to the delay in timing and modifications in participation estimates as mentioned above, TEP has altered its estimated savings for 2011 and 2012. These modifications in savings estimates by Pilot Program are shown in Exhibit 3.

IV. ARRT

Due to the reduction in savings, the calculation for the ARRT has also been reduced. TEP is now requesting approval to collect approximately $16.8 million in ARRT. Table IV-A below provides information on the ARRT by rate class.

Table IV-A ARRT by Rate Class

	Residential	Small General	Large General	Industrial	Other	Total
Original EE Plan	$10,397,500	$5,968,052	$1,009,779	$652,873	$222,063	$18,250,267
Updated Information	$9,495,233	$5,460,027	$957,772	$652,188	$203,158	$16,768,378

The ARRT, attached as Exhibit 4, shows the monthly and annual results of this calculation by rate class for calendar years 2011 and 2012[2].

V. DSM Adjustor

TEP seeks to update two components within its DSM Surcharge: (i) program cost recovery; and (ii) ARRT. TEP is not proposing any changes to the DSM Performance Incentive from the EE Plan. Specifically, TEP is requesting approval to collect $43 million in DSM program costs for 2011-2012, a $16 million pre-tax DSM performance incentive for 2011-2012, and $17 million in ARRT for 2011-2012.

TEP requests that the 2011-2012 EE Plan and the updated 2011-2012 DSM Tariff as attached herein be approved in order to be implemented on October 1, 2011[3].

TEP has included a revised tariff in Exhibit 5 that complies with A.A.C. R14-2-2406(A). Additionally, because of the delayed implantation date, TEP requests that the existing DSM adjustment mechanism be approved for implementation effective October 1, 2011 through December 31, 2012, in order to ensure just and reasonable rates.

Additional details and the elements of the Company's proposed Demand-Side Management Surcharge ("DSMS") for October 1, 2011 through December 31, 2012 can also be found in the attached Exhibit 5. At this time, it is anticipated that the DSMS required to implement the updated 2011-2012 EE Plan will be approximately $0.006343 per kWh based on forecasted retail sales from October 1, 2011 through December 31, 2012.[4] The average impact to a residential customer will be $5.58 per month.

[2] These projections are based on TEP's best estimates of market penetration for each program. TEP will recover the ARRT through the DSM Surcharge and will be reset coincident with the effective date of applicable changes to the Company's rates or eliminate this incremental portion of the DSM Surcharge in conjunction with the approval of revenue decoupling in a manner that will not leave a gap or result in double recovery.

[3] TEP assumed an October 1, 2011 effective date in calculations for the Demand Side Management Surcharge ("DSMS") but will file as a compliance item a revised DSMS using the actual effective date for the new surcharge following Commission approval.

[4] TEP has assumed the DSMS of $0.001249 will remain in effect through September 31, 2011.

EXHIBIT

"1"

CLEAN

VERSION

Program Description

Tucson Electric Power Co. ("TEP" or the "Company") has designed a proposed Energy Efficiency Residential Financing Pilot Program ("Program") to provide customers with the capital needed to make cost-effective energy efficiency upgrades to their homes. TEP believes that a two year pilot program will allow sufficient time for the Company to evaluate the Program, including participation, default rates, and overall value to customers. TEP's proposed Program elements include:

- Loan commitment of $2,000,000 per year for two years; this will provide approximately 424 loans per year based on an average $4,722 loan amount;
- Loans available only on energy efficiency measures meeting the Commission-required cost-effectiveness test;
- Low interest rates provided by a combination of an interest rate buy-down and a 10% loan loss reserve account;
- Limited ratepayer exposure to default risk (10% of the loan commitment);
- Funding provided through an approved Demand-Side Management ("DSM") surcharge charged to residential customers;
- Affordable residential financing for energy efficient measures;
- Convenient customer access to and repayment of the financing;
- Standard finance product offering for all eligible, approved borrowers;
- Leveraged financing;
- Accurate Truth-in-Lending notifications and billing to customers provided by an experienced third party lender; and
- Community involvement in forming and marketing the Program.

TEP proposes to increase DSM surcharge for residential customers by $0.00018 per kWh to fund the Program during the two year pilot program. The average annual cost to each residential customer would be $1.90.

It should be noted that UNS Gas, Inc. ("UNS Gas") (an affiliate of TEP), requested a program nearly identical to the one requested herein for TEP. The UNS Gas program was approved in Arizona Corporation Commission ("Commission") Decision No. 72062 (January 6, 2011). After receiving requests from Staff and local community members to investigate alternative Arizona-based lenders for the TEP and UNS Electric, Inc. ("UNS Electric") programs and after experiencing contract issues with the prior lender for the UNS Gas program, suitable loan programs for all three companies were negotiated with a local credit union. The loan programs for the three companies are nearly identical, are very similar to loan program approved under Decision No. 72062, have improved functionality of loan loss reserve and interest rate buy-down accounts, and have reduced costs.

Program Objectives and Rationale

TEP believes that the Program's financing options to help cover the costs of energy efficiency measures will improve customer participation in energy efficiency programs and expand the pool of customers that can afford to participate in those programs. Although other vendors offer financing for their own individual products, the Program's comprehensive approach to home energy upgrades cuts across several potential products and includes efficiency measures not traditionally financed, such as air and duct sealing.

Prior to designing the Program, TEP developed key objectives for the Company's implementation of a financing program. The following three objectives stood out from the rest as fundamental in order for TEP to provide a financing option:

- The program design must eliminate the utility from any Truth-in-Lending Law regulation implications;
- The program must provide a reasonable amount of funds at a reasonable interest rate and with a low initial investment; and
- Energy efficiency measures that qualify for TEP financing must have met the Commission's cost-effectiveness test.

With these objectives, TEP hired Harcourt Brown Energy and Finance ("Harcourt Brown") to assist with the evaluation, negotiations, and design of the Program. TEP, selected a Third Party Financing model secured by a combination of a 10% loan loss reserve account and an interest rate buy-down, all funded from the DSM Surcharge, as the best program offering.

Target Market

The target market for this Program is any residential customer in TEP's service territory who owns their home. Financing is available for installation of approved and cost effective DSM energy efficiency measures.

Program Eligibility

Eligible properties include single-family (1 to 4 unit), owner-occupied homes.

Current Baseline Conditions

The primary program available for comparison is offered through Fannie Mae. Fannie Mae utilizes an unsecured loan program structured in a similar manner to TEP's. Fannie Mae's base interest rate is 14.99% compared to the 7.99% available through the TEP Program. The programs offered by Arizona Public Service Company ("APS") and Southwest Gas Corporation ("Southwest Gas") are expected to have base interest rates of 6.5% to 8.5%.

Products and Services

Harcourt Brown evaluated the following parameters before recommending the most beneficial program to TEP:

- sources of capital;
- interest rates;
- loan terms;
- loan types and amounts;
- risk management;
- program integration;
- ease of use;
- repayment billing; and
- equitable funding.

TEP, with guidance from Harcourt Brown and input from Commission Staff and community leaders, considered several financing models and completed discussions with numerous entities nationwide before determining the most beneficial financing model for customers. The model selected by TEP uses Vantage West Credit Union ("VW" or "Lender"), an Arizona-based company, as the third party lender. The loans will be leveraged by a 10% loss reserve account as well as an interest rate buy-down fee. All funding will be provided by a DSM Surcharge applied to residential customers of TEP.

The Program will offer energy efficiency loans to TEP customers who are seeking financing for the energy efficiency improvements to their homes. Loan proceeds can be used for energy efficiency measures that have been approved by the Commission.

The Program is designed to provide an equitable and comprehensive approach to the financing of energy efficiency improvements in existing homes. TEP is proposing $2,000,000 in overall loan commitments to this Program for two consecutive years as a pilot program. TEP believes the size of this loan commitment is sufficient based on the number of customers in its service territory and the limited DSM energy efficiency measures available for customers at this time.

TEP evaluated the funding levels and cost to the customer, as shown in Table 1-1 below. TEP assumed an average loan size of $4,722 and a maximum term of 10 years in these calculations. Actual amounts will vary by loan size and terms. The 2011 total loan amount , interest rate buy-down and loan loss reserve is significantly reduced due to the delay in program approval and the anticipated launch to customers in November 2011.

Table 1-1. Funding Levels and Cost to Customer

TEP - Supplemental 2011 Residential Financing Program - Year 1				
Total Loan Amount Available (ResRate 10 Only)	*Estimated # of Loans	DSM Funding for Reserve	**DSM Funding for Buy-Down	Program Budget (Year 1)
$100,000	21	$10,000	$4,000	$142,815

TEP - Impact of Residential Financing Program - Year 2				
Total Loan Amount Available (ResRate 10 Only)	*Estimated # of Loans	DSM Funding for Reserve	**DSM Funding for Buy-Down	Program Budget (Year 2)
$2,000,000	424	$200,000	$79,995	$442,645

* Assumes average loan size $4,722 at max % buydown

** Assumes maximum 10 year term

Total 2-Year DSM Budget	
2011 Budget	$142,815
2012 Budget	$442,645
Total	$585,460

Note: TEP proposes that the DSM Surcharge necessary to fund this program be collected only from residential customers, as the loan instruments described are restricted to residential customers.

Table 1-2. 2011-2012 Cost to Customer

TEP - 2011-2012 DSM Adjustor for Residential Financing Program (Residential Customers Recovery Only)					
2011-2012 Program Budget	Actual kWh 2009 Less Lifeline Residential	Adjustor Increase/ kWh	Customers EOY 2009 (Less Lifeline)	Average kWh per Customer	Average Annual Cost
$585,460	3,726,945,671	$0.00016	345,445	10,789	$1.69

Program Funding and Terms

The proposed Program operates as follows:

1. VW will be the Lender that originates, services, and holds the Program loans until maturity. VW has committed to make loans according to basic underwriting terms, including approving borrowers with a Fair Isaac Corporation ("FICO") credit score of 640 or higher. Borrowers may be granted up to 10 years repayment. For all approved loans, the interest rate will be 7.99%, fixed for the life of the loan. Interest rates will not vary due to loan size, term, or credit score and there will be no prepayment penalty.
2. Additional terms will be contractually delineated between VW and TEP.
3. TEP will set aside funds through a loan loss reserve account (10% of committed loan value) and an interest rate buy-down account (4% of committed loan value).
4. TEP's role in this process will be to provide the loan loss reserve and interest rate buy-down accounts, to support lending. Funding will be collected through the DSM surcharge from TEP residential customers. TEP will not service or originate the loans.

Interest Rate Buy-down

The interest rate buy-down referenced above is necessary to offer a rate competitive with those rates offered in other utility financing programs in the State. The programs offered by APS and Southwest Gas have interest rates ranging from 6.5% to 8.5%. The loan interest rates will be bought down to 7.99%. The cost of the interest rate buy-down is dependent upon the FICO credit score of each customer. VW's base rate is 11.99% (requiring a 4% buy-down) for customers with FICO scores of 640 to 679, and 9.99% (requiring a 2% buy-down) for scores of 680 and above. VW does not charge a premium to reduce the interest rates, so the cost of the reduction equals the percentage change by which the rate was reduced [*i.e.*, if the rate is bought down from 11.99% to 7.99% (a difference of 4%) the cost to the Program for the reduction is only 4%]. Table 1-3 illustrates the two potential scenarios regarding the interest rate buy-down cost on a per-loan basis. Additional details are shown in Table 1-2 above.

Table 1-3. Interest Rate Buy-Down Costs

Average Loan Size of $4,722		
Buydown %	**5-Year Term**	**10-Year Term**
2%	$94	$94
4%	$189	$189
Adjusted Buy-Down per Dollar		
Buydown %	**5-Year Term**	**10-Year Term**
2%	$0.020	$0.020
4%	$0.040	$0.040

Loan Terms

TEP has worked with many lenders to develop the best loan terms for its customers. Optimal repayment terms, interest rates, fees, and application processes have been at the forefront of discussions. The terms must be negotiated and beneficial to both the lender and the customer, and meet various standards set forth by bank regulators. The loan terms available under the VW Program for the maximum term of 10 years and the maximum loan amount of $15,000 is shown below:

Table 1-4. Loan Term, Rate and Payment

Financing Amount	Terms	Interest Rate	Monthly Payment
$4,722	10 Yr.	7.99%	$57.27

Financing Amount	Terms	Interest Rate	Monthly Payment on Each $1.00
$4,722	10 Yr.	7.99%	$0.01213

As with other DSM Programs, low-income customers will be excluded from the DSM Surcharge.

Credit Underwriting

Limited credit standards will be used by the Lender in its underwriting process. Loan approval is granted based on FICO credit scores of 640 and above, debt-to-income ratios of 50% or less, and proof of income. These lower credit scores allow far greater participation for TEP residential customers than products offered by most other lenders.

Application and Approval Process

The application and approval process is designed to be simple, easily accessible and convenient to all, as shown below.

- Customers can call a 1-800 telephone number to apply and receive loan approval; or
- Applications can be filled out during the visit with the contractor; or
- Loan applications will be available on the VW website; and
- Loan pre-approvals will occur within 1 business day of making the application.

With the help of community-action groups as well as contractor marketing and TEP marketing, the Company believes that Program loan funds will be fully used each year. At this time, the only approved residential energy efficiency measures for the TEP territory is the high-efficiency air conditioner and heat pump exchange, duct sealing, air sealing, ceiling insulation and window film/shade screens. The anticipated participation discussed herein is based on the assumed participation in the Existing Homes Program approved by the Commission in Decision No. 72028 (December 10, 2010).

While loan sizes are likely to vary, TEP estimates that 800 customers will choose to participate in the Existing Homes Program. TEP further estimates that only a percentage of those participants will install each energy efficiency measure. Details of the TEP methodology to determine the average loan size are demonstrated in Table 1-5. With the $2,000,000 loan commitment each year available through the Program, approximately 424 loans could be made in the service territory assuming an average loan size of $4,722. If the average loan size is smaller than this estimate, the number of loans will increase proportionately.

Exhibit 1

Table 1-5. Determination of Average Loan Size

TEP ESTIMATE OF LOAN SIZE					
Participants	800				
Category	Annual kWh	%	Total Lost Therm	Estimated Cost of Measure	Total Financing Requirement
Duct Seal	1,030	0.6	494,400	$ 935	$ 448,800
Air Seal	415	0.4	132,800	$ 370	$ 118,400
Insul & Air Seal	1,075	0.3	258,000	$1,165	$ 279,600
Equipment & Ducts	1,300	0.4	416,000	$7,700	$2,464,000
Shade Screens	1,060	0.6	508,800	$ 708	$ 339,840
Attic Insulation Only	660	0.2	105,600	$ 795	$ 127,200
TOTALS			1,915,600		$3,777,840
Average Loan Size per Customer					$4,722

Delivery Strategy, Incentive Processing and Administration

The strategy for Program delivery and administration is as follows:

- Coordination between the Lender and TEP on all fund transfers will be managed in-house by a single TEP Program Manager;
- The Program Manager will also provide overall management, marketing oversight, planning and tracking of customer and contractor participation; and
- The Program Manager will coordinate all activities necessary to develop application forms and contractor training.

Key partnering relationships will include:

- Community interest groups;
- HVAC, insulation, and air sealing contractors trained in Program procedures; and
- The Arizona Energy Office, Pima Community College, or other industry experts to provide training, education and awareness.

The Program will use contractors initially recruited for the Existing Homes Program, encouraging them to promote TEP financing when working with customers. TEP will provide an orientation of the Program which will outline Program requirements and contractors responsibilities as well as discuss reporting and data collection procedures. Contractors interested in participating in the Program must attend the orientation.

Program Marketing and Communication Strategy

TEP will provide Program marketing and customer outreach and awareness through a range of strategies including:

- Promotions on the TEP website about the benefits of purchasing high-efficiency equipment and home performance measures;

- Promotion through contractors and through community interest groups;
- Providing information through TEP's customer care center;
- Developing marketing pieces including brochures and other collateral pieces to promote the benefits of qualifying equipment, air sealing and duct sealing, and the financing program available to fund those measures; and
- Training and seminars for participating trade allies and contractors.

The advertising campaign will communicate that high-efficiency systems and home performance measures will help reduce customer energy bills, provide equal or better comfort conditions, and are beneficial for the environment.

Program Implementation Schedule

TEP will continue working with VW on preparation of contracts, agreements, and other documents as we await Commission approval. TEP estimates the Program could commence within 30 to 60 days of receiving Commission approval.

Measurement, Evaluation and Research Plan

TEP will adopt an integrated data collection strategy designed to provide a quality data resource for Program tracking, management, and evaluation. This approach will entail the following primary activities:

- Database management: As part of Program operation, TEP will request the Lender to provide the necessary data elements to populate the tracking database and provide periodic reporting; and
- Data collection: TEP will establish systems to collect the data needed to support effective Program management, transfer of funds from TEP to the loan loss reserve accounts, reporting, and evaluation.

Quality Assurance and Control

Due to the risks inherent with this type of program, quality assurance and control will be a daily function of the Program Manager. In order to protect its customer's interests, TEP plans to collect loan information prior to and after each loan closing, as it believes the best time to correct a mistake or avoid fraud is prior to the loan being funded. The information collected will not be used by TEP to approve the credit-worthiness of a borrower, but will be reviewed to ensure that: 1) each loan falls within what has been approved by the Commission; 2) Commission-approved measures are the only items being financed by the loan; and 3) the loan proceeds are for work being performed by an approved contractor. Additionally, each signed Promissory Note and Disbursement Sheet along with a copy of the disbursement check will be collected to verify the loan was closed and funded as presented to TEP.
Additional steps to keep a tight control on the portfolio are the requirements of daily, weekly and monthly reporting. Daily reporting will include daily viewing access to the Loan Loss Reserve and Interest Rate Buy-down Accounts, and notification of any defaults and charge offs. Lender will also provide TEP a past-due report on a weekly basis. Monthly reporting will be more extensive, with a full portfolio report provided to TEP. The monthly portfolio report will include the information TEP will need for accurate reporting and control of the Program. A monthly reconciled statement for the Loan Loss Reserve Account will also be required.

Program Costs and Benefits

The budget is detailed in Table 1-6. . In order to have a sufficient budget to support the Program should more loans fall into the 640-679 FICO score category, the budget is calculated using the 4% interest rate buy-down.

Table 1-6. Two Year Pilot Program Budget

$2,000,000 Loan Commitment per Year	*2011	2012	Total
Loan Loss Reserve Amount	$10,000	$200,000	$210,000
DSM Funds for Interest Buy-Down	$4,000	$79,995	$83,995
TEP Internal Administration	$50,000	$30,900	$80,900
Measurement and Reporting	$17,416	$21,777	$39,193
Marketing Materials	$36,399	$34,973	$71,372
Joint Utility Coordination Transfers	$0	$50,000	$50,000
Contractor Training Classes	$25,000	$25,000	$50,000
Budget Total	$142,815	$442,645	$585,460

* 2011 budget reduced due to delay in program approval and anticipated launch for Nov 2011.

Upon maturity of the first set of loans (maximum of 10 years into the Program), the amount collected through the DSM surcharge for the next year will be reduced. At that point, the loan loss reserve account associated with the loans from the first year will be returned to the Program. The amount returned will equal the initial amount funded into the loan loss reserve account, plus interest accrued on the account, less any loan losses sustained.

There is no direct benefit or savings from a residential financing program, but the total DSM Portfolio Cost for TEP will increase as a result of offering the Program. However the indirect benefit and savings is measured at the program level where individual energy efficiency measures are included. TEP believes the availability of financing for the Existing Homes Program will increase participation, and thus increase the resulting societal benefits and savings reported in the program.

To compare the estimated annual savings to the estimated annual payments on the average-sized loan TEP provided examples of the customer benefit and savings from two likely scenarios from participation in the Existing Homes Program. This information is included in Table 1-7. As set forth in Example 1 of Table 1-7, anticipated savings would be less than estimated loan payments. Example 2 however, demonstrates that with a lower loan size, the savings would be much closer to the annual loan payments. This example demonstrates how the Program could result in cost savings to some customers depending on loan size and term but that TEP cannot guarantee cost savings to all customers.

According to Commission Staff, societal cost tests are not applicable to a residential financing program.

Table 1-7. Examples of Estimated Savings, Costs and Payments

Category	Annual kWh Savings	Estim Job Cost	Annual Customer Savings $0.10/kWh
Duct Seal	1,030	$935	$103
Air Seal	415	$370	$42
Insul & Air Seal	1,075	$1,165	$108
Equipment & Ducts	1,300	$7,700	$130
Shade Screens	1,060	$708	$106
Attic Insulation Only	660	$795	$66

Example 1:

Customer Chooses Envelope AND Efficient Equipment	Annual kWh Savings	Estim Job Cost	Annual Customer Savings @$0.10/kWh	Annual Pmt 10 Year
Equipment & Ducts	1,300	$7,700	$130	
Insulation & Air Sealing	1,075	$1,165	$108	
Totals	2375	$8,865	$238	$1,290

Example 2:

Customer Chooses Envelope AND Efficient Equipment	Annual kWh Savings	Estim Job Cost	Annual Customer Savings @$0.10/kWh	Annual Pmt 10 Year
Duct Sealing Only	1,030	$935	$103	
Insulation & Air Sealing	1,075	$1,165	$108	
Totals	2,105	$2,100	$211	$306

REDLINED

VERSION

TEP Residential Energy Efficiency Financing Pilot Program (Updated)

Exhibit 1~~Appendix B~~

Program Description

Tucson Electric Power Co. ("TEP" or the "Company") has designed a proposed Energy Efficiency Residential Financing Pilot Program ("Program") to provide customers with the capital needed to make cost-effective energy efficiency upgrades to their homes. TEP believes that a two year pilot program will allow sufficient time for the Company to evaluate the Program, including participation, default rates, and overall value to customers. TEP's proposed Program elements include:

- Loan commitment of $2,000,000 per year for two years; this will provide approximately 424 loans per year based on an average $4,722 loan amount;
- Loans available only on energy efficiency measures meeting the Commission-required cost-effectiveness test;
- Low interest rates provided by a combination of an interest rate buy-down and a 10% loan loss reserve account;
- Limited ~~customer~~ ratepayer exposure to default risk (10% of the loan commitment);
- Funding provided through an approved Demand-Side Management ("DSM") surcharge charged to residential customers;
- Affordable residential financing for energy efficient measures;
- Convenient customer access to and repayment of the financing;
- Standard finance product offering for all eligible, approved borrowers;
- Leveraged financing;
- Accurate Truth-in-Lending notifications and billing to customers provided by an experienced third party lender; and
- Community involvement in forming and marketing the Program.

~~TEP requests Commission direction on the level of impact for residential customers. Depending on the Commission direction,~~ TEP proposes to increase DSM surcharge for residential customers by $0.00018 per kWh to fund the Program ~~by one of three levels~~ during the ~~first year of the~~ two year pilot program. The average annual cost to each residential customer would be $1.90.

~~• $2,000,000 in funding with no interest rate buy-down would require $0.0001 per kWh to fund the Program. The average annual cost to each residential customer would be $1.48;~~

~~• $2,000,000 in funding with a 2% interest rate buy-down would require $0.0002 per kWh to fund the Program. The average annual cost to each residential customer would be $2.13;~~

~~• $2,000,000 in funding with a 3% interest rate buy-down would require $0.0002 per kWh to fund the Program. The average annual cost to each residential customer would be $2.44.~~

It should be noted that~~Of note,~~ UNS Gas, Inc. ("UNS Gas") (an ~~related entity to~~affiliate of TEP), requested a program nearly identical to the one requested herein for TEP. The UNS Gas program was approved in Arizona Corporation Commission ("Commission") Decision No. 72062 (January 6, 2011). ~~In that decision, the Commission opted for the 2% interest rate buy-down option. Based on that decision, TEP recommends the 2% buy-down option, yet provides throughout this application all three buy-down options for the Commission's consideration.~~ After receiving requests from Staff and local community

members to investigate alternative Arizona-based lenders for the TEP and UNS Electric, Inc. ("UNS Electric") programs and after experiencing contract issues with the prior lender for the UNS Gas program, suitable loan programs for all three companies were negotiated with a local credit union. The loan programs for the three companies are nearly identical, are very similar to loan program approved under Decision No. 72062, have improved functionality of loan loss reserve and interest rate buy-down accounts, and have reduced costs.

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Prior to designing the Program, TEP developed key objectives for the Company's implementation of a financing program. The following ~~T~~three objectives stood out from the rest as fundamental in order for TEP to provide a financing option:

- The program design must eliminate the utility from any Truth-in-Lending Law regulation implications;
- The program must provide a reasonable amount of funds at a reasonable interest rate and with a low initial investment; and
- Energy efficiency measures that qualify for TEP financing must have met the Commission's cost-effectiveness test.

With these objectives, TEP hired Harcourt Brown Energy and Finance ("Harcourt Brown") to assist with the evaluation, negotiations, and design of the Program. TEP, ~~with guidance from Harcourt Brown,~~ selected a Third Party Financing model secured by a combination of a 10% loan loss reserve account and an interest rate buy-down, all funded from the DSM Surcharge, as the best program offering.

Target Market

The target market for this Program is any residential customer in TEP's service territory who owns their home. Financing is available for installation of approved and cost effective DSM energy efficiency measures.

Program Eligibility

Eligible properties include single-family (1 to 4 unit), owner-occupied homes.

Current Baseline Conditions

The primary program available for comparison is offered through Fannie Mae. Fannie Mae utilizes an unsecured loan program structured in a similar manner to TEP's. Fannie Mae's base interest rate is 14.99% compared to the 7.99%~~ to 9.99%~~ available through the TEP Program. The programs offered by Arizona Public Service Company ("APS") and Southwest Gas Corporation ("Southwest Gas") are expected to have base interest rates of 6.5% to 8.5%.

Products and Services

Harcourt Brown evaluated the following parameters before recommending the most beneficial program to TEP:

- sources of capital;
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- loan terms;
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- risk management;
- program integration;
- ease of use;
- repayment billing; and
- equitable funding.

TEP, with guidance from ~~and~~ Harcourt Brown and input from Commission Staff and community leaders, considered several financing models and completed discussions with numerous entities nationwide before determining the most beneficial financing model for customers. The model selected by TEP uses Vantage West Credit Union~~AFC First~~ ("VW~~AFC~~" or "Lender"), an Arizona-based company, as the third party lender. ~~Capital resources are provided by the Pennsylvania Treasury ("PA Treasury") with~~The~~-~~ loans will be leveraged by a 10% loss reserve account as well as an~~the possibility of a small~~ interest rate buy-down fee. All funding will be provided by a DSM Surcharge applied to residential customers of TEP.

The Program will offer energy efficiency loans to TEP customers who are seeking financing for the energy efficiency improvements to their homes. Loan proceeds can be used for energy efficiency measures that have been approved by the Commission.

The Program is designed to provide an equitable and comprehensive approach to the financing of energy efficiency improvements in existing homes. TEP is proposing $2,000,000 in overall loan commitments to this Program for two consecutive years as a pilot program. TEP believes the size of this loan commitment is sufficient based on the number of customers in its service territory and the limited DSM energy efficiency measures available for ~~gas~~ customers at this time. ~~In order for this Program to be viable, TEP needs Commission approval of its currently pending Existing Homes and Residential Energy Assessment Programs.~~

TEP evaluated the ~~customer impact~~funding levels and cost to the customer ~~of three levels of funding~~, as shown in Table 1-1 below. TEP assumed an average loan size of $4,722 and a maximum term of 1~~2~~0 years in these calculations. Actual amounts will vary by loan size and terms. The 2011 total loan amount , interest rate buy-down and loan loss reserve is significantly reduced due to the delay in program approval and the anticipated launch to customers in November 2011.

Table 1-1. Funding Levels and Cost to Customer

TEP Residential Energy Efficiency Financing Pilot Program (Updated)

Exhibit 1~~Appendix B~~

TEP - Supplemental 2011 Residential Financing Program - Year 1				
Total Loan Amount Available (ResRate 10 Only)	*Estimated # of Loans	DSM Funding for Reserve	**DSM Funding for Buy-Down	Program Budget (Year 1)
$100,000	21	$10,000	$4,000	$142,815

TEP - Impact of Residential Financing Program - Year 2				
Total Loan Amount Available (ResRate 10 Only)	*Estimated # of Loans	DSM Funding for Reserve	**DSM Funding for Buy-Down	Program Budget (Year 2)
$2,000,000	424	$200,000	$79,995	$442,645

* Assumes average loan size $4,722 at max % buydown

** Assumes maximum 10 year term

~~$2,000,000~~	~~424~~	~~$200,000~~	~~0%~~	~~$ -~~	~~$509,604~~
~~$2,000,000~~	~~424~~	~~$200,000~~	~~2%~~	~~$225,314~~	~~$734,918~~
~~$2,000,000~~	~~424~~	~~$200,000~~	~~3%~~	~~$332,889~~	~~$842,193~~

~~$2,000,000~~	~~424~~	~~$200,000~~	~~0%~~	~~$ -~~	~~$465,596~~
~~$2,000,000~~	~~424~~	~~$200,000~~	~~2%~~	~~$225,314~~	~~$690,910~~
~~$2,000,000~~	~~424~~	~~$200,000~~	~~3%~~	~~$332,889~~	~~$798,485~~

~~* Assumes average loan size $4,722~~

~~** Assumes maximum 12 year term~~

~~*** Year 2 costs reduced due to lower cost for marketing materials and contractor training~~

Total 2-Year DSM Budget	
2011 Budget	$142,815
2012 Budget	$442,645
Total	$585,460

[illegible]	[illegible]
~~No Buydown~~	~~$ 975,201~~
~~2% Buydown~~	~~$1,485,829~~
~~3% Buydown~~	~~$1,640,978~~

Note: TEP proposes that the DSM Surcharge necessary to fund this program be collected only from residential customers, as the loan instruments described are restricted to residential customers.

Table 1-2. 2011-2012 Cost to Customer ~~Buy Down Options~~

TEP - 2011-2012 DSM Adjustor for Residential Financing Program (Residential Customers Recovery Only)					
2011-2012 Program Budget	Actual kWh 2009 Less Lifeline Residential	Adjustor Increase/ kWh	Customers EOY 2009 (Less Lifeline)	Average kWh per Customer	Average Annual Cost
$585,460	3,726,945,671	$0.00016	345,445	10,789	$1.69

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
~~$ 509,604~~	~~3,726,945,671~~	~~$ 0.0001~~	~~345,445~~	~~10,789~~	~~$ 1.48~~
~~$ 734,918~~	~~3,726,945,671~~	~~$ 0.0002~~	~~345,445~~	~~10,789~~	~~$ 2.13~~
~~$ 842,493~~	~~3,726,945,671~~	~~$ 0.0002~~	~~345,445~~	~~10,789~~	~~$ 2.44~~

Program Funding and Terms

The proposed Program operates as follows:

1. VW~~AFC~~ will be the Lender that originates, ~~and~~ services, and holds the Program loans until maturity. VW~~AFC~~ has committed to make loans according to basic underwriting terms, including approving borrowers with a Fair Isaac Corporation ("FICO") credit score of 640 or higher. Borrowers may be granted up to 1~~2~~0 years repayment. For all approved loans, the ~~;~~ ~~though~~ interest rate ~~s are currently to be determined, TEP has secured a verbal commitment that rates~~ will be ~~between~~ 7.99% ~~and 9.99%~~, fixed for the life of the loan. Interest rates will not vary due to loan size, term, or credit score and there will be no prepayment penalty.
2. Additional terms will be contractually delineated between ~~AFC~~VW and TEP. ~~Final rates and availability will be determined prior to Program commencement.~~
3. ~~PA Treasury will contract with AFC to purchase the Program loans from AFC. The interest rates, loan terms, underwriting criteria and other relevant characteristics of the loans that PA Treasury will purchase will be contractually delineated.~~
4. ~~4.~~3. TEP will set aside funds through a loan loss reserve account (10% of committed loan value) and~~/or~~ an interest rate buy-down account (4% of committed loan value). ~~The loss reserve agreement will be negotiated with the PA Treasury.~~
5. ~~AFC's loan capital will be replenished from the proceeds of TEP's sale of Program loans to the PA Treasury, thereby enabling AFC to make new loans.~~

~~6. The PA Treasury will sell the Program loans to its investors. The proceeds from these sales will enable the PA Treasury to make additional loan purchases from AFC.~~

~~7.~~4. TEP's role in this process will be to provide the loan loss reserve and interest rate buy-down accounts, to support lending~~, and potentially to buy down interest rates~~. Funding will be collected through the DSM surcharge from TEP residential customers. TEP will not service or originate the loans.

Interest Rate Buy-down

The interest rate buy-down referenced ~~above~~ above is~~may be~~ necessary to offer a rate competitive with those rates offered in other utility financing programs in the State. The programs offered by APS and Southwest Gas have interest rates ranging from 6.5% to 8.5%. The loan interest rates will be bought down to 7.99%. ~~Because the interest rate buy-down will result in an additional cost that will be covered through the DSM Surcharge, TEP seeks Commission guidance on the final product offering. As previously stated, TEP recommends the 2% buy down option based on the Commission's decision in the UNS Gas Residential Energy Efficiency Financing Pilot Program Decision No. 72062 (January 6, 2011), yet provides the data for all three options for the Commission's consideration in this matter.~~ The cost of the interest rate buy-down ~~will depend on (1) the market interest rate, (2) the target interest rate, (3) the loan amounts, and (4) the loan term~~ is dependent upon the FICO credit score of each customer. VW's base rate is 11.99% (requiring a 4% buy-down) for customers with FICO scores of 640 to 679, and 9.99% (requiring a 2% buy-down) for scores of 680 and above. VW does not charge a premium to reduce the interest rates, so the cost of the reduction equals the percentage change by which the rate was reduced [*i.e.*, if the rate is bought down from 11.99% to 7.99% (a difference of 4%) the cost to the Program for the reduction is only 4%]. Table 1-3 illustrates the two potential scenarios regarding the interest rate buy-down cost on a per-loan basis. Additional details are shown in Table 1-2 above.

Table 1-3. Interest Rate Buy-Down Costs

Average Loan Size of $4,722		
Buydown %	**5-Year Term**	**10-Year Term**
2%	$94	$94
4%	$189	$189
Adjusted Buy-Down per Dollar		
Buydown %	**5-Year Term**	**10-Year Term**
2%	$0.020	$0.020
4%	$0.040	$0.040

~~Buydown %~~	~~7-Year Term~~	~~12-Year Term~~
~~0.02~~	~~322~~	~~532~~
~~0.03~~	~~479~~	~~786~~

Loan Terms

TEP has worked with many lenders to develop the best loan terms for its customers. Optimal repayment terms, interest rates, fees, and application processes have been at the forefront of discussions. ~~However, TEP cannot dictate to any lender the package of terms they must offer.~~ The terms must be negotiated and beneficial to both the lender and the customer, and meet various standards set forth by bank regulators. The loan terms available under the VW Program for the maximum term of 10 years and the maximum loan amount of $15,000 ~~are as follows~~is shown below:

Table 1-4. Loan Terms, Rates and Payment ~~Range~~

Financing Amount	Terms	Interest Rate	Monthly Payment
$4,722	10 Yr.	7.99%	$57.27

Financing Amount	Terms	Interest Rate	Monthly Payment on Each $1.00
$4,722	10 Yr.	7.99%	$0.01213

~~$1,000 - $15,000 w/o Buydown~~	~~up to 144 Mos.~~	~~7.99% - 9.99%~~	~~$51 - $56~~
~~$1,000 - $15,000 w/2% Buydown~~	~~up to 144 Mos.~~	~~5.99% - 7.99%~~	~~$46 - $51~~
~~$1,000 - $15,000 w/3% Buydown~~	~~up to 144 Mos.~~	~~4.99% - 6.99%~~	~~$41 - $49~~

~~As demonstrated in Table 1-4, the payment amount based on the estimated average loan size does not fluctuate greatly between an interest rate of 4.99% and 9.99% ($44 to $56 per month). As the loan size increases to the maximum ($15,000), the payment spread widens from $139 per month to $179 per month at these same rates. TEP is looking for guidance from the Commission to decide whether or not the benefit of the payment savings to these individual customers offsets the buy-down fee charged to all residential customers.~~ As with other DSM Programs, low-income customers will be excluded from the DSM Surcharge.

Credit Underwriting

Limited credit standards will be used by the Lender in its underwriting process. Loan approval is granted based on FICO credit scores of 640 and above, debt-to-income ratios of 50% or less, and proof of income. These lower credit scores allow far greater participation for TEP residential customers than products offered by most other lenders.

Application and Approval Process

The application and approval process is designed to be simple, easily accessible and convenient to all, as shown below.

- Customers can call a 1-800 telephone number to apply and receive loan approval; or
- Applications can be filled out during the visit with the contractor; or
- Loan applications will be available on the VW~~TEP~~ website; and

- Loan pre-approvals will occur within 1 business day~~20 minutes to 48 hours~~ of making the application.

With the help of community-action groups as well as contractor marketing and TEP marketing, the Company believes that Program loan funds will be fully used each year. At this time, the only approved residential energy efficiency measures for the TEP territory is the high-efficiency air conditioner and heat pump exchange, duct sealing, air sealing, ceiling insulation and window film/shade screens. The anticipated participation discussed herein is based on the assumed participation in the Existing Homes Program approved by the Commission in Decision No. 72028 (December 10, 2010).

While loan sizes are likely to vary, TEP estimates that 800 customers will choose to participate in the Existing Homes Program. TEP further estimates that only a percentage of those participants will install each energy efficiency measure. Details of the TEP methodology to determine the average loan size are demonstrated in Table 1-5. With the $2,000,000 loan commitment each year available through the Program, approximately 424 loans could be made in the service territory assuming an average loan size of $4,722. If the average loan size is smaller than this estimate, the number of loans will increase proportionately.

Table 1-5. Determination of Average Loan Size

TEP ESTIMATE OF LOAN SIZE					
Participants	800				
Category	Annual kWh	%	Total Lost Therm	Estimated Cost of Measure	Total Financing Requirement
Duct Seal	1,030	0.6	494,400	$ 935	$ 448,800
Air Seal	415	0.4	132,800	$ 370	$ 118,400
Insul & Air Seal	1,075	0.3	258,000	$1,165	$ 279,600
Equipment & Ducts	1,300	0.4	416,000	$7,700	$2,464,000
Shade Screens	1,060	0.6	508,800	$ 708	$ 339,840
Attic Insulation Only	660	0.2	105,600	$ 795	$ 127,200
TOTALS			1,915,600		$3,777,840
Average Loan Size per Customer					$4,722

Delivery Strategy, Incentive Processing and Administration

The strategy for Program delivery and administration is as follows:

- Coordination between the Lender and TEP on all fund transfers will be managed in-house by a single TEP Program Manager;
- The Program Manager will also provide overall management, marketing oversight, planning and tracking of customer and contractor participation; and
- The Program Manager will coordinate all activities necessary to develop application forms and contractor training.

Key partnering relationships will include:

- Community interest groups;
- HVAC, insulation, and air sealing contractors trained in Program procedures; and
- The Arizona Energy Office, Pima Community College, or other industry experts to provide training, education and awareness.

The Program will use contractors initially recruited for the Existing Homes Program, encouraging them to promote TEP financing when working with customers. TEP will provide an orientation of the Program which will outline Program requirements and contractors responsibilities as well as discuss reporting and data collection procedures. Contractors interested in participating in the Program must attend the orientation.

Program Marketing and Communication Strategy

TEP will provide Program marketing and customer outreach and awareness through a range of strategies including:

- Promotions on the TEP website about the benefits of purchasing high-efficiency equipment and home performance measures;
- Promotion through contractors and through community interest groups;
- Providing information through TEP's customer care center;
- Developing marketing pieces including brochures and other collateral pieces to promote the benefits of qualifying equipment, air sealing and duct sealing, and the financing program available to fund those measures; and
- Training and seminars for participating trade allies and contractors.

The advertising campaign will communicate that high-efficiency systems and home performance measures will help reduce customer energy bills, provide equal or better comfort conditions, and are beneficial for the environment.

Program Implementation Schedule

~~The PA Treasury has assured Hareourt Brown that funding for the Program is available.~~TEP will continue working with VW~~AFC and the PA Treasury~~ on preparation of contracts, agreements, and other documents as we await Commission approval. TEP estimates the Program could commence within 30 to 60 days of receiving Commission approval.

Measurement, Evaluation and Research Plan

TEP will adopt an integrated data collection strategy designed to provide a quality data resource for Program tracking, management, and evaluation. This approach will entail the following primary activities:

- Database management: As part of Program operation, TEP will request the Lender to provide the necessary data elements to populate the tracking database and provide periodic reporting; and
- Data collection: TEP will establish systems to collect the data needed to support effective Program management, transfer of funds from TEP to the loan loss reserve accounts, reporting, and evaluation.

Quality Assurance and Control

Due to the risks inherent with this type of program, quality assurance and control will be a daily function of the Program Manager. In order to protect its customer's interests, TEP plans to collect loan information prior to and after each loan closing, as it believes the best time to correct a mistake or avoid fraud is prior to the loan being funded. The information collected will not be used by TEP to approve the credit-worthiness of a borrower, but will be reviewed to ensure that: 1) ~~ensure that~~ each loan falls within what has been approved by the Commission; 2) ~~that~~ Commission-approved measures are the only items being financed by the loan; and 3) ~~that~~ the loan proceeds are for work being performed by an approved contractor. Additionally, each signed Promissory Note and Disbursement Sheet along with a copy of the disbursement check will be collected to verify the loan was closed and funded as presented to TEP.

Additional steps to keep a tight control on the portfolio are the requirements of daily, weekly and monthly reporting. Daily reporting will include daily viewing access to the Loan Loss Reserve and Interest Rate Buy-down Accounts, and notification of any defaults and charge offs. Lender will also provide TEP a past-due report on a weekly basis. Monthly reporting will be more extensive, with a full portfolio report provided to TEP. The monthly portfolio report will include the information TEP will need for accurate reporting and control of the Program. A monthly reconciled statement for the Loan Loss Reserve Account will also be required.

Program Costs and Benefits

~~Three possible~~ budgets ~~is~~are detailed in Table 1-6 ~~Potential budgets depend on whether or not a buy-down approach is used. An estimate of lost revenue resulting from installation of energy efficiency measures installed as a result of the Program has been included as a component of the Annual Budget~~. In order to have a sufficient budget to support the Program should more loans fall into the 640-679 FICO score category, the budget is calculated using the 4% interest rate buy-down.

Table 1-6. Two Year Pilot Program Budget

~~$2,000,000 Loan Commitment~~ per Year	*2011	2012	Total
Loan Loss Reserve Amount	$10,000	$200,000	$210,000
DSM Funds for Interest Buy-Down	$4,000	$79,995	$83,995
TEP Internal Administration	$50,000	$30,900	$80,900
Measurement and Reporting	$17,416	$21,777	$39,193
Marketing Materials	$36,399	$34,973	$71,372
Joint Utility Coordination Transfers	$0	$50,000	$50,000
Contractor Training Classes	$25,000	$25,000	$50,000
Budget Total	$142,815	$442,645	$585,460

* 2011 budget reduced due to delay in program approval and anticipated launch for Nov 2011.

~~Loan Loss Reserve Amount~~	~~$ 200,000~~	~~$200,000~~	~~$400,000~~
~~DSM Funds for Interest Buy-Down~~	~~$ 0~~	~~$ 0~~	~~$ 0~~
~~Loss Default Recovery Expected 2023 @ 3% of 2011 commitment~~	~~$ 0~~	~~$ 0~~	~~$ 0~~
~~TEP Internal Administration 1/3 FTE~~	~~$40,000~~	~~$41,200~~	~~$81,200~~
~~Reporting~~	~~$10,000~~	~~$10,300~~	~~$20,300~~
~~Marketing Materials~~	~~$50,000~~	~~$25,000~~	~~$75,000~~
~~Joint Utility Coordination Transfers~~	~~$50,000~~	~~$50,000~~	~~$100,000~~
~~Contractor Training Classes~~	~~$25,000~~	~~$10,000~~	~~$35,000~~
~~TEP Loss Revenue Recovery~~	~~$60,847~~	~~$60,847~~	~~$121,695~~
~~Budget Total~~	~~$435,847~~	~~$497,847~~	~~$933,195~~

~~Loan Loss Reserve Amount~~	~~$200,000~~	~~$200,000~~	~~$400,000~~
~~DSM Funds for Interest Buy-Down~~	~~$225,314~~	~~$225,314~~	~~$450,628~~
~~Loss Default Recovery Expected 2023 @ 3% of 2011 commitment~~	~~$ –~~	~~$ –~~	~~$ –~~
~~TEP Internal Administration 1/3 FTE~~	~~$ 40,000~~	~~$41,200~~	~~$81,200~~
~~Reporting~~	~~$10,000~~	~~$10,300~~	~~$20,300~~
~~Marketing Materials~~	~~$50,000~~	~~$ 25,000~~	~~$75,000~~

~~Joint Utility Coordination Transfers~~	~~$50,000~~	~~$50,000~~	~~$100,000~~
~~Contractor Training Classes~~	~~$25,000~~	~~$10,000~~	~~$35,000~~
~~TEP Loss Revenue Recovery~~	~~$60,847~~	~~$60,847~~	~~$121,695~~
~~Budget Total~~	~~$604,184~~	~~$622,661~~	~~$1,283,823~~

~~Loan Loss Reserve Amount~~	~~$200,000~~	~~$200,000~~	~~$400,000~~
~~DSM Funds for Interest Buy-Down~~	~~$332,889~~	~~$332,889~~	~~$665,777~~
~~Loss Default Recovery Expected 2023 @ 3% of 2011 commitment~~	~~$ –~~	~~$ –~~	~~$ –~~
~~TEP Internal Administration 1/3 FTE~~	~~$40,000~~	~~$41,200~~	~~$81,200~~
~~Reporting~~	~~$10,000~~	~~$10,300~~	~~$20,300~~
~~Marketing Materials~~	~~$50,000~~	~~$25,000~~	~~$75,000~~
~~Joint Utility Coordination Transfers~~	~~$50,000~~	~~$50,000~~	~~$100,000~~
~~Contractor Training Classes~~	~~$25,000~~	~~$10,000~~	~~$35,000~~
~~TEP Loss Revenue Recovery~~	~~$60,847~~	~~$60,847~~	~~$121,695~~
~~Budget Total~~	~~$768,736~~	~~$ 730,236~~	~~$1,498,972~~

Upon maturity of the first set of loans (maximum of 1~~2~~0 years into the Program), the amount collected through the DSM surcharge for the next year will be reduced. At that point, the loan loss reserve account associated with the loans from the first year will be returned to the Program. The amount returned will equal the initial amount funded into the loan loss reserve account, plus interest accrued on the account, less any loan losses sustained.

There is no direct benefit or savings from a residential financing program, but the total DSM Portfolio Cost for TEP will increase as a result of offering the Program. However the indirect benefit and savings is measured at the program level where individual energy efficiency measures are included. TEP believes the availability of financing for the Existing Homes Program will increase participation, and thus increase the resulting societal benefits and savings reported in the program.

To compare the estimated annual savings to the estimated annual payments on the average-sized loan~~for the three buy-down scenarios (no buy-down, 2% buy-down and 3% buy-down)~~ TEP provided examples of the customer benefit and savings from two likely scenarios from participation in the Existing Homes Program. This information is included in Table 1-7. As set forth in Example 1 of Table 1-7, anticipated savings would be less than estimated loan payments~~using a 2% or 3% buy-down~~. ~~However,~~ Example 2 however, demonstrates that with a lower loan size, the savings would be ~~greater than~~much closer to the annual loan payments. This example demonstrates how the Program could result in cost savings to some customers depending on loan size and term ~~,~~ but that TEP cannot guarantee cost savings to all customers.

According to Commission Staff, societal cost tests are not applicable to a residential financing program.

Table 1-7. Examples of Estimated Savings, Costs and Payments

Category	Annual kWh Savings	Estim Job Cost	Annual Customer Savings $0.10/kWh
Duct Seal	1,030	$935	$103
Air Seal	415	$370	$42
Insul & Air Seal	1,075	$1,165	$108
Equipment & Ducts	1,300	$7,700	$130
Shade Screens	1,060	$708	$106
Attic Insulation Only	660	$795	$66

Example 1:

Customer Chooses Envelope AND Efficient Equipment	Annual kWh Savings	Estim Job Cost	Annual Customer Savings @$0.10/kWh	Annual Pmt 10 Year
Equipment & Ducts	1,300	$7,700	$130	
Insulation & Air Sealing	1,075	$1,165	$108	
Totals	2375	$8,865	$238	$1,290

Example 2:

Customer Chooses Envelope AND Efficient Equipment	Annual kWh Savings	Estim Job Cost	Annual Customer Savings @$0.10/kWh	Annual Pmt 10 Year
Duct Sealing Only	1,030	$935	$103	
Insulation & Air Sealing	1,075	$1,165	$108	
Totals	2,105	$2,100	$211	$306

~~Duct Seal~~	~~1030~~	~~$103~~	~~$935~~
~~Air Seal~~	~~415~~	~~$42~~	~~$370~~
~~Insul & Air Seal~~	~~1075~~	~~$108~~	~~$1,165~~
~~Equipment & Ducts~~	~~1300~~	~~$130~~	~~$7,700~~

~~Shade Screens~~	~~1060~~	~~$106~~	~~$708~~
~~Attic Insulation Only~~	~~660~~	~~$66~~	~~$795~~

~~**Example 1:**~~

~~Equipment & Ducts~~	~~1,300~~	~~$130~~	~~$7,700~~	-	-	-
~~Insulation & Air Sealing~~	~~1,075~~	~~$108~~	~~$1,165~~	-	-	-

~~**Example 2:**~~

~~Duct Sealing Only~~	~~1,030~~	~~$103~~	~~$935~~	-	-	-
~~Insulation & Air Sealing~~	~~1,075~~	~~$108~~	~~$1,165~~	-	-	-

EXHIBIT

"2"

Exhibit 2 – Updated Budgets

Table 1: 2010 Expenditures and 2011-2012 Updated Proposed Budgets

DSM Support Programs	2010 Expenditures[2]	2010 Approved Budgets	Original 2011 Budgets	Original 2012 Budgets	Original combined 2011-2012 Budget	Revised 2011 Budget	Revised 2012 Budget	Revised combined 2011-2012 Budget
Education and Outreach	$559,783	$510,880	$383,917	$384,724	**$768,641**	$383,917	$384,724	**$768,641**
Residential Energy Financing	NA	NA	$781,646	$792,262	**$1,573,908**	$142,815	$442,645	**$585,460**
Codes Support	NA	NA	$49,335	$75,490	**$124,825**	$49,335	$75,490	**$124,825**
Support Programs Subtotal	$559,783	$510,880	$1,214,898	$1,252,476	**$2,467,374**	$576,067	$902,859	**$1,478,926**
Behavioral Programs								
Home Energy Reports	NA	NA	$400,706	$673,790	**$1,074,496**	$400,706	$673,790	**$1,074,496**
Behavioral Comprehensive Program	NA	NA	$819,289	$1,420,279	**$2,239,568**	$494,341	$1,420,279	**$1,914,620**
Behavioral Subtotal	$0	$0	$1,219,995	$2,094,069	**$3,314,064**	$895,047	$2,094,069	**$2,989,116**
Residential Efficiency Programs								
Low-Income Weatherization	$315,405	$396,392	$611,190	$616,451	**$1,227,641**	$611,190	$616,451	**$1,227,641**
Appliance Recycling	NA	NA	$856,725	$859,533	**$1,716,258**	$41,574	$859,533	**$901,107**
Residential New Construction	$1,965,352	$3,663,824	$2,445,125	$2,720,648	**$5,165,773**	$1,908,036	$1,766,846	**$3,674,882**
Existing Home (was Efficient Home Cooling)	$1,585,705	$530,450	$2,577,643	$3,576,038	**$6,153,681**	$2,118,572	$3,514,886	**$5,633,458**
Shade Tree Program	$160,887	$160,000	$319,155	$325,582	**$644,737**	$319,155	$325,582	**$644,737**
Efficient Products (CFL)	$1,751,541	$1,535,444	$1,926,611	$2,431,495	**$4,358,106**	$2,096,550	$2,431,495	**$4,528,045**
Multi-Family Direct Install	NA	NA	NA	$169,738	**$169,738**	NA	$169,738	**$169,738**
Residential Subtotal	$5,778,890	$6,286,110	$8,736,449	$10,699,485	**$19,435,934**	$7,095,078	$9,684,531	**$16,779,609**
Non-Residential Efficiency Programs								
Bid For Efficiency	NA	NA	$294,261	$503,092	**$797,353**	$47,469	$503,092	**$550,561**
C&I Comprehensive Program	$2,282,468	$2,116,735	$3,794,134	$4,285,856	**$8,079,990**	$3,794,134	$4,285,856	**$8,079,990**
Small Business Direct Install	$2,308,890	$2,116,735	$3,547,437	$4,069,211	**$7,616,648**	$2,598,978	$2,921,085	**$5,520,063**
Commercial New Construction	$153,655	$848,720	$402,469	$406,319	**$808,788**	$402,469	$406,319	**$808,788**
CHP Joint Program (Pilot)	NA	NA	$74,800	$75,956	**$150,756**	$22,000	$22,000	**$44,000**
C&I Schools Program	NA	NA	NA	$157,941	**$157,941**	NA	$157,941	**$157,941**
Retro-Commissioning	NA	NA	NA	$175,520	**$175,520**	NA	$175,520	**$175,520**
Non-Residential Subtotal	$4,745,013	$5,082,190	$8,113,101	$9,673,895	**$17,786,996**	$6,865,050	$8,471,813	**$15,336,863**
Demand Response Programs								
Residential & Small Commercial DLC	$915,626	$1,090,950	$785,150	$184,816	**$969,966**	$785,150	$184,816	**$969,966**
C & I DLC	$35,254	$809,000	$2,737,846	$2,751,959	**$5,489,805**	$1,335,846	$2,751,959	**$4,087,805**
Demand Response Subtotal	$950,880	$1,899,950	$3,522,996	$2,936,775	**$6,459,771**	$2,120,996	$2,936,775	**$5,057,771**
Program Totals	**$12,034,566**	**$13,779,130**	**$22,807,439**	**$26,656,700**	**$49,464,139**	**$17,552,238**	**$24,090,047**	**$41,642,285**
Program Development, Analysis & Reporting Software[1]	$677,114	NA	$805,238	$829,395	**$1,634,633**	$630,238	$649,145	**$1,279,383**
Baseline Study	$260,864	$274,000	NA	NA	**NA**	NA	NA	**NA**
Sub-total	**$937,978**	**$274,000**	**$805,238**	**$829,395**	**$1,634,633**	**$630,238**	**$649,145**	**$1,279,383**
Total	**$12,972,545**	**$14,053,130**	**$23,612,677**	**$27,486,095**	**$51,098,772**	**$18,182,476**	**$24,739,192**	**$42,921,668**

1. Expenses are necessary for compliance and reporting reqirements of EEES.

2. Source: Semi-annual DSM filing 3-1-2011.

EXHIBIT

"3"

Exhibit 3 – Updated Portfolio Savings

Table 1: Updated Portfolio Savings

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Residential					
Efficient Products (CFL)	50,948	48,173	99,122	74,077	60,888	134,965
Appliance Recycling	7,229	7,229	14,459	0	7,164	7,164
Residential New Construction	3,339	3,749	7,088	3,309	2,612	5,921
Existing Home Program/Audit Direct Install	2,562	3,808	6,371	1,734	3,774	5,508
Shade Tree Program	978	978	1,956	969	969	1,938
Low-Income Weatherization	215	215	431	213	213	427
Multi-Family Direct Install	0	1,193	1,193	0	1,182	1,182
Residential & Small Commercial DLC	0	0	0	0	0	0
Commercial						
C & I Comprehensive	26,568	32,631	59,199	26,329	32,337	58,666
C &I DLC	11,613	16,337	27,950	11,615	16,337	27,951
Small Business	19,579	24,414	43,993	14,060	16,421	30,481
Commercial New Construction	2,006	2,006	4,011	1,987	1,987	3,975
Bid for Efficiency	1,547	2,431	3,978	0	2,409	2,409
Retro-Commissioning	0	1,105	1,105	0	1,095	1,095
Schools	0	697	697	0	690	690
CHP Pilot	7,956	7,956	15,912	0	0	0
Behavioral Comprehensive						
Home Energy Reports	10,359	16,575	26,934	0	16,425	16,425
Behavioral Comprehensive	10,425	11,107	21,532	1,489	10,860	12,349
Support Programs						
Education & Outreach	0	0	0	0	0	0
Residential Financing	0	0	0	0	0	0
Codes Support	0	0	0	0	0	0
TOTAL	**155,325**	**180,603**	**335,928**	**135,781**	**175,365**	**311,146**

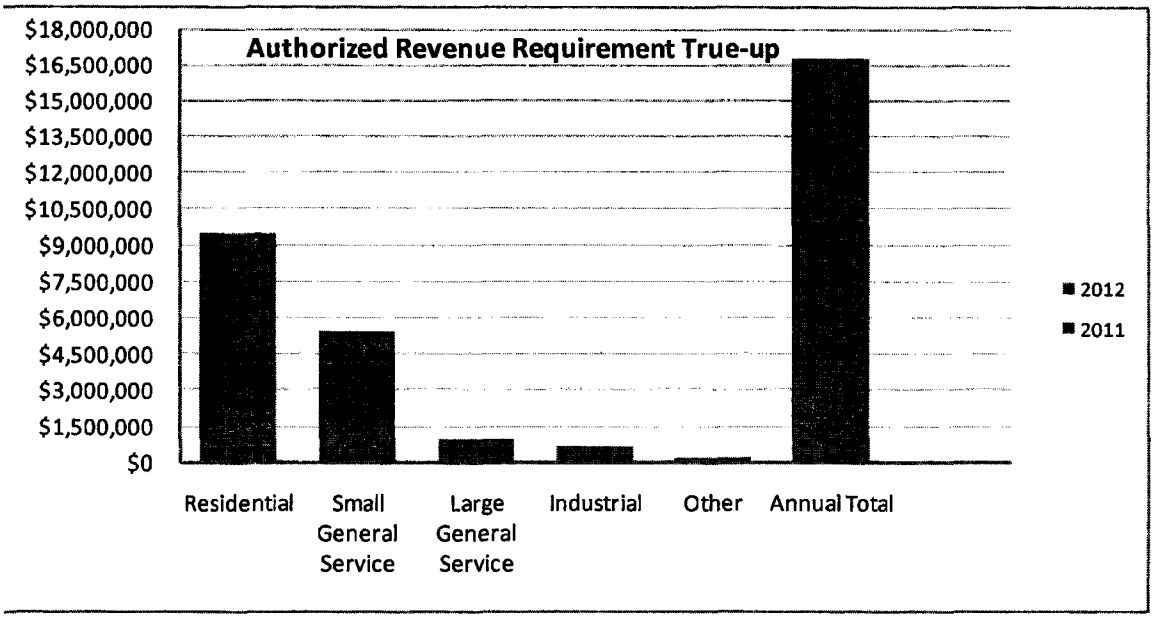
EXHIBIT

"4"

Exhibit 4 – Updated ARRT

TUCSON ELECTRIC POWER, INC.
Authorized Revenue Requirement True-up

Month	Residential	Small General Service	Large General Service	Industrial	Other	Annual Total
1/1/2011	$19,195	$14,285	$2,374	$1,523	$546	
2/1/2011	37,312	28,520	4,946	3,368	1,093	
3/1/2011	87,164	42,740	6,974	4,337	1,639	
4/1/2011	109,518	57,130	10,261	7,333	2,185	
5/1/2011	136,525	77,107	13,584	9,219	2,809	
6/1/2011	178,128	92,153	16,835	11,940	3,371	
7/1/2011	219,939	107,876	19,369	13,485	3,933	
8/1/2011	251,661	123,199	22,135	15,412	4,495	
9/1/2011	282,776	138,495	25,255	17,910	5,057	
10/1/2011	303,431	153,401	28,182	20,098	5,618	
11/1/2011	312,757	157,372	29,356	21,980	6,010	
12/1/2011	376,151	171,592	29,851	20,471	6,556	
Total	$2,314,557	$1,163,870	$209,122	$147,076	$43,312	$3,877,937
1/1/2012	$430,306	$194,908	$31,675	$19,619	$7,454	
2/1/2012	427,743	198,068	33,535	22,084	7,588	
3/1/2012	425,237	270,907	43,259	25,953	10,389	
4/1/2012	428,992	300,308	52,598	36,387	11,487	
5/1/2012	458,717	377,224	64,902	42,577	13,743	
6/1/2012	537,437	395,691	70,522	48,400	14,475	
7/1/2012	634,244	441,614	77,380	52,117	16,100	
8/1/2012	678,724	474,443	83,192	56,031	17,310	
9/1/2012	741,868	436,356	77,620	53,271	15,932	
10/1/2012	724,926	458,810	82,215	56,746	16,804	
11/1/2012	750,486	400,317	72,733	52,783	15,287	
12/1/2012	941,996	347,511	59,019	39,144	13,277	
Total	$7,180,676	$4,296,157	$748,650	$505,111	$159,846	$12,890,440



EXHIBIT

"5"

CLEAN

VERSION

Rider R-2
Demand Side Management Surcharge (DSMS)

APPLICABILITY
The Demand Side Management Surcharge ("DSMS") applies to all customers, except those customers who take service under the Residential Lifeline Discount or Residential Lifeline/Medical Life-Support Discount rates, in all territory served by the Company as mandated by the Arizona Corporation Commission, unless otherwise specified. Lifeline and Lifeline Medical customers are exempt from DSM Surcharges effective June 1, 2009.

RATE
The following DSM Surcharge will be effective October 1, 2011 through December 31, 2012. The DSMS shall be applied to all monthly net bills except lifeline customers at the following rate:

All kWhs @ $0.006343 per kWh

REQUIREMENTS
The Arizona Corporation Commission will approve any changes to the surcharge to be billed to all applicable rates.

TAX CLAUSE
To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS
The standard Rules and Regulations of the Company as on file from time to time with the Arizona Corporation Commission shall apply where not inconsistent with this rate.

REDLINED

VERSION

Rider R-2
Demand Side Management Surcharge (DSMS)

APPLICABILITY

The Demand Side Management Surcharge ("DSMS") applies to all customers, except those customers who take service under the Residential Lifeline Discount or Residential Lifeline/Medical Life-Support Discount rates, in all territory served by the Company as mandated by the Arizona Corporation Commission, unless otherwise specified. Lifeline and Lifeline Medical customers are exempt from DSM Surcharges effective June 1, 2009.

RATE

The following DSM Surcharge will be effective October 1, 2011 through December 31, 2012. The DSMS shall be applied to all monthly net bills except lifeline customers at the following rate:
~~The DSMS shall be applied to all monthly net bills at the following rate:~~

All kWhs @ $0.0063431~~249~~ per kWh

REQUIREMENTS

~~The TEP DSMS will be calculated and filed with the Arizona Corporation Commission (ACC) for approval on or before April 1st.~~ The Arizona Corporation Commission will approve any changes to the surcharge to be billed to all applicable rates. ~~for twelve (12) months beginning each June 1.~~

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file from time to time with the Arizona Corporation Commission shall apply where not inconsistent with this rate.

BACKUP

INFORMATION

Exhibit 5 – Updated DSMS Backup

Table 1: 2010 Expenditures and 2011-2012 Updated Proposed Budgets

DSM Support Programs	2010 Expenditures	2010 Approved Budget	Original 2011 Budget	Original 2012 Budget	Original Combined 2011-2012 Budget	Revised 2011 Budget	Revised 2012 Budget	Revised Combined 2011-2012 Budget
Education and Outreach	$559,783	$510,880	$383,917	$384,724	**$768,641**	$383,917	$384,724	**$768,641**
Residential Energy Financing	NA	NA	$781,646	$792,262	**$1,573,908**	$142,815	$442,645	**$585,460**
Codes Support	NA	NA	$49,335	$75,490	**$124,825**	$49,335	$75,490	**$124,825**
Support Programs Subtotal	$559,783	$510,880	$1,214,898	$1,252,476	**$2,467,374**	$576,067	$902,859	**$1,478,926**
Behavioral Programs								
Home Energy Reports	NA	NA	$400,706	$673,790	**$1,074,496**	$400,706	$673,790	**$1,074,496**
Behavioral Comprehensive Program	NA	NA	$819,289	$1,420,279	**$2,239,568**	$494,341	$1,420,279	**$1,914,620**
Behavioral Subtotal	$0	$0	$1,219,995	$2,094,069	**$3,314,064**	$895,047	$2,094,069	**$2,989,116**
Residential Efficiency Programs								
Low-Income Weatherization	$315,405	$396,392	$611,190	$616,451	**$1,227,641**	$611,190	$616,451	**$1,227,641**
Appliance Recycling	NA	NA	$856,725	$859,533	**$1,716,258**	$41,574	$859,533	**$901,107**
Residential New Construction	$1,965,352	$3,663,824	$2,445,125	$2,720,648	**$5,165,773**	$1,908,036	$1,766,846	**$3,674,882**
Existing Home (was Efficient Home Cooling)	$1,585,705	$530,450	$2,577,643	$3,576,038	**$6,153,681**	$2,118,572	$3,514,886	**$5,633,458**
Shade Tree Program	$160,887	$160,000	$319,155	$325,582	**$644,737**	$319,155	$325,582	**$644,737**
Efficient Products (CFL)	$1,751,541	$1,535,444	$1,926,611	$2,431,495	**$4,358,106**	$2,096,550	$2,431,495	**$4,528,045**
Multi-Family Direct Install	NA	NA	NA	$169,738	**$169,738**	NA	$169,738	**$169,738**
Residential Subtotal	$5,778,890	$6,286,110	$8,736,449	$10,699,485	**$19,435,934**	$7,095,078	$9,684,531	**$16,779,609**
Non-Residential Efficiency Programs								
Bid For Efficiency	NA	NA	$294,261	$503,092	**$797,353**	$47,469	$503,092	**$550,561**
C&I Comprehensive Program	$2,282,468	$2,116,735	$3,794,134	$4,285,856	**$8,079,990**	$3,794,134	$4,285,856	**$8,079,990**
Small Business Direct Install	$2,308,890	$2,116,735	$3,547,437	$4,069,211	**$7,616,648**	$2,598,978	$2,921,085	**$5,520,063**
Commercial New Construction	$153,655	$848,720	$402,469	$406,319	**$808,788**	$402,469	$406,319	**$808,788**
CHP Joint Program (Pilot)	NA	NA	$74,800	$75,956	**$150,756**	$22,000	$22,000	**$44,000**
C&I Schools Program	NA	NA	NA	$157,941	**$157,941**	NA	$157,941	**$157,941**
Retro-Commissioning	NA	NA	NA	$175,520	**$175,520**	NA	$175,520	**$175,520**
Non-Residential Subtotal	$4,745,013	$5,082,190	$8,113,101	$9,673,895	**$17,786,996**	$6,865,050	$8,471,813	**$15,336,863**
Demand Response Programs								
Residential & Small Commercial DLC	$915,626	$1,090,950	$785,150	$184,816	**$969,966**	$785,150	$184,816	**$969,966**
C & I DLC	$35,254	$809,000	$2,737,846	$2,751,959	**$5,489,805**	$1,335,846	$2,751,959	**$4,087,805**
Demand Response Subtotal	$950,880	$1,899,950	$3,522,996	$2,936,775	**$6,459,771**	$2,120,996	$2,936,775	**$5,057,771**
Program Totals	**$12,034,566**	**$13,779,130**	**$22,807,439**	**$26,656,700**	**$49,464,139**	**$17,552,238**	**$24,090,047**	**$41,642,285**
Program Development, Analysis & Reporting Software[1]	$677,114	NA	$805,238	$829,395	**$1,634,633**	$630,238	$649,145	**$1,279,383**
Baseline Study	$260,864	$274,000	NA	NA	**NA**	NA	NA	**NA**
Sub-total	**$937,978**	**$274,000**	**$805,238**	**$829,395**	**$1,634,633**	**$630,238**	**$649,145**	**$1,279,383**
Total	**$12,972,545**	**$14,053,130**	**$23,612,677**	**$27,486,095**	**$51,098,772**	**$18,182,476**	**$24,739,192**	**$42,921,668**

1. Expenses are necessary for compliance and reporting reqirements of EEES.

2. Source: Semi-annual DSM filing 3-1-2011.

Table 2: 2010 Performance Incentive Calculations[1]

DSM Program	Program Cost	Societal Benefits	Societal Costs	Net Benefits
Residential				
Low-Income Weatherization [1]	$ 315,405	$ 397,094	$ 397,094	$ -
Guarantee Home Program	$ 1,965,352	$ 10,508,433	$ 2,793,768	$ 7,714,665
Shade Tree Program	$ 160,887	$ 1,024,021	$ 210,832	$ 813,189
ENERGY STAR® Lighting (CFL)	$ 1,751,541	$ 41,196,965	$ 2,383,602	$ 38,813,363
Efficient Home Cooling	$ 1,585,705	$ 2,482,347	$ 5,341,594	$ (2,859,247)
Total for Residential	**$ 5,778,890**	**$ 55,608,861**	**$ 11,126,890**	**$ 44,481,971**
Non-Residential				
Non-Residential Existing Facilities	$ 2,282,468	$ 27,437,801	$ 5,036,507	$ 22,401,294
Small Business	$ 2,308,890	$ 18,624,141	$ 4,028,403	$ 14,595,738
Efficient Commercial Building Design	$ 153,655	$ 246,743	$ 171,369	$ 75,374
Total for Non-Residential	**$ 4,745,012**	**$ 46,308,685**	**$ 9,236,278**	**$ 37,072,407**
Portfolio Totals	**$ 10,523,902**	**$ 101,917,546**	**$ 20,363,168**	**$ 81,554,377**
Program Development, Analysis & Reporting Software	$ 677,114	$ -	$ 677,114	$ (677,114)
Baseline Study	$ 260,864	$ -	$ 260,864	$ (260,864)
TOTAL	**$ 11,461,881**	**$ 101,917,546**	**$ 21,301,147**	**$ 80,616,399**
Performance Incentive Calculation:				
Total Spending [2] / Total Net Benefits	$ 11,146,476			$ 80,616,399
10% of Spending / Net Benefits	$ 1,114,648			$ 8,061,640
Performance Incentive for 2010	$ 1,114,648			

1. Source: Semi-annual DSM filing supplement 6-15-2011.

Exhibit 5 – Updated DSMS Backup

Table 3: DSM Surcharge True-up

2008-2011 DSM Expenses vs. Surcharge[1]	2008	2009	2010	2011	Total
DSM Expenses	$606,662	$7,387,383	$12,972,545	$18,182,476	$39,149,065
DSM Surcharge Collection (thru Sep 2011)	$228,655	$6,973,737	$9,855,772	$8,650,665	$25,708,829
Annual Carry Over Balance	**$378,007**	**$413,646**	**$3,116,773**	**$9,531,811**	**$13,440,236**
Carry Over Balance (Undercollection)					**$13,440,236**

1. Expected DSM Expenses through Dec 2011 and expected Surcharge Collection through Sep 2011

Table 4: Adjustor Expenses by Category

Cost Category	2011	2012	Total
2012 Program Budget		$24,739,192	$24,739,192
Carry Over Balance through 2011			$13,440,236
Performance Incentive (2010)	$1,114,648	NA	$1,114,648
Performance Incentive (2011 & 2012)	$6,706,524	$8,577,172	$15,283,696
ARRT	$3,877,937	$12,890,440	$16,768,377
Total			$71,346,149

Table 5: DSMS Rate Calculation

TEP	DSM Budget	19MoForecast	Rate/kWh
Total Expense	$38,179,428	11,247,734,158	**$0.003394**
Performance Incentive	$16,398,344	11,247,734,158	**$0.001458**
ARRT	$16,768,378	11,247,734,158	**$0.001491**
	$71,346,150		**$0.006343**

EXHIBIT
AECC
ADMITTED

BEFORE THE ARIZONA CORPORATION COMMISSION

In the Matter of the Application of Tucson Electric Power Company for Approval of Its 2011-2012 Energy Efficiency Implementation Plan	))))	Docket No. E-01933A-11-0055

Direct Testimony of Kevin C. Higgins

on behalf of

Freeport-McMoRan Copper & Gold Inc. and

Arizonans for Electric Choice & Competition

June 15, 2012

DIRECT TESTIMONY OF KEVIN C. HIGGINS

TABLE OF CONTENTS

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1 **DIRECT TESTIMONY OF KEVIN C. HIGGINS**

2

3 **INTRODUCTION**

4 **Q. Please state your name and business address.**

5 A. Kevin C. Higgins, 215 South State Street, Suite 200, Salt Lake City, Utah,

6 84111.

7 **Q. By whom are you employed and in what capacity?**

8 A. I am a Principal in the firm of Energy Strategies, LLC. Energy Strategies

9 is a private consulting firm specializing in economic and policy analysis

10 applicable to energy production, transportation, and consumption.

11 **Q. On whose behalf are you testifying in this proceeding?**

12 A. My testimony is being sponsored by Freeport-McMoRan Copper & Gold

13 Inc. and Arizonans for Electric Choice and Competition ("AECC"). AECC is a

14 business coalition that advocates on behalf of retail electric customers in

15 Arizona.[1]

16 **Q. Please describe your professional experience and qualifications.**

17 A. My academic background is in economics, and I have completed all

18 coursework and field examinations toward the Ph.D. in Economics at the

19 University of Utah. In addition, I have served on the adjunct faculties of both the

20 University of Utah and Westminster College, where I taught undergraduate and

21 graduate courses in economics. I joined Energy Strategies in 1995, where I assist

[1] Henceforth in this testimony, Freeport-McMoRan Copper & Gold Inc. and AECC collectively will be referred to as "AECC."

private and public sector clients in the areas of energy-related economic and policy analysis, including evaluation of electric and gas utility rate matters.

Prior to joining Energy Strategies, I held policy positions in state and local government. From 1983 to 1990, I was economist, then assistant director, for the Utah Energy Office, where I helped develop and implement state energy policy. From 1991 to 1994, I was chief of staff to the chairman of the Salt Lake County Commission, where I was responsible for development and implementation of a broad spectrum of public policy at the local government level.

Q. Have you testified before this Commission in other dockets?

A. Yes. I have testified in a number of proceedings before this Commission, including the generic proceeding on retail electric competition (1998),[2] the hearings on the Arizona Public Service Company ("APS") 1999 Settlement Agreement (1999),[3] the hearings on the Tucson Electric Power ("TEP") 1999 Settlement Agreement (1999),[4] the AEPCO transition charge hearings (1999),[5] the Commission's Track A proceeding (2002),[6] the APS adjustment mechanism proceeding (2003),[7] the Arizona ISA proceeding (2003),[8] the APS 2004 rate case (2004),[9] the Trico 2004 rate case (2005),[10] the TEP 2004 rate review (2005),[11] the APS 2006 interim rate proceeding (2006),[12] the APS 2006 rate case (2006),[13]

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[2] Docket No. RE-00000C-94-0165.
[3] Docket Nos. RE-00000C-94-0165, E-01345A-98-0471, and E-01345A-98-0473.
[4] Docket Nos. RE-00000C-94-0165, E-01933A-97-0772, and E-01933A-97-0773.
[5] Docket No. E-01773A-98-0470.
[6] Docket Nos. E-00000A-02-0051; E-01345A-01-0822; E-00000A-01-0630; E-01933A-02-0069; E-01933A-98-0471.
[7] Docket No. E-01345A-02-0403.
[8] Docket No. E-00000A-01-0630.
[9] Docket No. E-01345A-03-0437.
[10] Docket No. E-01461A-04-0607.
[11] Docket No. E-01933A-04-0408.
[12] Docket No. E-01345A-06-0009.

TEP's request to amend Decision No. 62103 (2007),[14] the TEP 2007 rate case (2008),[15] the APS 2008 rate case (2008),[16] and the APS 2011 rate case (2011).[17]

Q. Have you testified before utility regulatory commissions in other states?

A. Yes. I have testified in approximately 140 other proceedings on the subjects of utility rates and regulatory policy before state utility regulators in Alaska, Arkansas, Colorado, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Michigan, Minnesota, Missouri, Montana, Nevada, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Virginia, Washington, West Virginia, and Wyoming. I have also participated in various Pricing Processes conducted by the Salt River Project Board and have filed affidavits in proceedings at the Federal Energy Regulatory Commission.

OVERVIEW AND CONCLUSIONS

Q. What is the purpose of your direct testimony?

A. I am testifying in support of the Proposed Updated Energy Efficiency ("EE") Implementation Plan ("Updated Plan") filed by TEP on May 2, 2012. The Updated Plan provides a balanced and reasonable resolution of the ongoing disagreements concerning the scope and cost of TEP's 2012-2013 EE program.

Q. What is your recommendation to the Commission with respect to the Updated Plan?

---

[13] Docket No. E-01345A-05-0816.
[14] Docket No. E-01933A-05-0650.
[15] Docket No. E-01933A-07-0402.
[16] Docket No. E-01345A-08-0172.
[17] Docket No. E-01345A-11-0224

A. I recommend that the Updated Plan be approved by the Commission. In my opinion, approval of the Updated Plan is reasonable and in the public interest.

I note that in supporting approval of the Updated Plan, AECC is not intending to waive the ability of any individual AECC member (or any other customer) from seeking a waiver or exemption from the Commission with respect to participating in and funding TEP EE programs. Any such requests should be considered on their particular merits.

UPDATED PLAN

Q. Please provide a general overview as to why you believe the Updated Plan should be approved by the Commission.

A. AECC initially filed comments in this docket on September 26, 2011, in response to the proposed EE implementation plans filed by TEP in 2011. AECC strongly opposed TEP's 2011 EE proposal (as revised on August 23, 2011) in which TEP requested a five-fold increase in its Demand Side Management Surcharge ("DSMS"), from $.001249/kWh to $.006343/kWh. Using FERC Form 1 data, I estimated that TEP's 2011 EE proposal would have increased average overall rates by 5.3% for Residential customers, 4.6% for small commercial customers, 6.2% for large commercial customers, 7.8% for industrial customers, and 9.0% for mining customers. When added to the existing DSMS, the resulting DSMS as a share of customer bills would have ranged from 5.4% for small commercial customers to 9.0% for industrial customers – and up to 10.3% for mining customers.

AECC argued that such a rate impact would be dramatic and unreasonable; in lieu of TEP's EE proposal, AECC recommended that the Commission adopt a uniform percentage DSMS that would not exceed 3%, which was more in line with the DSM riders adopted in other western states. AECC also opposed other features of TEP's 2011 EE proposal, including a program implementation level that was designed to overshoot the Commission's energy efficiency targets, a proposed expanded performance incentive payment to TEP, and a proposed Authorized Revenue Requirement True-Up ("ARRT") of $16.8 million, which AECC viewed to be an improper rate increase that violated the terms of the 2008 Settlement Agreement in Docket No. E-01933A-07-0402.

The Commission wisely did not adopt TEP's 2011 EE proposal, but gave stakeholders an opportunity to engage in discussions to possibly craft a modified proposal that better addressed these and other concerns. AECC participated in the ensuing discussions and largely supported the resulting Modified Implementation Plan filed by TEP on January 31, 2012 – with one major exception: the cost.

The Modified Implementation Plan included the following structural improvements relative to TEP's 2011 EE proposal:

- The proposed overall budget and rate increase were significantly reduced.
- The DSMS rate design for non-Residential customers was made more equitable by changing it to an equal percentage surcharge.
- The structure of TEP's incentive proposal was modified, while the proposed overall funding for the incentive was reduced.
- The proposal for recovery of ARRT was withdrawn.

These structural improvements notwithstanding, AECC remained opposed to the cost impacts on customers that would result from the Modified Implementation Plan, which was proposed to have a DSMS equal to $.003608 per kWh for Residential customers and 4.19% for non-Residential customers.

The Updated Plan filed by TEP on May 2, 2012 satisfactorily addresses the cost concern raised by AECC by reducing the overall cost to customers relative to the Modified EE Plan. Specifically, the Updated Plan proposes a DSMS of $0.002497 per kWh for Residential customers and 2.86% for non-Residential customers. (Note that in deriving the DSMS of 2.86% for non-Residential customers, TEP allocates costs to the non-Residential group as a whole using the same $0.002497 per kWh rate used for Residential customers.) In finding a way to reduce program costs, TEP is proposing to reduce its requested performance incentive from $7.2 million in the Modified Implementation Plan to $3.3 million in 2012 in the Updated Plan with a cap of $3.9 million. While this outcome still represents a rate increase compared to the current DSMS, the DSMS resulting from the Updated Plan would be in line with DSM surcharges in other western states, and would strike a reasonable balance between meeting the Commission's goals of improved energy efficiency while being mindful of the cost impacts on customers of funding energy efficiency programs through a surcharge.

DSMS RATE DESIGN

Q. Why do you support the equal percentage rate design for non-Residential customers?

A. An equal percentage approach is fairer than the current cents/kWh rate design because it makes the cost of funding EE programs proportionate to each non-Residential customer's bill. Any individual customer's contribution to EE program funding through a surcharge is not a direct purchase of energy or demand, but a contribution to programs and overhead costs. It makes more sense for funding of this sort to be proportionate to the customer's energy costs, rather than charged on an energy-unit basis because a proportionate surcharge better reflects the potential benefits the customer might receive as a result of EE programs. It therefore strikes a more reasonable balance between the costs charged to customers for EE programs and the potential benefits they might receive.

Further, a percentage surcharge to underwrite program costs is also more transparent than the cents/kWh rate. For example, as I discussed above, the cents/kWh DSMS surcharge as originally proposed by TEP would have been equivalent to 5.4% to 10.3% of customers' bills, depending on the type of customer. This widely disparate rate impact – and EE program cost burden – is masked when the DSMS is designed as a cents/kWh charge. A percentage rider is more immediately and directly translatable to the customer.

Q. Do other western states recover EE program costs through a percentage-of-bill rider?

A. Yes. Percentage-of-bill riders are used in Idaho, Utah, Wyoming, and New Mexico. The comparable EE surcharge rates in effect in these states are shown below in Table KCH-1.

Table KCH-1

Percentage DSM/EE Riders in Western States		
Utility	DSM/EE Rider	Effective Date
El Paso Electric (New Mexico)	2.9167%	4/1/2012
Idaho Power	4.00%	1/1/2012
Public Service Co. of New Mexico	2.553%	12/1/2011
Rocky Mountain Power (Idaho)	3.40%	12/29/2010
Rocky Mountain Power (Utah)	3.21% (Industrial)	2/1/2012
Rocky Mountain Power (Wyoming)	0.90% (Industrial)	3/1/2012

IMPORTANCE OF CONSIDERING RATE IMPACTS FROM FUNDING EE PROGRAMS

Q. Why is it important to consider rate impacts from funding EE programs even if energy efficiency is cost effective?

A. Even if energy efficiency is cost-effective it is still important to consider the importance of short-term rate impacts. When EE programs pass the standard tests used to determine cost effectiveness it may be tempting to become complacent about the potential short-term rate impacts of the energy efficiency investments. So long as an investment is cost effective, the argument goes, society is better off if the investment is made, so we should strive to make the incremental investment capital available. What sometimes gets overlooked in this situation is that EE cost-effectiveness is measured (properly) over the life of the

investment by comparing it to the cost of supply-side alternatives. Yet, the costs of the supply-side alternatives with which EE competes are recovered from customers in a very different manner than the cost of efficiency investments: supply side costs are recovered from customers over the life of the investment, e.g., 35 years, smoothing out the rate impact over time, whereas efficiency investment costs typically are recovered in full from customers by the utility upfront, i.e., expensed in a single year. This mismatch between cost recovery periods of supply-side and demand-side resources explains, in part, why EE efficiency that is cost effective can nevertheless cause unreasonable rate impacts in certain situations. Add to this the fact that utility energy efficiency programs are fundamentally structured as cross subsidies among individual customers, and we come to the obvious (but sometimes overlooked) conclusion that short-term rate impacts do matter.

CUSTOMER REQUESTS FOR WAIVERS

Q. In supporting approval of the Updated Plan, is AECC agreeing to waive the ability of any individual AECC member from seeking a waiver or exemption from the Commission with respect to participating in and funding TEP EE programs?

A. No. AECC supports the Updated Plan as the most reasonable EE plan option presented to the Commission in this docket. In supporting approval of the Updated Plan, AECC is not intending to waive the ability of any individual AECC member (or any other customer) from seeking a waiver or exemption from the Commission with respect to participating in and funding TEP EE programs.

1 Specific circumstances may warrant such waivers or exemptions. Any such

2 requests should be considered on their particular merits.

3 **Q. Does this conclude your direct testimony?**

4 A. Yes, it does.

EXHIBIT
AECC
ADMITTED

BEFORE THE ARIZONA CORPORATION COMMISSION

In the Matter of the Application of Tucson Electric Power Company for Approval of Its 2011-2012 Energy Efficiency Implementation Plan	))))	Docket No. E-01933A-11-0055

Rebuttal Testimony of Kevin C. Higgins

on behalf of

Freeport-McMoRan Copper & Gold Inc. and

Arizonans for Electric Choice & Competition

July 6, 2012

DIRECT TESTIMONY OF KEVIN C. HIGGINS

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1 **DIRECT TESTIMONY OF KEVIN C. HIGGINS**

2

3 **INTRODUCTION**

4 **Q. Please state your name and business address.**

5 A. Kevin C. Higgins, 215 South State Street, Suite 200, Salt Lake City, Utah,

6 84111.

7 **Q. By whom are you employed and in what capacity?**

8 A. I am a Principal in the firm of Energy Strategies, LLC. Energy Strategies

9 is a private consulting firm specializing in economic and policy analysis

10 applicable to energy production, transportation, and consumption.

11 **Q. Are you the same Kevin C. Higgins who previously filed direct testimony in**

12 **this proceeding on behalf of Freeport-McMoRan Copper & Gold Inc. and**

13 **Arizonans for Electric Choice and Competition ("AECC") ?** [1]

14 A. Yes, I am.

15

16 **OVERVIEW AND CONCLUSIONS**

17 **Q. What is the purpose of your rebuttal testimony?**

18 A. My rebuttal testimony responds at a general level to the overall position

19 advocated by Staff and specifically to the assertion of Staff witness Julie

20 McNeely-Kirwan that the equal percentage DSMS rider for Non-Residential

21 customers included in the Updated Plan is inequitable. I also respond to concerns

22 expressed by SWEEP witness Jeffrey Schlegel that the equal percentage DSMS

[1] Henceforth in this testimony, Freeport-McMoRan Copper & Gold Inc. and AECC collectively will be referred to as "AECC."

rider for Non-Residential customers included in the Updated Plan would cause a larger percentage increase (relative to the current DSMS) for smaller Non-Residential customers than for larger Non-Residential customers.

RESPONSE TO MR. SCHLEGEL

Q. What concern does Mr. Schlegel express regarding the DSMS rate design included in the Updated Plan?

A. Mr. Schlegel notes that, according to TEP, the Updated Plan would cause a 1.76% rate increase for small commercial customers, while the increase for industrial customers would be 1.26% and the increase for large commercial customers would be 1.60%. Mr. Schlegel states that SWEEP could accept this differential rate impact for the interim period of the Updated Plan so long as small commercial customers as a whole receive the energy efficiency ("EE") program funding collected from them.

Q What is your response to Mr. Schlegel's comments?

A. In assessing the percentage bill impact on Non-Residential customers attributable to the DSMS in the Updated Plan it is important to recognize where all Non-Residential customers end up under the Updated Plan: EQUAL. Every Non-Residential customer experiences the same 2.86% overall rate impact from the DSMS in the Updated Plan. The fact that the percentage *change* required to get to an equal percentage bill impact is less for larger customers stems from the fact that under the current DSMS these customers are paying a higher percentage of their bill toward EE funding than smaller customers. Thus, it requires a one-time unequal percentage change (across different sized Non-Residential

customers) to achieve an equal percentage overall bill impact for funding EE. The final result of the Updated Plan rate design – an equal percentage bill impact for EE funding – is inherently equitable.

Q. What is your response to Mr. Schlegel's proposal that small commercial customers as a group should receive the EE program funding that they contribute through their DSMS payments?

A. AECC does not object to this concept, so long as the remaining Non-Residential customers are similarly able to receive the full EE funding that they contribute.

<u>RESPONSE TO MS. MCNEELY-KIRWAN</u>

Q. What is your general assessment of Staff's position opposing the Updated Plan filed by TEP?

A. Staff's preferred alternative is a more expensive proposition for customers, not only in terms of the direct cost of the EE program ($23 million vs. TEP's proposed $18.5 million), but also because Staff's position leaves open the possibility of deferring for later recovery fixed costs associated with lost revenues from energy efficiency savings. Although Staff takes an aggressive position in opposition to the performance incentive (when considered in isolation) in the Updated Plan, the *overall* package presented in the Updated Plan reflects good-faith give and take among stakeholders and is on the whole a superior package than that advocated by Staff as its preferred alternative. Therefore, I recommend that Staff's preferred alternative be rejected by the Commission in favor of the Updated Plan that reflects the input of TEP, RUCO, SWEEP, and AECC.

1 **Q. What is your response to Ms. McNeely-Kirwan's assertion that the DSMS**
2 **rate design in the Updated Plan is inequitable?**
3 A. Ms. McNeely-Kirwan notes that an equal percentage DSMS would result
4 in a lower effective DSMS for larger Non-Residential customers when measured
5 on a per-kWh basis. She states that Staff views this as inequitable. She further
6 states that no convincing rationale has been provided to support an effective lower
7 per-kWh rate for large Non-Residential customers.
8 **Q. Did you address the rationale for an equal percentage DSMS in your direct**
9 **testimony?**
10 A. Yes, I did. I pointed out that an equal percentage DSMS makes the cost
11 of funding EE programs proportionate to each Non-Residential customer's bill,
12 which makes sense because a proportionate surcharge better reflects the potential
13 benefits the customer might receive as a result of EE programs than an equal per-
14 kWh surcharge. It therefore strikes a more reasonable balance between the costs
15 charged to customers for EE programs and the potential benefits they might
16 receive. I noted further that a percentage surcharge to underwrite program costs is
17 more transparent than the cents-per-kWh rate because it is more immediately and
18 directly translatable to the customer and makes for a more straightforward
19 comparison of the overall EE program cost burden across customers than a per-
20 kWh charge. I also pointed out that the use of percentage-based riders for
21 recovering EE costs was commonplace in several other western states.
22 **Q. Why does a proportionate surcharge better reflect the potential benefits the**
23 **customer might receive as a result of EE programs than an equal per-kWh**
24 **surcharge?**

1 A. On average, it is significantly more expensive for the utility to generate
2 and deliver one kilowatt-hour to a small Non-Residential customer than to a large
3 industrial customer: this is why small commercial customers and large industrial
4 customers pay different rates. This cost differential takes into account the fact
5 that larger customers tend to have a higher load factors than smaller customers;
6 that is, larger customers tend to consume energy more evenly throughout the day
7 and year than smaller customers, thereby utilizing the utility's fixed generation,
8 transmission and distribution facilities more efficiently, resulting in an overall
9 lower unit cost of production. Further, the largest industrial customers typically
10 take delivery at high voltage and do not even use the distribution system at all,
11 further reducing the unit-cost of production.
12 In recognition of these cost drivers, the Commission's EE Rules require
13 that the avoided cost of new capacity, transmission, and distribution be considered
14 when evaluating the benefits of energy efficiency measures. [R14-2-2401.23]
15 Thus, the higher unit-cost of serving lower-load-factor customers is taken into
16 account in justifying program expenditures.
17 Because a small commercial customer pays a higher rate per-kWh for
18 power, the small commercial customer will save more money than an industrial
19 customer for every kilowatt-hour of reduced energy consumption. Given the
20 higher cost to serve smaller customers (on average) and the higher savings-per-
21 kWh that a smaller customer experiences when conserving energy, it makes
22 perfect sense for the effective per-kWh charge for funding EE programs to be
23 higher for these customers than for larger customers, who are less expensive to
24 serve and who save less money per-kWh from energy conservation. This is why a

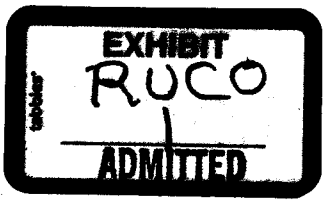
1 proportionate charge (i.e., an equal percentage rider) is the most reasonable way

2 to recover EE costs.

3 **Q. Does this conclude your rebuttal testimony?**

4 A. Yes, it does.

BEFORE THE ARIZONA CORPORATION COMMISSION



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IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	Docket No. E-01933A-11-0055

RUCO'S NOTICE OF FILING

The RESIDENTIAL UTILITY CONSUMER OFFICE ("RUCO") hereby provides notice of filing the Direct Testimony of Jodi A. Jerich, in the above-referenced matter.

RESPECTFULLY SUBMITTED this 15th day of June, 2012.

Daniel W. Pozefsky
Chief Counsel

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By Cheryl Franklin

TUCSON ELECTRIC POWER COMPANY
DOCKET NO. E-01933A-11-0055

DIRECT TESTIMONY

OF

JODI A. JERICH

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

JUNE 15, 2012

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INTRODUCTION **1**

SUPPORT OF UPDATED PLAN **2**

COMPARISON OF PLANS **4**

INTRODUCTION

Q. Please state your name, occupation and business address for the record.

A. My name is Jodi Jerich. I am the Director of the Arizona Residential Utility Consumer Office (RUCO). My business address is 1110 W. Washington Street, Suite 220, Phoenix, Arizona 85007.

Q. Please state your educational background and qualifications in the utility regulation field.

A. My educational background and qualifications are set forth in Exhibit A.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to explain RUCO's support of TEP's "Updated Plan" filed May 2, 2012.

Q. What is the "Updated Plan"?

A. The Updated Plan is the most recent version of TEP's Energy Efficiency Implementation Plan.

SUPPORT OF UPDATED PLAN

Q. Why does RUCO support TEP's Updated Plan?

A. RUCO supports the Updated Plan for the following reasons:

1. An overall budget that is far below the budget originally sought by TEP as well as the budget originally recommended by Staff, but that still provides TEP a reasonable opportunity to meet its EE goal.

2. Elimination of the ARRT which RUCO contends is the unlawful creation of a new surcharge outside of a rate case.

3. A reasonable bill impact that increases the DSM surcharge for the average residential consumer from $1.10 to $2.20.

5. A performance incentive based in part on ultimate program performance rather than solely on program dollars spent.

6. Allows TEP to recover the sizeable under collection as well as performance incentive monies due to TEP for 2010 and 2011.

In RUCO's opinion, this Updated Plan serves as a bridge mechanism that allows TEP to expand its EE programs, to begin recovery for money owed to it that no party in this docket disputes, and to be given a reasonable opportunity to meets its EE goals. It is a temporary measure that would last until the next rate case or next EE Implementation Plan. RUCO's support for the Updated Plan in this docket in no way commits RUCO support any future energy efficiency implementation plan or performance incentive methodology.

Q. Is the Updated Plan different from TEP's original proposal filed on January 31, 2011 and revised on August 22, 2011?

A. Yes. It is very different.

Q. Can you please briefly describe how and why TEP's EE Implementation Plan has changed since its original filing?

A. Yes. TEP made its original 2011-2012 EE Implementation Plan in January 2011. To date, TEP has filed three modifications to that original filing. Below is timeline of relevant events associated with this matter:

January 11, 2011	Original Plan filed
August 22, 2011	TEP modifies Plan to reflect passage of time
November 16, 2011	Staff Report on TEP's Plan
January 10, 2012	Open Meeting where TEP requests matter pulled to find compromise with stakeholders
January 31, 2012	TEP files "Modified Plan" to address stakeholder issues
February 28, 2012	Updated Staff Report on Modified Plan
March 16, 2012	Open Meeting where Commission sends matter to an evidentiary hearing
May 2, 2012	TEP files "Updated Modified Plan" to reflect the passage of time

COMPARISON OF PLANS

Q. Please describe the differences in the total cost of the different proposals?

A. The chart below provides this information.

TOTAL PLAN COST

	CURRENT	TEP Original Plan (8/22/2011)	Staff Report (11/16/2011)	Modified Plan (1/31/2011)	Updated Modified Plan (5/2/2012)
TOTAL PLAN COST	$11 M	$71.3M (over 12 months)	$34.7 M (over 12 months)	$59.3 M (Over 22 months) (Mar. 2012 – Dec. 2013)	$27.9 M (over 15 months) (Oct. 2012 – Dec. 2013))
DSM RATE	$0.001249	$0.006343	$0.003812	$0.003608	$0.002497
AVG. RES. BILL IMPACT	$1.10	$5.58	$3.35	$3.19	$2.20

Q. Please provide a breakdown of the various components of the Plan and how those components have changed over the course of time.

A. That information is found in the chart below.

BREAKDOWN OF PLAN COMPONENTS

	TEP Original Plan (Exhibit 5)	Staff Report	Modified Plan (Over 22 months) (Mar. 2012 – Dec. 2013)	Updated Modified Plan (Over 15 months) (Oct. 2012 – Dec. 2013))
PROGRAM COST				
2012 Program Budget	$24,739,192	$24,739,192	$18,532,606	
2013 Program Budget	N/A	N/A	$18,532,606	
Oct. 2012 – Dec. 2013 Program Budget				$18,532,606
PERFORMANCE INCENTIVE				
2010	$1,114,648	$1,114,648	$1,114,648	$1,114,648
2011	$6,706,524	$1,101,749	$1,101,749	$1,101,749
2012	$8,577,172	$2,099,197	$7,246,379	$3,283,854
2013	N/A	N/A	$7,246,379	TBD in rate case
UNDERCOLLECTED BALANCE				
Thru 2011	$13,440,236	$5,614,113	$5,614,113	$3,862,556
ARRT				
2011-2012	$16,768,377	N/A	N/A	N/A
TOTAL	**$71,346,149**	**$34,668,899**	**$59,338,980**	**$27,894,412**

Q. Why should the Commission approve the Updated Plan when TEP will be filing a rate case in the very near future? Why shouldn't the Commission address this during the rate case?

A. The Commission could do that. However, the rate case will take ***at a minimum*** 12 months to go from Application to Decision. There is no dispute among the parties that TEP has an under collected balance for programs costs incurred over the last few years as well as money owed for meeting performance incentive levels as the Commission approved in TEP's last rate case. Finally, if this matter were to be rolled into the rate case, there is no reason for TEP to ask for anything less than the full amount of money they feel is due. In the Updated Plan, TEP has compromised significantly on the amount of undercollected money due and the amount owed for the 2011 and 2012 performance incentives.

Q. When was the last time the Commission adopted an EE Implementation Plan for TEP and set its DSM surcharge rate?

A. The current rate of $0.001249 was set in Decision No. 71720 and went into effect on June 1, 2010.

Q. Is the Updated Plan a variation of the Modified Plan?

A. Yes. TEP filed the Modified Plan on January 31, 2012 after a series of meetings with stakeholders to find a compromise from its original EE Implementation Plan proposal which could be supported by RUCO and other parties who had various objections to one or more components of TEP's Plan. On February 14, 2012, RUCO filed a Notice in support of TEP's Modified Plan. (See Attachment B)

Q. What are the differences between the Modified Plan and the Updated Plan?

A. The most obvious difference is in the price tag. The reasons for this reduced cost are as follows:

a. **Duration of the Program**:

The Modified Plan included an $18.5M program budget for 2012 and again for 2013. The Updated Plan has an $18.5M program budget for a 15 month time period starting October 2012 and ending December 2013.

b. **Performance incentive**

The Modified Plan proposed a $7.2 M performance incentive for 2012 and for 2013. The Updated Plan proposes a $3.3 M

performance incentive for 2012 and leaves the 2013 performance incentive to be determined in the rate case.

c. Undercollected balance

The Modified Plan recognized a $5.6 M undercollected balance. The Updated Plan accepts a $3.9 M undercollected balance.

R. Does that conclude your testimony?

A. Yes it does.

ATTACHMENT A

Statement of Qualifications

Jodi A. Jerich
Director
Arizona Residential Utility Consumer Office ("RUCO")

Governor Jan Brewer appointed Jodi Jerich to serve as the Director of RUCO in February 2009. The Arizona State Senate found her qualifications to meet the statutory requirements to be Director found in Arizona Revised Statutes §40-462 and confirmed her appointment. As Director, Ms. Jerich oversees and approves all testimony and briefs filed by RUCO. In consultation with her staff, she directs the public policy direction of the office.

From 2003 through 2005, Ms. Jerich was employed at the Arizona Corporation Commission as the Policy Advisor to Commissioner Mike Gleason. In that role, she advised the Commissioner on matters coming before the Commission and was actively involved in the policy-making decisions of that Commissioner's office. In 2006 when Governor Janet Napolitano appointed Barry Wong to fill the Commission seat vacated when Marc Spitzer was appointed to serve on the Federal Energy Regulatory Commission (FERC), she took a short leave of absence from the Legislature to assist Commissioner Wong to establish his office.

Except for the time she was employed at the Commission, from 1997 through 2008, Ms. Jerich was employed at the Arizona House of Representatives. She

held numerous positions of ascending duties, eventually becoming Chief of Staff to the Speaker of the House and Counsel to the Majority Caucus. Relevant to utility regulation, Ms. Jerich advised Legislators on matters involving water, energy, Commission jurisdiction and utility infrastructure security.

Jodi Jerich is a Phi Beta Kappa graduate of Indiana University. She also is a graduate of the Indiana University Mauer School of Law and is a member of the Arizona and Tennessee state bars.

As RUCO Director, Ms. Jerich has sponsored testimony in several dockets involving policy positions regarding rate consolidation, decoupling and rate case expense. She has also filed testimony regarding settlement agreements that RUCO has signed and supported.

ATTACHMENT B

ORIGINAL

OPEN MEETING AGENDA ITEM

BEFORE THE ARIZONA CORPORATION COMMISSION

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COMMISSIONER

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	Docket No. E-01933A-11-0055

RUCO'S NOTICE OF FILING

The RESIDENTIAL UTILITY CONSUMER OFFICE ("RUCO") hereby files notice of its support of Tucson Electric Power's ("TEP") Proposed Modified Implementation Plan ("Plan") filed with the Arizona Corporation Commission ("Commission") on January 31, 2012, and supports TEP's request that this matter be placed on an agenda for the February 23, 2012 Open Meeting.

RUCO has participated in the negotiations which resulted in the Plan. The negotiations were open, transparent and each party was provided ample opportunity to participate and express its position. The Plan, in RUCO's opinion, is a reasonable and balanced approach to a very difficult and unique set of circumstances. TEP believes that the Plan will allow it to meet its EE standard, and is in the public interest. The Plan does not include the controversial Authorized Revenue Recovery True-up mechanism ("ARRT"), adopts a program funding level 25% lower than Staff's recommendation, sets the 2012

budget almost $5 million lower than the budget recommended by Staff, and sets the Demand Side Management Surcharge at $0.003608 per kWh for residential customers, lower than the Company's $0.007603[1] per kWh or Staff's recommended $.003812 per kWh. The Plan, if approved would have an average bill impact of 2.39% or a monthly increase of $2.08 on the residential bill. The parties will have the opportunity to revisit the issue when TEP files its next rate case in July, 2012.

In sum, the Plan is in the public interest and RUCO supports it.

RESPECTFULLY SUBMITTED this 14th day of February, 2012.

Daniel W. Pozefsky
Chief Counsel

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---

[1] Company's Exceptions, Exhibit A - Proposed Language

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BEFORE THE ARIZONA CORPORATION COMMISSION

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CHAIRMAN
BOB STUMP
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COMMISSIONER

EXHIBIT
RUCO
2
ADMITTED

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	Docket No. E-01933A-11-0055

RUCO'S NOTICE OF FILING

The RESIDENTIAL UTILITY CONSUMER OFFICE ("RUCO") hereby provides notice of filing the Rebuttal Testimony of Jodi A. Jerich, in the above-referenced matter.

RESPECTFULLY SUBMITTED this 6th day of July, 2012.

Daniel W. Pozefsky
Chief Counsel

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By Cheryl Fraulob

TUCSON ELECTRIC POWER COMPANY
DOCKET NO. E-01933A-11-0055

REBUTTAL TESTIMONY

OF

JODI A. JERICH

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

JULY 6, 2012

Q. Did you previously file testimony in this docket?

A. Yes. I sponsored Direct Testimony in support of TEP's Updated Plan.

Q. Have you read the Direct Testimony filed by the other parties in this docket?

A. Yes.

Q. Does RUCO continue to support TEP's Updated Plan??

A. Yes.

Q. TEP witness Mr. Hutchens, in his Direct Testimony, characterizes the Updated Plan as "a bridge between now and the end of the rate case". (Hutchens, Direct Testimony, p. 2) Does RUCO agree with this characterization?

A. Yes.

Q. Why does RUCO support TEP's Updated Plan?

A. In my Direct Testimony, I provided several reasons why the Updated Plan is in the residential ratepayers' interest. In addition to those delineated reasons, RUCO agrees with the reasoning of TEP witness, Denise Smith, found in her Direct Testimony which reads in part:

> "This Updated Plan allows TEP to increase its EE programs well before the conclusion of its upcoming rate case, providing a smoother ramp up of programs and costs needed to try to meet the Commission's EE Standard. The

> Updated Plan also represents a compromise position that still provides net benefits to all customers, provides programs for customers to reduce their electric bill, provides stability to the DSM market place, and provides a bridge mechanism to TEP's next rate case, where lost fixed cost recovery can be synchronized with TEP's future implementation plans." (Smith, Direct Testimony, p. 10)

Q. **After reading the testimony of the other parties, do you have a different perspective on the Updated Plan?**

A. Somewhat. In my Direct Testimony, I stated that the Updated Plan provided a program that gave TEP "*a reasonable opportunity to meet its EE goal.*" (Jerich, Direct Testimony, p. 2) However, TEP witness, David Hutchens, testified in his Direct Testimony that the Updated Plan does **not** allow TEP to meet the 2012 or 2013 Standard. "However, it will provide TEP with the opportunity to narrow the compliance gap with the EE Standard in the future rather than the status quo." (Hutchens, Direct Testimony, p. 12)

RUCO continues to support the Plan and finds it understandable that TEP would be unable to meet its current year EE requirement. Since any DSMS reset and authorization of a new EE Plan would take place in October 2012 at the earliest, it is difficult to reach 12 months of energy savings in the last three months.

Q. Does TEP need a waiver of the EE Rules?

A. No. A waiver is not necessary. First, TEP is not seeking a waiver at this time. Furthermore, as Jeff Schlegel, from SWEEP, testified, "The Electric Energy Efficiency Standard is a cumulative standard meaning that TEP has the opportunity to catch up to the requirements of the standard over several years." (Schlegel, Direct Testimony, p. 7)

Q. Does RUCO support Staff's recommendation to increase the Updated Plan's Budget from $18.5 million to $25 million?

A. No. Staff proposes adding $6.5 million to TEP's Energy Efficiency Implementation Plan. This would increase the average residential monthly bill from $1.10 to $2.38, which is a net increase of $0.18 over the average bill impact of TEP's proposed Updated Plan.

RUCO opposes the additional $6.5 million because it effectively scuttles the compromise the parties worked to achieve. And the utility is not asking for the additional funds. Additionally, RUCO is unclear which programs would be bolstered by the extra money. Finally, RUCO is unclear of just how much closer the extra $6.5 million would take TEP to meeting the Standard. At a time when the Commission has made it clear that accountability is a priority when it comes to energy efficiency, the additional $6.5 million is not justified.

Q. Does RUCO support Staff's recommendation that there be no floor payments established for any Performance Incentive?

Normally, RUCO would find Staff's point persuasive. "A floor would have the effect of guaranteeing a $2.6 (million) Performance Incentive, regardless of the savings actually achieved." (McNeely-Kirwan, Direct Testimony, p. 11) So guaranteeing a minimum amount with a possibility of the utility not meeting that performance level would normally go against RUCO's philosophy.

For this docket, under these limited set of facts, RUCO does not adopt Staff's recommendation for five reasons. First, the Updated Plan is merely a bridge until a long range Energy Efficiency strategy may be more thoroughly vetted in TEP's rate case. Second, after meeting with stakeholders, TEP agreed to collect an amount under this Updated Plan that is less than what TEP originally sought and is less than what it may be entitled to if TEP had pushed the issue. Third, the level of performance incentive funding is only a single component of the overall $18.5 million budget and is part of the give and take of the negotiating process. Fourth, TEP has given every indication of acting in good faith and will probably meet the performance level needed to earn the minimum incentive amount. Fifth, after this long, arduous and protracted proceeding, RUCO understands that a floor provides an assurance of a minimum amount of

revenues to be collected and sends a positive signal to Wall Street and rating agencies.

Q. What is RUCO's opinion on the comments made in TEP's Direct Testimony regarding the structuring of a Performance Incentive going forward as proposed in its rate case?

A. RUCO finds these comments unrelated to the pending Updated Plan. While TEP may wish to preview the detail of its rate case Application now, RUCO limits its comments to the Updated Plan and nothing more. RUCO will address the various components of TEP's energy efficiency rate case proposal in that docket.

Q. Any final comments?

A. Yes. RUCO would like to reiterate that the Updated Plan provides balance. TEP may begin collection of monies due from previous Commission Orders authorizing new EE programs without adjusting the DSMS to accommodate these costs. The Updated Plan provides more expansive EE programs for TEP's customers to utilize in order to reduce their electric bills. Finally, the Updated Plan results in a manageable increase to the average bill of $1.10.

Q. Does that conclude your testimony?

A. Yes it does.

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

GARY PIERCE, Chairman
BOB STUMP
SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

EXHIBIT
EnerNOC
1
ADMITTED

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	))))	DOCKET NO. E-01933A-11-0055 NOTICE OF FILING OF REBUTTAL TESTIMONY

EnerNOC, Inc. hereby provides notice of filing of the Rebuttal Testimony of Mona Tierney-Lloyd in the above-docketed proceeding.

Dated this 6th day of July 2012.

Respectfully submitted,

Lawrence V. Robertson, Jr.

Lawrence V. Robertson, Jr.
Attorney for EnerNOC, Inc.

The original and thirteen (13) copies of the foregoing will be filed this 6th day of July 2012 with:

Docket Control Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

A copy of the same served by e-mail or first class mail this same date to:

All Parties of Record

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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

GARY PIERCE, Chairman
BOB STUMP
SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	))))	DOCKET NO. E-01933A-11-0055

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Rebuttal Testimony of Mona Tierney-Lloyd EnerNOC, Inc.

Q.1 Please state your name, business affiliation and business address.

A.1 My name is Mona Tierney-Lloyd. I am Director, Western Regulatory Affairs, for EnerNOC, Inc. ("EnerNOC"). My business address is P. O. Box 378, Cayucos, California 93430.

Q.2 Please describe the nature of EnerNOC's business activities, and particularly those activities which are relevant to the subject matter of this preceding.

A.2 EnerNOC is an implementer of commercial and industrial customer energy management solutions, including demand response and a suite of energy efficiency services which provide continuous savings through software and services. EnerNOC has approximately 8,000 MW of dispatchable demand response available to provide peak capacity reductions, energy and ancillary services through contractual relationships with utilities or grid operators in North America, the United Kingdom, Australia and New Zealand.

Q.3 Please describe your position responsibilities with EnerNOC.

A.3 I am a Director of Western Regulatory Affairs for EnerNOC. In my position, I am responsible for representing EnerNOC's interests before utility regulatory agencies in California, Arizona and New Mexico. Those interests could include protecting the value of existing contracts from changes in the regulatory environment, advocating for the approval of contracts by the regulatory agencies, advocating for expanded opportunities for third-party administered programs for energy efficiency and demand response and for the incorporation of energy efficiency and demand response into resource planning proceedings.

Q.4 Have you previously presented testimony before this Commission or regulatory commissions in other decisions?

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A.4 I have previously testified before the Arizona Corporation Commission ("ACC") in Case No. U-000-84-165. I have participated in the ACC's Energy Efficiency Rulemaking (Docket Nos. E-00000J-08-0314, E-00000C-09-0427). I have provided public comment in ACC Open Meetings in this proceeding as well as in support of the approval of the Commercial Direct Load Control Program (Docket No. e-01933A 07-0401). I have recently filed testimony in California in Docket Number R.12-03-014, the Long-Term Procurement Proceeding for all California Investor-Owned Utilities (IOUs), wherein EnerNOC is testifying to the ability for demand response to provide fast-response resources to displace the need for conventional resources. I have testified before the Minnesota Public Utilities Commission in Docket No. E-999/CI-09-1449 about the value of third-party demand response providers and the New Mexico Public Regulatory Commission in Case No. 09-00257 to preserve the existing load management programs, including EnerNOC's contract with Public Service of New Mexico (PNM). In my positions preceding my employment with EnerNOC, I have testified in various dockets in various state proceedings.

Q.5 What is the purpose of your Rebuttal Testimony?

A.5 I will be discussing current proposals by Tucson Electric Power Company ("TEP") and the Commission's Staff to resolve certain issues which have arisen in this proceeding. Specifically, I will address Commission's Staff's proposals contained in its June 15, 2012 Direct Testimony.

Q.6 Does EnerNOC have a business relationship with TEP which will be impacted by the Commission's decision in this proceeding?

A.6 Yes.

Q.7 Please describe the nature of that business relationship.

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A.7 EnerNOC has a four-year agreement with TEP to provide commercial load curtailment services pursuant to TEP's Commercial Direct Load Control Program ("DLC Program"). EnerNOC provides TEP with firm capacity curtailment services from TEP's commercial and industrial customers. More specifically, TEP pays EnerNOC for those load reductions and EnerNOC pays the customers to curtail their demand as directed. In that regard, EnerNOC provides the customers with equipment that communicates real-time energy usage information to EnerNOC's network operations center (NOC), the customer and TEP. EnerNOC also provides the customers with a site analysis and a detailed energy curtailment plan.

Q.8 Please briefly describe the benefits of the DLC Program to TEP and to its customers.

A.8 The DLC Program provides several benefits to both TEP and its customers, participants and non-participants alike. The DLC Program gives TEP the ability to call upon the program when its demand is approaching peak conditions. By initiating an event, TEP's participating customers reduce their demand and thereby (i) may reduce stress or congestion on the distribution or transmission system, (ii) may obviate the need for a higher-priced capacity or energy resources, and (iii) may contribute to the reserve margin for planning purposes. The DLC Program is distributed across TEP's service territory. It doesn't require green field or brown field development permits or approvals or any new infrastructure investment.

From a participating customer's perspective, they receive all equipment necessary to participate at no charge. They are provided a detailed curtailment execution plan. They receive real-time access to their energy usage data on a five-minute interval basis. They gain insight into the ways that they can manage their energy demand, control a portion of their energy costs and receive a payment for that modified behavior, while providing an overall benefit to the reliability of the electrical system. Further, EnerNOC

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insulates customers from any penalties for failure to perform. In the difficult economic climate for businesses today, customers need any edge they can access to improve the bottom line. Non-participating customers receive value by TEP being able to defer additional investment in infrastructure through a cost-effective resource that does not add new air emissions.

Q9 Are you familiar with the history of this proceeding, and the various proposals which have been submitted by both TEP and the Commission's Staff at various stages?

A.9 Yes, I am. TEP filed its original Energy Efficiency Implementation Plan in January 2011. In response, Commission Staff filed its Recommended Order on November 16, 2011, which approved a budget for TEP's Energy Efficiency Programs of $34.7 million for 2011 and 2012 and suggested deferring action on TEP's proposed Authorized Revenue Requirement True-Up (ARRT) Mechanism, as well as TEP's proposed revised incentive mechanism, until a future rate case. TEP filed Exceptions to the Recommended Order on December 2, 2011. I represented EnerNOC at the ACC's Open Meeting held on January 10, 2012 and provided public comment in support of TEP's original EE Implementation Plan. The ACC declined to make a decision upon the matter; however, the ACC did order the parties to meet to see if a settlement was possible.

Thereafter, Residential Utility Consumers Office (RUCO), Southwest Energy Efficiency Project (SWEEP), Arizonans for Electric Choice and Competition and Freeport McMoRan (AECC/Freeport McMoRan), collectively "The Settling Parties", and TEP reached a settlement in support of TEP's Revised Implementation Plan with some further changes which was filed on January 31, 2012. That plan is referred to as the Modified Plan. However, Commission Staff did not reach agreement with TEP and The Settling Parties.

The matter was discussed at the ACC's March 16, 2012 Open Meeting and referred to the ACC's Hearing Division. A Procedural Conference was convened on

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April 11, 2012. On May 2, 2012, TEP filed and update to the Modified Plan referred to as the Updated Plan. A Procedural Order was issued on May 24, 2012 establishing the dates for filing Direct Testimony, June 15, 2012, and Rebuttal Testimony, July 6, 2012.

Q.10 Is it your understanding that the Updated Modified Plan filed by TEP on May 2, 2012 represents TEP's current proposal for resolving the various issues which have arisen during the history of this proceeding?

A.10 Yes.

Q.11 What is your understanding of the Updated Plan?

A.11 My understanding of the Updated Plan is that it includes the following:

- Funding for the programs, recommended by Commission Staff in the Recommended Order, at 75% of the funding level
- Elimination of the AART Mechanism
- An interim performance incentive mechanism
- A budget of $27.9 million from October 1, 2012 through December 31, 2013
- Establishment of a Demand Side Management Surcharge at $.002497/kWh for residential customers and 2.86% on all charges (except for taxes and governmental charges) for all non-residential customers.

Q.12 Is it your understanding that the Direct Testimony filed by the Commission's Staff on June 15, 2012 represents the Commission Staff's current Primary Proposal for resolving such issues, plus two (2) alternative forms of resolution if the Commission Staff's Primary Proposal is not adopted by the Commission?

A.12 Yes.

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Q.13 Please describe your understanding of Commission Staff's Primary Proposal and the two alternative proposals.

A.13 My understanding of Commission Staff's Primary Proposal is as follows:

- Adoption of Staff's Recommended Order
- Increase TEP's budget from $18.5 to $23.5 million to ensure meeting the EE targets
- TEP's requests for waivers of the 2012 and 2013 EE Standards would be denied
- TEP's revised incentive mechanism would be denied and the current incentive mechanism would remain in place until TEP's next rate case
- The DSM Surcharge would remain at equal cents/kWh for all customer classes
- The lost fixed cost recovery (LFCR) would be dealt with in TEP's next rate case

My understanding of Alternate 1 is it:

- Includes TEP's budget of $18.5 million
- Grants a waiver for 2012 and 2013 EE Standards
- Recommends adoption of Staff's position on the true-up mechanism and the 2013 Implementation Plan
- Establishes a DSM Surcharge of $.02284 with TEP's spending proposal and Staff's recommended performance incentive mechanism and recovery mechanism

My understanding of Alternate 2 is as follows:

- Includes the existing budget of $7.5 million
- Grants a waiver for 2012 and 2013 EE Standards
- Establishes a DSM Surcharge at $.001432, on a equal cent/kWh basis from all customers
- TEP would be granted a waiver from filing a 2013 EE Implementation Plan
- True-up would be done in accordance with Staff's recommendation
- All other issues would be resolved in TEP's just filed rate case and remain in effect until a decision is rendered in that case.

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Q.14 Please discuss how Commission adoption of TEP's Updated Plan would impact EnerNOC's existing business relationship with TEP, and how such impact, in turn, would affect the ability of both TEP and EnerNOC to fully realize the originally contemplated benefits for each company under the contract between them.

A.14 EnerNOC supports adoption of TEP's Updated Plan as a reasonable middle ground between Commission Staff's November 16, 2011 Recommended Order and TEP's January 31, 2011 original proposal by balancing funding levels for existing programs while ensuring a reasonable recovery opportunity for TEP.

By way of background, the ACC approved the DLC Program in Decision No. 71787 on July 12, 2010. TEP and EnerNOC entered into a four-year contract to provide up to 40 MW of demand response capacity through curtailable load. Less than six (6) months later, TEP submitted its original EE Implementation Plan proposal on January 31, 2011. Since the DLC Program was approved, EnerNOC has been working with TEP and its customers to enable commercial and industrial customers to participate in the program. To do so, requires marketing and sales efforts, establishing the program parameters in EnerNOC's internet technology systems, training employees about the program, site visits with customers and development of individual curtailment plans, enabling the customer sites with EnerNOC's Site Servers to provide real-time insight into customer energy usage, coordinating with TEP on utility installation of devices, etc. Accordingly, pursuant to its contract with TEP, EnerNOC has made an investment in human resources, equipment and technology to implement the DLC Program and meet contract performance expectations.

TEP's original proposed EE Implementation Plan program cost for 2011 and 2012 was slightly more than $51 million. Of that, TEP had proposed a 2-year budget for the DLC Program of $5.4 million. The Updated Plan contains a budget for October 1, 2012 through December 31, 2013 of $27.89 million, of which the program budget is $18.5 million. The budget for the DLC Program in the Updated Plan is $1.431 million. The

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Commission Staff's Recommended Order provided a budget for the DLC Program of $1.336 million in 2011 and $2.752 million in 2012. The difference between the 2011 and 2012 budgets for the DLC Program is mainly related to anticipated growth in the program. While TEP's Updated Plan contains a DLC Program budget that is significantly less than that originally presented by TEP and that proposed in the Recommended Order, EnerNOC is recommending adoption of the Updated Plan, because EnerNOC believes it represents a reasonable resolution of some thorny issues for the interim period until TEP's next rate case is resolved.

EnerNOC's expectation for the program, whose first year of implementation was in 2011, was to continue to add capacity to the DLC Program up to the full contract capacity. Now, 2011 and a large portion of 2012 will have passed without clarity on the EE Implementation Plan and EnerNOC's contract opportunities relative to the DLC Program. TEP notified EnerNOC, as reflected in the Direct Testimony of TEP Witness Denise Smith, to suspend recruitment of new customers into the program. At the budget levels presented by TEP Witness Denise Smith, EnerNOC could grow its program slightly in 2012 and 2013 above 2011 levels. While still falling short of EnerNOC's expectations in terms of program growth and revenue, it is a better proposition than freezing the funding at current levels ($7.5 million).

No implementation contractor wants to face the prospect of freezing its growth potential for a couple of years on a new contract with a finite term. However, EnerNOC is a partner to TEP and is interested in cultivating a longer-term relationship, if possible. Therefore, we are willing to accept a share of the burden during the interim period in order to reach a reasoned compromise, which is what the Updated Plan represents.

Q.15 You referred to "thorny issues" in the proceeding a moment ago. Does EnerNOC have a position at this time on the technical aspects of the performance incentive and cost recovery mechanisms which have been proposed?

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A.15 No.

Q.16 Please discuss how Commission adoption of Commission Staff's Primary Proposal would impact EnerNOC's existing business relationship with TEP, and how it would affect the ability of TEP and EnerNOC to realize their respective originally contemplated contractual benefits.

A.16 Commission Staff has a Primary Proposal and two alternative proposals, which are discussed in its June 15, 2012 Direct Testimony. The Primary Proposal would increase the amount of funding relative to TEP's Updated Plan. While at first blush that approach might appear to be a good outcome for EnerNOC's individual program, and other EE programs, it also places TEP in the untenable position of spending more on energy efficiency while it is losing revenues and contributions toward its related fixed cost recovery. In that regard, it is EnerNOC's belief that EE program rules and requirements are only viable and durable if there is a perceived commitment to a regulatory paradigm which reflects rule consistency and ongoing regulatory support. In addition, the utility and the implementation contractor must have a reasonable expectation that the program can actually be implemented, as expected. For the implementation contractor, that means the opportunity to realize the full contract capacity and associated revenue generation from the program. For the utility, they would receive the resource they were expecting and a reasonable opportunity to recover associated costs to implement the programs. If TEP is placed in the position of losing revenue and an inability to make contributions toward its fixed cost recovery and its rate of return, then TEP conceivably will be put into the position of having to seek waivers to the rules, in order to protect its fiduciary responsibility to its shareholders and its ability to provide safe, adequate and reliable service to its ratepayers. Commission Staff's Primary Proposal contemplates an increase in spending without modifying either the performance incentive or the lost revenue recovery mechanism, which will affect TEP's ability to recover associated costs for

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implementing the program. The inability to resolve this issue has frozen existing programs, which has impacted EnerNOC's contract capacity and revenue generation expectations, it has impacted the ability to add customers that had exhibited an interest in the Program, and it has created uncertainty as to those expectations for the next year or longer, until the rate case is resolved. Therefore, it has hurt the overall program implementation.

Q.17 Please discuss how Commission adoption of Commission Staff's Alternative #1 would impact EnerNOC's existing business relationship with TEP, and how it would affect the ability of TEP and EnerNOC to realize their respective originally contemplated contractual benefits.

A.17 Alternative 1 would adopt TEP's program budget proposal of $18.5 million, but would not adopt the DSM Surcharge allocation methodology or the performance incentive mechanism. Commission Staff's position is that the lost revenue recovery and changes to the performance incentive mechanism should be proposed and addressed in the rate case filed by TEP on July 2, 2012. As previously noted, EnerNOC's position is to support TEP's Updated Plan for the interim period, while the rate case is pending. It provides a middle ground of providing continued funding to existing programs while also providing some revenue certainty for TEP. Commission Staff's Alternative #1 does not do so, and could result in some of the same adverse consequences for EnerNOC as Commission Staff's Primary Proposal, discussed above. Accordingly, EnerNOC opposes Alternative #1.

Q.18 Please discuss how Commission adoption of Commission Staff's Alternative #2 would impact EnerNOC's existing business relationship with TEP, and how it would affect the ability of TEP and EnerNOC to realize their respective originally contemplated contractual benefits.

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A.18 Alternative 2 would be devastating to implementation contractors by reducing EE program funding to 2011 levels and thereby disallowing any growth to occur during 2012 and 2013 until the new rates would take effect. For EnerNOC, that would create great uncertainty and cause harm to the existing program. EnerNOC would have to contact currently registered customers who were equipped, trained and ready to perform and ask them not to participate in the program until further notice. These customers have planned to reduce consumption in exchange for monetary inducements, may have planned or budgeted for their reduced energy spend, and would now have to either look for other options or just incur the additional expense. That would harm the specific relationships with the affected customers, and it could generally hurt the reputation of EnerNOC and the program as a whole. Further, customers might not have confidence to re-enlist once the budget concerns are worked out, since it may appear that TEP and/or the Commission is reconsidering the value of EE programs.

Thus, EnerNOC would be in the position of having deployed resources with the expectation of receiving revenues that would not be realized. Plus, EnerNOC's near-term opportunities to realize increased revenues by expanding the program over 2011 levels would be frozen until the rate case is resolved, which potentially could be through the end of 2013. EnerNOC's contract with TEP was entered into with certain expectations of both counterparties. EnerNOC's enrollment and revenue opportunities, as well as those of participating customers would be significantly undercut by this proposal. Of all of the Commission Staff's proposals, this is the most detrimental from an implementation contractor's perspective.

Q.19 Please summarize why EnerNOC believes that the Commission should adopt TEP's Updated Plan rather than the Commission Staff's Primary Proposal or the Commission Staff's Alternative #s 1 or 2.

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A.19 It is EnerNOC's position that the Commission should adopt TEP's Updated Plan, rather than the Commission Staff's Primary Proposal or Commission Staff's Alternative Proposals, since the Updated Plan represents a reasoned compromise in which all parties will absorb a little pain in order to maintain an appropriate balance of interests until the Commission reaches a decision in TEP's recently filed rate case.

Q.20 The history of this proceeding suggests that several important aspects of TEP's Energy Efficiency Programs and Implementation Plans may be carried over into TEP's forthcoming rate case. Does EnerNOC plan to request intervention in that proceeding?

A.20 Yes, as of this juncture.

Q.21 Does that complete your Rebuttal Testimony?

A.21 Yes.

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ORIGINAL

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Attorneys for Southwest Energy
Efficiency Project

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EXHIBIT
SWEEP
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BEFORE THE ARIZONA CORPORATION COMMISSION

GARY PIERCE, Chairman
BOB STUMP
SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	DOCKET NO. E-01933A-11-0055 **NOTICE OF FILING DIRECT TESTIMONY OF JEFFREY SCHLEGEL ON BEHALF OF SOUTHWEST ENERGY EFFICIENCY PROJECT**

Southwest Energy Efficiency Project ("SWEEP"), through its undersigned counsel, hereby provides notice that it has this day filed the written direct testimony of Jeff Schlegel.

/ / /

/ / /

/ / /

Arizona Corporation Commission
DOCKETED
JUN 15 2012
DOCKETED BY

RESPECTFULLY SUBMITTED this 15th day of June, 2012.

ARIZONA CENTER FOR LAW IN
THE PUBLIC INTEREST

By _____
Timothy M. Hogan
202 E. McDowell Rd., Suite 153
Phoenix, Arizona 85004
Attorneys for Southwest Energy Efficiency Project

ORIGINAL and 13 COPIES of the foregoing filed this 15th day of June, 2012, with:

Docketing Supervisor
Docket Control
Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007

COPIES of the foregoing Electronically mailed this 15th day of June, 2012 to:

All Parties of Record

_____

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PAUL NEWMAN
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	)	DOCKET NO. E-01933A-11-0055

Direct Testimony of
Jeffrey Schlegel
Southwest Energy Efficiency Project

Introduction

Q. Please state your name and business address.

A. My name is Jeff Schlegel. My business address is 1167 W. Samalayuca Drive, Tucson, Arizona 85704-3224.

Q. For whom are you testifying?

A. I am testifying on behalf of the Southwest Energy Efficiency Project (SWEEP).

Q. Please describe SWEEP.

A. SWEEP is a public interest organization dedicated to advancing energy efficiency as a means of promoting customer benefits, economic prosperity, and environmental protection in the six states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming. SWEEP works on state legislation; analysis of energy efficiency opportunities and potential; expansion of state and utility energy efficiency programs as well as the design of these programs; building energy codes and appliance standards; and voluntary partnerships with the private sector to advance energy efficiency. SWEEP collaborates with utilities, state agencies, environmental groups, universities, and energy specialists in the region. SWEEP is funded by foundations, the U.S. Department of Energy, and the U.S. Environmental Protection Agency. I am the Arizona Representative for SWEEP.

Q. What are your professional qualifications?

A. I am an independent consultant specializing in policy analysis, evaluation and research, planning, and program design for energy efficiency programs and clean energy resources. I consult for public groups and government agencies; and I have been working in the field for over 25 years. In addition to my responsibilities with SWEEP, I am working or have worked extensively in many states that have effective energy efficiency programs, including California, Connecticut, Massachusetts, New Jersey, Vermont, and Wisconsin. In 1997 I received the Outstanding Achievement Award for the International Energy Program Evaluation Conference. I have testified before the Arizona Corporation Commission in many proceedings.

Q. What is the purpose of your testimony?

A. In my testimony I will summarize the public interest in increasing electric energy efficiency; describe the significant consumer, economic, and environmental benefits that Tucson Electric Power Company's (TEP) energy efficiency programs have achieved; explain why TEP's existing energy efficiency offerings have been suspended in 2012; explain why new customer money-and-energy-saving opportunities have been indefinitely delayed; explain SWEEP's support for the

Updated Modified Plan as a framework for restoring existing and establishing new cost-effective energy efficiency opportunities for customers; describe SWEEP's opposition to TEP's request for a waiver to the Electric Energy Efficiency Standard and plans not to file a 2013 Energy Efficiency Implementation Plan; SWEEP's concerns about the bill impact for small commercial customers relative to the costs that other commercial and industrial customers would experience; and SWEEP's support of the proposed performance incentive as an interim incentive only and one that is not precedent setting.

The Public Interest in Increasing Electric Energy Efficiency

Q. What is the public interest in increasing electric energy efficiency?

A. Electric energy efficiency is in the public interest. Increasing energy efficiency will provide significant and cost-effective benefits for all TEP customers, the electric system, the economy, and the environment. Electric energy efficiency is a reliable energy resource that is less expensive than other available energy resources. Consequently, increasing energy efficiency will save consumers and businesses money through lower electric bills and the deferral of unnecessary infrastructure, resulting in lower total costs for customers. Increasing energy efficiency also reduces load growth; diversifies energy resources; enhances the reliability of the electricity grid; reduces the amount of water used for power generation; reduces air pollution; creates jobs that cannot be outsourced; and improves the economy. In addition, meeting a portion of load growth through increased energy efficiency can help to relieve system constraints in load pockets. By reducing electricity demand, energy efficiency mitigates electricity and fuel price increases and reduces customer vulnerability and exposure to price volatility. Energy efficiency does not rely on any fuel and is not subject to shortages of supply or increased prices for natural gas or other fuels.

The Status of TEP's Energy Efficiency Offerings for Customers

Q. How long has TEP offered energy efficiency opportunities for customers?

A. TEP has offered money-and-energy-saving opportunities for customers since 1992. These programs have been recognized as best practices, including TEP's residential new construction program, which has served as a model for other electric utilities. TEP has also been recognized for its innovative offerings, including its Shade Tree program.

Q. At what levels has TEP invested in energy efficiency?

A. From 2009-2011 TEP invested more than $33.6 million in energy efficiency (EE). Over this period, TEP's annual commitment to EE programs grew from $7.4 million in 2009 to $13.0 million in 2010 and $13.2 million in 2011.

Q. What have TEP's EE programs accomplished?

A. TEP's cost-effective programs have delivered significant economic, energy and environmental benefits for customers. For example, from 2009-2011, TEP reports that its EE portfolio delivered:

- Net benefits exceeding $150 million dollars;
- Lifetime savings exceeding 3.5 GWh;
- Lifetime savings exceeding 2.2 million therms;
- Lifetime water reductions exceeding 1.5 billion gallons;
- Lifetime SOx reductions exceeding 3,700 tons; and
- Lifetime NOx reductions exceeding 4,900 tons.

Q. What EE plans has TEP proposed recently?

A. In January 2011, TEP filed a 2011-2012 EE Implementation Plan with the Commission. This two-year Plan proposed the launch of new and the expansion and continuation of existing customer energy-saving opportunities. The Plan anticipated delivery of cumulative annual energy savings exceeding 300 GWh and net benefits exceeding $130 million. The total program investment sought was $51.1 million: $23.6 million in 2011 and $27.5 million in 2012. TEP's proposal also included a request for expedited review and approval with the goal of launching new and expanding existing customer opportunities by June 2011. This expedited review and Commission approval did not occur.

Q. What new customer opportunities were proposed by TEP in its Plan?

A. TEP proposed several new cost-effective money-and-energy-saving opportunities for customers. These new opportunities were designed to serve more customers (including small business owners; renters; and schools) and provide new ways for customers to save money and energy. Moreover, new offerings were developed after years of work by TEP ratepayers (including the forty religious institutions that comprise the Pima County Interfaith Council); were strongly supported by TEP ratepayers (as evidenced by the hundreds of handwritten and email communications the Commission received in the implementation plan docket and the public comments made at open meetings concerning the plan); and have been successfully implemented in other Arizona electric utility service territories.

Proposed new offerings included:

- A Schools Facilities Program to help schools upgrade their facilities.

- A Multi-Family Housing Efficiency Program to provide renters, who are notoriously hard-to-engage due to an array of market failures, with savings opportunities.

- A Retro-Commissioning Program to help commercial and industrial customers improve existing building performance.

- A Residential Energy Financing Program to leverage private capital with ratepayer money to help residents implement additional efficiency measures.

- A Bid for Efficiency Pilot Program to spur market competition by engaging third parties to propose energy-saving projects and bid competitively for incentives.

- An Appliance Recycling Program to help customers recycle old, inefficient appliances.

- Additional energy efficiency saving opportunities for small businesses through the Small Business Direct Install Program.

- An Energy Codes Enhancement Program, mirrored after a successful Salt River Project program projected to achieve nearly half a million MWh savings by 2020.[1]

Q. What is the status of TEP's 2011-2012 EE Implementation Plan?

A. TEP's 2011-2012 Plan was considered by the Arizona Corporation Commission at its Open Meeting in January 2012 (after the 2011 program year concluded). At that meeting, and in response to a suggestion from the Company and other stakeholders (including SWEEP), the Commission encouraged interested stakeholders to negotiate a compromise solution to address outstanding issues in TEP's Plan, including TEP's lost fixed cost revenue recovery mechanism (the "Authorized Revenue Recovery True-up" mechanism or AART).

Acting on the Commission's request, interested stakeholders including TEP, Commission Staff, the Residential Utility Consumer Office (RUCO), Freeport McMoRan Copper & Gold, Inc., Arizonans for Electric Choice and Competition (AECC), and SWEEP met over several days to contemplate a mutually-agreeable compromise. The end product of these conversations was the "Modified Plan," which the Commission considered at its March 2012 utilities Open Meeting. At that Open Meeting, the Commission elected to hold evidentiary hearings on the matter, effectively delaying consideration of the Modified Plan until a later date. TEP has since updated the Modified Plan to address issues raised by AECC and the lapse in

[1] See "In Support of Clean & Efficient Energy: SRP Position on Model Energy Codes": http://www.srpnet.com/environment/earthwise/pdfx/spp/ModelEnergyCodes2011.pdf

time. This revised plan is called the "Updated Modified Plan," which was filed on May 2, 2012.

Q. What is the current status of TEP's energy efficiency programs?

A. Following the Commission Open Meeting in March 2012, many of TEP's existing programs serving residential and commercial customers were suspended. In addition, TEP's plans to launch new programs and opportunities to serve more customers were indefinitely delayed. Compared with 2011 levels, existing programs were also significantly downsized. For example, overall efficiency investment was halved from $11.3 million in 2011 to $5.6 million in 2012, and investment in almost every existing EE program was slashed dramatically (with the exception of low income weatherization). EE program cuts ranged between 12 and 72%, with the greatest changes to programs serving business and commercial customers. SWEEP has prepared a table as "Attachment A" describing these cuts.

Q. Why were existing programs suspended and/or cut in 2012?

A. Two factors contributed to the suspension and cuts to existing programs:

1. The Commission approved new EE programs and expanded program budgets for TEP at several points in the 2010-2011 timeframe, yet the adjustor mechanism to collect the Commission-approved EE program funding from customers has not been reset to accommodate Commission-authorized program funding levels since June 1, 2010. TEP complied with Commission authorization by implementing the Commission-approved EE programs and approved budgets, but the ratepayer funding to support the budgets was not collected from ratepayers due to the delay in resetting the adjustor.

2. The Modified Plan included a proposal to reset this adjustor mechanism. Because Commission action on the Modified Plan has not occurred, and did not occur at the January or March 2012 Open Meetings, this adjustor mechanism has not been reset to adequately fund Commission-authorized programs and program budgets.

Q. What are SWEEP's concerns about the status of TEP's energy efficiency offerings?

A. SWEEP is extremely concerned about the deep cuts to TEP's EE programs because these programs deliver important and substantial customer, economic, environmental, and utility system benefits. Notably, these programs help customers reduce their energy bills, and program cuts are occurring at a time when energy bills are highest during the year. These program cutbacks have caused significant disruptions in the demand side management marketplace, leading to a loss of local jobs. In addition, proposed new programs and program expansions, which would provide additional cost-effective benefits to customers, have not been implemented.

Q. How can this evidentiary hearing process help to resolve these concerns?

A. SWEEP is very appreciative of the Procedural Order issued by the Commission on May 16, 2011, which established the evidentiary hearing process to consider outstanding issues related to TEP's 2011-2012 EE Implementation Plan. By focusing the scope of the hearings on the TEP's Updated Modified Plan, the hearings could lead to the reinstatement of existing and enhanced EE programs and adequate budgets for TEP customers by fall 2012, consistent with TEP's estimate in its May 2, 2012 filing. In contrast, if the EE implementation plan issues were deferred to the TEP rate case, customers would not receive the benefits of the Updated Plan EE programs until mid-2013 at the earliest. Such a delay is not in the interest of TEP customers and would only further disadvantage customers.

SWEEP's Position on the Updated Modified Plan

Q. What is SWEEP's position on the Updated Modified Plan?

A. SWEEP supports the Updated Modified Plan (with modifications as described below) as a framework that enables restoration of existing and the establishment of new cost-effective opportunities that help customers save money and energy. SWEEP previously supported the Modified Plan developed through discussions with TEP and interested parties, including at the March 2012 Open Meeting.

Q. Does SWEEP support the lower level of program funding contemplated by the Updated Modified Plan?

A. In the spirit of compromise, SWEEP is willing to agree to and support a lower level of program funding than was originally proposed by TEP in its initial filing and lower than the level proposed in the Compromise Modified Plan in March 2012 because the Updated Modified Plan's programs and program budgets will:

1. Restore existing cost-effective programs that help ratepayers save money and energy, reduce customer bills, lower total customer costs, create local jobs, and deliver significant consumer and economic benefits.

2. Launch new cost-effective programs and offerings that deliver customer savings.

Q. Are there any aspects of the Updated Modified Plan that SWEEP does not support?

A. Yes. SWEEP opposes any waiver of the Electric Energy Efficiency Standard and TEP's request not to file a 2013 EE Plan. In addition, SWEEP is concerned that the Updated Modified Plan results in DSMS customer charges and bill impacts for small commercial customers that are too high relative to the costs that large industrial and large commercial customers would experience.

Q. Why does SWEEP oppose a waiver of an Electric Energy Efficiency Standard and TEP's request not to file a 2013 EE Plan?

A. The Electric Energy Efficiency Standard is a cumulative standard, meaning that TEP has the opportunity to catch up to the requirements of the standard over several years. In fact, TEP recently indicated that it plans to be in compliance with the Electric Energy Efficiency Standard by 2016, despite recent cutbacks to programs. Therefore a waiver is simply unnecessary. To that end, TEP should prepare a filing that will propose new energy efficiency programs or program enhancements in 2013 to ensure it continues along a pathway for achievement of the cumulative energy savings requirements set forth in the Standard.

Furthermore, energy efficiency is the least cost energy resource available and delivers significant and cost-effective benefits for all TEP customers, the electric system, the economy, and the environment. As such, it should be fully pursued in alignment with the Electric Energy Efficiency Standard, as a cumulative requirement, even if a utility may fall short for one or more years along the way. TEP should continue to pursue full compliance with the cumulative standard essentially by catching up over the next few years.

Q. Regarding the DSMS customer charges and the bill impacts for customer sectors, what are SWEEP's concerns?

A. SWEEP is concerned that the Updated Modified Plan results in DSMS customer charges and bill impacts for small commercial customers that are high (as a total utility bill % increase) relative to the costs that other commercial and industrial customers would experience. Indeed, Table 4 in TEP's May 2, 2012, filing anticipates an increase in small commercial bills of 1.71%. In comparison, industrial customers will experience a 1.26% increase and commercial customers will experience a 1.60% increase.

SWEEP could accept the relatively higher total utility bill % increase for small commercial customers, which is only a slightly higher % bill impact than the level that large commercial customers would experience, for the interim period of the Updated Modified Plan, as long as the small commercial customers as a class receive at least the level of EE program funding collected from small commercial customers. In this manner, the small commercial class would be receiving the benefits of the funding collected from their customer class.

Q. What is SWEEP's position on the proposed performance incentive?

A. SWEEP supports the performance incentive in the Updated Modified Plan as an interim incentive only and one that is not precedent setting. We also support the revision of this performance incentive as part of the next TEP rate case. Finally, SWEEP has provided other comments on the design of the performance incentive in

this and other dockets before the Commission, which SWEEP plans to raise during the TEP rate case.

Conclusion

Q. Does this conclude your testimony?

A. Yes.

SWEEP ATTACHMENT A
Tucson Electric Power Company
2011-2012 Energy Efficiency Implementation Plan
Docket No. E-01933A-11-0055

Comparison of TEP's Historic Energy Efficiency Investment with 2012 Energy Efficiency Investment Levels

Sector	Program	2011 Actual Spending	2012 Spending Original TEP Proposal	2012 Spending Modified Plan	2012 Revised Budget (SWEEP Best Estimate)	% Change: 2011 Actual v 2012 Revised Budget
Residential	Appliance Recycling	--	$859,533	$755,095	*Postponed*	
Residential	Efficient Products	$1,911,540	$2,431,495	$2,453,253	$1,362,986	-29%
Residential	Existing Homes and Audit Direct Install	$1,958,421	$3,514,886	$2,304,525	$929,922	-53%
Residential	Low Income Weatherization	$313,517	$616,451	$526,464	$414,675	32%
Residential	Multi-Family	--	$169,738	$181,565	*Postponed*	
Residential	Residential Energy Financing	--	$442,645	$315,405	*Postponed*	
Residential	Residential New Construction	$956,018	$1,766,846	$1,011,945	$649,813	-32%
Residential	Shade Trees	$155,844	$325,582	$250,681	$137,275	-12%
Residential TOTAL		**$5,295,340**	**$10,127,176**	**$7,798,933**	**$3,494,671**	**-34%**
Commercial	Bid for Efficiency	--	$503,092	$388,846	*Postponed*	
Commercial	C&I Comprehensive	$2,897,741	$4,285,856	$3,728,462	$797,719	-72%
Commercial	CHP Joint Program	--	$22,000	$22,000	*Postponed*	
Commercial	Commercial New Construction	$598,661	$406,319	$515,702	$253,399	-58%
Commercial	Retro-commissioning	--	$175,520	$336,493	*Postponed*	
Commercial	Schools Facilities	--	$157,941	$170,049	*Postponed*	

Sector	Program	2011 Actual Spending	2012 Spending Original TEP Proposal	2012 Spending Modified Plan	2012 Revised Budget (SWEEP Best Estimate)	% Change: 2011 Actual v 2012 Revised Budget
Commercial	Small Business	$1,758,322	$2,921,085	$2,044,806	$700,449	-60%
Commercial TOTAL		**$5,254,724**	**$8,471,813**	**$7,206,358**	**$1,751,567**	**-67%**
Behavioral	Behavioral Comprehensive		$1,420,279	$724,151	*Postponed*	
Behavioral	Home Energy Reports	$254,285	$673,790	$699,197	$150,271	-41%
Behavioral TOTAL		**$254,285**	**$2,094,069**	**$1,423,348**	**$150,271**	**-41%**
Support	Codes Support		$75,490	$73,288	*Postponed*	
Support	Education and Outreach	$471,576	$384,724	$155,250	$209,668	-56%
Support TOTAL		**$471,576**	**$460,214**	**$228,538**	**$209,668**	**-56%**
Demand Response	Residential and Small Commercial Direct Load Control	$695,856	$184,816	$167,864	$44,667	-94%
Demand Response	Commercial Direct Load Control	$747,900	$2,751,959	$1,431,445	$1,507,066	102%
Demand Response TOTAL		**$1,443,756**	**$2,936,775**	**$1,599,309**	**$1,551,733**	**7%**
EE TOTAL		**$11,275,925**	**$21,153,272**	**$16,657,177**	**$5,606,177**	**-50%**
DSM TOTAL (includes demand response)		**$12,719,681**	**$24,090,047**	**$18,256,486**	**$7,157,910**	**-44%**

ORIGINAL

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EXHIBIT
SWEEP
2
ADMITTED

BEFORE THE ARIZONA CORPORATION COMMISSION

GARY PIERCE, Chairman
BOB STUMP
SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	)	DOCKET NO. E-01933A-11-0055 **NOTICE OF FILING REBUTTAL TESTIMONTY OF JEFFREY SCHLEGEL ON BEHALF OF SOUTHWEST ENERGY EFFICIENCY PROJECT**

Southwest Energy Efficiency Project ("SWEEP"), through its undersigned counsel, hereby provides notice that it has this day filed the rebuttal testimony of Jeff Schlegel.

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Arizona Corporation Commission
DOCKETED
JUL -6 2012
DOCKETED BY

RESPECTFULLY SUBMITTED this 6th day of July, 2012.

ARIZONA CENTER FOR LAW IN
THE PUBLIC INTEREST

By _____
Timothy M. Hogan
202 E. McDowell Rd., Suite 153
Phoenix, Arizona 85004
Attorneys for Southwest Energy Efficiency Project

ORIGINAL and 13 COPIES of the foregoing filed this 6th day of July, 2012, with:

Docketing Supervisor
Docket Control
Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007

COPIES of the foregoing Electronically mailed this 6th day of July, 2012 to:

All Parties of Record

_____

Introduction

Q. Please state your name and business address.

A. My name is Jeff Schlegel. My business address is 1167 W. Samalayuca Drive, Tucson, Arizona 85704-3224.

Q. Did you submit direct testimony in this proceeding?

A. Yes. I filed direct testimony on behalf of the Southwest Energy Efficiency Project (SWEEP) on June 15, 2012.

Q. Have there been any changes in your qualifications or representation of SWEEP?

A. No.

Q. What is the purpose of your testimony?

A. In my testimony, I will to respond to several issues raised by Commission Staff and interveners in their direct testimony.

SWEEP Response to Issues Raised by Commission Staff and Interverners

Q. Several parties supported the Updated Plan in their testimony. What is SWEEP's position on the Updated Plan?

A. SWEEP supports the Updated Plan as a framework to restore existing energy efficiency programs and to establish new cost-effective energy efficiency opportunities to help more and new customers – including renters, small businesses, and schools – save money and energy and reduce their utility bills. If approved, the Updated Plan will deliver substantial customer, economic, environmental, and utility system benefits and put local contractors back to work, bringing stability and continuity to the demand side management marketplace. Commission approval of the Updated Plan will also ensure delivery of these important customer services and benefits in the near-term, long before the conclusion of the Tucson Electric Power Company's (TEP) next general rate case, which could be more than one year away.

The Updated Plan is a compromise that SWEEP supports because it will result in the delivery of important public interest benefits for TEP customers over the next year while the utility company's general rate case application is processed. As SWEEP previously testified, the Updated Plan represents a product developed through many hours of conversations between TEP, Commission Staff, the Residential Utility Consumer Office, Freeport McMoRan Copper & Gold, Inc., Arizonans for Electric Choice and Competition, and SWEEP. To that

end, it considers mutual concessions and represents a give and take on a series of issues. SWEEP would not normally compromise on several of the issues contemplated by the Updated Plan. However, in the interest of working vigorously to ensure that consumers have adequate opportunities to reduce their utility bills, and soon, SWEEP was willing to work with others to forge and support a compromise that balances the various parties' interests. SWEEP emphasizes that this is a short-term solution to benefit customers now, which will be superseded by the outcome of the rate case proceeding next year.

Q. In its testimony, Staff proposed alternatives to the Updated Plan. What is SWEEP's position on Staff's alternative proposals?

A. Considering the positions of the various parties in this proceeding, SWEEP is concerned that Staff's alternative proposals would not have the broad support that exists for the Updated Plan. As a result, Staff's proposals could result in a delay in Commission approval of a timely solution and ultimately may result in a delay in customers receiving the utility bill savings and benefits from the cost-effective programs.

SWEEP is supporting the Updated Plan compromise even though Staff's alternative proposal would result in more energy efficiency program funding.

Q. Does SWEEP support Staff's proposal to expand TEP's energy efficiency budget?

A. While SWEEP very much appreciates Staff's recommendation to expand TEP's energy efficiency budget, in the spirit of compromise, SWEEP is willing to agree to and support a lower level of program funding than it would usually recommend because we want to ensure that consumers have adequate opportunities to reduce their utility bills well before the conclusion of TEP's next general case. Approval of the Updated Plan and its associated program and budgets will ensure that energy efficiency offerings previously available to customers are reinstated and that new offerings serving more customer segments including renters, small businesses, and schools are enacted. Such programs are necessary in order for TEP to be on a pathway to achieve the benefits contemplated by the Commission when it adopted the Electric Energy Efficiency Standard. In our direct testimony, SWEEP also argued that TEP should prepare a filing that will propose new energy efficiency programs or program enhancements in 2013 to ensure it continues along a pathway for achievement of the cumulative energy savings requirements set forth in the Standard. We believe that this filing or the rate case proceeding represent the most appropriate time to propose the next round of new programs, program modifications, and program budget expansions.

SWEEP notes that the higher program funding proposed by Staff ($23.2 million) would support energy efficiency programs in the field. This higher amount of funding would not result in higher performance incentives or earnings for TEP. As shown in the chart below, Staff's proposal results in lower performance incentives for the Company in 2012 than the level proposed in the Updated Plan. SWEEP stresses that the Updated Plan is an effort to bridge a number of issues in order to provide customers with energy-and-money saving opportunities a timely manner. As such, the 2012 performance incentive level in the Updated Plan represents an amount around which the supporting parties compromised.

	Commission Staff Proposal	Updated Plan
Carry Over Balance	$3,861,556	$3,861,556
15-month Program Budget	$23,165,758	$18,532,606
2010 Performance Incentive	$1,114,648	$1,114,648
2011 Performance Incentive	$1,101,749	$1,101,749
2012 Performance Incentive	$902,986	$3,283,854
TOTAL	$30,146,697	$27,894,413

Q. What is SWEEP's position on the performance incentive and the performance incentive floor?

A. SWEEP supports the performance incentive proposed in the Updated Plan. SWEEP understands the technical possibility of Staff's concerns related to the performance incentive floor. However, SWEEP thinks that it is highly unlikely that TEP would receive a performance incentive payment without delivering the significant customer savings and benefits to which the utility has committed itself. Indeed, SWEEP fully expects TEP to honor its commitment to implement effective energy efficiency programs and deliver money and energy savings for customers, as set forth in the Updated Plan. SWEEP notes that TEP has delivered successful, nationally recognized energy efficiency programs for the last three years even though it experienced lost revenues while doing so. In addition, TEP has demonstrated its good faith commitment by filing a plan to improve money-and-energy-saving opportunities for customers; participating in negotiations to develop the Updated Plan; and filing comments supportive of energy efficiency and its associated customer benefits in this proceeding. Finally, SWEEP notes that any bad faith actions of TEP – which SWEEP thinks are highly unlikely – could be addressed in TEP's rate case deliberations.

SWEEP also supports the performance incentive metrics, which are aligned with important activities and outcomes that provide value to customers.

Q. In its testimony, Staff expressed concerns about the impact to small business customers. What is SWEEP's position on this?

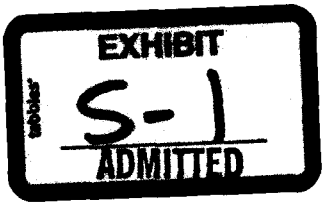
A. In its direct testimony, SWEEP also expressed concerns about the bill impact for small commercial customers. SWEEP further proposed that it could accept the relatively higher total utility bill % increase for small commercial customers, which is only a slightly higher % bill impact than the level that large commercial customers would experience, for the interim period of the Updated Plan, as long as the small commercial customers as a class receive at least the level of EE program funding collected from small commercial customers. In this manner, the small commercial class would be receiving the benefits of the funding collected from their customer class.

Conclusion

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE ARIZONA CORPORATION COMMISSION



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Commissioner
PAUL NEWMAN
Commissioner
BRENDA BURNS
Commissioner

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2012-2013 ENERGY EFFICIENCY IMPLMENTATION PLAN	)	DOCKET NO. E-01933A-11-0055

DIRECT

TESTIMONY

OF

JULIE MCNEELY-KIRWAN

PUBLIC UTILITIES ANALYST IV

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

JUNE 15, 2012

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EXECUTIVE SUMMARY
TUCSON ELECTRIC POWER COMPANY
DOCKET NO. E-01933A-11-0055

Tucson Electric Power Company ("TEP" or "Company") is seeking approval of its 2012-2013 Energy Efficiency Implementation Plan.

The Company is seeking waivers from the Energy Efficiency Standard for 2012 and 2013 and is also proposing: (i) $18.5 million in spending from October 2012 through December 2013: (ii) $3.9 million in recovery for its under-collected balance; (iii) approximately $1.1 million in Performance Incentives for 2010 and an additional $1.1 million for 2011 (using methodology determined during the last rate case), and (iv) a target of $3.3 million for the Performance Incentive for 2012 (calculated using a new methodology). The Company is also proposing that Non-residential recovery for demand-side management ("DSM") be based on a percentage of each Non-residential customer's bill. Under the TEP proposal, recovery from Residential customers would remain on a per-kWh basis.

Staff recommends that:

1. The programs and measures recommended for approval in Staff's Proposed Order that was docketed on November 16, 2011 and amended on February 29, 2012, be approved.

2. TEP's Implementation Plan Budget be increased from the $18.5 million proposed by the Company to approximately $23 million in order to enable TEP to meet or more closely approach the Energy Efficiency Standard.

3. The requested waivers for the 2012 and 2013 Energy Efficiency Standards not be approved.

4. TEP's proposed Interim Performance Incentive not be approved and that the current Performance Incentive methodology remain unchanged until it is reviewed in TEP's soon to be filed rate case, when it can be more fully considered.

5. The DSM Surcharge be maintained on a per-kWh basis for all customer classes.

6. There be no floor payments established for any Performance Incentive.

7. TEP's requested waiver from filing its 2013 Implementation Plan be approved.

8. Not only actual costs, but the 2012 Performance Incentive itself be trued-up to ensure that it reflects an incentive level based on actual, rather than projected, savings.

9. That Lost Fixed Cost Recovery ("LFCR") be dealt with as part of TEP's upcoming rate case. However, if LFCR is dealt with as part of this Updated Plan, TEP should be authorized to defer unrecovered fixed costs associated with energy efficiency savings, in the manner described in Staff's testimony.

If the Commission disagrees with Staff's recommendations above, Staff has proposed Alternative 1 and Alternative 2, below, providing for lower budgets and waivers for the Energy Efficiency Standard.

Alternative 1. (i) a waiver be granted for 2012 and 2013; (ii) programs and measures proposed in the proposed order be approved; (iii) the approximately $18.5 million spending level proposed by the Company be approved (iv) Staff's recommendations on the true-up, and the 2013 Implementation Plan filing be approved; and (v) the DSM Surcharge be reset at $0.002284 to reflect TEP's proposed spending level and Staff's recommendations on Performance Incentive and recovery methodologies.

Alternative 2. (i) a waiver be granted for 2012 and 2013; (ii) programs and spending remain unchanged at this time, and left at approximately $7.5 million per year; (iii) the DSM Surcharge be reset at $0.001432 to reflect the $7.5 million spending level and Performance Incentives calculated according to the existing methodology; (iv) recovery continue to be made on a per-kWh basis for all customers; (v)TEP shall be granted a waiver with respect to filing its 2013 Implementation Plan; (vi) the true-up be done in accordance with Staff's recommendations; and (vii) the TEP Implementation Plan and all related issues, including, but not limited to, the DSM budget, and the Performance Incentive and recovery methodologies, be addressed in the upcoming TEP rate case; and (viii) Alternative 2 shall remain in effect until further action of the Commission (most likely the Commission decision in the rate case).

INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Julie McNeely-Kirwan. I am a Public Utilities Analyst IV employed by the Arizona Corporation Commission ("Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as a Public Utilities Analyst IV.

A. My duties as a Public Utilities Analyst IV include reviewing and analyzing applications filed with the Commission, and preparing memoranda and proposed orders for Open Meetings. In addition, my duties have included preparing written testimony in multiple rate cases, and testifying during the related hearings. I have also assisted in the management of rate cases and have performed evaluations of energy efficiency implementation plans.

Q. Please describe your educational background and professional experience.

A. In 1979, I graduated Magna Cum Laude from Arizona State University, receiving a Bachelor of Arts degree in History. In 1987, I received a Master's Degree in Political Science from the University of Wisconsin, Madison. I have been employed by the Commission since September of 2006. Since that time, I have attended a number of seminars and classes on general regulatory issues, including demand-side management and the gas and electric industries.

Q. What is the scope of your testimony in this case?

A. Staff's testimony will discuss concerns arising from Tucson Electric Power Company's ("TEP" or "the Company") Energy Efficiency Implementation Plan ("the Updated Plan"), as proposed by TEP in TEP's Procedural Comments docketed on May 2, 2012. Staff's

testimony will also address Staff's proposed modifications with respect to TEP's Updated Plan.

SUMMARY OF TEP'S UPDATED PLAN

Q. Please summarize TEP's proposed Updated Plan.

A. TEP's Updated Plan:

- is designed to cover the 15-month period from October 2012 though December 2013;
- is budgeted to spend approximately $18.5 million over the 15-month period from October 2012 through December 2013;
- will not meet the Energy Efficiency ("EE") Standard for 2012 or 2013 and requests waivers for those years;
- includes 8 Residential programs, 8 Non-residential programs, 2 Behavioral programs, an Education and Outreach program and a Residential Energy Financing program, along with Codes Support and Program Development, Analysis and Reporting Software.
- is calculated to recover an under-collection of approximately $3.9 million, as of the end of September 2012;
- is calculated to recover Performance Incentives of approximately $1.1 million for 2010 and another approximately $1.1 million for 2011, based on methodology from the last rate case; and
- is proposed to recover an Interim Performance Incentive ranging from a floor of $2.6 million to a ceiling of $3.9 million for 2012, based on a new methodology; and

- proposes a $0.002497 per kWh demand-side management ("DSM") Surcharge for Residential customers and a 2.86 percent rate on all charges (except taxes and other governmental assessments) for Non-residential classes.

STAFF'S ANALYSIS

Q. Does Staff believe that TEP's Updated Plan should be implemented as proposed?

A. No. Staff has a number of concerns about TEP's Updated Plan.

Q. What are Staff's concerns?

A. Staff's major concerns with respect to TEP's Updated Plan are as follows:

- TEP states that, based on the Updated Plan (approximately $18.5 million over 15 months) it will not meet the Energy Efficiency Standard for 2012 or 2013 and requests waivers for those years.
- TEP's Updated Plan would change the Performance Incentive methodology outside a rate case, and in a manner that would increase cost to ratepayers. In addition, the proposed methodology does not adequately support the payments associated with the Other Performance Metrics.
- TEP's Updated Plan would change the Non-residential DSM Surcharge mechanism outside of a rate case, and in a manner that shifts the per-kWh burden of paying for DSM from larger to smaller Non-residential customers.
- TEP's Updated Plan provides for an Interim Performance Incentive with a floor of $2.6 million.
- TEP's Interim Performance Incentive should be trued-up to reflect the savings actually achieved, but the filing's language on this point is not clear.

Q. Has TEP requested waivers with respect to the Energy Efficiency Standards?

A. Yes. TEP has requested waivers of the Energy Efficiency Standards for 2012 and 2013. The Company has also requested a waiver from filing its 2013 Implementation Plan, because the Updated Plan is intended to cover 2013.

Q. How does the proposed spending level impact TEP's ability to meet the Energy Efficiency Standards?

A. In the Proposed Modified Implementation Plan (January 31, 2012), based on an annual $18.5 million annual budget, TEP stated that it might need to request a waiver, but that "[e]ven with these budget reductions, TEP hopes to meet the EE Standard for 2012 and believes it could possibly meet the EE Standard in 2013." In its May 2, 2012, Updated Plan TEP proposes the same $18.5 million in spending, but over 15 months, and states that the Company will not meet the EE Standard for either 2012 or 2013.

Q. What are Staff's concerns with the level of spending proposed by TEP?

A. Staff's position is that the Energy Efficiency Standards require affected utilities to meet the Standards set in the Rules. TEP's DSM budget should be set at a level that would enable the Company to achieve each Energy Efficiency Standard and, where that is not feasible, to more closely approach yearly standards, so that the 2020 Standard remains achievable. In order to determine this level, Staff has calculated the monthly spending for the Modified Plan (designed to potentially meet the Standard), then extended that monthly spending over the 15-month period proposed by TEP. The result is an approximately $23 million budget.

Q. Would a higher budget guarantee that TEP will meet the Energy Efficiency Standards?

A. Not necessarily. Higher spending may enable TEP to meet the 2013 Standard and will make it more likely that the Company will meet Standards in future years.

Q. Is TEP's requested waiver from filing its 2013 Implementation Plan reasonable?

A. Staff believes it is not unreasonable to grant this waiver, in light of the fact that in TEP's upcoming rate case Staff may be proposing an entirely new method of funding energy efficiency such that energy efficiency would be treated as part of TEP's resources, and as such be included as part of TEP's rate base.

Q. What is Staff's recommendation regarding TEP's proposed $18.5 budget and its requests for waivers?

A. Staff recommends that TEP's Implementation Plan Budget be increased from the $18.5 million proposed by the Company to approximately $23 million. Staff further recommends that the requested waivers for the 2012 and 2013 Energy Efficiency Standards not be approved.

Q. What is Staff's recommendation regarding the DSM Surcharge which includes a DSM budget designed to enable the Company to more closely approach, or achieve, the Energy Efficiency Standards?

A. Staff's recommends a DSM Surcharge of $0.002699 for the 15-month period. The $0.002699 DSM Surcharge is based on the carry over balance as of the end of September 2012, on performance incentives calculated based on existing methodology for 2010 through 2012, and on a budget designed to enable the Company to more closely

approach, or achieve, the Energy Efficiency Standards. The components of the DSM Surcharge are listed below:

Table 1

With 2012 Performance Incentive	
Carry Over Balance	$3,861,556
2010 Performance Incentive	$1,114,648
2011 Performance Incentive	$1,101,749
15-month Budget	$23,165,758
2012 Performance Incentive (old methodology)	$902,986
Total	$30,146,697
15-month forecasted MWh	11,170,724,000
Staff DSM Surcharge	**$0.002699**

Q. Why is Staff's proposed Surcharge higher than the one proposed by the Company?

A. Because Staff proposed higher DSM spending for the TEP portfolio of programs, in order to enable the Company to more closely approach the EE Standard for 2012, to meet the EE Standard for 2013 and to make the 2020 EE Standard set in the Rules achievable. The higher budget is offset, partially, by the lower 2012 Performance Incentive recommended by Staff.

Q. What are the bill impacts for the DSM Surcharges proposed by TEP and Staff?

A. These are listed in Table 2, below:

Table 2

	DSM Surcharge	$0.001249	$0.002497/2.68%	$0.002699
Customer Class	Average monthly usage	Current average monthly impact	Average monthly impact based on TEP's recommendation of $0.002497 per kWh for Residential and 2.68% of the bill for Non-residential customers	Average monthly impact based on Staff's recommendation of $0.002699 per kWh for all customers
Residential	880	$1.10	$2.20	$2.38
Small Commercial	4,300	$5.37	$13.60	$11.61
Large Commercial	160,000	$199.84	$460.26	$431.84
Industrial	1,500,000	$1,873.50	$3,392.50	$4,048.50

Q. Why are some of the bill impacts for the proposed TEP DSM Surcharge higher, while others are lower?

A. Because the percentage of bill rate proposed by TEP for its Non-residential customers results in different effective kWh rates, as shown in Table 4, herein.

Q. Please describe the current methodology for calculating the Performance Incentive.

A. The current methodology for calculating the Performance Incentive was set in the last rate case, as determined in the Settlement Agreement and approved in Decision No. 70628. Under this methodology, the Performance Incentive is based on 10 percent of Net Benefits, capped at 10 percent of DSM spending. The calculation excludes the Low-Income Weatherization, Educational and Outreach and Direct Load Controls programs.

TEP proposes to use this methodology for the 2010 and 2011 Performance Incentives, but proposes a different methodology for its new Interim Performance Incentive.

Q. Please describe the methodology proposed in TEP's Updated Plan for calculating the Interim Performance Incentive.

A. In the Updated Plan, TEP proposes a 2012 Interim Performance Incentive consisting of two parts: Part I: the Base Performance Incentive; and Part II: Other Performance Metrics.

Part I: the Base Performance Incentive is equal to 7 percent of the Net Benefits.

Part II: Other Performance Metrics, consists of five metrics, with targets and associated incentive dollars, as shown below:

Table 3

Metric	Target (totals for 2012)	Associated Incentive Dollars
Net Benefit per customer dollar spent.	2:1 ratio	$1,100,000
Community weatherization workshops	30 workshops	$150,000
Community outreach (monthly outreach to Seniors about energy efficiency).	4 Community outreach events	$150,000
Loan program (training contractors on TEP's new loan program).	8 contractors trained	$150,000
Low Income Weatherization (5% increase in participation over 2011).	163 houses (8 more than last year)	$150,000
TOTAL (FOR 100% OF GOAL)		**$1,700,000**

Q. Why is Staff concerned about altering the methodology for calculating its Performance Incentive?

A. Staff is concerned about TEP's proposed changes for three reasons: (i) the methodology proposed by TEP significantly increases the Performance Incentive at the expense of ratepayers; (ii) with respect to Part II (the Other Performance Metrics), the payment associated with Net Benefits per customer dollar spent amounts to a double recovery, and the payments associated with the other four metrics are not justified by direct, measurable and verifiable kWh savings; and (iii) it would be preferable to review the Performance

Incentive mechanism in TEP's rate case, where it can be more fully considered, and considered in conjunction with related issues.

Q. How much would the Performance Incentive increase, based on the Company's proposal?

A. For the 2012 calendar year, TEP projects $22.6 million in Net Benefits, and approximately $11 million in DSM costs. Staff has relied on these projections for purposes of estimating the 2012 Performance Incentive based on the methodology set in the last rate case.

Under the current methodology, the 2012 Performance Incentive would initially be calculated as 10 percent of Net Benefits ($2.26 million), which would then be capped at 10 percent of DSM spending ($1.1 million). After subtracting spending associated with the Low-Income Weatherization, Educational and Outreach and Direct Load Controls programs, Staff projects the Performance Incentive at approximately $903,000. By contrast, TEP's proposed Interim Performance Incentive would range from $2.6 million to $3.9 million for 2012 (with a target of $3.3 million).

Q. With respect to Part II of the Interim Performance Incentive (also referred to as the "Other Performance Metrics"), please explain how the payment associated with the Net Benefits per customer dollar spent is a double recovery.

A. Although Staff supports the concept of maximizing energy efficiency benefits for each ratepayer dollar spent, it is not reasonable to allocate $1.1 million for the 2-to-1 ratio projected for Net Benefits to customer dollars spent. Staff notes that the $1.1 million payment would be in addition to the $1.6 million Base Performance Incentive, based on the same Net Benefits from the same DSM portfolio – which is already required to be cost-effective (meaning its benefits must already exceed its costs). In Staff's opinion, a 2-

to-1 ratio of Net Benefits to customer dollars spent is too modest to either demonstrate an enhanced focus on improved benefit-to-cost ratios, or to merit an additional $1.1 million payment.

Q. Please explain Staff's concerns regarding the proposed payments associated with the Other Performance Metrics of Part II (weatherization workshops, community outreach, training of contractors for loan program and increase participation in Low-Income Weatherization).

A. Other metrics under Part II are primarily linked to activities which do not produce direct, measurable, or verifiable savings. For example, TEP proposes that it receive $150,000 for meeting a target goal of 30 community weatherization workshops. It is not clear why TEP should receive an amount equal to $5,000 per workshop, nor is there any level of savings supplied for these workshops. The issues are similar for the proposed senior outreach and loan program training metrics. The senior outreach metric is allocated $150,000 for a total of 4 Community Outreach events, while the loan program metric is allocated another $150,000 for training a total of 8 contractors. Staff notes that the payments allocated for these activities are both substantial and unsupported by data.

There would be savings associated with a 5 percent increase in participation in the Low-Income Weatherization program, but the linkage between the 5 percent target and the proposed $150,000 payment remains unexplained. (Staff also notes that only eight additional houses would be weatherized under this metric and that any savings from the increased participation would reasonably be included in the Net Benefits on which the Base Performance Incentive is based.)

Q. What are Staff's concerns over the range proposed for the Performance Incentive?

A. TEP's Updated Plan proposes an Interim Performance Incentive "with a floor of $2.6 million and a ceiling of $3.9 million." In addition to its general concern about the increased level TEP has proposed for the Performance Incentive, Staff is opposed to there being a floor.

Q. Why is Staff opposed to a floor for the proposed Performance Incentive?

A. A floor would have the effect of guaranteeing a $2.6 Performance Incentive, regardless of the savings actually achieved. With any minimum, there is a risk that the Company could receive a performance incentive that is too high relative to the actual energy savings achieved. (For example, it would be inequitable for TEP to receive an Interim Performance Incentive equivalent to 80 percent of the Goal, if the savings it actually achieved were equivalent to only 50 percent of the Goal.)

The Company has expressed concern about lost fixed cost recovery. However, for there to be lost fixed costs associated with energy efficiency, there have to be savings associated with energy efficiency, meaning sales the utility has foregone as a result of the Company's energy efficiency programs. It makes no sense to guarantee recovery for lost fixed costs at a level higher than what the utility may actually experience.

Staff is also concerned that this proposal, with its high guarantee, is not designed to incentivize energy efficiency above the "floor." Generally, more per-unit effort is required to achieve savings at the higher levels of energy efficiency, than at the lower levels, where efficiency is made easier by the availability of "low hanging fruit." An Interim Performance Incentive which includes a high guaranteed "floor" payment could limit the incentive to achieve energy efficiency savings.

Q. What is Staff's recommendation with respect to the Interim Performance Incentive?

A. Staff recommends that TEP's proposed Interim Performance Incentive not be approved and that the current Performance Incentive methodology should remain unchanged until the rate case, when it can be more fully considered.

Q. Why is Staff concerned about TEP's proposal that the Non-residential DSM Surcharge be based on a percentage of each Non-residential customer's bill, as opposed to a per-kWh rate?

A. TEP's proposal would not only change the DSM adjustor mechanism outside of a rate case, it would result in a lower effective per-kWh DSM recovery for large Non-residential customers paying less per-kWh for their usage. Such a change would tend to shift per-kWh costs for energy efficiency from large Non-residential customers to smaller non-residential customers, a shift which Staff views as inequitable. No convincing rationale has been provided to support an effective lower per-kWh recovery rate for large Non-residential customers.

Q. Please illustrate the impact of moving from per-kWh recovery to percentage of bill recovery.

A. The table below shows that, under TEP's proposal, Small Commercial customers experience the highest effective per-kWh rate, while the lowest rate would be experienced by Industrial customers. (Under TEP's proposal Residential customers would pay a per-kWh rate only.)

Table 4

Customer Class	Average monthly usage	Average monthly impact based on a $0.002497 per-kWh rate for all customers	Average monthly impact based on $0.002497 per-kWh for Residential and 2.68% of the bill for Non-residential customers	**Effective per-kWh rate under TEP proposal to recover $0.002497 per-kWh from Residential and 2.68% of the bill from Non-residential customers**
Residential	880	$2.20	$2.20	**$0.002497**
Small Commercial	4,300	$10.74	$13.60	**$0.003163**
Large Commercial	160,000	$399.52	$460.26	**$0.002877**
Industrial	1,500,000	$3,745.50	$3,392.50	**$0.002262**

Q. What is Staff's recommendation regarding the proposed change to recovery for Non-residential customers?

A. Staff recommends that the DSM Surcharge should be maintained on a per-kWh basis for all customer classes.

Performance Incentive True-up

Q. What are Staff's concerns with the language regarding 2012 Performance Incentive true-up from TEP's Updated Plan?

A. The Updated Plan states "[t]he Energy Efficiency Shared Benefits will be trued-up in the 2012 rate case proceeding." Should the Updated Plan be approved, clarification needs to be provided that not only actual costs, but the Performance Incentive itself would be trued-up to ensure that it reflects an incentive level based on actual, rather than projected, savings. This would mean, for example, that if the Net Benefits actually achieved fall below projections, the Performance Incentive would be recalculated to reflect those savings and the difference between the projected and actual Performance Incentive would be taken into account when the DSM Surcharge was reset.

Q. What does Staff recommend regarding the regarding the true-up?

A. Staff recommends that that not only actual costs, but the 2012 Performance Incentive itself be trued-up to ensure that it reflects an incentive level based on actual, rather than projected, savings.

Lost Fixed Cost Recovery ("LFCR")

Q. The Updated Plan filing expresses concern about LFCR. Does Staff believe that LFCR should be dealt with as part of the Updated Plan?

A. No. Staff recommends that the LFCR be dealt with as part of TEP's upcoming rate case, where it can be more fully considered. However, if the Commission prefers to deal with the issue as part of the Updated Plan, Staff recommends that TEP be authorized to defer unrecovered fixed costs associated with energy efficiency savings, using a methodology approved by Staff.

Q. Please provide more detail.

A. If LFCR is dealt with as part of this Updated Plan, within 30 days of the effective date of a Decision in this case TEP would file in this Docket its proposed methodology for calculating and recording unrecovered fixed costs. This methodology should be approved by Staff before TEP may record any amounts in a deferral account.

Q. Should there be any reporting with respect to the deferral account?

A. Yes. TEP should file, as a compliance item in this Docket, quarterly reports of the account, detailing the current balance and all transactions recorded during the quarter, including the calculations used to determine the recorded amounts. These reports should be filed each April, July, October and January, until there is a decision made in the upcoming rate case.

RECOMMENDATIONS

Q. Please state Staff's recommendations.

A Staff's recommendations are that:

- The programs and measures recommended for approval in Staff's Proposed Order that was docketed on November 16, 2011 and amended on February 29, 2012, be approved.
- TEP's Implementation Plan Budget be increased from the $18.5 million proposed by the Company to approximately $23 million in order to enable TEP to meet or more closely approach the Energy Efficiency Standard.
- The requested waivers for the 2012 and 2013 Energy Efficiency Standards not be approved.
- TEP's proposed Interim Performance Incentive not be approved and that the current Performance Incentive methodology remain unchanged until it is reviewed in TEP's soon to be filed rate case, when it can be more fully considered.
- The DSM Surcharge be maintained on a per-kWh basis for all customer classes.
- There be no floor payments for any Performance Incentive.
- TEP's requested waiver from filing its 2013 Implementation Plan be approved.
- Not only actual costs, but the 2012 Performance Incentive itself be trued-up to ensure that it reflects an incentive level based on actual, rather than projected, savings.
- LFCR be dealt with as part of TEP's upcoming rate case. However, if LFCR is dealt with as part of this Updated Plan, TEP should be authorized to defer unrecovered fixed costs associated with energy efficiency savings, in the manner described in Staff's testimony.

Q. What if the Commission disagrees with Staff's recommendations, above?

A. Staff has proposed Alternative 1 and Alternative 2, below, providing for lower budgets and waivers for the Energy Efficiency Standard.

Alternative 1

Q. Please Describe Alternative 1.

A. Alternative 1. (i) a waiver be granted for 2012 and 2013; (ii) programs and measures proposed in the proposed order be approved; (iii) the approximately $18.5 million spending level proposed by the Company be approved (iv) Staff's recommendations on the true-up, and the 2013 Implementation Plan filing be approved; and (v) the DSM Surcharge be reset at $0.002284 to reflect TEP's proposed spending level and Staff's recommendations on Performance Incentive and recovery methodologies.

Q. What is Staff's recommendation regarding the DSM Surcharge based on TEP's proposed budget, but taking into account Staff's recommendations on the Performance Incentive?

A. Staff recommends a DSM Surcharge of $0.002284 for the 15-month period. The $0.002284 DSM Surcharge is based on the carry over balance as of the end of September 2012, on performance incentives calculated based on existing methodology for 2010 through 2012, and on a budget based on TEP's recommended $18.5 million over 15 months. The components of the alternative DSM Surcharge are listed below:

Table 5

DSM Surcharge Based on Current Spending Levels	
Carry Over Balance	$3,861,556
2010 Performance Incentive	$1,114,648
2011 Performance Incentive	$1,101,749
15-month Budget	$18,532,604
2012 Performance Incentive	$902,986
Total	$25,513,543
15-month forecasted MWh	11,170,724,000
Staff DSM Surcharge	**$0.002284**

Q. Compare the current bill impacts with the bill impacts for Alternative 1.

A. These are listed in Table 6, below:

Table 6

	$0.001249	$0.002284
Customer Class	Current average monthly impact	Average monthly impact based on Staff's recommendation of $0.002284 per kWh for all customers
Residential	$1.10	$2.01
Small Commercial	$5.37	$9.82
Large Commercial	$199.84	$365.44
Industrial	$1,873.50	$3,426.00

Alternative 2

Q. Please Describe Alternative 2.

A. Alternative 2. (i) a waiver be granted for 2012 and 2013; (ii) programs and spending remain unchanged at this time, and left at approximately $7.5 million per year; (iii) the DSM Surcharge be reset at $0.001432 to reflect the $7.5 million spending level and Performance Incentives calculated according to the existing methodology; (iv) recovery

continue to be made on a per-kWh basis for all customers; (v) TEP shall be granted a waiver with respect to filing its 2013 Implementation Plan; (vi) the true-up should be done in according with Staff's recommendations; (vii) the TEP Implementation Plan and all related issues, including, but not limited to, the DSM budget, and the Performance Incentive and recovery methodologies, be addressed in the upcoming TEP rate case; and (viii) Alternative 2 shall remain in effect until further action of the Commission (most likely the Commission decision in the rate case).

Q. What is Staff's recommendation regarding the DSM Surcharge which maintains the current level of spending?

A. Staff's recommends a DSM Surcharge of $0.001432 for the 15-month period. The $0.001432 DSM Surcharge is based on the carryover balance as of the end of September 2012, on performance incentives calculated based on existing methodology for 2010 through 2012, and on a budget based on current monthly spending levels projected over 15 months. The components of the alternative DSM Surcharge are listed below. Please note that the Performance Incentive for 2012 is estimated based on current methodology and should be trued-up based on actual spending:

Table 7	
DSM Surcharge Based on Current Spending Levels	
Carry Over Balance	$3,861,556
2010 Performance Incentive	$1,114,648
2011 Performance Incentive	$1,101,749
15-month Budget	$9,310,031
2012 Performance Incentive	$564,872
Total	$15,952,856
15-month forecasted MWh	11,170,724,000
Staff DSM Surcharge	**$0.001428**

Q. Compare bill impacts for Alternative 2.

A. These are listed in Table 6, below:

Table 8

	$0.001249	$0.001428
Customer Class	Current average monthly impact	Average monthly impact based on Staff's recommendation of $0.001428 per kWh for all customers
Residential	$1.10	$1.26
Small Commercial	$5.37	$6.14
Large Commercial	$199.84	$228.48
Industrial	$1,873.50	$2,142.00

Q. Does this conclude your Direct Testimony?

A. Yes, it does.

BEFORE THE ARIZONA CORPORATION COMMISSION

GARY PIERCE
Chairman
BOB STUMP
Commissioner
SANDRA D. KENNEDY
Commissioner
PAUL NEWMAN
Commissioner
BRENDA BURNS
Commissioner

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2012-2013 ENERGY EFFICIENCY IMPLMENTATION PLAN	)	DOCKET NO. E-01933A-11-0055

REBUTTAL

TESTIMONY

OF

JULIE MCNEELY-KIRWAN

PUBLIC UTILITIES ANALYST IV

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

JULY 6, 2012

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EXECUTIVE SUMMARY
TUCSON ELECTRIC POWER COMPANY
DOCKET NO. E-01933A-11-0055

Tucson Electric Power Company ("TEP" or "Company") is seeking approval of its 2012-2013 EE Implementation Plan.

In its Rebuttal Testimony Staff rebuts certain issues from the Direct Testimony in this matter and expands on its Direct Testimony.

INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Julie McNeely-Kirwan. I am a Public Utilities Analyst IV employed by the Arizona Corporation Commission ("Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Have you filed testimony previously in this matter?

A. Yes. Direct Testimony from me was filed on June 15th of this year.

LOST FIXED COST RECOVERY

Q. In his Direct Testimony (page 2), David G. Hutchens expresses concern regarding Tucson Electric Power Company's ("TEP's") ability to recover lost fixed cost revenues. Does Staff wish to respond to Mr. Hutchens' concerns?

A. Yes. As a response to Mr. Hutchens' concerns about recovery of lost fixed cost revenues, Staff wishes to clarify and expand on its recommendations regarding the deferral account option, as discussed in Staff's Direct Testimony.

Q. Does Staff's recommendation regarding the lost fixed cost revenue deferral option apply to Staff's proposed Alternatives 1 and 2, as well as to Staff's Recommendation?

A. Yes. Staff recommends that if the Commission approves Staff's Recommendation, or one of Staff's two alternatives, and also elects to deal with lost fixed cost revenues in the current docket, TEP should be authorized to defer unrecovered fixed costs as described in Staff's Direct Testimony. The methodology used to defer unrecovered fixed costs associated with Staff's Recommendation or either alternative should be approved by Staff.

Staff notes that the amount deferred with respect to Alternative 2 should be comparatively minimal.

Q. In its direct testimony, TEP discusses an alternative solution for financing the cost of complying with the Energy Efficiency ("EE") standard. Please describe it.

A. On page 13 of his testimony, David G. Hutchens states that TEP plans to propose an alternative Demand-side Management/Energy Efficiency ("DSM/EE") financing solution in its rate case. Mr. Hutchens testifies that, under TEP's proposal, TEP would "invest its capital in cost-effective DSM/EE programs, recovering its costs through the DSMS [Demand-side Management Surcharge] and eliminating the PI [Performance Incentive]."

Q. What is Staff's response to the proposed alternative for financing the cost of complying with the EE standard?

A. Although more details would be required, Staff is interested in TEP's proposal to invest its capital in cost-effective DSM/EE programs. Staff is contemplating a rate case proposal that evaluates recovery for investment in EE more like recovery for investment in other resources.

DSM SURCHARGE MECHANISM AND PERFORMANCE INCENTIVE METHODOLOGY

Q. In her Direct Testimony, Denise Smith describes a "bridge" implementation plan that includes changes to the DSM Surcharge mechanism and the Performance Incentive methodology (pages 2, 10, 13). Please respond.

A. Staff recommends that changes to the DSM Surcharge mechanism and to the Performance Incentive methodology take place within TEP's recently filed rate case docket, not this docket.

Q. What type of changes does TEP propose for the DSM surcharge mechanism and to the Performance Incentive methodology?

A. TEP proposes that the DSM Surcharge for non-residential customers be based on a percentage of the bill charges, minus taxes and other governmental assessments. TEP proposes that the Performance Incentive methodology be based on net benefits, with floor and ceiling payments, a tiered payment structure, and payments based on other performance metrics (net benefit per dollar spent, weatherization workshops, community outreach, contractor training and an increase in participation for the Weatherization program).

Q. Does Staff have a response to TEP's proposed changes to the DSM Surcharge mechanism and Performance Incentive methodology?

A. Yes. Staff believes that such changes should take place inside the rate case, because changes to the DSM Surcharge mechanism and to the methodology for calculating the Performance Incentive are complex and can produce a wide range of consequences for ratepayers. For example, such changes may impact not only how much ratepayers pay overall, but may also shift the impact among the rate classes (as would be the case with

the percentage-of-bill non-residential recovery method) or affect the level and type of benefits received by ratepayers in exchange for their investment in EE (as would be the case with the proposed changes to the Performance Incentive).

Staff believes that, as compared to more narrowly focused dockets, rate cases provide ratepayers, including the different rate classes, more opportunity to intervene or file comments regarding any changes that may impact them. In addition, rate cases generally provide a better opportunity for potential problems or inequities to be identified and resolved.

Q. In the current docket, has there been input by intervenors representing different customer classes?

A. Yes. There have been a number of interventions in the current docket, including the Residential Utility Consumer Office ("RUCO"), Southwest Energy Efficiency Project ("SWEEP") and Freeport-McMoRan Copper & Gold Inc./Arizonans for Electric Choice and Competition ("Freeport-McMoRan/AECC"). RUCO represents the interests of residential customers, Freeport-McMoRan is a large industrial concern, and AECC is an association of industrial and large commercial class customers, while SWEEP is an energy efficiency advocate. RUCO, Freeport-McMoRan/AECC and SWEEP have participated in meetings and discussions, allowing residential, industrial and large commercial class customers to have input into the current proceedings.

Western Resources Advocate, a non-profit environmental law policy organization also intervened. More recently, EnerNoc applied for, and was granted, intervention. (EnerNoc is an implementer for TEP's Commercial Direct Load Control Program.)

Q. Who is representing the interests of small non-residential ratepayers in these current proceedings?

A. No intervenor appears to be representing the interests of small non-residential customers. In its Direct Testimony, however, Staff expressed concern about the percentage-of-bill recovery method for the non-residential sector, since this method would shift the burden to small commercial customers who would end up with the highest effective per-kWh rate of any customer class.

APPROVAL OF PROGRAMS AND MEASURES

Q. In her Direct Testimony, on pages 6-9, Denise Smith discusses the current status of TEP's DSM/EE programs, based on current funding levels. Does Staff wish to respond to Ms. Smith's testimony regarding program changes and funding?

A. Yes. Staff wishes to clarify and expand its testimony with respect to programs and measures that should be available at different funding levels, and wishes, also, to address the allocation of funding.

Q. If the Commission approves Staff's Recommendation, Alternative 1, or Alternative 2, should the program and measures recommended *in Staff's Proposed Order* docketed on November 16, 2011, and amended on February 29, 2012, also be approved?

A. Yes. In particular, Staff believes that the programs and measures recommended in Staff's Proposed Order should be approved if the Commission approves Staff's Recommendation, or either of Staff's proposed alternatives.

Approving the measures and programs recommended by Staff in its Proposed Order will provide TEP with an enhanced range of options on which to focus its EE efforts, at whatever spending level is approved.

ALLOCATION OF FUNDING

Q. How should the Company allocate whatever funding level is approved?

A. If the Commission approves Staff's Recommendation, that recommendation lists the funding levels for each measure/program. If the Commission approves some version of Staff's Alternative 1 or Alternative 2, the Commission may wish to specify how to allocate the spending level it approves, wholly or in part, or may leave the allocation process to TEP. If allocation is left to the discretion of TEP, TEP may elect to allocate its funding based on cost-effectiveness (as limited by the EE Rules) or take other factors into account, such as allocating among cost-effective programs and measures in a manner calculated to best serve all the major customer classes (for example, low-income, residential, small non-residential and large non-residential).[1]

DSM/EE COST RECOVERY: PERCENTAGE-OF-BILL VERSUS PER-KWH RECOVERY

Q. Does Staff agree with Kevin C. Higgins (pages 6-7 of his direct testimony) that the percentage-of-bill recovery method is more equitable and more transparent than the per-kWh method of recovery?

A. No. The percentage-of-bill recovery method would result in industrial customers, who are the largest end-users, paying the lowest effective per-kWh rate to recover the costs of EE programs. No convincing rationale, or equitable alternative, has yet been presented to justify setting a lower effective per-kWh rate for recovery of EE costs for these large end-users.

[1] Staff notes that R14-2-2408 B. of the Rules states that "[a]n affected utility shall allocate DSM funds collected from residential customers and from non-residential customers proportionately to those customer classes to the extent practicable."

Staff does not believe that a percentage-of-bill calculation is more "transparent" than a per-kWh charge, particularly given that the percentage would be applied against only certain components of the bill (taxes and other governmental assessments would be excluded). Staff believes that a per-kWh rate multiplied against the usage figure would be more transparent than the percentage-of-bill recovery method. Staff also believes that the inequity associated with percentage-of-bill recovery would outweigh ease of calculation (although Staff does not agree that Mr. Higgins' proposed methodology is easier) as a consideration in designing the recovery mechanism.

Q. Mr. Higgins has testified (pages 8-9) that it is important to consider the short term rate impacts from funding even cost-effective EE programs. Does Staff concur?

A. Yes. Staff believes that the financial impact of EE programs on ratepayers should always be calculated and considered, even in cases where EE is cost-effective.

Q. In his Direct Testimony (pages 8-9), Mr. Higgins expresses concern about the manner in which EE costs are recovered. Please describe his concerns.

A. Mr. Higgins states that "supply side costs are recovered from customers over the life of the investment. . .smoothing out the rate impact over time, whereas efficiency investment costs typically are recovered in full from customers by the utility upfront, i.e., expensed in a single year."

Q, Does Staff believe that changes to the way in which EE costs are recovered should be explored?

A. Yes. As indicated herein, Staff is contemplating a rate case proposal to treat recovery for investment in EE more like recovery for investment in other resources.

Q. Please summarize Staff's recommendations.

A. Staff's Rebuttal Testimony recommendations are summarized below.

- Staff recommends that if the Commission approves Staff's Recommendation, or one of Staff's two alternatives, and also elects to deal with lost fixed cost revenues in the current docket, TEP should be authorized to defer unrecovered fixed costs as described in Staff's Direct Testimony. The methodology used to defer unrecovered fixed costs associated with Staff's Recommendation or either alternative should be approved by Staff.

- Staff recommends that changes to the DSM Surcharge mechanism and to the Performance Incentive methodology should take place within TEP's recently filed rate case.

- Staff recommends that the programs and measures recommended in Staff's Proposed Order should be approved if the Commission approves Staff's Recommendation, or either of Staff's proposed alternatives.

Q. Does this conclude your Rebuttal Testimony?

A. Yes, it does.

OPEN MEETING

MEMORANDUM

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Arizona Corporation Commission
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AZ CORP COMMISSION
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EXHIBIT
S-3
ADMITTED

TO: THE COMMISSION

FROM: Utilities Division

DATE: November 16, 2011

RE: TUCSON ELECTRIC POWER COMPANY - APPLICATION FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN (DOCKET NO. E-01933A-11-0055)

On January 31, 2011, Tucson Electric Power Company ("TEP" or "the Company") filed its application for approval of the Company's Energy Efficiency Implementation Plan for 2011-2012 ("Implementation Plan"). On August 22, 2011, the Company filed updated information concerning several elements of the original filing, including the Residential Financing Program, the budgets, Implementation Plan savings, the Authorized Revenue Requirement True-up ("ARRT") and the Demand-side Management ("DSM") Adjustor.

The Implementation Plan and updated filing address the following issues and Company proposals:

i. *TEP Portfolio of Programs for 2011-2012.* The existing and proposed DSM programs and measures proposed for the Company's DSM through the 2012 program year;

ii. *DSM Performance Incentive.* TEP is proposing a performance incentive of $16.4 million for two years, based on a modification of the performance incentive structure.

iii. *Authorized Revenue Requirement True-up ("ARRT") Mechanism.* The ARRT Mechanism is intended to recover the revenue requirements associated with energy efficiency kWh savings until approval of decoupling or a similar mechanism in the Company's next rate case. TEP has proposed an updated ARRT of $16.7 million over two years; and

iv. *Proposed Demand-Side Management ("DSM") Surcharge ("DSMS").* The proposed DSMS is the rate, per kWh, at which the Company would recover its proposed DSM costs, DSM Performance Incentive, and ARRT.

Scope and Structure of Program Review

Existing and Proposed Programs. The TEP Implementation Plan is organized into four parts: (i) Residential; (ii) Commercial; (iii) Behavioral; and (iv) Support. For purposes of review, each sector has been addressed in the above order: New (Proposed) and Existing (with

modifications proposed) programs and Existing (without modifications proposed). The programs have been reviewed in the order indicated by Program Description Tables 1-4, herein.

Summarized descriptions are provided for existing programs, but the focus of Staff's review and analysis was new programs, proposed changes to existing programs and new Implementation Plan components or enhancements, along with the Company's proposals regarding the ARRT and the methodology for calculating the DSMS. Measures previously determined by Staff to be cost-effective were re-evaluated for cost-effectiveness if current information indicated that re-evaluation was necessary. Information from the August 2011 update has been incorporated into this review.

TEP Implementation Plan. The tables below list programs by sector, and indicate whether each program is new (proposed) or existing (with or without proposed modifications). A brief description is also provided. More detailed program descriptions are presented herein, in the order indicated in the following tables.

PROGRAM DESCRIPTION -- TABLE 1 (Residential)

RESIDENTIAL SECTOR		
Program Name	New (Proposed), Existing with modifications proposed or Existing without modifications proposed	Description
Appliance Recycling	New (Proposed)	Removes and recycles inefficient refrigerators and freezers.
Multi-Family	New (Proposed)	Promotes direct install of energy efficient measures at apartment complexes consisting of more than four apartments.
Efficient Products (formerly the CFL Buy-Down Program)	Existing, with additional measures proposed	Program currently promotes CFLs. The Company has proposed including advanced power strips, and energy efficient pool pumps and timers.
Low Income Weatherization	Existing, with expanded eligibility proposed (eligibility to track with that of federal LIHEAP Program)	Assists in making low-income homes more energy efficient.
Residential New Construction	Existing, no modifications proposed	Promotes the building of more efficient new homes.
Existing Homes and Audit Direct Install (formerly the Residential HVAC Program)	Existing, no modifications proposed	Promotes energy efficiency in existing homes.
Shade Tree	Existing, no modifications proposed	Promotes planting of desert-adapted shade trees in locations designed to enhance energy efficiency.
Residential Direct Load Control--Pilot	Existing, no modifications proposed	Reduced use of AC units through Utility control.

PROGRAM DESCRIPTION – TABLE 2 (Commercial)

COMMERCIAL SECTOR		
Program Name	New (Proposed) or Existing	Description
Bid for Efficiency -- Pilot	New (Proposed)	Customers or project sponsors develop a holistic EE project then bid competitively for incentives within broad program guidelines.
Retro-Commissioning	New (Proposed)	Involves using a systematic approach to identifying building equipment or processes that are not achieving optimal performance or results in an existing facility.
Schools Facilities	New (Proposed)	A program similar to the TEP C&I Comprehensive Program, but with a separate budget specifically for school facilities.
CHP Joint Program -- Pilot	New (Proposed)	Joint program in cooperation with Southwest Gas to promote increased development of CHP installations.
Small Business Direct Install	Existing, with new measures proposed	Persuade small business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program.
C&I Comprehensive	Existing, with new measures proposed	Persuade business customers to install high-efficiency equipment at their facilities and encourage contractors to provide turn-key installation services to business customers.
Commercial Direct Load Control	Existing, no modifications proposed	A third-party implementation contractor negotiates load reduction agreements with multiple customers and "aggregates" these customers to provide TEP a guaranteed load reduction upon request.
Commercial New Construction	Existing, with proposed new measure	A re-branding of the Efficient Commercial Building Design Program intended to assist customers in designing and constructing energy efficient buildings.

PROGRAM DESCRIPTION – TABLE 3 (Behavioral)

Behavioral Sector		
Program Name	New (Proposed) or Existing	Description
Behavioral Comprehensive	New (Proposed) and Existing Components	A variety of educational/behavioral programs, including direct canvassing, K-12 education, community education, in home energy use monitors and CFL giveaway outreach events.
Home Energy Reports	Existing, no modifications proposed	Energy reports comparing a customer's usage to that of their neighbors. Reviewed herein as part of the Behavioral Comprehensive Program.

PROGRAM DESCRIPTION – TABLE 4 (Support)

Support Sector		
Program Name	New (Proposed) or Existing	Description
Residential Energy Financing	New (Proposed)	Low-interest unsecured loans for energy efficiency measures installed in existing homes
Energy Codes Enhancement Program	New (Proposed)	Seeks to improve the level of compliance with existing local building energy codes and supports the periodic updating of these codes.

Education and Outreach	Existing. On-line Energy Audits and Academic Education components transferred to Behavioral Comprehensive sector programs.	Education programs designed to increase participation in the TEP Implementation Plan and promote changes in behavior.
Support and Program Development	Existing, tracks with portfolio program requirements	Costs for program design, development and resources necessary to meet reporting requirements of the EE Standard

BUDGETS: 2011 and 2012

Below are the proposed budgets for the TEP Implementation Plan, by sector, program and category for 2011 and 2012. Although the budgets for two years are included herein, the programs will not conclude at the end of those two years but, instead, will continue until further Commission action. The Implementation Plan budgets were updated in August 2011, in the Notice of Filing Updated Information In Support of [the] 2011-2012 Electric Energy Efficiency Implementation Plan. The tables below reflect the updated budgets.

Proposed costs for the DSM performance incentive and the ARRT are not included in this table.

UPDATED TEP EE IMPLEMENTATION PLAN BUDGET 2011 TABLE

Sector	Program Name	Incentives	Program Delivery	Program Marketing	Program Administration	Evaluation	Total
Residential	Efficient Products	$1,291,500	$418,603	$256,515	$49,296	$80,637	$2,096,550
	Appliance Recycling	$0	$20,713	$5,178	$14,085	$1,599	$41,574
	Residential New Construction	$1,140,000	$476,800	$200,000	$17,850	$73,386	$1,908,036
	Existing Homes/Audit Direct Install	$1,154,360	$618,697	$265,959	$17,850	$61,706	$2,118,572
	Shade Tree	$200,000	$78,853	$13,943	$14,085	$12,275	$319,155
	Low-Income Weatherization	$525,000*	$48,568	$5,736	$14,085	$17,802	$611,190
	Multi-Family	$0	$0	$0	$0	$0	$0
	Residential Direct Load Control (Pilot)	$0	$655,000	$98,250	$12,750	$19,150	$785,150
	Subtotal	**$4,310,860**	**$2,317,232**	**$845,580**	**$140,000**	**$266,554**	**$7,880,227**
Commercial	C&I Comprehensive	$2,165,375	$1,125,568	$329,094	$28,169	$145,928	$3,794,134
	Commercial Direct Load Control	$650,000	$625,283	$0	$10,563	$50,000	$1,335,846
	Small Business Direct Install	$1,505,956	$654,855	$324,122	$14,085	$99,961	$2,598,978
	Commercial New Construction	$279,310	$59,695	$33,900	$14,085	$15,480	$402,469
	Bid for Efficiency (Pilot)	$0	$34,160	$4,441	$7,042	$1,826	$47,469
	Retro-Commissioning	$0	$0	$0	$0	$0	$0
	Schools Facilities	$0	$0	$0	$0	$0	$0
	CHP Joint Program (Pilot)	$0	$20,000	$2,000	$0	$0	$22,000
	Subtotal	**$4,600,640**	**$2,519,560**	**$693,557**	**$73,944**	**$313,194**	**$8,200,896**

Behavior	Home Energy Reports	$247,500	$85,913	$16,671	$35,211	$15,412	$400,706
	Behavioral Comprehensive	$110,450	$300,794	$50,000	$14,085	$19,013	$494,341
	Subtotal	**$357,950**	**$386,706**	**$66,671**	**$49,296**	**$34,425**	**$895,048**
Support	Education and Outreach	$0	$350,000	$16,530	$9,859	$7,528	$383,917
	Residential Energy Financing	$4,000	$85,000	$36,399	$14,085	$3,331	$142,815
	Codes Support	$0	$41,250	$6,188	$0	$1,898	$49,335
	Program Development, Analysis and Reporting Software[1]	$0	$630,238	$0	$0	$0	$630,238
	Subtotal	**$4,000**	**$1,106,488**	**$59,117**	**$23,944**	**$12,756**	**$1,206,305**
	TOTAL	**$9,273,450**	**$6,329,987**	**$1,664,925**	**$287,183**	**$626,930**	**$18,182,475**
Percentage of Total Budget		**51%**	**35%**	**9%**	**2%**	**3%**	**100%**

*For the Low-Income Weatherization Program, payments to the community action agencies responsible for managing and implementing the weatherization projects are classified as incentives.

UPDATED TEP EE IMPLEMENTATION PLAN BUDGET 2012 TABLE

Sector	Program Name	Incentives	Program Delivery	Program Marketing	Program Administration	Evaluation	Total
Residential	Efficient Products	$1,571,232	$417,639	$298,331	$50,775	$93,519	$2,431,495
	Appliance Recycling	$189,000	$562,822	$60,146	$14,507	$33,059	$859,533
	Residential New Construction	$915,000	$565,505	$200,000	$18,386	$67,956	$1,766,846
	Existing Homes/Audit Direct Install	$2,253,180	$698,233	$442,712	$18,386	$102,375	$3,514,886
	Shade Tree	$200,000	$84,336	$14,217	$14,507	$12,522	$325,582
	Low-Income Weatherization	$525,000	$53,207	$5,782	$14,507	$17,955	$616,451
	Multi-Family	$40,950	$94,234	$13,518	$14,507	$6,528	$169,738
	Residential Direct Load Control (Pilot)	$40,000	$105,370	$21,806	$13,133	$4,508	$184,816
	Subtotal	**$5,734,362**	**$2,581,346**	**$1,056,511**	**$158,707**	**$338,422**	**$9,869,348**
Commercial	C&I Comprehensive	$2,557,394	$1,162,607	$372,000	$29,014	$164,841	$4,285,856
	Commercial Direct Load Control	$1,452,000	$1,259,079	$0	$10,880	$30,000	$2,751,959
	Small Business Direct Install	$1,753,478	$676,286	$364,465	$14,507	$112,349	$2,921,085
	Commercial New Construction	$279,310	$62,676	$34,199	$14,507	$15,628	$406,319
	Bid for Efficiency (Pilot)	$330,000	$85,253	$53,983	$14,507	$19,350	$503,092
	Retro-Commissioning	$110,000	$24,141	$20,121	$14,507	$6,751	$175,520
	Schools Facilities	$78,158	$52,287	$6,914	$14,507	$6,075	$157,941

[1] Although classified as delivery costs by the Company, this budgetary item relates more to overall Implementation Plan management than to the delivery of specific programs.

	CHP Joint Program (Pilot)	$0	$20,000	$2,000	$0	$0	$22,000
	Subtotal	**$6,560,340**	**$3,342,329**	**$853,681**	**$112,430**	**$354,993**	**$11,223,772**
Behavior	Home Energy Reports	$513,200	$69,283	$29,124	$36,268	$25,915	$673,790
	Behavioral Comprehensive	$602,380	$698,765	$50,000	$14,507	$54,626	$1,420,279
	Subtotal	**$1,115,580**	**$768,048**	**$79,124**	**$50,775**	**$80,541**	**$2,094,069**
Support	Education and Outreach	$0	$350,000	$17,026	$10,155	$7,544	$384,724
	Residential Energy Financing	$7,995	$375,415	$37,458	$14,507	$7,270	$442,645
	Codes Support	$0	$56,180	$8,427	$7,979	$2,903	$75,490
	Program Development, Analysis and Reporting Software	$0	$649,145	$0	$0	$0	$649,145
	Subtotal	**$7,995**	**$1,430,740**	**$62,911**	**$32,641**	**$17,717**	**$1,552,004**
	TOTAL	**$13,418,277**	**$8,122,464**	**$2,052,227**	**$354,552**	**$791,673**	**$24,739,193**
Percentage of Total Budget		**54%**	**33%**	**8%**	**1%**	**3%**	**100%**

SAVINGS: 2011 AND 2012

TEP reports that the Company anticipates meeting the EE standards for both 2011 and 2012. Based on the August 2011 filing, the Company anticipates total savings of approximately 311,146,000 kWh (or 311,126 MWh) for 2011 and 2012. The following table shows TEP's projected savings by year, and the percentage of cumulative savings, as compared to the previous year's retail sales (2010 retail sales are actual, but 2011 sales are forecast).

Year	Retail Energy Sales (MWh)	Projected Incremental Annual Energy Savings (MWh)	Projected Cumulative Annual Energy Savings (MWh)	Cumulative Annual Savings as a % of previous year Retail Sales	Cumulative EE Standard
2010	9,291,788				
2011	9,335,237	135,781	135,781	1.46%	1.25%
2012		175,365	311,146	3.33%	3.00%

RESIDENTIAL PROGRAMS

A. APPLIANCE RECYCLING

Program Description. TEP's proposed new Appliance Recycling Program ("Appliance Program") is designed to remove and recycle inefficient working refrigerators and freezers. TEP cites national studies indicating that approximately 20% of customers have at least one

secondary inefficient refrigerator or freezer in their home, suggesting a significant potential for energy savings in this sector. The goal is to recycle 5,400 units per year, for 2011-2013. The Appliance Program would offer residential customers a $35 incentive, plus free pick-up and recycling for working, but inefficient, refrigerators and freezers.

The Appliance Recycling Program permanently removes inefficient appliances that might otherwise remain in service, either at the customer's home, or elsewhere through donation or resale. In addition, the recycling program removes the usual barriers to taking these appliances offline by eliminating both the cost and the inconvenience associated with disposing of inefficient appliances.

Program Objectives and Rationale. Second refrigerators and freezers are usually older models and are often less efficient and more costly to operate than up-to-date efficiency appliances. TEP estimates an average monthly dollar savings of $8.47 for refrigerators and $6.55 for freezers for its customers. Savings can go higher. For example, the TEP Green Energy site estimates that a standard, non-Energy Star side-by-side standard refrigerator (15 to 20 years old), uses an average of 190 kWh per month and costs $17.10 to operate, while the comparable Energy Star refrigerator uses 44 kWh per month and costs $3.96. The Energy Star site notes that replacing a refrigerator from the 1970s can save more than $200 per year, while replacing a refrigerator from the 1980s can save over $100 per year. Another consideration is that the existing inefficiencies of older refrigerators and freezers may be magnified by storage in garages or on porches, causing them to expend more power in order to keep their contents cool, and making them even more costly for consumers to operate.

Eligibility. The Program is open to TEP residential customers with operable inefficient refrigerators or freezers of between 10 and 30 cubic feet in size. Households are limited to two recycling rebates per year.

Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Delivery and Marketing Strategy. The Appliance Program would utilize an experienced appliance recycling contractor, JACO, to: (i) market the program; (ii) verify customer's eligibility; (iii) process incentives; (iv) pick up eligible appliances; and (v) responsibly recycle the appliances.

The TEP application emphasizes that prompt processing of incentive payments is essential to customer satisfaction.

Program Analysis/Issues. The JACO recycling facility in Phoenix will recycle all the appliances picked up from the TEP service territory. JACO was chosen because the company has a recycling center in Phoenix capable of meeting the TEP Appliance Recycling Program's needs. (It would not be cost-effective for JACO to set up a facility in the TEP territory, because JACO would require at least 10,000 units per year for three years to cover the estimated

$250,000 in construction costs.) JACO will set up a local office and storage facility for the TEP area, and will store appliances locally until they can be transported in quantity, in order to minimize shipping costs.

JACO's website states that it completely deconstructs each unit and safely disposes of toxins and ozone-depleting chlorofluorocarbon gases (CFC-11). JACO ensures that over 95% of the components and materials are recycled or "eliminated in an environmentally responsible way."

Cost-Effectiveness. Based on Staff's analysis, the refrigerator measure has a benefit-cost ratio of 2.91 and the freezer measure has a benefit-cost ratio of 2.21, making both measures cost-effective.

Staff Recommendation. Staff recommends that the TEP Appliance Recycling Program be approved and that it include both the refrigerator and freezer measures.

Staff also recommends that the Company offer a $30 incentive, rather than the $35 incentive proposed, but that the overall budget for incentives not be decreased. A $30 incentive would be consistent with the incentives offered under the Arizona Public Service Company ("APS") and the Salt River Project ("SRP") appliance program, and would allow more TEP customers to participate, potentially removing more inefficient appliances from the grid. (The proposed total incentive budget is $189,000. A per-unit incentive of $35 would allow 5,400 TEP customers to participate, while an incentive of $30 would allow 6,300 to participate.)

Staff also recommends that the Appliance Recycling Program be expanded to include non-residential customers with extra working refrigerators or freezers eligible for recycling, with the same limit of two appliances per year, per customer. Expanding eligibility to non-residential customers with eligible appliances would provide more TEP customers, particularly small businesses, with an opportunity to participate in the Appliance Recycling Program. Such expanded eligibility potentially enhances participation levels and could help to get additional inefficient appliances permanently off the grid.

B. Multi-Family Housing Efficiency Program

Program Description. The proposed new Multi-Family Housing Efficiency Program ("Multi-Family Program") would promote energy efficiency in the residential multi-family sector, to properties with five or more units. The Multi-Family Program is designed to overcome barriers typical to the multi-family housing market, which has limited participation in energy efficiency programs.

The Multi-Family Program would offer property owners and managers the following options: (i) direct installation of CFLs, low-flow showerheads and faucet aerators; and (ii) improvements to common areas handled by the Small Business Direct Install Existing Facilities ("SBDIEF") Program. Once the Multi-Family Program has ramped up and matured, TEP will

look into developing a third track for existing complexes that are not part of a major renovation or rehabilitation. If cost-effective, and if approved by the Commission, this third track would focus on improvements to the building shell, including insulation and air sealing.

Objectives and Rationale. Multi-family housing offers large potential savings through economies of scale, but this has been a difficult sector to reach, in part because owners may not directly benefit from improving energy efficiency. By reducing key market barriers and targeting key decision makers, the Multi-Family Program may produce energy savings in this under-addressed market segment.

The objectives of the Multi-Family Program are to:

- Reduce peak demand and overall energy consumption in the multifamily housing market segment;
- Promote energy efficiency retrofits of both dwelling units and common areas in this market segment;
- Increase overall awareness about the importance and benefits of energy efficiency improvements to the landlord and property ownership community; and
- Help meet the energy savings targets of the TEP DSM Implementation Plan.

Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Delivery and Marketing Strategy. Delivery of the direct installation, rehabilitation and new construction components of the Program will be handled by an implementation contractor.

Marketing and communications strategies will include website updates, local newspapers and radio, bill messages and bill inserts, training seminars, call center on-hold messages, direct mail promotion, outreach to rental housing industry associations, and work with contractors and industry specialists. A primary emphasis will be placed on larger, older, and less efficient complexes.

Program Analysis/Issues. Barriers to energy efficiency programs in the multi-family market segment include: (i) split incentives, (ii) lack of capital, and (iii) lack of information about energy efficiency improvements. These barriers are described in more detail, below.

Split Incentives. "Split incentives" describes the problem that arises in promoting energy efficiency in rental units. The builders who construct rental properties, and the owners who would be responsible for upgrades, do not usually pay the energy bills. Consequently, builders and owners do not directly benefit from the lower energy costs that arise from investing in

efficiency measures, reducing or eliminating their incentive to participate in energy efficiency programs. At the same time, the renters who would benefit from lower energy bills have no direct influence over original construction and, with respect to renovations or retrofits, may not have the authority, the incentive or the means to invest in energy efficiency for housing they do not own.

Lack of Capital and Awareness. Other problems can include a lack of capital for improvements and a lack of awareness about energy efficiency. The Multi-Family Program would address both through direct installation of low cost energy efficiency improvement in existing complexes and through energy efficiency improvements to common areas through the Small Business Direct Install Existing Facilities Program.

Commercial Versus Residential Multi-Family Housing. Another issue is that ownership and decision-making tends to vary for multi-family housing, depending on the number of units. Properties with 2-4 dwelling units typically fall under residential financing guidelines and, for these smaller properties, the decision-makers are usually individuals. Larger properties with 5 dwelling units or more typically fall under commercial lending guidelines and decision-makers (at least for larger complexes) are typically corporate, institutional, or trusts (e.g., Real Estate Investment Trusts). As such, the decision-making process and access to capital varies between these two market segments. With this distinction in mind, the Company believes that the 2-4 unit market segment can be best served by the Residential Existing Home and Audit Direct Install Program, while the 5+ Multifamily Housing market segment would be served by the proposed Multifamily Program.

Cost-Effectiveness. Based on Staff's analysis, the benefit-cost ratio for each of the three proposed direct install measures is approximately 2.1, making all three measures cost-effective.

As noted elsewhere, improvements to common areas will be a part of the Small Business Direct Install Existing Facilities Program. Costs and savings associated with the common area improvements will, accordingly, be tracked as a part of that program.

Staff Recommendation. Staff recommends that the proposed Multi-Family Program be approved, but that older, less efficient and low-income complexes be a primary focus for the Multi-Family Program's activities.

RESIDENTIAL EXISTING PROGRAMS (WITH PROPOSED MODIFICATIONS)

C. Efficient Products

Program Description. This is an existing Residential program previously approved by the Commission in Decision No. 70383 (June 13, 2010), with proposed new measures. The Efficient Products Program (formerly called the CFL Buy-Down Program) would promote the purchase of energy efficient retail products through in-store buy-down promotions. In addition to the existing CFL measure, four new measures are proposed for the Efficient Products Program, beginning in 2012. The measures and proposed incentives are as follows: (i) Variable Speed

Pool Pump ($200 per unit); (ii) Pool Pump Timer ($75 per unit); (iii) Residential LED light ($30 per bulb) and (iv) Advanced Power Strips ($10 per sensor). CFL incentives vary by type of CFL, but the average is $1.14 per unit.

Program Objectives and Rationale. The new measures will offer residential customers additional opportunities to increase energy efficiency. The Efficient Products Program promotes market transformation through retail partnerships, training for retail staff, and increased stocking and selection of efficient retail products.

Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Delivery and Marketing. TEP is not proposing any significant changes in implementation approach or delivery strategy, except for the addition of new measures starting in 2012. Delivery channels for the new measures will continue to be via a combination of both buy-downs and possible mail-in rebates with participating retailers. Program marketing is primarily through mass-market channels (e.g., radio, newspaper, website, etc.) and through education and training of participating retailers.

Program Analysis/Issues. While there are reports questioning the life expectancy of CFLs in practice, there is currently very little actual study data on the lifespan of CFLs. (Verification testing requires only that eight out of ten units operate for 40% of rated life.) Assumptions regarding the lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions should be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

Cost-Effectiveness. To be cost-effective, an energy efficiency measure should have a benefit-cost ratio above 1.0, based on a comparison of avoided costs with costs incurred to purchase and deliver an energy efficiency measure. The existing CFL measure was found to be cost-effective when it was approved, with a 1.6 benefit-cost ratio, and the most recent semi-annual DSM filing (for January through June 2011) reported demand and energy savings for 2010 that were significantly above projections, indicating a higher than anticipated benefit-cost ratio.

Three of the proposed new measures have benefit-cost ratios above 1.0, while one does not. The Variable Speed Pool Pump has a benefit-cost ratio of 1.4, the Advanced Power Strips have a benefit-cost ratio of 1.8, and the Pool Pump Timer measure has a benefit-cost ratio of 2.4. The Residential LED light has a benefit-cost ratio of 0.77, well below 1.0. The lower benefit-cost ratio is largely due to energy savings that are low compared to the cost of the measure.

Staff Recommendations.

- Staff recommends that the Efficient Products Program be approved, and continue to offer CFLs, with the addition of the Variable Speed Pool Pump, Advanced Power Strip and Pool Pump Timer measures.

- Staff also recommends that the Residential LED Light measure not be approved at this time, but that the budget associated with Residential LED Light measure be re-allocated to the Efficient Products Program measures approved by the Commission.

- Staff recommends that the lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

D. Low-Income Weatherization

Program Description. The Low-Income Weatherization ("LIW") Program is an existing program designed to conserve energy and lower utility bills for TEP households with limited incomes. The primary goal of the LIW Program is to fund weatherization for low-income homes, to reduce energy costs and improve comfort and safety for low-income customers. The LIW Program also conserves energy, and reduces both electric and gas consumption.

Program Objectives and Rationale. The objective of the Program is to coordinate with the Arizona Energy Office (now the Governor's Office of Energy Policy ("OEP")) to follow state Weatherization Assistance Program rules in using TEP ratepayer funds to lower household energy consumption for low-income customers and increase the number of weatherized homes.

Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Delivery and Marketing Strategy. The Program is delivered through the Tucson Urban League ("TUL") and Pima County Community Services ("PCCS"). Due to the popularity of the Program, revenues are not allocated to advertising and promotion. Promotion takes place through presentations to community organizations, through information left at community and recreation centers, and through calls directed from TEP. TEP also promotes the Program on its website and through speaking engagements and outreach presentations.

Program Analysis/Issues. TEP is proposing to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"). Currently, eligibility for the TEP LIW Program is set at 150 percent of the federal poverty level, while the federal LIHEAP eligibility level is set at 200 percent. Increasing the

TEP LIW eligibility level would allow the Program to serve more customers, and tracking the TEP level with the level set by LIHEAP (whether increasing or decreasing) would streamline the administrative process for community action agencies delivering the Program.

Cost-Effectiveness. The benefit-cost ratio for the Low-Income Weatherization Program is 1.03, slightly above the level required for cost-effectiveness.

Staff Recommendation. The Low-Income Weatherization Program enhances the energy efficiency of low-income Residential household on a cost-effective basis, reducing utility costs and improving the health and safety for low-income customers.

- Staff recommends that the Low-Income Weatherization Program be approved for continuation as part of TEP's Implementation Plan.

- Staff also recommends that TEP be allowed to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"), so that the eligibility levels remain consistent over time.

E. Residential New Construction

Program Description. The Residential New Construction Program, also known as the Zero Net Energy Homes Program, is a continuation of the existing program design that was approved by Decision No. 71638 (April 14, 2010). The Residential New Construction Program is designed with an incentive schedule that awards larger incentives for more efficient homes. The incentive schedule for the Residential New Construction Program provides a $400 incentive for each Tier 1 home, a $1,500 incentive for each Tier 2 home, and a $3,000 incentive for each Tier 3 home.

To qualify for an incentive, homes must be tested by an approved energy rater, and meet one of the three tiers in the Program based on a Home Energy Rating System ("HERS") Index score. On the HERS index scale, a score of 100 is considered the average efficiency of baseline new construction, while a HERS index score of 0 represents a home that produces all of its energy through on-site generation from renewable energy. In other words, the lower the HERS score, the more efficient the home. Under the Residential New Construction Program, Tier 1 requires a minimum HERS score lower than or equal to 85, Tier 2 requires a HERS score lower than, or equal to, 70, and Tier 3 requires a HERS score lower than, or equal to 45.

Program Objectives and Rationale. The objectives of the Residential New Construction Program are to advance energy efficient building practices through builder training, and to increase customer awareness of the benefits associated with energy efficient construction, combined with application of renewable technologies, such as solar photovoltaic and solar hot water systems consistent with achieving the goals of the Arizona Renewable Energy Standard.

Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Delivery and Marketing Strategy. Program delivery is provided by TEP staff, and participation of independent RESNET approved home energy raters. TEP provides outreach to targeted builders, conducts builder training on marketing ENERGY STAR homes and on the ENERGY STAR performance standard, and mentors participating builders and raters.

The Program is marketed to select builders primarily through direct business-to-business contacts. The Program is marketed to consumers at home shows, parade of homes, and other events focused on homebuilding as advertised through mass market and targeted media outlets.

Program Analysis/Issues. In Decision No. 71638, Tier 2 and Tier 3 were added to the existing Residential New Construction Program, with monetized carbon values taken into account in calculating cost-effectiveness. (TEP included potential costs of complying with carbon dioxide (CO2) regulation in its benefit-cost calculations.) Without the monetized carbon value, Tier 2 had a benefit-cost ratio of 0.75, well below the 1.0 benefit-cost ratio required for cost-effectiveness. No benefit-cost analysis of Tier 3 was done because, according to information provided by TEP, the only difference between Tier 2 and Tier 3 were the additional costs for solar measures.

Staff did not recommend approval of the Zero Net Homes Program, as proposed, but found that Tier 2 had a benefit-cost ratio of 1.1, if the Company's lowest proposed CO2 value was included.

The Commission approved the Zero-Net Energy Homes Pilot Program in April 2010, stating "The Commission believes that TEP's Pilot Program advances the Company's efforts with regard to energy efficiency and broadens its current program offerings." The Decision also noted that "inclusion of a modest CO2 value in determining the proposal's cost effectiveness is appropriate, particularly for a pilot project and in light of likely Federal action addressing carbon within the proposed pilot project timeframe."

To date, no federal action has taken place which creates a clearly monetized value for the avoided costs of complying with carbon dioxide regulation. Without a monetized value, Staff practice has been to assume that the value of avoided emissions, although unknown, is greater than zero, and likely to make measures with benefit-cost ratios close to 1.0 cost-effective in practice.

Cost-Effectiveness. Benefit-cost ratios for the three New Residential Construction tiers were re-evaluated to determine cost-effectiveness based on current information, and taking into account the absence of federal regulations regarding carbon. Staff included gas savings for Tier 1 and Tier 2 (for duel fuel homes) when calculating updated cost-effectiveness.

Based on the Societal Test, and without monetized carbon values, the benefit-cost ratio for Tier 1 homes is 1.17, making the Tier 1 measure cost-effective. The benefit-cost ratio for Tier 2 is 0.88, making Tier 2 too low to be considered cost-effective, even taking into account the non-monetized environmental savings.

Staff Recommendation. Staff recommends that the Tier 1 measure be approved for continuation, but recommends that the Tier 2 and Tier 3 measures not be continued. If the Commission does not approve the Tier 2 and Tier 3 measures, Staff recommends that they be discontinued once the Residential New Construction Program has met its existing commitments for Tier 2 and Tier 3 homes.

F. Existing Homes and Audit Direct Install

Program Description. The Existing Homes and Audit Direct Install ("Existing Homes") Program is an existing program that replaced the former Residential HVAC Program (approved by Decision No.72028 in December 10, 2010). No modification of this Program is being proposed in the current filing.

The Existing Homes Program is targeted to existing homes in need of energy efficiency improvements. The Program has two components, an initial energy audit with direct install of CFLs and advanced power strips, followed by identification of actionable, larger scale home energy efficiency improvements and referral to local Building Performance Institute ("BPI") certified contractors to implement major home energy improvements such as insulation, air-sealing and HVAC. Rebates are paid to contractors for HVAC and thermal envelope measures, with incentives ranging from $250 to $1,700 per measure. The current average total incentive per participating home is approximately $1,000. TEP plans to submit the Existing Home Program to EPA with a request to utilize EPA labeling as Home Performance with ENERGY STAR.

Program Objectives and Rationale. The Existing Homes Program achieves energy and demand savings from the installation of energy efficient measures and contributes toward transforming the industry to emphasize best practice building science principles. The Existing Homes Program invests in training and mentorship of participating contractors to understand the "house as a system" building science and to achieve BPI certification. TEP has included a Residential Financing Pilot Program in this Plan for 2011-2012 which will be used to enhance participation in this program.

Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Delivery and Marketing Strategy. TEP provides program management oversight and marketing. A third party implementation contractor will be responsible for recruitment, training, and mentorship of participating contractors and trained energy auditors, data tracking, rebate processing and technical support. Auditors will provide referrals to BPI certified contractors and

referral information will be reported to TEP. Measure installation to residential customers will be provided by participating independent contractors. In 2011-2012, program delivery will be coordinated with APS and Southwest Gas Corporation ("Southwest Gas") to address programming overlap among the utilities.

TEP provides program marketing and customer awareness-building through website promotion, community interest groups, mass-market channels (e.g. radio, newspaper, etc.), brochures and bill inserts, high bill inquiries, trade ally marketing efforts, contractor enrollment and training.

Cost-Effectiveness. The enhanced Existing Homes Program was approved in December 2010, with a benefit-cost ratio of 1.06, making the Program cost-effective. No modifications of the Program have been proposed, so a re-calculation of cost-effectiveness was not necessary.

Staff Recommendation. Staff recommends that the Existing Homes and Audit Direct Install Program be approved for continuance.

G. Shade Tree

Program Description. The Shade Tree Program is an ongoing element of the Implementation Plan, approved in Decision No. 70455 (August 6, 2008). No modifications have been proposed for the Shade Tree Program. The Shade Tree Program promotes energy conservation and environmental benefits by motivating customers to plant desert-adapted trees in locations where the trees will provide shade and reduce HVAC load. TEP customers are allowed to purchase shade trees for $8.00 per tree, if they agree to plant the trees on the east, west, or south sides of their homes.

Program Objectives and Rationale. The objectives of the Program are to promote the strategic planting of trees to provide shade, thereby reducing the cooling load of homes and associated energy usage and to educate school-age children and the public on the conservation and environmental benefits of planting trees.

In addition, there are Community and the Schools tree planting projects, but these must meet the planting criteria outlined for planting residential trees.

Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program. Program funds are leveraged with a significant in-kind contribution of labor, material and technical support from individuals and the community.

Delivery and Marketing Strategy. TEP provides DSM funds for the planting of trees within the guidelines that provide kWh savings. TEP partners with Trees for Tucson, a local non-profit organization that manages and administers the Program.

Due to the popularity of the Program, DSM revenues are not normally allocated for advertising and promotion. TEP employees currently inform customers about the Program during speaking engagements and outreach presentations. Other efforts entail website promotion, newspaper advertising, planting and care brochure, presentations at schools, tree tours, and tree care workshops.

Cost-Effectiveness. In Decision No. 70455, Staff calculated the benefit-cost ratio for this Program at 3.14, making it highly cost-effective. No modifications have been proposed for this Program.

Staff Recommendation. Staff recommends that the TEP Shade Tree Program be approved for continuance.

H. Residential and Small Commercial Direct Load Control – Pilot

Program Description. TEP is requesting budget approval to continue this program with no additional modifications. The Residential and Small Commercial Direct Load Control ("DLC") Program was first approved in Decision No. 71846 (August 25, 2010). With the DLC Program TEP intends to better manage peak demand and to mitigate system emergencies through direct load control of residential central air-conditioners ("AC").

The DLC Program will use two-way communication that sends load control signals to equipment at the home and provides interval consumption data back to TEP for all participants. The two-way communication will allow TEP to provide usage and billing information to customers via an in-home display or the Internet.

Participants will receive either: (i) a free thermostat that can be programmed manually or remotely via the Internet; or (ii) a load control device placed on their air conditioning unit. In exchange, customers will permit TEP to cycle AC units or raise thermostat temperature settings for a limited number of hours or events per year. It is expected that TEP will call roughly 8 to 10 load control events each year. Customers will have the option to change thermostat settings or override cycling strategies during a control event, but could risk penalty if they do so repeatedly.

Program Objectives and Rationale. The DLC Program pilot is intended to control air conditioners during peak hours as a cost-effective means to reduce peak system load.

Delivery and Marketing Strategy. The Program's delivery strategy includes a third party implementation contractor, Tendril Networks, whose responsibilities include provision of load control equipment and control software that can be used by TEP to call and monitor load control events, training on software and assistance in designing effective load control strategies, recruitment of participants, participant tracking, technology installation, marketing, and call center/customer satisfaction.

Recruitment is based on specific criteria to ensure participants represent the population of eligible customers. Participants are required to have functioning broad band connection and would receive a $50 incentive. Customers also receive an internet-enabled programmable thermostat that will be installed by a qualified contractor at no cost to the customer. Residential recruitment started in June 2011 with an email marketing request for applications. Installation of program devices is underway.

Cost-Effectiveness. As discussed in Decision No. 71846, Staff calculated a benefit-cost ratio of 1.39 for the DLC Program.

Staff Recommendation. Staff recommends continuation of the Residential and Small Commercial Direct Load Control Program.

Measurement, Evaluation, and Research. As discussed in Decision No. 71846, TEP intends for an independent evaluation contractor to conduct a process evaluation, an impact evaluation and a technology assessment.

Reporting. Reporting shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2409.

I. Bid for Efficiency

Program Description. Under TEP's Bid for Efficiency Program ("BFE Program"), customers or project sponsors would conceive their own projects and then bid competitively for incentives within broad program guidelines. TEP would then select winning applicants based on specified criteria.

BFE Program participants and project sponsors may include commercial customers, Energy Service Companies ("ESCOs") or other aggregators who organize proposals that involve multiple sites.

Program Objectives and Rationale. The BFE Program seeks to encourage customers and project sponsors to think holistically regarding energy systems and to develop projects designed to optimize system energy use by encouraging a systems approach to energy efficiency.

The BFE Program would provide an incentive for participants to use multiple EE approaches at one or several sites simultaneously. The subject Program attempts to address customer market barriers such as small savings levels at multiple sites, longer payback periods and organizing implementation contractors.

TEP's implementation goals for the Program are as follows:

- Ensure projects are submitted, approved, implemented and verified in a timely manner;

- Allow each project to be customer-driven; responsibility will be placed on the customer (or project sponsor) to select appropriate trade and professional allies to design and implement the project and to prepare the incentive application;

- Encourage implementation of multiple measures for comprehensive projects; and

- Encourage aggregated applications that involve implementation at multiple sites.

Budget. TEP requested a budget of $47,469 for the first year (2011) of the BFE Program and a budget of $503,092 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Delivery and Marketing. The BFE Program will focus on market segments with significant savings potential, unique load or energy savings characteristics, and those that require specialized delivery or support services. The target market consists primarily of larger customers and customer groups that may include grocery stores, convenience stores, or data centers, business sectors that have historically been hard to reach.

Eligibility. Any entity, customer, or project sponsor may participate if the proposal meets the minimum application requirement of 200,000 kWh in savings for the first year. Electric loads may be aggregated among multiple facilities to meet the kWh threshold. Eligible project sponsors may include, but are not limited to TEP customers, ESCOs and engineering / architecture firms. Any third-party project sponsor must submit an application with the consent and support of the identified TEP customer. To provide participants with maximum flexibility, the Program will not explicitly specify eligible measures, but, pre- and post-installation metering will be required to ensure that savings estimates are in line with actual savings produced by the projects. All proposed measures must meet the following requirements:

- Produce a measurable and verifiable reduction in energy consumption;

- Produce savings through an increase in energy efficiency or better utilization of energy through improved production equipment or controls;

- Be installed in a retrofit application;

- Have a useful life of five years or greater; and

- Prove cost effective using the Societal Cost Test (applies to total project including all measures).

Examples of eligible measures include, but are not limited to, installation of Premium efficiency motors, lighting system upgrades, HVAC system improvements, heat recovery systems, and energy system control upgrades. Project sponsors are free to propose measures, as long as the above requirements are met. TEP anticipates an average incentive of $0.15 / kWh, based on multiple measures with varying savings. With average savings of 400,000 kWh per project, the average incentive would be $60,000.

The following implementation process is proposed for the BFE Program:

- TEP, and/or its implementation contractor ("IC"), will advertise the BFE Program to target customers and trade allies;
- Customers or trade allies will submit bids for its EE projects.
- TEP/IC will evaluate projects and make awards;
- TEP/IC will perform pre-installation metering;
- Customer will implement the proposed project;
- TEP will pay 50 percent of the incentive amount prior to installation;
- TEP/IC will perform post-installation metering; and
- TEP will pay the remaining incentive amount based on the actual M&V energy savings (based on first year operation).

TEP proposes to implement the BFE Program as a pilot during 2011 and 2012. Pilot results would be evaluated in 2013. If the market response and measure savings indicate the Program is cost-effective, and achieving substantial savings, the Company would include the full Program offering in its 2014 DSM Implementation Plan.

Program Analysis/Issues. The BFE concept is being used by several other western utilities, including San Diego Gas & Electric in California and Xcel Energy in Colorado. With a focus on whole-building efficiency, coupled with the ability of participants to select from a wide range of potential efficiency measures, the BFE Program could offer an opportunity to customers and project sponsors to design cost-effective energy efficiency projects.

Under TEP's proposal, 50 percent of the incentive for each project is paid prior to measure installation, with the remaining incentive amount based on the actual energy savings, paid after the first year of operation. Staff believes this payment sequence offers an important "true-up" opportunity that ensures projects receive incentives proportionate to their actual energy efficiency. However, Staff is concerned that there are no limits proposed for the maximum

incentive available to an individual project. Therefore, Staff recommends that incentives be capped at 60 percent of the incremental cost of the efficiency measures utilized in the project.

TEP estimates annual energy savings of 400,000 kWh, and peak demand savings of 36.53 kW for each of the 10 projects anticipated during the two-year pilot program. Based on these anticipated savings, Staff has determined that the BFE Program would have a benefit / cost ratio of 1.86, indicating that the Program would be cost-effective.

Staff Recommendations

- Staff recommends that the TEP Bid for Efficiency Pilot Program be approved as a two-year pilot program as discussed herein.

- Staff further recommends that individual project incentives under this program be capped at 60 percent of the incremental costs of the efficiency measures included in the project.

J. RETRO-COMMISSIONING PROGRAM

Program Description. TEP's proposed Retro-Commissioning Program ("RCx Program") would identify deficiencies in existing facilities and makes necessary adjustments to produce energy savings and other benefits such as occupant comfort. The proposed new RCx Program is geared to assist owners of large existing commercial and industrial facilities in improving energy performance. TEP states that improvements made in response to RCx efforts are comparatively inexpensive to implement and typically offer paybacks of less than two years.

The RCx Program would begin with a Screening Energy Audit. Participants then proceed, if eligible for the RCx Program, through a three part retro-commissioning study: (i) the Operations and Maintenance Review Phase (operational procedures and maintenance practices); (ii) the Systems Commissioning Phase (performance testing, trending and metering), and (iii) the Systems Optimization Phase (high performance building operation strategies).

A 2009 study of retro-commissioning by Lawrence Berkley National Laboratories noted a median savings of 16 percent of whole building energy costs across 561 projects. Documented benefits of RCx programs include, but are not limited to the following:

- Up to 15 percent energy savings
- Reduced occupant complaints and improved occupant comfort
- Increased equipment life
- Increased facility documentation
- Facility staff training

Program Objectives and Rationale. The Program would target large facilities which have lighting, cooling, and ventilation as their largest energy uses. Large office and retail facilities represent the most effective building type for the RCx approach.

Budget. TEP has requested a two-year budget for the RCx Program totaling $175,520. Incentives comprise $110,000, with program delivery, administration, marketing and evaluation costs accounting for the balance of the budget.

Delivery and Marketing Strategy. TEP would offer an online application for customers interested in the RCx Program on the TEP website. The screening audit would provide the customer with a basic energy audit, identifying basic equipment upgrades and control strategies that would result in energy savings for the customer. The audited facilities would also receive ENERGY STAR® Portfolio Manager ratings to benchmark the facility versus similar facilities in the area. The energy audit would be provided free of charge to all eligible applicants and will be used to determine eligibility for participation in subsequent phases of the RCx Program. The Program is designed so that customers can move to progressively higher levels of examination and analysis, only after they have implemented measures identified in the Screening Audit, and later, the Operations and Management Review phases of the Program.

For selected customers, and subsequent to the Screening Energy Audit, TEP would perform an Operations and Maintenance ("O&M") Review of the subject facility's energy usage, to evaluate operational procedures and maintenance practices related to major equipment. The result of this review would be a list of facility improvement measures with estimated cost and savings values. Customers would also receive training on O&M best practices and guidance on implementing facility improvements. The O&M Review would be provided by TEP at no cost to the customer.

For selected customers that implement recommendations identified in the O&M Review, TEP would offer Systems Commissioning services. Systems Commissioning services utilize advanced performance testing, trending and metering procedures that identify further opportunities for energy system repairs, upgrades and replacements. Measures identified during this phase include repairs, upgrades and capital planning that would allow existing systems to operate within the parameters developed during the O&M review. Systems Commissioning services would be paid by the Program.

The final phase of the RCx Program is known as Systems Optimization. This phase of the Program builds on work completed in prior Program phases by introducing cutting-edge practices developed for today's high performance buildings. Services for this phase would be provided by the Program for selected customers who implement recommendations identified during the Systems Commissioning phase of the Program.

Eligibility. The RCx Program will be available to TEP commercial and industrial customers with at least one meter on an eligible rate schedule. In addition, the facility must

contain a minimum of 100,000 square feet of conditioned space and have at least one full-time facility operations/management staff.

Program Analysis/Issues. Presently, the lack of knowledge by building operators, the lack of qualified workers, and the upfront costs of the audit and associated equipment optimization are barriers to improving the energy efficiency of commercial and industrial facilities. The TEP Retro-Commissioning Program intends to overcome these barriers by providing facility owners with the information necessary to identify energy-saving opportunities and manage energy consumption at their facilities.

Cost-Effectiveness. TEP estimates annual energy savings of 200,000 kWh, and peak demand savings of 18.26 kW for each of the five projects anticipated through the end of 2012. Based on these anticipated savings, Staff has determined that the BFE Program would have a benefit-cost ratio of 2.38, indicating that the Program would be cost-effective.

Staff Recommendations. Staff recommends that the TEP Retro-commissioning Program be approved.

K. SCHOOL FACILITIES PROGRAM

Program Description. Schools represent a market segment that has historically been underserved. TEP has proposed a School Facilities Program ("Schools Program") to increase participation in energy efficiency retrofits by schools.

The TEP Schools Program would be open to participation by all existing kindergarten through twelfth grade school facilities in the TEP service territory, including charter schools. The proposed Schools Program would utilize the same delivery method and pay incentives for the same energy efficiency measures as are found in the existing TEP C&I Comprehensive Program ("C&I Program"), but the Schools Program would only service eligible schools. TEP proposes to pay up to 100 percent of the incremental cost of the efficiency measures for the Schools Program, as compared to up to 85 percent for measures in the existing C&I Program.

The Schools Program would utilize an upstream market incentive design that provides incentives directly to contractors installing the energy efficiency measures. Specifically, the Schools Program would offer the following products and services:

- Educational and promotional pieces designed to assist contractors with the marketing of the Schools Program to schools; and

- Education and promotional efforts for schools and contractor allies on how the Schools Program functions, what energy efficiency technologies are offered, what incentives are provided and the benefits of the measures.

The lighting measures included in the Schools Program are:

- Retrofit of T12 fluorescent lighting with T8 lighting;
- Retrofit of standard T8 lighting to premium T8 lighting;
- Retrofit of high intensity discharge lighting with T8 or T5 lighting;
- Replacement of incandescent lamps with screw-in compact fluorescent lamps ("CFL");
- Retrofit of existing incandescent and CFL exit signs with LED or electroluminescent exit signs;
- Lighting system occupancy sensors; and
- Delamping and reduced lighting power density.

The HVAC measures included in the Schools Program are:

- High efficiency air conditioners and heat pumps (incentives vary by SEER rating);
- Programmable thermostats; and
- Shade screens and window films to reduce solar heat gain.

The Schools Program would also include variable speed drive motors to optimize performance, vendor miser sensors which turn off or turn down refrigeration and lighting in vending machines when not in use, and smart strips to better control plug loads. Whole building custom incentive applications would also be considered where appropriate. Table 1-1 below presents a summary of the incentives offered for each measure.

Table 1-1
School Facilities Efficiency Incentive Summary

Lighting Measures	Incentive
Replace T12 systems with T8	$55/fixture
Energy Efficient Integral Compact Fluorescent Lighting	$11/lamp
Replace Incandescent & CFL Exit Signs	$55/sign
Install Occupancy Sensors on Lighting Fixtures	$96/sensor
Daylighting Controls	$751/kW base load
Hard Wire CFL	$15/bulb
HIDs to T8/T5	$96/fixture
Induction Lighting	$196/lamp
Outdoor CFL	$9/lamp
Reduced Lighting Power Density (LPD)	$4,472/customer

Screw-in Cold Cathode CFL	$12/bulb
T8 to Premium T8	$21/lamp
Delamping	$6/fixture
HVAC Measures	
Programmable Thermostats	$204/thermostat
High-efficiency Packaged AC and Heat Pumps (<65,000 btuh)	$440 to $1,321 (depending on size and SEER rating)
Shade Screens	$4/sq.ft.
Window Films	$3/sq.ft.
Motors	
Variable Speed Drives	$377/HP
Plug Loads	
Beverage Controls ("Vending Miser")	$199/sensor
Snack Controls (Vending Miser")	$103/sensor
Advanced Power Strips – Load Sensor	$32/strip
Advanced Power Strips – Occupancy Sensor	$90/strip
Advanced Power Strips – Timer Plug Strip	$19/strip
Whole Building	
Custom Measures	$6,535/customer

Budget. The Program will begin in 2012 with a proposed first-year budget of $157,941. See The TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Delivery and Marketing. Schools that are interested in the Schools Program would apply for participation using an on-line proposal generation and project tracking system. This Internet-based system would provide an analysis of project costs and projected savings. Projects that are selected by TEP based on projected energy savings would utilize contractors to provide turn-key installation services to schools. Incentives would be paid directly to the contractors.

TEP would assign an in-house program manager to oversee the Schools Program, provide guidance on Schools Program activities and provide a point of contact for schools that are interested in participation, or have questions or concerns regarding the Schools Program. The implementation contractor would be responsible for program administration, application and incentive processing, monitoring activities of installation contractors, participation tracking and reporting, and overall quality control and management of the delivery process. In addition, the implementation contractor would conduct outreach to contractors, marketing and promotion to schools, and education and training on the benefits and functioning of the Schools Program.

Installation contractors would promote the Schools Program directly to schools, provide turn-key installation services and have access to the Schools Program Internet processing system to prepare proposals.

Program Analysis/Issues. The Schools Program lists a total of 30 individual energy efficiency measures that are eligible for incentives. This program is designed to install multiple measures on a "whole building" basis, where measures tend to complement or reinforce one another and, for this reason, cost-effectiveness is calculated on a per-project basis, where savings

and costs from a typical set of project measures are compared. The Schools Program also encourages the creative combination of listed measures with other measures that are not on the Schools Program's incentive list by offering a "custom measures" category. Proposed "custom measures" must demonstrate energy savings and pass the Societal Cost Test.

In order to evaluate the Schools Program at the project level, Staff analyzed a typical school energy efficiency project that included delamping a portion of the school facility and replacing the remaining lighting fixtures with T8 upgrades. In addition, the model project includes data for programmable thermostats, occupancy sensors, energy efficient exit signage, vending machine controls and advanced timer power strips. By combining these particular measures, and using anticipated savings values for each measure, Staff determined that this "typical" school project would cost approximately $2,821 dollars in incentives while saving approximately 40,956 kWh of energy and 4.13 kW of demand load.

Cost-Effectiveness. Based on these anticipated savings, Staff has determined that the typical School Facilities Program project would have a benefit-cost ratio of 1.71, indicating that the Schools Program would be cost-effective. Staff further believes that this ratio is indicative of the benefits of similar projects that would be completed under the Schools Program.

Staff Recommendations. Staff recommends that the School Facilities Program be approved.

L. Combined Heat and Power – Pilot

Program Description. TEP is requesting budget approval for a new Combined Heat and Power ("CHP") Pilot Program in 2011. The TEP CHP Pilot Program is a proposed Joint Utility Program to be implemented in cooperation with Southwest Gas. Distributed Generation ("DG') is defined in A.A.C. R14-2-2401 as "the production of electricity on the customer's side of the meter, for use by the customer, through a process such as CHP." R14-2-2401 goes on to define CHP as "combined heat and power, which is using a primary energy source to simultaneously produce electrical energy and useful heat." TEP proposes this program as a pilot to assist in developing methods and procedures for future joint utility programs with Southwest Gas or other utilities. TEP proposes to provide support for the existing Southwest Gas DG Program (Decision No. 69917, September 27, 2007) by sharing costs for marketing and outreach, training, and design. Specifically, TEP would pay up to 10 percent of the design costs for a CHP installation. TEP would cooperate with Southwest Gas on marketing and outreach strategy to maximize the effect of marketing and outreach expenses.

Program Objectives and Rationale. The primary goal of the Program is to provide support for the existing Southwest Gas DG Program, specifically for CHP projects. TEP states that the market potential for CHP is substantial and could contribute significantly to energy conservation in Arizona, and could accrue significant societal and customer benefits as well. According to TEP, CHP is an affordable, clean, and reliable way to meet a customer's energy needs. With gas used as the primary fuel, the process is far more efficient than electricity or gas

use alone because the waste heat is used as well. The economics of the CHP system depends on effective use of the thermal energy in the exhaust gases. Exhaust gases are primarily used for heating the facility and could also be applied to heat recovery steam generators (HRSG) to produce additional electric power.

Delivery and Marketing Strategy. Program delivery, incentives, and administration; as well as the marketing and communications strategy would be provided by Southwest Gas through its DG Program. TEP would assist with marketing and outreach, design assistance, and interconnection design expertise. TEP would assign an in-house program manager to coordinate joint program delivery with Southwest Gas.

Cost-Effectiveness. TEP's analysis of this program showed a benefit-cost ratio of 8.5. Although Staff's analysis indicated a lower benefit-cost ratio of 6.5, it still indicated a cost-effective program based upon avoided provision of TEP capacity and energy.

Staff Recommendation. In Staff's opinion, this program could increase the amount of CHP in TEP's service area, and, due to CHP's inherent efficiencies, increase the efficiency of energy use. Staff recommends approval of the CHP Pilot Program.

M. Small Business Direct Install

Program Description. TEP is requesting budget approval to continue this program and approval of these additional measures:

- Shade Screens
- Window Films
- Induction Lighting
- LED Channel Signs
- Outdoor CFL
- Reduced LPD
- T8 to Premium T8
- Premium T8 Lighting
- Beverage Controls
- Snack Ctrls ("vending miser")
- Refrigerated Display
- Automatic Door Closers
- Refrigerated Display Gaskets
- Advanced Power Strips - Occupancy Sensors
- Advanced Power Strips - Timer Plug Strip
- Advanced Power Strips - Load Sensor

The Small Business Direct Install Program is an existing program, approved by the Commission in Decision No. 70457 (August 6, 2008). The Program offers incentives for a select

group of retrofit and replace-on-burnout energy efficiency measures in existing facilities. Eligible customers include customers who qualify for TEP's Rate 10 - Small General Service pricing plan (typically an aggregate monthly demand of 200 kW or less). The Program offers incentives for the installation of energy efficiency measures, including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air, and refrigeration measures. Incentives for lighting measures range from $7 to $65, HVAC measures range from $125 to $675, and Refrigeration measures average $127.

Program Objectives and Rationale. The Small Business Direct Install Program is designed to address certain barriers to this market segment, including limited investment capital, limited awareness of energy cost savings, and required short-term payback. The Program's purpose is to persuade small business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program.

Budget. See TEP EE Implementation Plan Budget Table herein which lists the sector, projected costs per category, and total budget for each program. The Small Business Direct Install Program shows total costs for 2011-12 of $7.6 million.

Delivery and Marketing Strategy. The Program is operated as an "up-stream" market program, with incentives offered to prequalified contractors who can provide turn-key installation services for customers. The intention is to reduce the measure payback to one year or less. The Program also includes consumer and trade ally educational and promotional pieces designed to provide decision makers in the small business market with the information necessary to make informed choices (and increase awareness).

The marketing strategy includes educational seminars tailored to the small business market, major media advertising, website promotion, outreach and presentations at professional and community forums, and direct outreach to customers who meet the criteria for the Program.

Cost-Effectiveness. The original Program approved with Decision No. 70457 showed an overall benefit-cost ratio of 1.87 and a range of measure benefit-cost ratios ranging from 1.04 to 3.6. In this filing, the new proposed measures range from 1.4 to 10.8 with an overall benefit-cost ratio of 3.4.

Staff Recommendation. Staff recommends approval to continue the Small Business Direct Install Program, with the proposed new measures.

N. Commercial and Industrial ("C&I") Comprehensive

Program Description. TEP is requesting budget approval to continue the C&I Comprehensive Program and approval of additional measures listed below:

- Heat Pump Water Heaters - Tier 1
- CO Sensors

- CO2 Sensors
- Cooling Tower Sub cooling
- Economizers
- High Perf Glazing
- PTAC/PTHP
- Shade Screens
- Window Films
- EMS - Lighting Schedule
- Induction Lighting
- LED Channel Signs
- LED Pedestrian Signals
- LED Traffic Lights
- LED Street and Parking Lights
- Outdoor CFL
- T8 to Premium T8
- Green Motor Rewind
- Beverage Controls ("vending miser")
- Snack Controls ("vending miser")
- Efficient Compressors
- Efficient Condensers
- Floating Head Pressure Controls
- Refrigerated Display Automatic Door Closers
- Refrigerated Display Gaskets
- Coin Operated Washers - Tier 1
- Coin Operated Washers - Tier 2
- Advanced Power Strips - Occupancy Sensors
- Advanced Power Strips - Timer Plug Strip
- Advanced Power Strips - Load Sensor

Incentives for the above measures range from under $2 up to $200, except those for chillers and heat pumps/air conditioners. The average incentive for chillers is $13,465. Heat pump and air conditioning incentives average, respectively, $556 and $575.

The C&I Comprehensive Program is an existing program, approved by the Commission in Decision No. 70403 (July 3, 2008) under the name of Non-Residential Existing Facilities Program. The Program provides prescriptive incentives to large commercial customers who are under TEP's Rate 13 and Rate 14 pricing plans (typically an aggregate monthly demand exceeding 200 kW) for the installation of energy-efficiency measures, including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air and refrigeration measures. Prescriptive incentives are offered for a schedule of measures in each of these categories. Customers can also propose their own innovative energy efficiency solutions

by offering a custom energy efficiency measure. The average incentive for custom projects is $4,270.

Program Objectives and Rationale. The C&I Comprehensive Program is designed to address the barriers to this market segment, including limited awareness and lack of knowledge about the benefits and costs of energy efficiency improvements, performance uncertainty associated with energy efficiency projects, and the required short-term payback. The program's purpose is to encourage large business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program and provide turn-key installation services to small business customers.

Budget. The Summary Implementation Plan Implementation Costs for 2012, Table 3-11 in the filing, shows projected costs by category, and total budget for each program. The C&I Comprehensive Program shows total utility cost of $4.28 million and total lifetime net benefits of $20 million.

Delivery and Marketing Strategy. The Program is delivered by a third party implementation contractor who provides program administration, application review, participation tracking and reporting, project quality control, and technical support. In addition to the implementation contractor, key partnering relationships and marketing outreach include: the local architectural and engineering community, electrical, mechanical and building contractors, equipment manufacturers, distributors and vendors, professional and trade service associations, and the educational and promotional pieces designed to assist facility operators and decision makers with the information necessary to improve the energy efficiency of their facilities.

Cost-Effectiveness. With Decision No. 70403, the Commission approved this program's predecessor, the Non-Residential Existing Facilities Program which showed a benefit-cost ratio of 2.5 using Staff's methodology. The new measures described in this filing show similar cost effectiveness, except for one measure, the LED Street and Parking Lights which both TEP and Staff show a benefit-cost ratio less than one. Therefore, Staff does not recommend approval of this measure.

Staff Recommendation. Staff recommends approval of the C&I Comprehensive Program, except for the proposed additional measure LED Street and Parking Lights.

O. C&I Direct Load Control

Program Description. The C&I Direct Load Control Program is an existing program, approved previously by as the Commercial and Industrial Demand Response Program in Decision No. 71787 (July 12, 2010). TEP is requesting budget approval to continue this program with no additional modifications.

This is a commercial and industrial load curtailment program. Customers are compensated with incentives for their participation at negotiated levels that vary depending on

multiple factors including the size of the facility, amount of kW under load control, and the frequency with which the resource can be utilized.

Program Objectives and Rationale. Commercial and industrial load represents a total of approximately 22 percent of system demand during peak hours in the late afternoon and evening during summer months. Modification of controls for chillers, rooftop AC units, lighting, fans, and other end uses is capable of reducing power demand at peak times. In addition, the Program may be used to support standard benefits of demand-response programs which include avoided firm capacity required to meet reserve requirements, reduced or avoided open-market power purchases during periods of high energy prices, and greater grid stability and reduction in outages due to reduced grid demand.

Delivery and Marketing Strategy. The Program is delivered on a turnkey basis by a third-party implementation contractor, who negotiates load reduction agreements with multiple customers and "aggregate" these customers to provide TEP a confirmed and guaranteed load reduction capacity available upon request. The contract between TEP and the demand response ("DR") aggregator, EnerNOC, is similar to a power purchase agreement in that EnerNOC is obligated to provide megawatts of load curtailment while maintaining a degree of flexibility in how the curtailments are achieved. Incentives are provided by EnerNOC and customized based on a variety of factors, including the amount of load that can be reduced.

Recruitment is targeted to help ensure that customers invited to participate are able to provide reliable and significant load control reductions.

Cost Effectiveness. With Decision No. 71787, the Commission approved the original Program, showing a Staff-determined benefit-cost ratio of 2.47. Since TEP is making no modifications to the Program, it remains a cost-effective program.

Staff Recommendation. Staff recommends approving the C&I Direct Load Control Program for continuation.

P. Commercial New Construction Program

Background. On August 6, 2008, in Decision No. 70459, the Commission approved the Efficient Commercial Building Design Program for TEP. The Program was approved on a two-year pilot basis. On July 1, 2010, TEP filed an application for approval to continue the Program for an indefinite period. In December, 2010, TEP informed Commission Staff that a request for continuation would be contained in TEP's 2011 Energy Efficiency Implementation Plan ("EE Plan"). TEP filed the EE Plan on February 1, 2011, and rebranded the Efficient Commercial Building Design Program as the "Commercial New Construction Program." TEP is also proposing one additional measure for this Program, high-performance glazing.

Program Description. The Commercial New Construction Program is geared toward the building owner/developer by incenting the increased use of energy efficiency measures during

the design phase of a commercial building's development. Program incentives are based on improved building energy efficiency compared to a baseline design, as determined by a building energy simulation program such as the Department of Energy's eQUEST program. The Building Design Incentive is limited to a maximum of $75,000 per project and the Design Assistant Incentive is limited to a maximum of $10,000 per design team.

Program Objectives and Rationale. Commercial New Construction provides incentives to offset the additional design cost of alternative, more energy-efficient designs. The Program is performance-based and includes design assistance for the design team, performance-based incentives for the building owner/developer, and energy design information resources. Design assistance involves efforts to integrate energy efficiency into a customer's design process as early as possible.

In addition to the design incentives and performance-based incentives for the building owner/developer, this Program provides technical support services to the design community.

Budget. TEP requested a budget of $402,469 for 2011 for the Commercial New Construction Program and a budget of $406,319 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Eligibility. All new commercial building projects and major renovations to existing buildings in the TEP service territory that receive or will receive electric service from TEP are eligible to participate in the Program. Major renovation for this purpose would be a substantial or significant change to an existing structure, such as completely gutting a building and installing insulation, new windows, and new HVAC equipment.

Delivery and Marketing. TEP will continue to market the Program to building owners, developers and members of the design team. The Program uses a variety of educational and promotional pieces to assist building owners and developers with the necessary information to understand various energy efficiency options, and to encourage them to discuss these options with their design professionals early in the design process. TEP will continue to promote the Program through focused outreach to the building development community.

Cost Effectiveness. Although the original pilot did not enjoy a high level of participation due primarily to the poor economic environment, participation has grown dramatically during the first half of 2011. TEP reports a total of ten Program applications that would produce a total energy savings of 1,635,490 kWh. Based on these estimated savings, Staff has calculated the benefit-cost ratio for the Program as 2.70. The proposed new measure, high-performance glazing, has a calculated benefit-cost ratio of 1.14.

Staff believes that offering incentives and technical guidance during the design stage of commercial building projects is an important method of implementing energy efficiency measures. Staff further believes that by increasing the visibility of the Program through better

online marketing and continued use of educational seminars, participation in the Program can be further increased. Therefore, Staff recommends that the Program be approved for continuance.

Program Analysis/Issues. The subject Program is a continuation of the Program formerly known as "Efficient Commercial Building Design" that was originally approved as a two-year pilot on August 6, 2005, under Decision No. 70459.

The implementation of the original pilot occurred during the start of the current economic downturn. The financial environment resulted in a near total halt in loans for all types of commercial building development projects, as well as a concomitant decrease in overall building project activity.

Staff believes that the financial climate played a major part in the lower than anticipated participation in the original pilot, and that the reduction in new buildings within TEP's service area directly affected participation in the pilot. Participation in the Program grew dramatically during the first half of 2011, with TEP reporting the completion of two Design Assistance projects and the receipt of eight New Construction applications. Staff believes that this trend of increasing participation in the Program will continue.

Staff recommends that TEP continue its outreach efforts to building owner, developer and design professional organizations (e.g. American Institute of Architects, American Society of Professional Engineers, Urban Land Institute, National Association of Office and Industrial Properties, etc.). Staff further recommends that TEP extend its outreach activities to include banks and other lending institutions that service the building design and construction industry. In addition, TEP should communicate with local building code officials to apprise them of Program benefits and encourage the adoption of higher performance building and energy codes.

Baseline Study. At the inception of this pilot program, TEP had not conducted a formal baseline study of new commercial construction design characteristics. In preparing the analysis for the pilot program, the baseline performance conditions of new commercial construction projects were estimated based on best available knowledge of current market conditions and design practices. To confirm the baseline assumptions made in the preparation of this plan, TEP hired Navigant Consulting ("Navigant") to conduct a formal baseline study of commercial building practices. Funding for this baseline study was approved by Decision No. 71109 on June 5, 2009.

The study, entitled "Assessment of Baseline Practices for Commercial New Construction", dated June 25, 2010, was submitted by TEP to Staff at the time that TEP filed its application to continue the pilot program. The objective of this report was to determine how commercial buildings are currently being designed and specified within TEP's service area. The baseline study concluded that, except for federal and state buildings, new commercial construction in the TEP service area is generally built to code. Where buildings are constructed above code requirements, it is generally in pursuit of LEED (Leadership in Energy and Environmental Design) certification.

The baseline study offered several recommendations for TEP to consider in relation to the pilot program. A summary of those recommendations includes:

- Federal and other government buildings are generally mandated to build above code. Therefore, TEP should consider modifying its Program applications to determine whether a building is public or private, and require higher savings for public buildings.

- TEP should monitor code changes and talk to code officials on a regular basis.

- TEP should provide education to the building industry to define an integrated design approach and help this to become standard practice.

- TEP should encourage the use of commissioning agents (perhaps through specific incentives) to ensure that buildings operate as specified by design.

- TEP should consider adding a prescriptive path to the Program to provide incentives for specific technologies, such as high R value roofs and walls, variable speed drives and high efficiency motors, higher efficiency lighting systems.

- The Report states that the most important recommendation is "...to educate architects about life-cycle costs and how to sell these ideas to clients, educate owners who are buying from private developers, and educate the market about considering life cycle costs versus first costs in determining the value of a building..."

Staff Recommendations. Staff generally concurs with the recommendations of the baseline study with the exception that TEP should first ascertain the cost-effectiveness of using third-party commissioning agents. Staff makes the following additional recommendations:

- Staff recommends that the Program, including the high-performance glazing measure, be approved for a second two-year period.

- Staff further recommends that TEP implement the recommendations in the "Assessment of Baseline Practices for Commercial New Construction" prepared by Navigant Consulting, including modification of Program performance thresholds (for public buildings) and Program applications to differentiate between public and private sector facilities.

- Staff further recommends that Measurement & Evaluation statistics for the Program be included in the DSM reports filed with the Commission.

- Staff further recommends that TEP continue Program outreach efforts by targeting building owner, developer and design professional organizations, lenders and lender industry associations, and local building code officials.

- Staff further recommends that information announcing the availability of the Program occupy a more prominent position on the TEP website.

Q. BEHAVIORAL COMPREHENSIVE

Program Description. The proposed Behavioral Comprehensive Program ("Behavioral Program") consists of six educational subprograms. The focus of the Behavioral Program is to educate Residential customers on how changes in behavior, including purchasing decisions, can improve energy efficiency. Most of the subprograms include low-cost measures, such as CFLs, faucet aerators, LED nightlights and refrigerator thermometers, in addition to the educational components.

The table below lists and describes the six subprograms that make up the Behavioral Comprehensive Program. More detailed program descriptions are provided in the following paragraphs:

Subprogram	New (proposed) or existing	Descriptions
Home Energy Reports	Approved on April 7, 2011, Decision No. 72254.	Comparison of energy use to that of neighbors. An on-line energy audit component will also be added in 2012.
Direct Canvassing	New (proposed)	Door to door awareness and direct install campaign
K-12 Education	New (proposed). Consists of redesigned energy education for 6th, 7th and 8th grades, and will absorb the existing school-based energy education components from the Education and Outreach Program.	Classroom education including take home direct install kits
Community Education	New (proposed)	"Train the trainer" approach, with hands-on energy efficiency training
In home Energy Use Monitors	Approved as part of the Residential Direct Load Control Pilot, August 25, 2010, Decision No. 71846.	A sub-pilot of the smart meter program. Displays near-real time usage information
CFL Giveaway	New (proposed)	CFL bulb giveaway at outreach events

Home Energy Reports. Although budgeted separately, the Home Energy Reports subprogram is part of the overall Behavioral Comprehensive Program. The existing Home Energy Reports are designed to instigate behavioral changes in customers' energy consumption by (i) making customers aware of their energy consumption; and then (ii) allowing them to compare that usage to similarly situated homes. The subprogram targets habitual behaviors (e.g., lights and thermostats), purchasing behaviors (standard versus energy efficient appliances), and participation in demand-side management programs.

In addition, the on-line energy audit function that is currently part of the Education and Outreach Program will transition to the Home Energy Report subprogram during the first half of 2012.

Direct Canvassing. The direct canvassing initiative is a grass-roots, door-to-door approach to promoting energy efficiency, and is designed to reach neighborhoods difficult to reach through traditional messaging. The subprogram would use trained volunteers from local community organizations to talk to customers about energy efficiency. Two CFLs would be left with each customer, along with program materials for appropriate TEP DSM programs.

K-12 Education. In addition to energy based class room curriculum, students would be instructed in energy saving approaches for their homes. Students in grades 6-8 would be provided with a take home kit which includes CFLs and refrigerator thermometers, as well as educational materials on how to reduce energy use.

Beginning in 2012, the K-12 subprogram will also offer the academic support activities currently offered under the Education and Outreach ("E&O") Program. These activities include the Insulation Station, the Energy Patrol, the Electri-City exhibit at the Tucson Children's Museum and Energy Conservation Bike/Solar Generation Presentations. The E&O Program's school-based energy education activities will be transferred to the K-12 subprogram, to consolidate school-based energy education into one subprogram.

Community Education. The Community Education Program would engage community groups and work with public entities with "train the trainer" hands-on energy efficiency seminars. Community trainers would be given a broad based review of energy, efficiency and comfort principles. The seminars include hands-on training with a wide sample of materials such as weather stripping, low flow showerheads, caulk or foam sealant and CFLs.

CFL Giveaway. The Compact Fluorescent Light Give-Away Program will complement TEP's presence at community events, and its overall education and outreach efforts, and efficiency messaging. Free CFLs will be made available both at community events and to community organizations, including those involved in our Community Education Program.

In-home Display. The In-Home Display measure is part of the Residential Direct Load Control Program already approved by the Commission in Decision No. 71846. The In-home Display works by providing a digital readout showing customers their current cost of energy in cents per hour and their cumulative cost for the month. Participating customers are provided with interval energy usage data in several formats on a personal web portal or on an additional physical home display device.

Budget. The cost for the web portal and in-home displays are included in, and budgeted with, other communicating equipment provided to customers participating in the Residential Direct Load Control program. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Behavioral Comprehensive Program Overall Objectives and Rationale. The energy-related behaviors intended to be influenced by the Behavioral Comprehensive subprograms include the following:

- Habitual behaviors
  - Adjust thermostat setting
  - Turn off unnecessary lights
- Small purchasing and maintenance behaviors
  - Purchase and install faucet aerators and low flow shower heads
  - Purchase and install compact fluorescent lights
  - HVAC maintenance
- Larger purchasing decisions
  - Purchase an ENERGY STAR appliance
  - Purchase higher EE heating and cooling system through participation in a TEP DSM Program

Delivery and Marketing Strategy. All TEP residential customers would be eligible for this program. Delivery would be made through implementation contractors and TEP resources.

Program Analysis/Issues. The Company initially proposed to leave some elements of school-based energy efficiency education, such as the Insulation Station and the Energy Patrol, with the current Education and Outreach program. TEP is now proposing to consolidate the school-based energy education activities within the K-12 subprogram.

The Company's current proposal is reasonable. Consolidation of school-based energy efficiency education within the K-12 subprogram is likely to improve efficiency, limit duplication of administration effort and expenditure, and reduce confusion between the proposed K-12 subprogram and the existing Education and Outreach Program.

Cost-Effectiveness. Cost-effectiveness for measures associated with the proposed new Behavioral Comprehensive subprograms are listed in the table below. For the K-12 Education and Community Education Program, cost-effectiveness of the associated measures was calculated based on the entire kit.

Subprogram	Measures	Benefit-cost Ratios
Direct Canvassing	CFLs	2.8
K-12 Education	CFLs, Faucet Aerator, LED nightlight, Refrigerator thermometer	3.0
Community Education	CFLs, Showerhead, Faucet Aerator, LED nightlight, Refrigerator thermometer	1.57
CFL Giveaway	CFLs (18 Watt/23 Watt)	1.99/2.7

Staff Recommendations.

- Staff recommends that the Behavioral Comprehensive program, and all its subprograms, be approved.

R. Residential Energy Efficiency Financing

Program Description. TEP was ordered to file an energy efficiency financing program in Decision No. 72028 (December 10, 2010). TEP is requesting approval for a new Residential Energy Efficiency Financing pilot program to provide customers with the capital needed to make cost-effective energy efficiency upgrades to their homes. TEP believes that a two-year pilot program would allow sufficient time for the Company to evaluate the Program, including participation, default rates, and overall value to customers. TEP's proposed Program elements include:

- Loan commitment of $2,000,000 per year for two years; this would provide approximately 424 loans per year based on an average $4,722 loan amount;
- Loans available only on energy efficiency measures meeting the Commission-required cost effectiveness test;
- Low interest rates provided by a combination of an interest rate buy-down and a 10% loan loss reserve account;
- Limited ratepayer exposure to default risk (10% of the loan commitment);
- Funding provided through an approved Demand-Side Management ("DSM") surcharge charged to residential customers;
- Affordable residential financing for energy efficient measures;
- Convenient customer access to and repayment of the financing;
- Standard finance product offering for all eligible, approved borrowers;
- Leveraged financing;
- Accurate Truth-in-Lending notifications and billing to customers provided by an experienced third party lender; and
- Community involvement in forming and marketing the Program.

TEP proposes to increase the DSM surcharge for residential customers by $0.00018 per kWh to fund the Program during the two year pilot program. The average annual cost to each residential customer would be $1.90. TEP proposes that the DSM Surcharge necessary to fund this program be collected only from residential customers, as the loan instruments described are restricted to residential customers.

Budgeting for the Residential and Non-residential sectors is approximately equal, and the cost for all of TEP's energy efficiency programs (including those restricted to Non-residential customers) is recovered through a single DSM adjustor surcharge. Establishing a separate DSM adjustor for the Residential Financing Program would be unnecessary, inequitable and time-consuming.

Program Objectives and Rationale. TEP believes that the Program's financing options would help cover the costs of energy efficiency measures, would improve customer participation in energy efficiency programs and would expand the pool of customers who can afford to participate in those programs. Although other vendors offer financing for their own individual products, the Program's comprehensive approach to home energy upgrades cuts across several potential products and includes efficiency measures not traditionally financed, such as air and duct sealing.

Prior to designing the Program, TEP developed key objectives for the Company's implementation of a financing program. Three objectives stood out from the rest as fundamental in order for TEP to provide a financing option: 1) the program design must eliminate the utility from any Truth-in-Lending Law regulation implications; 2) the program must provide a reasonable amount of funds at a reasonable interest rate and with a low initial investment; and 3) energy efficiency measures that qualify for TEP financing must have met the Commission's cost effectiveness test.

With these objectives, TEP hired Harcourt Brown Energy and Finance to assist with the evaluation, negotiations, and design of the Program. TEP selected a Third Party Financing model secured by a combination of a 10 percent loan loss reserve account and an interest rate buy-down, both funded from the DSM Surcharge, as the best program offering.

Target Market. The target market for this program is any residential customer in TEP's service territory who owns their home. Financing would be available for installation of approved and cost-effective energy efficiency measures.

Program Eligibility. Eligible properties would include single-family (1 to 4 unit), owner-occupied homes.

Budget. This is a financing program supporting other program efficiency measures. Therefore, there are no energy efficiency measures specifically under this program. Nonetheless, TEP expects annual costs as follows:

RESIDENTIAL ENERGY FINANCING BUDGET TABLE
Two-Year Pilot

	Loan Amount Available	Number of Loans	Reserve Funding	Interest Rate buy-Down Funding	Program Budget
Year 1	$100,000	21	$10,000	$4,000	$142,815
Year 2	$2,000,000	424	$200,000	$79,995	$442,645

Delivery and Marketing Strategy. TEP's strategy for Program delivery and administration is as follows:

- Coordination between the Lender and TEP on all fund transfers would be managed in-house by a single TEP Program Manager;
- The Program Manager would also provide overall management, marketing oversight, planning and tracking of customer and contractor participation; and
- The Program Manager would coordinate all activities necessary to develop application forms and contractor training.

Key partnering relationships would include Community interest groups; HVAC, insulation and air sealing contractors trained in Program procedures; and the Arizona Energy Office, Pima Community College, or other industry experts to provide training, education and awareness.

The Program would use contractors initially recruited for the Existing Homes Program, encouraging them to promote TEP financing when working with customers. TEP would provide an orientation of the Program which would outline Program requirements and contractors responsibilities as well as discuss reporting and data collection procedures. Contractors interested in participating in the Program must attend the orientation.

Program Marketing and Communication Strategy. TEP would provide Program marketing and customer outreach and awareness through a range of strategies including:

- Promotions on the TEP website about the benefits of purchasing high-efficiency equipment and home performance measures;
- Promotion through contractors and through community interest groups;
- Providing information through TEP's customer care center;

- Developing marketing pieces including brochures and other collateral pieces to promote the benefits of qualifying equipment, air sealing and duct sealing, and the financing program available to fund those measures; and

- Training and seminars for participating trade allies and contractors.

The advertising campaign would communicate that high-efficiency systems and home performance measures would help reduce customer energy bills, provide equal or better comfort conditions, and are beneficial for the environment.

Program Analysis and Issues. TEP originally proposed using the Pennsylvania Treasury as the third party lender. Interested parties recommended making further effort to secure third-party lenders located in Arizona. TEP has now chosen Vantage West, a local Credit Union ("VW"), as the third-party lender with loans leveraged by a loss reserve account as well as the possibility of a combination of a 10 percent loan loss reserve account and an interest rate buy-down, all funded from the DSM Surcharge. The interest rate buy-down would bring the rate from VW's normal 11.099 percent down to 7.99 percent.

The Company notes that UNS Gas, Inc. requested a program nearly identical to the one requested here for TEP. The UNS Gas program was approved by the Commission in Decision No. 72062 (January 6, 2011).

Cost Effectiveness. There are no direct avoided cost benefits or energy savings from the residential financing program, and the total DSM Implementation Plan Cost for TEP would increase as a result of offering the Program. However, the indirect benefits and savings are measured at the program level where individual energy efficiency measures are included. TEP believes, and Staff agrees, that the availability of financing for the Existing Homes Program would increase participation, and thus increase the resulting societal benefits and savings reported for the Existing Homes Program.

Staff Recommendations.

- Staff recommends approval of the Residential Energy Efficiency Financing Program with a two-year pilot as described herein.

- Staff recommends that the Commission not approve TEP's request that the DSM Surcharge for the Residential Energy Financing Program be collected only from Residential customers.

Measurement, Evaluation, and Research. Measurement, Evaluation, Research shall be in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415, including the following database activities:

- As part of Program operation, TEP would request the Lender to provide the necessary data elements to populate the tracking database and provide periodic reporting and data collection.

- TEP would establish systems to collect the data needed to support effective Program management, transfer of funds from TEP to the loan loss reserve accounts, reporting, and evaluation.

S. ENERGY CODES ENHANCEMENT PROGRAM

Program Description. Improved building energy codes are recognized as a simple and cost-effective means of achieving energy savings over the lifetime of new construction and newly renovated buildings. The TEP Energy Codes Enhancement Program ("ECEP") seeks to overcome barriers to the adoption of improved building codes.

Budget. TEP requested a budget of $49,335 for the first year (2011) of the Energy Codes Enhancement Program and a budget of $75,490 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

Program Objectives and Rationale. The objective of the TEP ECEP is to increase energy savings in new construction and renovated buildings, in both the Residential and Commercial sectors, by improving compliance with existing building energy codes and supporting updates to building codes.

Delivery and Marketing Strategy. The ECEP would target building committees and city councils, as well as building design officials including architects, engineers, contractors and builders. TEP Program staff would collaborate with regional and national organizations that track market trends and can offer guidance on best practices for energy code adoption and enforcement.

Program support to the target audience may include activities such as:

- Classroom, field and "brown bag" training sessions;

- Purchasing energy code books for officials that currently lack such resources;

- Supporting energy code-related certifications for code officials;

- Conducting energy code compliance assessments by 2017 to fulfill American Recovery and Reinvestment Act ("ARRA") requirements to demonstrate 90% energy code compliance (may be done in coordination with energy efficiency program Measurement, Evaluation and Research ("MER") activities); and

- Collaboration with the Southwest Energy Efficiency Project and other regional groups to support research on and adoption of building codes and equipment standards.

TEP staff would be responsible for administering the Program. Responsibilities for these staff would include planning, coordination and implementation of all Program activities.

Program marketing would be accomplished through direct outreach to municipal officials, participation in building code enhancement committees, cross-marketing with other TEP energy efficiency programs and through TEP websites.

Program Analysis/Issues. According to the U.S. Department of Energy[2], buildings use 39 percent of our total energy, two-thirds of our electricity, and one-eighth of our water. In light of the increasing cost of energy, building energy efficiency is a key component of sound public policy. One reason is that the benefits of more efficient construction often continue for the life of the structure, often 30 to 50 years.

DOE research[3] shows that contemporary energy codes could save about 330 Trillion BTU by 2030, almost 2 percent of total current residential energy consumption. There would also be comparable savings in consumer energy bills, air pollution and greenhouse gas emissions. As is discussed below, however, Arizona is a "home rule" state with no mandatory state-wide energy efficiency building code.

Although many counties and cities within the state have adopted an EE building code, some municipalities lack the resources and knowledge to effectively enforce existing building codes or implement an energy efficiency-specific code. Many municipal code officials lack the resources to stay current on market trends relevant to building codes, especially given current economic conditions. In jurisdictions that currently lack any type of building code, public officials could benefit from information and assistance in developing and advocating the adoption of a building code.

In addition to the lack of information and resources impacting the development and enforcement of building codes at the governmental level, building design and construction professionals could likely benefit from additional education and training on code requirements.

The primary market barriers to achieving maximum energy efficiency from building related codes are as follows:

- Lack of knowledge and resources to facilitate compliance with existing codes,
- Inconsistency in codes across the state, and
- Lack of resources to advocate for adoption of new codes.

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[2] U.S. Department of Energy website.
[3] Ibid.

Cost-Effectiveness. TEP has not provided an estimate of energy savings from implementation of the Energy Codes Enhancement Program. Rather, development of tracking metrics and deemed savings methodologies form an integral part of the Program. Energy savings from the Program would be determined upon completion of the Measurement, Evaluation and Research phase of the Program.

Staff Recommendations. Advocacy of energy codes is an appropriate component of TEP's 2012 Energy Efficiency Implementation Plan, given the high potential for long-term energy savings. Therefore, Staff recommends approval of TEP's Energy Codes Enhancement Program, subject to implementation of the MER and Reporting protocols stated herein.

T. Education and Outreach

Program Description. The Education and Outreach ("E&O") Program is an existing program approved in Decision No. 70402 (July 3, 2008). TEP is requesting budget approval to continue this program, which is being modified through the transfer of its school-based energy education components and its on-line audit function to subprograms of the Behavioral Comprehensive Program.

The revised E&O Program would be responsible for overall marketing and general consumer education. In order to reflect this change in focus, TEP is proposing to rename the E&O Program as the Consumer Education and Outreach ("CEO") Program.

With the school-based energy education activities and measures and the on-line audit function moved into the Behavioral Comprehensive Program, the CEO Program would market TEP's energy efficiency and renewable programs[4], including Time of Use ("TOU") rates:

- Develop brochures and communication materials that showcase all available EE and Renewable Programs,
- Develop and maintain communication materials related to general energy saving information,
- Provide labor and materials to staff trade shows and community events,
- Develop and maintain web content to educate consumers on energy use and TOU rate choices, and
- Cross communication of EE Programs and general energy saving information.

[4] Marketing materials for TEP energy efficiency programs include information concerning TEP's renewable programs, providing an added benefit from the funding used to market energy efficiency.

Program Objectives and Rationale. The E&O Program is intended to increase participation in the Company's other DSM/EE programs and intended to promote conservation by customers.

Cost-effectiveness. The CEO Program markets the entire TEP portfolio, promotes conservation generally and educates customers about TOU rates. It does not produce direct savings. The 2012 budget, with the school-based energy education and on-line audit function removed, would be approximately $194,000, or less than 1 percent of the total Implementation Plan budget for 2012.

Staff Recommendation.

- Staff recommends that the Education and Outreach (or Consumer Education and Outreach) Program be approved for continuation, with the modifications proposed.

U. Program Development, Analysis And Reporting Software ("Program Development")

Description. This budget item provides program support and covers costs relating to the Implementation Plan as a whole, including program design, database design and development, and technical support. Included in this budget item are the resources necessary for meeting reporting requirements under the Electric Energy Efficiency Rates.

Objectives and Rationale. Program Development includes:

- Incremental cost studies,
- Measure and program research and benefit-cost analysis,
- Codes and Standards research and analysis,
- Education and training on new technologies,
- Program design, development and analysis, and
- Software for tracking and reporting to remain in compliance with the Electric Energy Efficiency Rules.

Cost-Effectiveness. Program Development costs are associated with administering the Implementation Plan as a whole. These costs are not attributable to one energy efficiency program or measure, but are required to facilitate the energy efficiency goals for all programs and measures. Cost-effectiveness, as such, can not be assessed for this budget item, but the Program Development costs should represent a limited portion of the total budget.

Projected Program Development costs for 2011 equal approximately 3.47 percent of the total Implementation Plan budget, declining to approximately 2.62 percent in 2012. (In comparison, incentives represent, respectively, approximately 51 percent and 54 percent of the 2011 and 2012 budgets.)

Staff Recommendation. Staff recommends that the budget amounts allocated to program development, analysis and reporting software costs be included in the budget as shown in the application.

V. MEASUREMENT, EVALUATION AND RESEARCH; REPORTING: ALL PROGRAMS

Measurement, Evaluation, and Research. At a minimum, Measurement, Evaluation, and Research ("MER") shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415.

Reporting. At a minimum, Reporting shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415.

W. BUDGET FLEXIBILITY

TEP has requested the ability to shift up to 25 percent of its approved funds from Residential to Commercial sector programs, or from Commercial to Residential sector programs, based on program activity. The Company has also requested that it be allowed to increase the total budget for the energy efficiency programs by up to 25 percent, where cost-effective. The Company states that this type of flexibility maximizes participation in successful programs and allows it to continue accepting applications from customers in cases where an individual program may be over-subscribed.

Shifting of Funds. Funding for the Residential and Commercial sectors is approximately equal under the proposed Implementation Plan budgets for 2011 and 2012. (The Home Energy Reports subprogram targets Residential customers and its budget should be considered part of the funding for the Residential sector.) While the Commission has allowed utilities to shift energy efficiency program funding among programs or measures within the Residential sector, or among program or measures within the Commercial sector, recent practice has been to limit shifting from sector to sector, to ensure that both Residential and Commercial customers both have a reasonable opportunity to participate in energy efficiency programs. Allowing funding shifts among programs or measures within a sector allows a reasonable degree of flexibility without the potential impact to the equitable access to participation in energy efficiency programs by Residential and Commercial customers.

Increase to Total Budget. With a projected budget for 2012 of $24.7 million, and the flexibility of up to 25 percent proposed by TEP could result in an increase of over $6 million, depending on customer participation and actual costs. Although actual spending may be either

the level projected for the Implementation Plan, and the Company should be allowed some flexibility to accommodate unanticipated levels of customer participation, the 25 percent level proposed by TEP is excessive. Allowing an increase of up to 5 percent would provide TEP with flexibility in responding to higher-than-anticipated customer participation, but would better limit potential costs.

Staff Recommendations.

- Staff recommends that the Company be allowed to shift funding from measure to measure, or from less active to more active programs, for up to 25% of the budget originally allocated to the less active program. Budget shifting may only be done within, and not between, the Residential and Non-Residential program sectors.

- Staff recommends that the Company be allowed to increase the overall Implementation Plan budget by up to 5 percent, if the increases are allocated to Commission-approved cost-effective measures and programs.

X. DEMAND-SIDE MANAGEMENT SURCHARGE ("DSMS")

In TEP's Application, as updated on August 22, 2011, TEP is requesting recovery of the following costs through the DSMS: (i) DSM program costs, including $13.4 million from the period through 2011 (DSM costs minus the amount recovered through the existing DSM adjustor) and $24.7 million in spending projected for 2012 ; (ii) the DSM Performance Incentive, in the amount of $16 million; and (iii) the Company's proposed Authorized Revenue Requirement True-up ("ARRT") Mechanism, in the amount of $17 million.

DSM program costs. The DSMS should include recovery for the projected cost of the TEP's Implementation Plan, and should reflect any actions taken by the Commission with respect to the Implementation Plan. TEP states that the budget proposed for the program is designed to provide approximately 7 percent more in savings than is required in order to meet the 2012 incremental savings goal. Although the budget could be reduced by 7 percent to more closely match the spending required to meet the 2012 goal, such a reduction would also eliminate any margin for error in meeting that goal.

DSM Performance Incentive. Currently, the performance incentive is based on 10% of the net benefits from the DSM portfolio, excluding the LIW, E&O and Direct Load Control Programs, with a cap based on 10 percent of DSM spending. The Company proposes to modify the spending cap to a hard dollar cap based on a percentage of net benefits (up to 10%). TEP also proposes to apply the gross revenue conversion factor from the last rate case (1.66) to the performance incentive, in order to arrive at a "pre-tax" level for the incentive.

The structure of TEP's current performance incentive, which is recovered through the DSM adjustor, was approved by the Commission in TEP's last rate case, in Decision No. 70628. The benefit-based cap and conversion factor proposed by TEP for the Performance Incentive

would significantly alter the type and level of cost recovered through the DSM adjustor. Although the DSM adjustor rate may be reset annually to reflect fluctuations in costs already approved for recovery (such as program costs that vary according to participation levels), it is not appropriate for a reset outside a rate case to include major changes to the type or level of costs recovered through the DSM adjustor. Changes to the adjustor, including changes to how the Performance Incentive is calculated, should be made within a rate case.

ARRT. The ARRT Mechanism proposed by TEP is designed to recover revenue lost due to implementation of the EE Standard. Recovery of net lost revenue can only be addressed during a rate case. The ARRT Mechanism may be addressed in TEP's next rate case, if TEP so requests, and if TEP documents its request in the rate application.

TEP requested that, if the ARRT is not approved, the Commission grant TEP a waiver of the energy efficiency Rules until the ARRT or another "adequate" remedy is in place. Staff recommends that no waiver of the energy efficiency rules be granted to TEP at this time.

DSMS Reset Level. The current DSMS is $0.001249 per kWh. TEP has requested to increase the DSMS to $0.006343 per kWh, based on its proposals, as discussed herein. Based on the analysis indicated above, including the need to exclude the ARRT and to retain the existing method for calculating the Performance Incentive, Staff recommends a DSMS of $0.003812 per kWh. The impacts, based on average Residential usage, are shown in the table below:

Residential Usage	kWh/ month	Curent DSMS/kWh	Current Bill Impact/month	TEP Proposed DSMS/kWh	TEP Proposed DSMS Impact/month	Staff Proposed DSMS/kWh	Staff Proposed DSMS Impact/month
Summer Average	1,100	$0.001249	$1.37	$0.006343	$6.98	$0.003812	$4.19
Winter Average	680	$0.001249	$0.85	$0.006343	$4.31	$0.003812	$2.59
Annual Average	880	$0.001249	$1.10	$0.006343	$5.58	$0.003812	$3.35

Recommendations. Recommendations regarding the DSMS are listed below:

- Staff recommends that the DSMS include: (i) the program spending approved by this Commission decision; and (ii) the Performance Incentive, as calculated in the manner set in the last rate case.

- Staff also recommends that calculation of the DSMS take into account the current DSM balance, but not include the Company's proposed ARRT at this time.

- Staff recommends that the DSMS be reset to $0.003812 per kWh.

Adjustor Reset and Reporting Requirements. The Company requested that the current April 1 surcharge filing requirement and semi-annual DSM reporting (March 1 and September 1) requirements be superseded by the reporting requirements of A.A.C. R14-2-2409. TEP plans to file for an adjustor rate reset annually, as part of its Implementation Plan filings, beginning in June 2012, with the actual reset to take effect in January 2012.

- Staff recommends that the current surcharge filing and DSM reporting requirement be superseded by the reporting requirements of A.A.C. R14-2-2409.

- Staff also recommends that, in any year during which the Company does not file an Implementation Plan, or does not address the DSM adjustor reset within its Implementation Plan, an adjustor reset application should be filed separately, no later than April 1.

Y. CALCULATING COST-EFFECTIVENESS

Staff recommends that, in all future DSM Implementation Plans, the Company use the same input values and methodology as Staff for calculating the present value benefits and costs to determine benefit-cost ratios.

Y. SUMMARY OF RECOMMENDATIONS

Staff has made the following recommendations:

Overall

- In cases where a measure is not approved, the funding associated with that measure should be used to fund cost-effective measures within the same program, if possible.

- The Company should have the flexibility to transfer funding among cost-effective measures, within each program, to accommodate varying participation levels.

- The Company should have the flexibility to move up to 25% of funding from program to program within each sector, to accommodate varying participation levels. However, funding may not be transferred out of the Low-Income Weatherization Program.

- The Company should track federal standards, including those for lighting, to ensure that measures promoted by the TEP Implementation Plan offer cost-effective savings over and above current baselines.

Appliance Recycling

- The TEP Appliance Recycling Program should be approved and it should include both the refrigerator and freezer measures.

- The Company should offer a $30 incentive, rather than the $35 incentive proposed, but the overall budget for incentives should not be decreased.

Multi-Family Housing Efficiency

- The proposed Multi-Family Program should be approved, with older, less efficient and low-income complexes as a primary focus for the Multi-Family Program's activities.

Efficient Products

- The Efficient Products Program should be approved and continue to offer CFLs, with the addition of the Variable Speed Pool Pump, Advanced Power Strip and Pool Pump Timer measures.

- The Residential LED Light measure should not be approved at this time.

- The lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions should be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

Low-Income Weatherization

- The Low-Income Weatherization Program should be approved for continuation as part of TEP's Implementation Plan.

- TEP should be allowed to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"), so that the eligibility levels remain consistent over time.

Residential New Construction

- The Tier 1 measure should be approved for continuation.

- The Tier 2 and Tier 3 measures should be discontinued once the Residential New Construction Program has met its existing commitments for Tier 2 and Tier 3 homes.

Existing Homes and Audit Direct Install

- The Existing Homes and Audit Direct Install Program should be approved for continuance.

Shade Tree

- The Shade Tree Program should be approved for continuance.

Residential and Small Commercial Direct Load Control

- The Residential and Small Commercial Direct Load Control Program be approved to continue.
-

Bid for Efficiency

- The TEP Bid for Efficiency Pilot Program should be approved as a two-year pilot program as discussed herein.

- Individual project incentives under this program should be capped at 60 percent of the incremental costs of the efficiency measures included in the project.

Retro-Commissioning

- The TEP Retro-commissioning Program should be approved.

Schools Facilities

- The School Facilities Schools Program should be approved.

CHP

- The CHP Joint Program should be approved.

Small Business Direct Install

- The Small Business Direct Install Program should be approved to continue, with the proposed new measures.

C&I Comprehensive

- The C&I Comprehensive Program should be approved, except for the proposed additional measure LED Street and Parking Lights.

Commercial Direct Load Control

- The C&I Direct Load Control Program should be approved for continuation.

Commercial New Construction

- The Commercial New Construction Program, including the high-performance glazing measure, should be approved for a second two-year period.

- TEP should implement the recommendations in the "Assessment of Baseline Practices for Commercial New Construction" prepared by Navigant Consulting, including modification of Program performance thresholds (for public buildings) and Program applications to differentiate between public and private sector facilities.

- Measurement & Evaluation statistics for the Program should be included in the DSM reports filed with the Commission.

- TEP should continue the Commercial New Construction Program's outreach efforts by targeting building owner, developer and design professional organizations, lenders and lender industry associations, and local building code officials.

- Information announcing the availability of the Program should occupy a more prominent position on the TEP website.

Behavioral Comprehensive

- The Behavioral Comprehensive program, and all its subprograms, should be approved.

Residential Energy Financing

- The Residential Energy Efficiency Financing Program should be approved for a two-year pilot as described herein.

- TEP's request that the DSM Surcharge for the Residential Energy Financing Program be collected only from Residential customers should not be approved.

Energy Codes Enhancement

- TEP's Energy Codes Enhancement Program should be approved, subject to implementation of the MER and Reporting protocols stated herein.

Education and Outreach

- The Education and Outreach (or Consumer Education and Outreach) Program should be approved for continuation, with the modifications proposed.

Program Development

- The budget amounts allocated to program development, analysis and reporting software costs should be included in the budget be approved, as shown in the application.

Budget Flexibility

- The Company should be allowed to shift funding from measure to measure, or from less active to more active programs, for up to 25 percent of the budget originally allocated to the less active program. Budget shifting should only be done within, and not between, the Residential and Non-Residential program sectors.

- The Company should be allowed to increase the overall Implementation Plan budget by up to 5 percent, if the increases are allocated to cost-effective measures and programs.

DSMS

- The DSMS should include: (i) the program spending approved the Commission; and (ii) the Performance Incentive, as calculated in the manner set in the last rate case.

- Calculation of the DSMS should take into account the current DSM balance, but not include the Company's proposed ARRT at this time.

- The DSMS should be reset to $0.003812 per kWh.

Adjust Reset and Reporting Requirements

- The current surcharge filing and DSM reporting requirement should be superseded by the reporting requirements of A.A.C. R14-2-2409.

- In any year during which the Company does not file an Implementation Plan, or does not address the DSM adjustor reset within its Implementation Plan, an adjustor reset application should be filed separately, no later than April 1.

Steven M. Olea
Director
Utilities Division

SMO:JMK:lhm\CHH

ORIGINATOR: Julie McNeely-Kirwan

BEFORE THE ARIZONA CORPORATION COMMISSION

GARY PIERCE
Chairman
BOB STUMP
Commissioner
SANDRA D. KENNEDY
Commissioner
PAUL NEWMAN
Commissioner
BRENDA BURNS
Commissioner

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	DOCKET NO. E-01933A-11-0055 DECISION NO._____ ORDER

Open Meeting
December 13 and 14, 2011
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Tucson Electric Power Company ("TEP" or "the Company") provides electric service within portions of Arizona, pursuant to authority granted by the Arizona Corporation Commission ("Commission").

2. TEP provides service in the counties of Cochise and Pima. The Company has approximately 400,000 customers, 365,000 of whom are Residential and 36,000 of whom are Commercial or Industrial, along with a small number of Mining, Public Street and Highway lighting and Resale customers.

Implementation Filing

3. On January 31, 2011, TEP filed its application for approval of the Company's Energy Efficiency Implementation Plan for 2011-2012 ("Implementation Plan"). On August 22, 2011, the Company filed updated information concerning several elements of the original filing, including the Residential Financing Program, the budgets, Implementation Plan savings, the

Authorized Revenue Requirement True-up ("ARRT") and the Demand-side Management ("DSM") Adjustor.

4. The Implementation Plan and updated filing address the following issues and Company proposals:

i. *TEP Portfolio of Programs for 2011-2012.* The existing and proposed DSM programs and measures proposed for the Company's DSM through the 2012 program year;

ii. *DSM Performance Incentive.* TEP is proposing a performance incentive of $16.4 million for two years, based on a modification of the performance incentive structure.

iii. *Authorized Revenue Requirement True-up ("ARRT") Mechanism.* The ARRT Mechanism is intended to recover the revenue requirements associated with energy efficiency kWh savings until approval of decoupling or a similar mechanism in the Company's next rate case. TEP has proposed an updated ARRT of $16.7 million over two years; and

iv. *Proposed Demand-Side Management ("DSM") Surcharge ("DSMS").* The proposed DSMS is the rate, per kWh, at which the Company would recover its proposed DSM costs, DSM Performance Incentive, and ARRT.

Scope and Structure of Program Review

5. *Existing and Proposed Programs*. The TEP Implementation Plan is organized into four parts: (i) Residential; (ii) Commercial; (iii) Behavioral; and (iv) Support. For purposes of review, each sector has been addressed in the above order: New (Proposed) and Existing (with modifications proposed) programs and Existing (without modifications proposed). The programs have been reviewed in the order indicated by Program Description Tables 1-4, herein.

6. Summarized descriptions are provided for existing programs, but the focus of Staff's review and analysis was new programs, proposed changes to existing programs and new Implementation Plan components or enhancements, along with the Company's proposals regarding the ARRT and the methodology for calculating the DSMS. Measures previously determined by Staff to be cost-effective were re-evaluated for cost-effectiveness if current information indicated that re-evaluation was necessary. Information from the August 2011 update has been incorporated into this review.

7. TEP Implementation Plan. The tables below list programs by sector, and indicate whether each program is new (proposed) or existing (with or without proposed modifications). A brief description is also provided. More detailed program descriptions are presented herein, in the order indicated in the following tables.

PROGRAM DESCRIPTION – TABLE 1 (Residential)

RESIDENTIAL SECTOR		
Program Name	New (Proposed), Existing with modifications proposed or Existing without modifications proposed	Description
Appliance Recycling	New (Proposed)	Removes and recycles inefficient refrigerators and freezers.
Multi-Family	New (Proposed)	Promotes direct install of energy efficient measures at apartment complexes consisting of more than four apartments.
Efficient Products (formerly the CFL Buy-Down Program)	Existing, with additional measures proposed	Program currently promotes CFLs. The Company has proposed including advanced power strips, and energy efficient pool pumps and timers.
Low Income Weatherization	Existing, with expanded eligibility proposed (eligibility to track with that of federal LIHEAP Program)	Assists in making low-income homes more energy efficient.
Residential New Construction	Existing, no modifications proposed	Promotes the building of more efficient new homes.
Existing Homes and Audit Direct Install (formerly the Residential HVAC Program)	Existing, no modifications proposed	Promotes energy efficiency in existing homes.
Shade Tree	Existing, no modifications proposed	Promotes planting of desert-adapted shade trees in locations designed to enhance energy efficiency.
Residential Direct Load Control–Pilot	Existing, no modifications proposed	Reduced use of AC units through Utility control.

PROGRAM DESCRIPTION – TABLE 2 (Commercial)

COMMERCIAL SECTOR		
Program Name	New (Proposed) or Existing	Description
Bid for Efficiency – Pilot	New (Proposed)	Customers or project sponsors develop a holistic EE project then bid competitively for incentives within broad program guidelines.
Retro-Commissioning	New (Proposed)	Involves using a systematic approach to identifying building equipment or processes that are not achieving optimal performance or results in an existing facility.
Schools Facilities	New (Proposed)	A program similar to the TEP C&I Comprehensive Program, but with a separate budget specifically for school facilities.
CHP Joint Program – Pilot	New (Proposed)	Joint program in cooperation with Southwest Gas to promote increased development of CHP installations.

Small Business Direct Install	Existing, with new measures proposed	Persuade small business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program.
C&I Comprehensive	Existing, with new measures proposed	Persuade business customers to install high-efficiency equipment at their facilities and encourage contractors to provide turn-key installation services to business customers.
Commercial Direct Load Control	Existing, no modifications proposed	A third-party implementation contractor negotiates load reduction agreements with multiple customers and "aggregates" these customers to provide TEP a guaranteed load reduction upon request.
Commercial New Construction	Existing, with proposed new measure	A re-branding of the Efficient Commercial Building Design Program intended to assist customers in designing and constructing energy efficient buildings.

PROGRAM DESCRIPTION – TABLE 3 (Behavioral)

Behavioral Sector		
Program Name	New (Proposed) or Existing	Description
Behavioral Comprehensive	New (Proposed) and Existing Components	A variety of educational/behavioral programs, including direct canvassing, K-12 education, community education, in home energy use monitors and CFL giveaway outreach events.
Home Energy Reports	Existing, no modifications proposed	Energy reports comparing a customer's usage to that of their neighbors. Reviewed herein as part of the Behavioral Comprehensive Program.

PROGRAM DESCRIPTION – TABLE 4 (Support)

Support Sector		
Program Name	New (Proposed) or Existing	Description
Residential Energy Financing	New (Proposed)	Low-interest unsecured loans for energy efficiency measures installed in existing homes
Energy Codes Enhancement Program	New (Proposed)	Seeks to improve the level of compliance with existing local building energy codes and supports the periodic updating of these codes.
Education and Outreach	Existing. On-line Energy Audits and Academic Education components transferred to Behavioral Comprehensive sector programs.	Education programs designed to increase participation in the TEP Implementation Plan and promote changes in behavior.
Support and Program Development	Existing, tracks with portfolio program requirements	Costs for program design, development and resources necessary to meet reporting requirements of the EE Standard

BUDGETS: 2011 and 2012

8. Below are the proposed budgets for the TEP Implementation Plan, by sector, program and category for 2011 and 2012. Although the budgets for two years are included herein, the programs will not conclude at the end of those two years but, instead, will continue until further Commission action. The Implementation Plan budgets were updated in August 2011, in the Notice of Filing Updated Information In Support of [the] 2011-2012 Electric Energy Efficiency Implementation Plan. The tables below reflect the updated budgets.

9. Proposed costs for the DSM performance incentive and the ARRT are not included in this table.

UPDATED TEP EE IMPLEMENTATION PLAN BUDGET 2011 TABLE

Sector	Program Name	Incentives	Program Delivery	Program Marketing	Program Administration	Evaluation	Total
Residential	Efficient Products	$1,291,500	$418,603	$256,515	$49,296	$80,637	$2,096,550
	Appliance Recycling	$0	$20,713	$5,178	$14,085	$1,599	$41,574
	Residential New Construction	$1,140,000	$476,800	$200,000	$17,850	$73,386	$1,908,036
	Existing Homes/Audit Direct Install	$1,154,360	$618,697	$265,959	$17,850	$61,706	$2,118,572
	Shade Tree	$200,000	$78,853	$13,943	$14,085	$12,275	$319,155
	Low-Income Weatherization	$525,000*	$48,568	$5,736	$14,085	$17,802	$611,190
	Multi-Family	$0	$0	$0	$0	$0	$0
	Residential Direct Load Control (Pilot)	$0	$655,000	$98,250	$12,750	$19,150	$785,150
	Subtotal	**$4,310,860**	**$2,317,232**	**$845,580**	**$140,000**	**$266,554**	**$7,880,227**
Commercial	C&I Comprehensive	$2,165,375	$1,125,568	$329,094	$28,169	$145,928	$3,794,134
	Commercial Direct Load Control	$650,000	$625,283	$0	$10,563	$50,000	$1,335,846
	Small Business Direct Install	$1,505,956	$654,855	$324,122	$14,085	$99,961	$2,598,978
	Commercial New Construction	$279,310	$59,695	$33,900	$14,085	$15,480	$402,469
	Bid for Efficiency (Pilot)	$0	$34,160	$4,441	$7,042	$1,826	$47,469
	Retro-Commissioning	$0	$0	$0	$0	$0	$0
	Schools Facilities	$0	$0	$0	$0	$0	$0
	CHP Joint Program (Pilot)	$0	$20,000	$2,000	$0	$0	$22,000
	Subtotal	**$4,600,640**	**$2,519,560**	**$693,557**	**$73,944**	**$313,194**	**$8,200,896**
Behavior	Home Energy Reports	$247,500	$85,913	$16,671	$35,211	$15,412	$400,706
	Behavioral Comprehensive	$110,450	$300,794	$50,000	$14,085	$19,013	$494,341
	Subtotal	**$357,950**	**$386,706**	**$66,671**	**$49,296**	**$34,425**	**$895,048**
Support	Education and Outreach	$0	$350,000	$16,530	$9,859	$7,528	$383,917
	Residential Energy Financing	$4,000	$85,000	$36,399	$14,085	$3,331	$142,815
	Codes Support	$0	$41,250	$6,188	$0	$1,898	$49,335
	Program Development, Analysis and Reporting Software[1]	$0	$630,238	$0	$0	$0	$630,238
	Subtotal	**$4,000**	**$1,106,488**	**$59,117**	**$23,944**	**$12,756**	**$1,206,305**
	TOTAL	**$9,273,450**	**$6,329,987**	**$1,664,925**	**$287,183**	**$626,930**	**$18,182,475**
Percentage of Total Budget		**51%**	**35%**	**9%**	**2%**	**3%**	**100%**

*For the Low-Income Weatherization Program, payments to the community action agencies responsible for managing and implementing the weatherization projects are classified as incentives.

[1] Although classified as delivery costs by the Company, this budgetary item relates more to overall Implementation Plan management than to the delivery of specific programs.

UPDATED TEP EE IMPLEMENTATION PLAN BUDGET 2012 TABLE

Sector	Program Name	Incentives	Program Delivery	Program Marketing	Program Administration	Evaluation	Total
Residential	Efficient Products	$1,571,232	$417,639	$298,331	$50,775	$93,519	$2,431,495
	Appliance Recycling	$189,000	$562,822	$60,146	$14,507	$33,059	$859,533
	Residential New Construction	$915,000	$565,505	$200,000	$18,386	$67,956	$1,766,846
	Existing Homes/Audit Direct Install	$2,253,180	$698,233	$442,712	$18,386	$102,375	$3,514,886
	Shade Tree	$200,000	$84,336	$14,217	$14,507	$12,522	$325,582
	Low-Income Weatherization	$525,000	$53,207	$5,782	$14,507	$17,955	$616,451
	Multi-Family	$40,950	$94,234	$13,518	$14,507	$6,528	$169,738
	Residential Direct Load Control (Pilot)	$40,000	$105,370	$21,806	$13,133	$4,508	$184,816
	Subtotal	**$5,734,362**	**$2,581,346**	**$1,056,511**	**$158,707**	**$338,422**	**$9,869,348**
Commercial	C&I Comprehensive	$2,557,394	$1,162,607	$372,000	$29,014	$164,841	$4,285,856
	Commercial Direct Load Control	$1,452,000	$1,259,079	$0	$10,880	$30,000	$2,751,959
	Small Business Direct Install	$1,753,478	$676,286	$364,465	$14,507	$112,349	$2,921,085
	Commercial New Construction	$279,310	$62,676	$34,199	$14,507	$15,628	$406,319
	Bid for Efficiency (Pilot)	$330,000	$85,253	$53,983	$14,507	$19,350	$503,092
	Retro-Commissioning	$110,000	$24,141	$20,121	$14,507	$6,751	$175,520
	Schools Facilities	$78,158	$52,287	$6,914	$14,507	$6,075	$157,941
	CHP Joint Program (Pilot)	$0	$20,000	$2,000	$0	$0	$22,000
	Subtotal	**$6,560,340**	**$3,342,329**	**$853,681**	**$112,430**	**$354,993**	**$11,223,772**
Behavior	Home Energy Reports	$513,200	$69,283	$29,124	$36,268	$25,915	$673,790
	Behavioral Comprehensive	$602,380	$698,765	$50,000	$14,507	$54,626	$1,420,279
	Subtotal	**$1,115,580**	**$768,048**	**$79,124**	**$50,775**	**$80,541**	**$2,094,069**
Support	Education and Outreach	$0	$350,000	$17,026	$10,155	$7,544	$384,724
	Residential Energy Financing	$7,995	$375,415	$37,458	$14,507	$7,270	$442,645
	Codes Support	$0	$56,180	$8,427	$7,979	$2,903	$75,490
	Program Development, Analysis and Reporting Software	$0	$649,145	$0	$0	$0	$649,145
	Subtotal	**$7,995**	**$1,430,740**	**$62,911**	**$32,641**	**$17,717**	**$1,552,004**
	TOTAL	**$13,418,277**	**$8,122,464**	**$2,052,227**	**$354,552**	**$791,673**	**$24,739,193**
Percentage of Total Budget		**54%**	**33%**	**8%**	**1%**	**3%**	**100%**

SAVINGS: 2011 AND 2012

10. TEP reports that the Company anticipates meeting the EE standards for both 2011 and 2012. Based on the August 2011 filing, the Company anticipates total savings of approximately 311,146,000 kWh (or 311,126 MWh) for 2011 and 2012. The following table

shows TEP's projected savings by year, and the percentage of cumulative savings, as compared to the previous year's retail sales (2010 retail sales are actual, but 2011 sales are forecast).

Year	Retail Energy Sales (MWh)	Projected Incremental Annual Energy Savings (MWh)	Projected Cumulative Annual Energy Savings (MWh)	Cumulative Annual Savings as a % of previous year Retail Sales	Cumulative EE Standard
2010	9,291,788				
2011	9,335,237	135,781	135,781	1.46%	1.25%
2012		175,365	311,146	3.33%	3.00%

RESIDENTIAL PROGRAMS

A. APPLIANCE RECYCLING

11. Program Description. TEP's proposed new Appliance Recycling Program ("Appliance Program") is designed to remove and recycle inefficient working refrigerators and freezers. TEP cites national studies indicating that approximately 20% of customers have at least one secondary inefficient refrigerator or freezer in their home, suggesting a significant potential for energy savings in this sector. The goal is to recycle 5,400 units per year, for 2011-2013. The Appliance Program would offer residential customers a $35 incentive, plus free pick-up and recycling for working, but inefficient, refrigerators and freezers.

12. The Appliance Recycling Program permanently removes inefficient appliances that might otherwise remain in service, either at the customer's home, or elsewhere through donation or resale. In addition, the recycling program removes the usual barriers to taking these appliances offline by eliminating both the cost and the inconvenience associated with disposing of inefficient appliances.

13. Program Objectives and Rationale. Second refrigerators and freezers are usually older models and are often less efficient and more costly to operate than up-to-date efficiency appliances. TEP estimates an average monthly dollar savings of $8.47 for refrigerators and $6.55 for freezers for its customers. Savings can go higher. For example, the TEP Green Energy site estimates that a standard, non-Energy Star side-by-side standard refrigerator (15 to 20 years old),

uses an average of 190 kWh per month and costs $17.10 to operate, while the comparable Energy Star refrigerator uses 44 kWh per month and costs $3.96. The Energy Star site notes that replacing a refrigerator from the 1970s can save more than $200 per year, while replacing a refrigerator from the 1980s can save over $100 per year. Another consideration is that the existing inefficiencies of older refrigerators and freezers may be magnified by storage in garages or on porches, causing them to expend more power in order to keep their contents cool, and making them even more costly for consumers to operate.

14. Eligibility. The Program is open to TEP residential customers with operable inefficient refrigerators or freezers of between 10 and 30 cubic feet in size. Households are limited to two recycling rebates per year.

15. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

16. Delivery and Marketing Strategy. The Appliance Program would utilize an experienced appliance recycling contractor, JACO, to: (i) market the program; (ii) verify customer's eligibility; (iii) process incentives; (iv) pick up eligible appliances; and (v) responsibly recycle the appliances.

17. The TEP application emphasizes that prompt processing of incentive payments is essential to customer satisfaction.

18. Program Analysis/Issues. The JACO recycling facility in Phoenix will recycle all the appliances picked up from the TEP service territory. JACO was chosen because the company has a recycling center in Phoenix capable of meeting the TEP Appliance Recycling Program's needs. (It would not be cost-effective for JACO to set up a facility in the TEP territory, because JACO would require at least 10,000 units per year for three years to cover the estimated $250,000 in construction costs.) JACO will set up a local office and storage facility for the TEP area, and will store appliances locally until they can be transported in quantity, in order to minimize shipping costs.

19. JACO's website states that it completely deconstructs each unit and safely disposes of toxins and ozone-depleting chlorofluorocarbon gases (CFC-11). JACO ensures that over 95%

of the components and materials are recycled or "eliminated in an environmentally responsible way."

20. Cost-Effectiveness. Based on Staff's analysis, the refrigerator measure has a benefit-cost ratio of 2.91 and the freezer measure has a benefit-cost ratio of 2.21, making both measures cost-effective.

21. Staff Recommendation. Staff has recommended that the TEP Appliance Recycling Program be approved and that it include both the refrigerator and freezer measures.

22. Staff has also recommended that the Company offer a $30 incentive, rather than the $35 incentive proposed, but that the overall budget for incentives not be decreased. A $30 incentive would be consistent with the incentives offered under the Arizona Public Service Company ("APS") and the Salt River Project ("SRP") appliance program, and would allow more TEP customers to participate, potentially removing more inefficient appliances from the grid. (The proposed total incentive budget is $189,000. A per-unit incentive of $35 would allow 5,400 TEP customers to participate, while an incentive of $30 would allow 6,300 to participate.)

23. Staff has also recommended that the Appliance Recycling Program be expanded to include non-residential customers with extra working refrigerators or freezers eligible for recycling, with the same limit of two appliances per year, per customer. Expanding eligibility to non-residential customers with eligible appliances would provide more TEP customers, particularly small businesses, with an opportunity to participate in the Appliance Recycling Program. Such expanded eligibility potentially enhances participation levels and could help to get additional inefficient appliances permanently off the grid.

B. Multi-Family Housing Efficiency Program

24. Program Description. The proposed new Multi-Family Housing Efficiency Program ("Multi-Family Program") would promote energy efficiency in the residential multi-family sector, to properties with five or more units. The Multi-Family Program is designed to overcome barriers typical to the multi-family housing market, which has limited participation in energy efficiency programs.

. . .

25. The Multi-Family Program would offer property owners and managers the following options: (i) direct installation of CFLs, low-flow showerheads and faucet aerators; and (ii) improvements to common areas handled by the Small Business Direct Install Existing Facilities ("SBDIEF") Program. Once the Multi-Family Program has ramped up and matured, TEP will look into developing a third track for existing complexes that are not part of a major renovation or rehabilitation. If cost-effective, and if approved by the Commission, this third track would focus on improvements to the building shell, including insulation and air sealing.

26. Objectives and Rationale. Multi-family housing offers large potential savings through economies of scale, but this has been a difficult sector to reach, in part because owners may not directly benefit from improving energy efficiency. By reducing key market barriers and targeting key decision makers, the Multi-Family Program may produce energy savings in this under-addressed market segment.

27. The objectives of the Multi-Family Program are to:

- Reduce peak demand and overall energy consumption in the multifamily housing market segment;
- Promote energy efficiency retrofits of both dwelling units and common areas in this market segment;
- Increase overall awareness about the importance and benefits of energy efficiency improvements to the landlord and property ownership community; and
- Help meet the energy savings targets of the TEP DSM Implementation Plan.

28. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

29. Delivery and Marketing Strategy. Delivery of the direct installation, rehabilitation and new construction components of the Program will be handled by an implementation contractor.

30. Marketing and communications strategies will include website updates, local newspapers and radio, bill messages and bill inserts, training seminars, call center on-hold messages, direct mail promotion, outreach to rental housing industry associations, and work with

contractors and industry specialists. A primary emphasis will be placed on larger, older, and less efficient complexes.

31. Program Analysis/Issues. Barriers to energy efficiency programs in the multi-family market segment include: (i) split incentives, (ii) lack of capital, and (iii) lack of information about energy efficiency improvements. These barriers are described in more detail, below.

32. Split Incentives. "Split incentives" describes the problem that arises in promoting energy efficiency in rental units. The builders who construct rental properties, and the owners who would be responsible for upgrades, do not usually pay the energy bills. Consequently, builders and owners do not directly benefit from the lower energy costs that arise from investing in efficiency measures, reducing or eliminating their incentive to participate in energy efficiency programs. At the same time, the renters who would benefit from lower energy bills have no direct influence over original construction and, with respect to renovations or retrofits, may not have the authority, the incentive or the means to invest in energy efficiency for housing they do not own.

33. Lack of Capital and Awareness. Other problems can include a lack of capital for improvements and a lack of awareness about energy efficiency. The Multi-Family Program would address both through direct installation of low cost energy efficiency improvement in existing complexes and through energy efficiency improvements to common areas through the Small Business Direct Install Existing Facilities Program.

34. Commercial Versus Residential Multi-Family Housing. Another issue is that ownership and decision-making tends to vary for multi-family housing, depending on the number of units. Properties with 2-4 dwelling units typically fall under residential financing guidelines and, for these smaller properties, the decision-makers are usually individuals. Larger properties with 5 dwelling units or more typically fall under commercial lending guidelines and decision-makers (at least for larger complexes) are typically corporate, institutional, or trusts (e.g., Real Estate Investment Trusts). As such, the decision-making process and access to capital varies between these two market segments. With this distinction in mind, the Company believes that the 2-4 unit market segment can be best served by the Residential Existing Home and Audit Direct . . .

Install Program, while the 5+ Multifamily Housing market segment would be served by the proposed Multifamily Program.

35. Cost-Effectiveness. Based on Staff's analysis, the benefit-cost ratio for each of the three proposed direct install measures is approximately 2.1, making all three measures cost-effective.

36. As noted elsewhere, improvements to common areas will be a part of the Small Business Direct Install Existing Facilities Program. Costs and savings associated with the common area improvements will, accordingly, be tracked as a part of that program.

37. Staff Recommendation. Staff has recommended that the proposed Multi-Family Program be approved, but that older, less efficient and low-income complexes be a primary focus for the Multi-Family Program's activities.

RESIDENTIAL EXISTING PROGRAMS (WITH PROPOSED MODIFICATIONS)

C. Efficient Products

38. Program Description. This is an existing Residential program previously approved by the Commission in Decision No. 70383 (June 13, 2010), with proposed new measures. The Efficient Products Program (formerly called the CFL Buy-Down Program) would promote the purchase of energy efficient retail products through in-store buy-down promotions. In addition to the existing CFL measure, four new measures are proposed for the Efficient Products Program, beginning in 2012. The measures and proposed incentives are as follows: (i) Variable Speed Pool Pump ($200 per unit); (ii) Pool Pump Timer ($75 per unit); (iii) Residential LED light ($30 per bulb) and (iv) Advanced Power Strips ($10 per sensor). CFL incentives vary by type of CFL, but the average is $1.14 per unit.

39. Program Objectives and Rationale. The new measures will offer residential customers additional opportunities to increase energy efficiency. The Efficient Products Program promotes market transformation through retail partnerships, training for retail staff, and increased stocking and selection of efficient retail products.

40. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

41. Delivery and Marketing. TEP is not proposing any significant changes in implementation approach or delivery strategy, except for the addition of new measures starting in 2012. Delivery channels for the new measures will continue to be via a combination of both buy-downs and possible mail-in rebates with participating retailers. Program marketing is primarily through mass-market channels (e.g., radio, newspaper, website, etc.) and through education and training of participating retailers.

42. Program Analysis/Issues. While there are reports questioning the life expectancy of CFLs in practice, there is currently very little actual study data on the lifespan of CFLs. (Verification testing requires only that eight out of ten units operate for 40% of rated life.) Assumptions regarding the lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions should be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

43. Cost-Effectiveness. To be cost-effective, an energy efficiency measure should have a benefit-cost ratio above 1.0, based on a comparison of avoided costs with costs incurred to purchase and deliver an energy efficiency measure. The existing CFL measure was found to be cost-effective when it was approved, with a 1.6 benefit-cost ratio, and the most recent semi-annual DSM filing (for January through June 2011) reported demand and energy savings for 2010 that were significantly above projections, indicating a higher than anticipated benefit-cost ratio.

44. Three of the proposed new measures have benefit-cost ratios above 1.0, while one does not. The Variable Speed Pool Pump has a benefit-cost ratio of 1.4, the Advanced Power Strips have a benefit-cost ratio of 1.8, and the Pool Pump Timer measure has a benefit-cost ratio of 2.4. The Residential LED light has a benefit-cost ratio of 0.77, well below 1.0. The lower benefit-cost ratio is largely due to energy savings that are low compared to the cost of the measure.

45. Staff Recommendations.

- Staff has recommended that the Efficient Products Program be approved, and continue to offer CFLs, with the addition of the Variable Speed Pool Pump, Advanced Power Strip and Pool Pump Timer measures.

- Staff has also recommended that the Residential LED Light measure not be approved at this time, but that the budget associated with Residential LED Light

measure be re-allocated to the Efficient Products Program measures approved by the Commission.

- Staff has recommended that the lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

D. Low-Income Weatherization

46. Program Description. The Low-Income Weatherization ("LIW") Program is an existing program designed to conserve energy and lower utility bills for TEP households with limited incomes. The primary goal of the LIW Program is to fund weatherization for low-income homes, to reduce energy costs and improve comfort and safety for low-income customers. The LIW Program also conserves energy, and reduces both electric and gas consumption.

47. Program Objectives and Rationale. The objective of the Program is to coordinate with the Arizona Energy Office (now the Governor's Office of Energy Policy ("OEP")) to follow state Weatherization Assistance Program rules in using TEP ratepayer funds to lower household energy consumption for low-income customers and increase the number of weatherized homes.

48. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

49. Delivery and Marketing Strategy. The Program is delivered through the Tucson Urban League ("TUL") and Pima County Community Services ("PCCS"). Due to the popularity of the Program, revenues are not allocated to advertising and promotion. Promotion takes place through presentations to community organizations, through information left at community and recreation centers, and through calls directed from TEP. TEP also promotes the Program on its website and through speaking engagements and outreach presentations.

50. Program Analysis/Issues. TEP is proposing to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"). Currently, eligibility for the TEP LIW Program is set at 150 percent of the federal poverty level, while the federal LIHEAP eligibility level is set at 200 percent. Increasing the TEP LIW eligibility level would allow the Program to serve more customers, and tracking the TEP

level with the level set by LIHEAP (whether increasing or decreasing) would streamline the administrative process for community action agencies delivering the Program.

51. Cost-Effectiveness. The benefit-cost ratio for the Low-Income Weatherization Program is 1.03, slightly above the level required for cost-effectiveness.

52. Staff Recommendation. The Low-Income Weatherization Program enhances the energy efficiency of low-income Residential household on a cost-effective basis, reducing utility costs and improving the health and safety for low-income customers.

- Staff has recommended that the Low-Income Weatherization Program be approved for continuation as part of TEP's Implementation Plan.
- Staff has also recommended that TEP be allowed to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"), so that the eligibility levels remain consistent over time.

E. Residential New Construction

53. Program Description. The Residential New Construction Program, also known as the Zero Net Energy Homes Program, is a continuation of the existing program design that was approved by Decision No. 71638 (April 14, 2010). The Residential New Construction Program is designed with an incentive schedule that awards larger incentives for more efficient homes. The incentive schedule for the Residential New Construction Program provides a $400 incentive for each Tier 1 home, a $1,500 incentive for each Tier 2 home, and a $3,000 incentive for each Tier 3 home.

54. To qualify for an incentive, homes must be tested by an approved energy rater, and meet one of the three tiers in the Program based on a Home Energy Rating System ("HERS") Index score. On the HERS index scale, a score of 100 is considered the average efficiency of baseline new construction, while a HERS index score of 0 represents a home that produces all of its energy through on-site generation from renewable energy. In other words, the lower the HERS score, the more efficient the home. Under the Residential New Construction Program, Tier 1 requires a minimum HERS score lower than or equal to 85, Tier 2 requires a HERS score lower than, or equal to, 70, and Tier 3 requires a HERS score lower than, or equal to 45.

55. Program Objectives and Rationale. The objectives of the Residential New Construction Program are to advance energy efficient building practices through builder training, and to increase customer awareness of the benefits associated with energy efficient construction, combined with application of renewable technologies, such as solar photovoltaic and solar hot water systems consistent with achieving the goals of the Arizona Renewable Energy Standard.

56. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

57. Delivery and Marketing Strategy. Program delivery is provided by TEP staff, and participation of independent RESNET approved home energy raters. TEP provides outreach to targeted builders, conducts builder training on marketing ENERGY STAR homes and on the ENERGY STAR performance standard, and mentors participating builders and raters.

58. The Program is marketed to select builders primarily through direct business-to-business contacts. The Program is marketed to consumers at home shows, parade of homes, and other events focused on homebuilding as advertised through mass market and targeted media outlets.

59. Program Analysis/Issues. In Decision No. 71638, Tier 2 and Tier 3 were added to the existing Residential New Construction Program, with monetized carbon values taken into account in calculating cost-effectiveness. (TEP included potential costs of complying with carbon dioxide (CO2) regulation in its benefit-cost calculations.) Without the monetized carbon value, Tier 2 had a benefit-cost ratio of 0.75, well below the 1.0 benefit-cost ratio required for cost-effectiveness. No benefit-cost analysis of Tier 3 was done because, according to information provided by TEP, the only difference between Tier 2 and Tier 3 were the additional costs for solar measures.

60. Staff did not recommend approval of the Zero Net Homes Program, as proposed, but found that Tier 2 had a benefit-cost ratio of 1.1, if the Company's lowest proposed CO2 value was included.

61. The Commission approved the Zero-Net Energy Homes Pilot Program in April 2010, stating "The Commission believes that TEP's Pilot Program advances the Company's efforts

with regard to energy efficiency and broadens its current program offerings." The Decision also noted that "inclusion of a modest CO2 value in determining the proposal's cost effectiveness is appropriate, particularly for a pilot project and in light of likely Federal action addressing carbon within the proposed pilot project timeframe."

62. To date, no federal action has taken place which creates a clearly monetized value for the avoided costs of complying with carbon dioxide regulation. Without a monetized value, Staff practice has been to assume that the value of avoided emissions, although unknown, is greater than zero, and likely to make measures with benefit-cost ratios close to 1.0 cost-effective in practice.

63. Cost-Effectiveness. Benefit-cost ratios for the three New Residential Construction tiers were re-evaluated to determine cost-effectiveness based on current information, and taking into account the absence of federal regulations regarding carbon. Staff included gas savings for Tier 1 and Tier 2 (for duel fuel homes) when calculating updated cost-effectiveness.

64. Based on the Societal Test, and without monetized carbon values, the benefit-cost ratio for Tier 1 homes is 1.17, making the Tier 1 measure cost-effective. The benefit-cost ratio for Tier 2 is 0.88, making Tier 2 too low to be considered cost-effective, even taking into account the non-monetized environmental savings.

65. Staff Recommendation. Staff has recommended that the Tier 1 measure be approved for continuation, but has recommended that the Tier 2 and Tier 3 measures not be continued. If the Commission does not approve the Tier 2 and Tier 3 measures, Staff has recommended that they be discontinued once the Residential New Construction Program has met its existing commitments for Tier 2 and Tier 3 homes.

F. Existing Homes and Audit Direct Install

66. Program Description. The Existing Homes and Audit Direct Install ("Existing Homes") Program is an existing program that replaced the former Residential HVAC Program (approved by Decision No.72028 in December 10, 2010). No modification of this Program is being proposed in the current filing.

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67. The Existing Homes Program is targeted to existing homes in need of energy efficiency improvements. The Program has two components, an initial energy audit with direct install of CFLs and advanced power strips, followed by identification of actionable, larger scale home energy efficiency improvements and referral to local Building Performance Institute ("BPI") certified contractors to implement major home energy improvements such as insulation, air-sealing and HVAC. Rebates are paid to contractors for HVAC and thermal envelope measures, with incentives ranging from $250 to $1,700 per measure. The current average total incentive per participating home is approximately $1,000. TEP plans to submit the Existing Home Program to EPA with a request to utilize EPA labeling as Home Performance with ENERGY STAR.

68. *Program Objectives and Rationale*. The Existing Homes Program achieves energy and demand savings from the installation of energy efficient measures and contributes toward transforming the industry to emphasize best practice building science principles. The Existing Homes Program invests in training and mentorship of participating contractors to understand the "house as a system" building science and to achieve BPI certification. TEP has included a Residential Financing Pilot Program in this Plan for 2011-2012 which will be used to enhance participation in this program.

69. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

70. Delivery and Marketing Strategy. TEP provides program management oversight and marketing. A third party implementation contractor will be responsible for recruitment, training, and mentorship of participating contractors and trained energy auditors, data tracking, rebate processing and technical support. Auditors will provide referrals to BPI certified contractors and referral information will be reported to TEP. Measure installation to residential customers will be provided by participating independent contractors. In 2011-2012, program delivery will be coordinated with APS and Southwest Gas Corporation ("Southwest Gas") to address programming overlap among the utilities.

71. TEP provides program marketing and customer awareness-building through website promotion, community interest groups, mass-market channels (e.g. radio, newspaper, etc.),

brochures and bill inserts, high bill inquiries, trade ally marketing efforts, contractor enrollment and training

72. Cost-Effectiveness. The enhanced Existing Homes Program was approved in December 2010, with a benefit-cost ratio of 1.06, making the Program cost-effective. No modifications of the Program have been proposed, so a re-calculation of cost-effectiveness was not necessary.

73. Staff Recommendation. Staff has recommended that the Existing Homes and Audit Direct Install Program be approved for continuance.

G. Shade Tree

74. Program Description. The Shade Tree Program is an ongoing element of the Implementation Plan, approved in Decision No. 70455 (August 6, 2008). No modifications have been proposed for the Shade Tree Program. The Shade Tree Program promotes energy conservation and environmental benefits by motivating customers to plant desert-adapted trees in locations where the trees will provide shade and reduce HVAC load. TEP customers are allowed to purchase shade trees for $8.00 per tree, if they agree to plant the trees on the east, west, or south sides of their homes.

75. Program Objectives and Rationale. The objectives of the Program are to promote the strategic planting of trees to provide shade, thereby reducing the cooling load of homes and associated energy usage and to educate school-age children and the public on the conservation and environmental benefits of planting trees.

76. In addition, there are Community and the Schools tree planting projects, but these must meet the planting criteria outlined for planting residential trees.

77. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program. Program funds are leveraged with a significant in-kind contribution of labor, material and technical support from individuals and the community.

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78. Delivery and Marketing Strategy. TEP provides DSM funds for the planting of trees within the guidelines that provide kWh savings. TEP partners with Trees for Tucson, a local non-profit organization that manages and administers the Program.

79. Due to the popularity of the Program, DSM revenues are not normally allocated for advertising and promotion. TEP employees currently inform customers about the Program during speaking engagements and outreach presentations. Other efforts entail website promotion, newspaper advertising, planting and care brochure, presentations at schools, tree tours, and tree care workshops.

80. Cost-Effectiveness. In Decision No. 70455, Staff calculated the benefit-cost ratio for this Program at 3.14, making it highly cost-effective. No modifications have been proposed for this Program.

81. Staff Recommendation. Staff has recommended that the TEP Shade Tree Program be approved for continuance.

H. Residential and Small Commercial Direct Load Control – Pilot

82. Program Description. TEP is requesting budget approval to continue this program with no additional modifications. The Residential and Small Commercial Direct Load Control ("DLC") Program was first approved in Decision No. 71846 (August 25, 2010). With the DLC Program TEP intends to better manage peak demand and to mitigate system emergencies through direct load control of residential central air-conditioners ("AC").

83. The DLC Program will use two-way communication that sends load control signals to equipment at the home and provides interval consumption data back to TEP for all participants. The two-way communication will allow TEP to provide usage and billing information to customers via an in-home display or the Internet.

84. Participants will receive either: (i) a free thermostat that can be programmed manually or remotely via the Internet; or (ii) a load control device placed on their air conditioning unit. In exchange, customers will permit TEP to cycle AC units or raise thermostat temperature settings for a limited number of hours or events per year. It is expected that TEP will

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call roughly 8 to 10 load control events each year. Customers would have the option to change thermostat settings or override cycling strategies during a control event, but could risk penalty if they do so repeatedly.

85. Program Objectives and Rationale. The DLC Program pilot is intended to control air conditioners during peak hours as a cost-effective means to reduce peak system load.

86. Delivery and Marketing Strategy. The Program's delivery strategy includes a third party implementation contractor, Tendril Networks, whose responsibilities include provision of load control equipment and control software that can be used by TEP to call and monitor load control events, training on software and assistance in designing effective load control strategies, recruitment of participants, participant tracking, technology installation, marketing, and call center/customer satisfaction.

87. Recruitment is based on specific criteria to ensure participants represent the population of eligible customers. Participants are required to have functioning broad band connection and would receive a $50 incentive. Customers also receive an internet-enabled programmable thermostat that will be installed by a qualified contractor at no cost to the customer. Residential recruitment started in June 2011 with an email marketing request for applications. Installation of program devices is underway.

88. Cost-Effectiveness. As discussed in Decision No. 71846, Staff calculated a benefit-cost ratio of 1.39 for the DLC Program.

89. Staff Recommendation. Staff has recommended continuation of the Residential and Small Commercial Direct Load Control Program.

90. Measurement, Evaluation, and Research. As discussed in Decision No. 71846, TEP intends for an independent evaluation contractor to conduct a process evaluation, an impact evaluation and a technology assessment.

91. Reporting. Reporting shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2409.

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I. Bid for Efficiency

92. Program Description. Under TEP's Bid for Efficiency Program ("BFE Program"), customers or project sponsors would conceive their own projects and then bid competitively for incentives within broad program guidelines. TEP would then select winning applicants based on specified criteria.

93. BFE Program participants and project sponsors may include commercial customers, Energy Service Companies ("ESCOs") or other aggregators who organize proposals that involve multiple sites.

94. Program Objectives and Rationale. The BFE Program seeks to encourage customers and project sponsors to think holistically regarding energy systems and to develop projects designed to optimize system energy use by encouraging a systems approach to energy efficiency.

95. The BFE Program would provide an incentive for participants to use multiple EE approaches at one or several sites simultaneously. The subject Program attempts to address customer market barriers such as small savings levels at multiple sites, longer payback periods and organizing implementation contractors.

96. TEP's implementation goals for the Program are as follows:

- Ensure projects are submitted, approved, implemented and verified in a timely manner;
- Allow each project to be customer-driven; responsibility will be placed on the customer (or project sponsor) to select appropriate trade and professional allies to design and implement the project and to prepare the incentive application;
- Encourage implementation of multiple measures for comprehensive projects; and
- Encourage aggregated applications that involve implementation at multiple sites.

97. Budget. TEP requested a budget of $47,469 for the first year (2011) of the BFE Program and a budget of $503,092 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

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98. Delivery and Marketing. The BFE Program will focus on market segments with significant savings potential, unique load or energy savings characteristics, and those that require specialized delivery or support services. The target market consists primarily of larger customers and customer groups that may include grocery stores, convenience stores, or data centers, business sectors that have historically been hard to reach.

99. Eligibility. Any entity, customer, or project sponsor may participate if the proposal meets the minimum application requirement of 200,000 kWh in savings for the first year. Electric loads may be aggregated among multiple facilities to meet the kWh threshold. Eligible project sponsors may include, but are not limited to TEP customers, ESCOs and engineering / architecture firms. Any third-party project sponsor must submit an application with the consent and support of the identified TEP customer. To provide participants with maximum flexibility, the Program will not explicitly specify eligible measures, but, pre- and post-installation metering will be required to ensure that savings estimates are in line with actual savings produced by the projects. All proposed measures must meet the following requirements:

- Produce a measurable and verifiable reduction in energy consumption;
- Produce savings through an increase in energy efficiency or better utilization of energy through improved production equipment or controls;
- Be installed in a retrofit application;
- Have a useful life of five years or greater; and
- Prove cost effective using the Societal Cost Test (applies to total project including all measures).

100. Examples of eligible measures include, but are not limited to, installation of Premium® efficiency motors, lighting system upgrades, HVAC system improvements, heat recovery systems, and energy system control upgrades. Project sponsors are free to propose measures, as long as the above requirements are met. TEP anticipates an average incentive of $0.15 / kWh, based on multiple measures with varying savings. With average savings of 400,000 kWh per project, the average incentive would be $60,000.

101. The following implementation process is proposed for the BFE Program:

- TEP, and/or its implementation contractor ("IC"), will advertise the BFE Program to target customers and trade allies;
- Customers or trade allies will submit bids for its EE projects.
- TEP/IC will evaluate projects and make awards;
- TEP/IC will perform pre-installation metering;
- Customer will implement the proposed project;
- TEP will pay 50 percent of the incentive amount prior to installation;
- TEP/IC will perform post-installation metering; and
- TEP will pay the remaining incentive amount based on the actual M&V energy savings (based on first year operation).

102. TEP proposes to implement the BFE Program as a pilot during 2011 and 2012. Pilot results would be evaluated in 2013. If the market response and measure savings indicate the Program is cost-effective, and achieving substantial savings, the Company would include the full Program offering in its 2014 DSM Implementation Plan.

103. Program Analysis/Issues. The BFE concept is being used by several other western utilities, including San Diego Gas & Electric in California and Xcel Energy in Colorado. With a focus on whole-building efficiency, coupled with the ability of participants to select from a wide range of potential efficiency measures, the BFE Program could offer an opportunity to customers and project sponsors to design cost-effective energy efficiency projects.

104. Under TEP's proposal, 50 percent of the incentive for each project is paid prior to measure installation, with the remaining incentive amount based on the actual energy savings, paid after the first year of operation. Staff believes this payment sequence offers an important "true-up" opportunity that ensures projects receive incentives proportionate to their actual energy efficiency. However, Staff is concerned that there are no limits proposed for the maximum incentive available to an individual project. Therefore, Staff recommends that incentives be capped at 60 percent of the incremental cost of the efficiency measures utilized in the project.

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105. TEP estimates annual energy savings of 400,000 kWh, and peak demand savings of 36.53 kW for each of the 10 projects anticipated during the two-year pilot program. Based on these anticipated savings, Staff has determined that the BFE Program would have a benefit / cost ratio of 1.86, indicating that the Program would be cost-effective.

106. Staff Recommendations

- Staff has recommended that the TEP Bid for Efficiency Pilot Program be approved as a two-year pilot program as discussed herein.
- Staff has further recommended that individual project incentives under this program be capped at 60 percent of the incremental costs of the efficiency measures included in the project.

J. RETRO-COMMISSIONING PROGRAM

107. Program Description. TEP's proposed Retro-Commissioning Program ("RCx Program") would identify deficiencies in existing facilities and makes necessary adjustments to produce energy savings and other benefits such as occupant comfort. The proposed new RCx Program is geared to assist owners of large existing commercial and industrial facilities in improving energy performance. TEP states that improvements made in response to RCx efforts are comparatively inexpensive to implement and typically offer paybacks of less than two years.

108. The RCx Program would begin with a Screening Energy Audit. Participants then proceed, if eligible for the RCx Program, through a three part retro-commissioning study: (i) the Operations and Maintenance Review Phase (operational procedures and maintenance practices); (ii) the Systems Commissioning Phase (performance testing, trending and metering), and (iii) the Systems Optimization Phase (high performance building operation strategies).

109. A 2009 study of retro-commissioning by Lawrence Berkley National Laboratories noted a median savings of 16 percent of whole building energy costs across 561 projects. Documented benefits of RCx programs include, but are not limited to the following:

- Up to 15 percent energy savings
- Reduced occupant complaints and improved occupant comfort
- Increased equipment life
- Increased facility documentation
- Facility staff training

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110. Program Objectives and Rationale. The Program would target large facilities which have lighting, cooling, and ventilation as their largest energy uses. Large office and retail facilities represent the most effective building type for the RCx approach.

111. Budget. TEP has requested a two-year budget for the RCx Program totaling $175,520. Incentives comprise $110,000, with program delivery, administration, marketing and evaluation costs accounting for the balance of the budget.

112. Delivery and Marketing Strategy. TEP would offer an online application for customers interested in the RCx Program on the TEP website. The screening audit would provide the customer with a basic energy audit, identifying basic equipment upgrades and control strategies that would result in energy savings for the customer. The audited facilities would also receive ENERGY STAR® Portfolio Manager ratings to benchmark the facility versus similar facilities in the area. The energy audit would be provided free of charge to all eligible applicants and will be used to determine eligibility for participation in subsequent phases of the RCx Program. The Program is designed so that customers can move to progressively higher levels of examination and analysis, only after they have implemented measures identified in the Screening Audit, and later, the Operations and Management Review phases of the Program.

113. For selected customers, and subsequent to the Screening Energy Audit, TEP would perform an Operations and Maintenance ("O&M") Review of the subject facility's energy usage, to evaluate operational procedures and maintenance practices related to major equipment. The result of this review would be a list of facility improvement measures with estimated cost and savings values. Customers would also receive training on O&M best practices and guidance on implementing facility improvements. The O&M Review would be provided by TEP at no cost to the customer.

114. For selected customers that implement recommendations identified in the O&M Review, TEP would offer Systems Commissioning services. Systems Commissioning services utilize advanced performance testing, trending and metering procedures that identify further opportunities for energy system repairs, upgrades and replacements. Measures identified during this phase include repairs, upgrades and capital planning that would allow existing systems to

operate within the parameters developed during the O&M review. Systems Commissioning services would be paid by the Program.

115. The final phase of the RCx Program is known as Systems Optimization. This phase of the Program builds on work completed in prior Program phases by introducing cutting-edge practices developed for today's high performance buildings. Services for this phase would be provided by the Program for selected customers who implement recommendations identified during the Systems Commissioning phase of the Program.

116. Eligibility. The RCx Program will be available to TEP commercial and industrial customers with at least one meter on an eligible rate schedule. In addition, the facility must contain a minimum of 100,000 square feet of conditioned space and have at least one full-time facility operations/management staff.

117. Program Analysis/Issues. Presently, the lack of knowledge by building operators, the lack of qualified workers, and the upfront costs of the audit and associated equipment optimization are barriers to improving the energy efficiency of commercial and industrial facilities. The TEP Retro-Commissioning Program intends to overcome these barriers by providing facility owners with the information necessary to identify energy-saving opportunities and manage energy consumption at their facilities.

118. Cost-Effectiveness. TEP estimates annual energy savings of 200,000 kWh, and peak demand savings of 18.26 kW for each of the five projects anticipated through the end of 2012. Based on these anticipated savings, Staff has determined that the BFE Program would have a benefit-cost ratio of 2.38, indicating that the Program would be cost-effective.

119. Staff Recommendations. Staff has recommended that the TEP Retro-commissioning Program be approved.

K. SCHOOL FACILITIES PROGRAM

120. Program Description. Schools represent a market segment that has historically been underserved. TEP has proposed a School Facilities Program ("Schools Program") to increase participation in energy efficiency retrofits by schools.

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121. The TEP Schools Program would be open to participation by all existing kindergarten through twelfth grade school facilities in the TEP service territory, including charter schools. The proposed Schools Program would utilize the same delivery method and pay incentives for the same energy efficiency measures as are found in the existing TEP C&I Comprehensive Program ("C&I Program"), but the Schools Program would only service eligible schools. TEP proposes to pay up to 100 percent of the incremental cost of the efficiency measures for the Schools Program, as compared to up to 85 percent for measures in the existing C&I Program.

122. The Schools Program would utilize an upstream market incentive design that provides incentives directly to contractors installing the energy efficiency measures. Specifically, the Schools Program would offer the following products and services:

- Educational and promotional pieces designed to assist contractors with the marketing of the Schools Program to schools; and
- Education and promotional efforts for schools and contractor allies on how the Schools Program functions, what energy efficiency technologies are offered, what incentives are provided and the benefits of the measures.

123. The lighting measures included in the Schools Program are:

- Retrofit of T12 fluorescent lighting with T8 lighting;
- Retrofit of standard T8 lighting to premium T8 lighting;
- Retrofit of high intensity discharge lighting with T8 or T5 lighting;
- Replacement of incandescent lamps with screw-in compact fluorescent lamps ("CFL");
- Retrofit of existing incandescent and CFL exit signs with LED or electroluminescent exit signs;
- Lighting system occupancy sensors; and
- Delamping and reduced lighting power density.

124. The HVAC measures included in the Schools Program are:

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- High efficiency air conditioners and heat pumps (incentives vary by SEER rating);
- Programmable thermostats; and
- Shade screens and window films to reduce solar heat gain.

125. The Schools Program would also include variable speed drive motors to optimize performance, vendor miser sensors which turn off or turn down refrigeration and lighting in vending machines when not in use, and smart strips to better control plug loads. Whole building custom incentive applications would also be considered where appropriate. Table 1-1 below presents a summary of the incentives offered for each measure.

Table 1-1
School Facilities Efficiency Incentive Summary

Lighting Measures	Incentive
Replace T12 systems with T8	$55/fixture
Energy Efficient Integral Compact Fluorescent Lighting	$11/lamp
Replace Incandescent & CFL Exit Signs	$55/sign
Install Occupancy Sensors on Lighting Fixtures	$96/sensor
Daylighting Controls	$751/kW base load
Hard Wire CFL	$15/bulb
HIDs to T8/T5	$96/fixture
Induction Lighting	$196/lamp
Outdoor CFL	$9/lamp
Reduced Lighting Power Density (LPD)	$4,472/customer
Screw-in Cold Cathode CFL	$12/bulb
T8 to Premium T8	$21/lamp
Delamping	$6/fixture
HVAC Measures	
Programmable Thermostats	$204/thermostat
High-efficiency Packaged AC and Heat Pumps (<65,000 btuh)	$440 to $1,321 (depending on size and SEER rating)
Shade Screens	$4/sq.ft.
Window Films	$3/sq.ft.
Motors	
Variable Speed Drives	$377/HP
Plug Loads	
Beverage Controls ("Vending Miser")	$199/sensor

Snack Controls (Vending Miser")	$103/sensor
Advanced Power Strips – Load Sensor	$32/strip
Advanced Power Strips – Occupancy Sensor	$90/strip
Advanced Power Strips – Timer Plug Strip	$19/strip
Whole Building	
Custom Measures	$6,535/customer

126. Budget. The Program will begin in 2012 with a proposed first-year budget of $157,941. See The TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

127. Delivery and Marketing. Schools that are interested in the Schools Program would apply for participation using an on-line proposal generation and project tracking system. This Internet-based system would provide an analysis of project costs and projected savings. Projects that are selected by TEP based on projected energy savings would utilize contractors to provide turn-key installation services to schools. Incentives would be paid directly to the contractors.

128. TEP would assign an in-house program manager to oversee the Schools Program, provide guidance on Schools Program activities and provide a point of contact for schools that are interested in participation, or have questions or concerns regarding the Schools Program. The implementation contractor would be responsible for program administration, application and incentive processing, monitoring activities of installation contractors, participation tracking and reporting, and overall quality control and management of the delivery process. In addition, the implementation contractor would conduct outreach to contractors, marketing and promotion to schools, and education and training on the benefits and functioning of the Schools Program.

129. Installation contractors would promote the Schools Program directly to schools, provide turn-key installation services and have access to the Schools Program Internet processing system to prepare proposals.

130. Program Analysis/Issues. The Schools Program lists a total of 30 individual energy efficiency measures that are eligible for incentives. This program is designed to install multiple measures on a "whole building" basis, where measures tend to complement or reinforce one another and, for this reason, cost-effectiveness is calculated on a per-project basis, where savings

and costs from a typical set of project measures are compared. The Schools Program also encourages the creative combination of listed measures with other measures that are not on the Schools Program's incentive list by offering a "custom measures" category. Proposed "custom measures" must demonstrate energy savings and pass the Societal Cost Test.

131. In order to evaluate the Schools Program at the project level, Staff analyzed a typical school energy efficiency project that included delamping a portion of the school facility and replacing the remaining lighting fixtures with T8 upgrades. In addition, the model project includes data for programmable thermostats, occupancy sensors, energy efficient exit signage, vending machine controls and advanced timer power strips. By combining these particular measures, and using anticipated savings values for each measure, Staff determined that this "typical" school project would cost approximately $2,821 dollars in incentives while saving approximately 40,956 kWh of energy and 4.13 kW of demand load.

132. Cost-Effectiveness. Based on these anticipated savings, Staff has determined that the typical School Facilities Program project would have a benefit-cost ratio of 1.71, indicating that the Schools Program would be cost-effective. Staff further believes that this ratio is indicative of the benefits of similar projects that would be completed under the Schools Program.

133. Staff Recommendations. Staff has recommended that the School Facilities Program be approved.

L. Combined Heat and Power – Pilot

134. Program Description. TEP is requesting budget approval for a new Combined Heat and Power ("CHP") Pilot Program in 2011. The TEP CHP Pilot Program is a proposed Joint Utility Program to be implemented in cooperation with Southwest Gas. Distributed Generation ("DG') is defined in A.A.C. R14-2-2401 as "the production of electricity on the customer's side of the meter, for use by the customer, through a process such as CHP." R14-2-2401 goes on to define CHP as "combined heat and power, which is using a primary energy source to simultaneously produce electrical energy and useful heat." TEP proposes this program as a pilot to assist in developing methods and procedures for future joint utility programs with Southwest Gas or other utilities. TEP proposes to provide support for the existing Southwest Gas DG Program (Decision

No. 69917, September 27, 2007) by sharing costs for marketing and outreach, training, and design. Specifically, TEP would pay up to 10 percent of the design costs for a CHP installation. TEP would cooperate with Southwest Gas on marketing and outreach strategy to maximize the effect of marketing and outreach expenses.

135. Program Objectives and Rationale. The primary goal of the Program is to provide support for the existing Southwest Gas DG Program, specifically for CHP projects. TEP states that the market potential for CHP is substantial and could contribute significantly to energy conservation in Arizona, and could accrue significant societal and customer benefits as well. According to TEP, CHP is an affordable, clean, and reliable way to meet a customer's energy needs. With gas used as the primary fuel, the process is far more efficient than electricity or gas use alone because the waste heat is used as well. The economics of the CHP system depends on effective use of the thermal energy in the exhaust gases. Exhaust gases are primarily used for heating the facility and could also be applied to heat recovery steam generators (HRSG) to produce additional electric power.

136. Delivery and Marketing Strategy. Program delivery, incentives, and administration; as well as the marketing and communications strategy would be provided by Southwest Gas through its DG Program. TEP would assist with marketing and outreach, design assistance, and interconnection design expertise. TEP would assign an in-house program manager to coordinate joint program delivery with Southwest Gas.

137. Cost-Effectiveness. TEP's analysis of this program showed a benefit-cost ratio of 8.5. Although Staff's analysis indicated a lower benefit-cost ratio of 6.5, it still indicated a cost-effective program based upon avoided provision of TEP capacity and energy.

138. Staff Recommendation. In Staff's opinion, this program could increase the amount of CHP in TEP's service area, and, due to CHP's inherent efficiencies, increase the efficiency of energy use. Staff has recommended approval of the CHP Pilot Program.

M. Small Business Direct Install

139. Program Description. TEP is requesting budget approval to continue this program and approval of these additional measures:

- Shade Screens
- Window Films
- Induction Lighting
- LED Channel Signs
- Outdoor CFL
- Reduced LPD
- T8 to Premium T8
- Premium T8 Lighting
- Beverage Controls
- Snack Ctrls ("vending miser")
- Refrigerated Display
- Automatic Door Closers
- Refrigerated Display Gaskets
- Advanced Power Strips - Occupancy Sensors
- Advanced Power Strips - Timer Plug Strip
- Advanced Power Strips - Load Sensor

140. The Small Business Direct Install Program is an existing program, approved by the Commission in Decision No. 70457 (August 6, 2008). The Program offers incentives for a select group of retrofit and replace-on-burnout energy efficiency measures in existing facilities. Eligible customers include customers who qualify for TEP's Rate 10 - Small General Service pricing plan (typically an aggregate monthly demand of 200 kW or less). The Program offers incentives for the installation of energy efficiency measures, including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air, and refrigeration measures. Incentives for lighting measures range from $7 to $65, HVAC measures range from $125 to $675, and Refrigeration measures average $127.

141. Program Objectives and Rationale. The Small Business Direct Install Program is designed to address certain barriers to this market segment, including limited investment capital, limited awareness of energy cost savings, and required short-term payback. The Program's purpose is to persuade small business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program.

142. Budget. See TEP EE Implementation Plan Budget Table herein which lists the sector, projected costs per category, and total budget for each program. The Small Business Direct Install Program shows total costs for 2011-12 of $7.6 million.

143. Delivery and Marketing Strategy. The Program is operated as an "up-stream" market program, with incentives offered to prequalified contractors who can provide turn-key installation services for customers. The intention is to reduce the measure payback to one year or less. The Program also includes consumer and trade ally educational and promotional pieces designed to provide decision makers in the small business market with the information necessary to make informed choices (and increase awareness).

144. The marketing strategy includes educational seminars tailored to the small business market, major media advertising, website promotion, outreach and presentations at professional and community forums, and direct outreach to customers who meet the criteria for the Program.

145. Cost-Effectiveness. The original Program approved with Decision No. 70457 showed an overall benefit-cost ratio of 1.87 and a range of measure benefit-cost ratios ranging from 1.04 to 3.6. In this filing, the new proposed measures range from 1.4 to 10.8 with an overall benefit-cost ratio of 3.4.

146. Staff Recommendation. Staff recommends approval to continue the Small Business Direct Install Program, with the proposed new measures.

N. Commercial & Industrial ("C&I") Comprehensive

147. Program Description. TEP is requesting budget approval to continue the C&I Comprehensive Program and approval of additional measures listed below:

- Heat Pump Water Heaters - Tier 1
- CO Sensors
- CO2 Sensors
- Cooling Tower Sub cooling
- Economizers
- High Perf Glazing
- PTAC/PTHP
- Shade Screens
- Window Films
- EMS - Lighting Schedule
- Induction Lighting
- LED Channel Signs
- LED Pedestrian Signals
- LED Traffic Lights
- LED Street and Parking Lights
- Outdoor CFL

- T8 to Premium T8
- Green Motor Rewind
- Beverage Controls ("vending miser")
- Snack Controls ("vending miser")
- Efficient Compressors
- Efficient Condensers
- Floating Head Pressure Controls
- Refrigerated Display Automatic Door Closers
- Refrigerated Display Gaskets
- Coin Operated Washers - Tier 1
- Coin Operated Washers - Tier 2
- Advanced Power Strips - Occupancy Sensors
- Advanced Power Strips - Timer Plug Strip
- Advanced Power Strips - Load Sensor

148. Incentives for the above measures range from under $2 up to $200, except those for chillers and heat pumps/air conditioners. The average incentive for chillers is $13,465. Heat pump and air conditioning incentives average, respectively, $556 and $575.

149. The C&I Comprehensive Program is an existing program, approved by the Commission in Decision No. 70403 (July 3, 2008) under the name of Non-Residential Existing Facilities Program. The Program provides prescriptive incentives to large commercial customers who are under TEP's Rate 13 and Rate 14 pricing plans (typically an aggregate monthly demand exceeding 200 kW) for the installation of energy-efficiency measures, including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air and refrigeration measures. Prescriptive incentives are offered for a schedule of measures in each of these categories. Customers can also propose their own innovative energy efficiency solutions by offering a custom energy efficiency measure. The average incentive for custom projects is $4,270.

150. Program Objectives and Rationale. The C&I Comprehensive Program is designed to address the barriers to this market segment, including limited awareness and lack of knowledge about the benefits and costs of energy efficiency improvements, performance uncertainty associated with energy efficiency projects, and the required short-term payback. The program's purpose is to encourage large business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program and provide turn-key installation services to small business customers.

151. Budget. The Summary Implementation Plan Implementation Costs for 2012, Table 3-11 in the filing, shows projected costs by category, and total budget for each program. The C&I Comprehensive Program shows total utility cost of $4.28 million and total lifetime net benefits of $20 million.

152. Delivery and Marketing Strategy. The Program is delivered by a third party implementation contractor who provides program administration, application review, participation tracking and reporting, project quality control, and technical support. In addition to the implementation contractor, key partnering relationships and marketing outreach include: the local architectural and engineering community, electrical, mechanical and building contractors, equipment manufacturers, distributors and vendors, professional and trade service associations, and the educational and promotional pieces designed to assist facility operators and decision makers with the information necessary to improve the energy efficiency of their facilities.

153. Cost-Effectiveness. With Decision No. 70403, the Commission approved this program's predecessor, the Non-Residential Existing Facilities Program which showed a benefit-cost ratio of 2.5 using Staff's methodology. The new measures described in this filing show similar cost effectiveness, except for one measure, the LED Street and Parking Lights which both TEP and Staff show a benefit-cost ratio less than one. Therefore, Staff does not recommend approval of this measure.

154. Staff Recommendation. Staff recommends approval of the C&I Comprehensive Program, except for the proposed additional measure LED Street and Parking Lights.

O. C&I Direct Load Control

155. Program Description. The C&I Direct Load Control Program is an existing program, approved previously by as the Commercial and Industrial Demand Response Program in Decision No. 71787 (July 12, 2010). TEP is requesting budget approval to continue this program with no additional modifications.

156. This is a commercial and industrial load curtailment program. Customers are compensated with incentives for their participation at negotiated levels that vary depending on

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multiple factors including the size of the facility, amount of kW under load control, and the frequency with which the resource can be utilized.

157. Program Objectives and Rationale. Commercial and industrial load represents a total of approximately 22 percent of system demand during peak hours in the late afternoon and evening during summer months. Modification of controls for chillers, rooftop AC units, lighting, fans, and other end uses is capable of reducing power demand at peak times. In addition, the Program may be used to support standard benefits of demand-response programs which include avoided firm capacity required to meet reserve requirements, reduced or avoided open-market power purchases during periods of high energy prices, and greater grid stability and reduction in outages due to reduced grid demand.

158. Delivery and Marketing Strategy. The Program is delivered on a turnkey basis by a third-party implementation contractor, who negotiates load reduction agreements with multiple customers and "aggregate" these customers to provide TEP a confirmed and guaranteed load reduction capacity available upon request. The contract between TEP and the demand response ("DR") aggregator, EnerNOC, is similar to a power purchase agreement in that EnerNOC is obligated to provide megawatts of load curtailment while maintaining a degree of flexibility in how the curtailments are achieved. Incentives are provided by EnerNOC and customized based on a variety of factors, including the amount of load that can be reduced.

159. Recruitment is targeted to help ensure that customers invited to participate are able to provide reliable and significant load control reductions.

160. Cost Effectiveness. With Decision No. 71787, the Commission approved the original Program, showing a Staff-determined benefit-cost ratio of 2.47. Since TEP is making no modifications to the Program, it remains a cost-effective program.

161. Staff Recommendation. Staff has recommended approving the C&I Direct Load Control Program for continuation.

P. Commercial New Construction Program

162. Background. On August 6, 2008, in Decision No. 70459, the Commission approved the Efficient Commercial Building Design Program for TEP. The Program was

approved on a two-year pilot basis. On July 1, 2010, TEP filed an application for approval to continue the Program for an indefinite period. In December, 2010, TEP informed Commission Staff that a request for continuation would be contained in TEP's 2011 Energy Efficiency Implementation Plan ("EE Plan"). TEP filed the EE Plan on February 1, 2011, and rebranded the Efficient Commercial Building Design Program as the "Commercial New Construction Program." TEP is also proposing one additional measure for this Program, high-performance glazing.

163. Program Description. The Commercial New Construction Program is geared toward the building owner/developer by incenting the increased use of energy efficiency measures during the design phase of a commercial building's development. Program incentives are based on improved building energy efficiency compared to a baseline design, as determined by a building energy simulation program such as the Department of Energy's eQUEST program. The Building Design Incentive is limited to a maximum of $75,000 per project and the Design Assistant Incentive is limited to a maximum of $10,000 per design team.

164. Program Objectives and Rationale. Commercial New Construction provides incentives to offset the additional design cost of alternative, more energy-efficient designs. The Program is performance-based and includes design assistance for the design team, performance-based incentives for the building owner/developer, and energy design information resources. Design assistance involves efforts to integrate energy efficiency into a customer's design process as early as possible.

165. In addition to the design incentives and performance-based incentives for the building owner/developer, this Program provides technical support services to the design community.

166. Budget. TEP requested a budget of $402,469 for 2011 for the Commercial New Construction Program and a budget of $406,319 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

167. Eligibility. All new commercial building projects and major renovations to existing buildings in the TEP service territory that receive or will receive electric service from TEP are

eligible to participate in the Program. Major renovation for this purpose would be a substantial or significant change to an existing structure, such as completely gutting a building and installing insulation, new windows, and new HVAC equipment.

168. Delivery and Marketing. TEP will continue to market the Program to building owners, developers and members of the design team. The Program uses a variety of educational and promotional pieces to assist building owners and developers with the necessary information to understand various energy efficiency options, and to encourage them to discuss these options with their design professionals early in the design process. TEP will continue to promote the Program through focused outreach to the building development community.

169. Cost Effectiveness. Although the original pilot did not enjoy a high level of participation due primarily to the poor economic environment, participation has grown dramatically during the first half of 2011. TEP reports a total of ten Program applications that would produce a total energy savings of 1,635,490 kWh. Based on these estimated savings, Staff has calculated the benefit-cost ratio for the Program as 2.70. The proposed new measure, high-performance glazing, has a calculated benefit-cost ratio of 1.14.

170. Staff believes that offering incentives and technical guidance during the design stage of commercial building projects is an important method of implementing energy efficiency measures. Staff further believes that by increasing the visibility of the Program through better online marketing and continued use of educational seminars, participation in the Program can be further increased. Therefore, Staff has recommended that the Program be approved for continuance.

171. Program Analysis/Issues. The subject Program is a continuation of the Program formerly known as "Efficient Commercial Building Design" that was originally approved as a two-year pilot on August 6, 2005, under Decision No. 70459.

172. The implementation of the original pilot occurred during the start of the current economic downturn. The financial environment resulted in a near total halt in loans for all types of commercial building development projects, as well as a concomitant decrease in overall building project activity.

173. Staff believes that the financial climate played a major part in the lower than anticipated participation in the original pilot, and that the reduction in new buildings within TEP's service area directly affected participation in the pilot. Participation in the Program grew dramatically during the first half of 2011, with TEP reporting the completion of two Design Assistance projects and the receipt of eight New Construction applications. Staff believes that this trend of increasing participation in the Program will continue.

174. Staff has recommended that TEP continue its outreach efforts to building owner, developer and design professional organizations (e.g. American Institute of Architects, American Society of Professional Engineers, Urban Land Institute, National Association of Office and Industrial Properties, etc.). Staff further recommended that TEP extend its outreach activities to include banks and other lending institutions that service the building design and construction industry. In addition, TEP should communicate with local building code officials to apprise them of Program benefits and encourage the adoption of higher performance building and energy codes.

175. Baseline Study. At the inception of this pilot program, TEP had not conducted a formal baseline study of new commercial construction design characteristics. In preparing the analysis for the pilot program, the baseline performance conditions of new commercial construction projects were estimated based on best available knowledge of current market conditions and design practices. To confirm the baseline assumptions made in the preparation of this plan, TEP hired Navigant Consulting ("Navigant") to conduct a formal baseline study of commercial building practices. Funding for this baseline study was approved by Decision No. 71109 on June 5, 2009.

176. The study, entitled "Assessment of Baseline Practices for Commercial New Construction", dated June 25, 2010, was submitted by TEP to Staff at the time that TEP filed its application to continue the pilot program. The objective of this report was to determine how commercial buildings are currently being designed and specified within TEP's service area. The baseline study concluded that, except for federal and state buildings, new commercial construction in the TEP service area is generally built to code. Where buildings are constructed above code . . .

requirements, it is generally in pursuit of LEED (Leadership in Energy and Environmental Design) certification.

177. The baseline study offered several recommendations for TEP to consider in relation to the pilot program. A summary of those recommendations includes:

- Federal and other government buildings are generally mandated to build above code. Therefore, TEP should consider modifying its Program applications to determine whether a building is public or private, and require higher savings for public buildings.
- TEP should monitor code changes and talk to code officials on a regular basis.
- TEP should provide education to the building industry to define an integrated design approach and help this to become standard practice.
- TEP should encourage the use of commissioning agents (perhaps through specific incentives) to ensure that buildings operate as specified by design.
- TEP should consider adding a prescriptive path to the Program to provide incentives for specific technologies, such as high R value roofs and walls, variable speed drives and high efficiency motors, higher efficiency lighting systems.
- The Report states that the most important recommendation is "...to educate architects about life-cycle costs and how to sell these ideas to clients, educate owners who are buying from private developers, and educate the market about considering life cycle costs versus first costs in determining the value of a building..."

178. Staff Recommendations. Staff generally concurs with the recommendations of the baseline study with the exception that TEP should first ascertain the cost-effectiveness of using third-party commissioning agents. Staff has made the following additional recommendations:

- Staff has recommended that the Program, including the high-performance glazing measure, be approved for a second two-year period.
- Staff has further recommended that TEP implement the recommendations in the "Assessment of Baseline Practices for Commercial New Construction" prepared by Navigant Consulting, including modification of Program performance thresholds (for public buildings) and Program applications to differentiate between public and private sector facilities.
- Staff has further recommended that Measurement & Evaluation statistics for the Program be included in the DSM reports filed with the Commission.

- Staff has further recommended that TEP continue Program outreach efforts by targeting building owner, developer and design professional organizations, lenders and lender industry associations, and local building code officials.

- Staff has further recommended that information announcing the availability of the Program occupy a more prominent position on the TEP website.

Q. BEHAVIORAL COMPREHENSIVE

179. Program Description. The proposed Behavioral Comprehensive Program ("Behavioral Program") consists of six educational subprograms. The focus of the Behavioral Program is to educate Residential customers on how changes in behavior, including purchasing decisions, can improve energy efficiency. Most of the subprograms include low-cost measures, such as CFLs, faucet aerators, LED nightlights and refrigerator thermometers, in addition to the educational components.

180. The table below lists and describes the six subprograms that make up the Behavioral Comprehensive Program. More detailed program descriptions are provided in the following paragraphs:

Subprogram	New (proposed) or existing	Descriptions
Home Energy Reports	Approved on April 7, 2011, Decision No. 72254.	Comparison of energy use to that of neighbors. An on-line energy audit component will also be added in 2012.
Direct Canvassing	New (proposed)	Door to door awareness and direct install campaign
K-12 Education	New (proposed). Consists of redesigned energy education for 6th, 7th and 8th grades, and will absorb the existing school-based energy education components from the Education and Outreach Program.	Classroom education including take home direct install kits
Community Education	New (proposed)	"Train the trainer" approach, with hands-on energy efficiency training

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In home Energy Use Monitors	Approved as part of the Residential Direct Load Control Pilot, August 25, 2010, Decision No. 71846.	A sub-pilot of the smart meter program. Displays near-real time usage information
CFL Giveaway	New (proposed)	CFL bulb giveaway at outreach events

181. Home Energy Reports. Although budgeted separately, the Home Energy Reports subprogram is part of the overall Behavioral Comprehensive Program. The existing Home Energy Reports are designed to instigate behavioral changes in customers' energy consumption by (i) making customers aware of their energy consumption; and then (ii) allowing them to compare that usage to similarly situated homes. The subprogram targets habitual behaviors (e.g., lights and thermostats), purchasing behaviors (standard versus energy efficient appliances), and participation in demand-side management programs.

182. In addition, the on-line energy audit function that is currently part of the Education and Outreach Program will transition to the Home Energy Report subprogram during the first half of 2012.

183. Direct Canvassing. The direct canvassing initiative is a grass-roots, door-to-door approach to promoting energy efficiency, and is designed to reach neighborhoods difficult to reach through traditional messaging. The subprogram would use trained volunteers from local community organizations to talk to customers about energy efficiency. Two CFLs would be left with each customer, along with program materials for appropriate TEP DSM programs.

184. K-12 Education. In addition to energy based class room curriculum, students would be instructed in energy saving approaches for their homes. Students in grades 6-8 would be provided with a take home kit which includes CFLs and refrigerator thermometers, as well as educational materials on how to reduce energy use.

185. Beginning in 2012, the K-12 subprogram will also offer the academic support activities currently offered under the Education and Outreach ("E&O") Program. These activities include the Insulation Station, the Energy Patrol, the Electri-City exhibit at the Tucson Children's Museum and Energy Conservation Bike/Solar Generation Presentations. The E&O Program's

school-based energy education activities will be transferred to the K-12 subprogram, to consolidate school-based energy education into one subprogram.

186. Community Education. The Community Education Program would engage community groups and work with public entities with "train the trainer" hands-on energy efficiency seminars. Community trainers would be given a broad based review of energy, efficiency and comfort principles. The seminars include hands-on training with a wide sample of materials such as weather stripping, low flow showerheads, caulk or foam sealant and CFLs.

187. CFL Giveaway. The Compact Fluorescent Light Give-Away Program will complement TEP's presence at community events, and its overall education and outreach efforts, and efficiency messaging. Free CFLs will be made available both at community events and to community organizations, including those involved in our Community Education Program.

188. In-home Display. The In-Home Display measure is part of the Residential Direct Load Control Program already approved by the Commission in Decision No. 71846. The In-home Display works by providing a digital readout showing customers their current cost of energy in cents per hour and their cumulative cost for the month. Participating customers are provided with interval energy usage data in several formats on a personal web portal or on an additional physical home display device.

189. Budget. The cost for the web portal and in-home displays are included in, and budgeted with, other communicating equipment provided to customers participating in the Residential Direct Load Control program. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

190. Behavioral Comprehensive Program Overall Objectives and Rationale. The energy-related behaviors intended to be influenced by the Behavioral Comprehensive subprograms include the following:

- Habitual behaviors
  - Adjust thermostat setting
  - Turn off unnecessary lights
- Small purchasing and maintenance behaviors
  - Purchase and install faucet aerators and low flow shower heads

- Purchase and install compact fluorescent lights
- HVAC maintenance

- Larger purchasing decisions
  - Purchase an ENERGY STAR appliance
  - Purchase higher EE heating and cooling system through participation in a TEP DSM Program

191. Delivery and Marketing Strategy. All TEP residential customers would be eligible for this program. Delivery would be made through implementation contractors and TEP resources.

192. Program Analysis/Issues. The Company initially proposed to leave some elements of school-based energy efficiency education, such as the Insulation Station and the Energy Patrol, with the current Education and Outreach program. TEP is now proposing to consolidate the school-based energy education activities within the K-12 subprogram.

193. The Company's current proposal is reasonable. Consolidation of school-based energy efficiency education within the K-12 subprogram is likely to improve efficiency, limit duplication of administration effort and expenditure, and reduce confusion between the proposed K-12 subprogram and the existing Education and Outreach Program.

194. Cost-Effectiveness. Cost-effectiveness for measures associated with the proposed new Behavioral Comprehensive subprograms are listed in the table below. For the K-12 Education and Community Education Program, cost-effectiveness of the associated measures was calculated based on the entire kit.

Subprogram	Measures	Benefit-cost Ratios
Direct Canvassing	CFLs	2.8
K-12 Education	CFLs, Faucet Aerator, LED nightlight, Refrigerator thermometer	3.0
Community Education	CFLs, Showerhead, Faucet Aerator, LED nightlight, Refrigerator thermometer	1.57
CFL Giveaway	CFLs (18 Watt/23 Watt)	1.99/2.7

195. Staff Recommendations.

- Staff has recommended that the Behavioral Comprehensive program, and all its subprograms, be approved.

R. Residential Energy Efficiency Financing

196. Program Description. TEP was ordered to file an energy efficiency financing program in Decision No. 72028 (December 10, 2010). TEP is requesting approval for a new Residential Energy Efficiency Financing pilot program to provide customers with the capital needed to make cost-effective energy efficiency upgrades to their homes. TEP believes that a two-year pilot program would allow sufficient time for the Company to evaluate the Program, including participation, default rates, and overall value to customers. TEP's proposed Program elements include:

- Loan commitment of $2,000,000 per year for two years; this would provide approximately 424 loans per year based on an average $4,722 loan amount;
- Loans available only on energy efficiency measures meeting the Commission-required cost effectiveness test;
- Low interest rates provided by a combination of an interest rate buy-down and a 10% loan loss reserve account;
- Limited ratepayer exposure to default risk (10% of the loan commitment);
- Funding provided through an approved Demand-Side Management ("DSM") surcharge charged to residential customers;
- Affordable residential financing for energy efficient measures;
- Convenient customer access to and repayment of the financing;
- Standard finance product offering for all eligible, approved borrowers;
- Leveraged financing;
- Accurate Truth-in-Lending notifications and billing to customers provided by an experienced third party lender; and
- Community involvement in forming and marketing the Program.

197. TEP proposes to increase the DSM surcharge for residential customers by $0.00018 per kWh to fund the Program during the two year pilot program. The average annual cost to each residential customer would be $1.90. TEP proposes that the DSM Surcharge necessary to fund

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this program be collected only from residential customers, as the loan instruments described are restricted to residential customers.

198. Budgeting for the Residential and Non-residential sectors is approximately equal, and the cost for all of TEP's energy efficiency programs (including those restricted to Non-residential customers) is recovered through a single DSM adjustor surcharge. Establishing a separate DSM adjustor for the Residential Financing Program would be unnecessary, inequitable and time-consuming.

199. Program Objectives and Rationale. TEP believes that the Program's financing options would help cover the costs of energy efficiency measures, would improve customer participation in energy efficiency programs and would expand the pool of customers who can afford to participate in those programs. Although other vendors offer financing for their own individual products, the Program's comprehensive approach to home energy upgrades cuts across several potential products and includes efficiency measures not traditionally financed, such as air and duct sealing.

200. Prior to designing the Program, TEP developed key objectives for the Company's implementation of a financing program. Three objectives stood out from the rest as fundamental in order for TEP to provide a financing option: 1) the program design must eliminate the utility from any Truth-in-Lending Law regulation implications; 2) the program must provide a reasonable amount of funds at a reasonable interest rate and with a low initial investment; and 3) energy efficiency measures that qualify for TEP financing must have met the Commission's cost effectiveness test.

201. With these objectives, TEP hired Harcourt Brown Energy and Finance to assist with the evaluation, negotiations, and design of the Program. TEP selected a Third Party Financing model secured by a combination of a 10 percent loan loss reserve account and an interest rate buy-down, both funded from the DSM Surcharge, as the best program offering.

202. Target Market. The target market for this program is any residential customer in TEP's service territory who owns their home. Financing would be available for installation of approved and cost-effective energy efficiency measures.

203. Program Eligibility. Eligible properties would include single-family (1 to 4 unit), owner-occupied homes.

204. Budget. This is a financing program supporting other program efficiency measures. Therefore, there are no energy efficiency measures specifically under this program. Nonetheless, TEP expects annual costs as follows:

RESIDENTIAL ENERGY FINANCING BUDGET TABLE
Two-Year Pilot

	Loan Amount Available	Number of Loans	Reserve Funding	Interest Rate buy-Down Funding	Program Budget
Year 1	$100,000	21	$10,000	$4,000	$142,815
Year 2	$2,000,000	424	$200,000	$79,995	$442,645

205. Delivery and Marketing Strategy. TEP's strategy for Program delivery and administration is as follows:

- Coordination between the Lender and TEP on all fund transfers would be managed in-house by a single TEP Program Manager;
- The Program Manager would also provide overall management, marketing oversight, planning and tracking of customer and contractor participation; and
- The Program Manager would coordinate all activities necessary to develop application forms and contractor training.

206. Key partnering relationships would include Community interest groups; HVAC, insulation and air sealing contractors trained in Program procedures; and the Arizona Energy Office, Pima Community College, or other industry experts to provide training, education and awareness.

207. The Program would use contractors initially recruited for the Existing Homes Program, encouraging them to promote TEP financing when working with customers. TEP would provide an orientation of the Program which would outline Program requirements and contractors responsibilities as well as discuss reporting and data collection procedures. Contractors interested in participating in the Program must attend the orientation.

208. Program Marketing and Communication Strategy. TEP would provide Program marketing and customer outreach and awareness through a range of strategies including:

- Promotions on the TEP website about the benefits of purchasing high-efficiency equipment and home performance measures;
- Promotion through contractors and through community interest groups;
- Providing information through TEP's customer care center;
- Developing marketing pieces including brochures and other collateral pieces to promote the benefits of qualifying equipment, air sealing and duct sealing, and the financing program available to fund those measures; and
- Training and seminars for participating trade allies and contractors.

209. The advertising campaign would communicate that high-efficiency systems and home performance measures would help reduce customer energy bills, provide equal or better comfort conditions, and are beneficial for the environment.

210. Program Analysis and Issues. TEP originally proposed using the Pennsylvania Treasury as the third party lender. Interested parties had recommended making further effort to secure third-party lenders located in Arizona. TEP has now chosen Vantage West, a local Credit Union ("VW"), as the third-party lender with loans leveraged by a loss reserve account as well as the possibility of a combination of a 10 percent loan loss reserve account and an interest rate buy-down, all funded from the DSM Surcharge. The interest rate buy-down would bring the rate from VW's normal 11.099 percent down to 7.99 percent.

211. The Company notes that UNS Gas, Inc. requested a program nearly identical to the one requested here for TEP. The UNS Gas program was approved by the Commission in Decision No. 72062 (January 6, 2011).

212. Cost Effectiveness. There are no direct avoided cost benefits or energy savings from the residential financing program, and the total DSM Implementation Plan Cost for TEP would increase as a result of offering the Program. However, the indirect benefits and savings are measured at the program level where individual energy efficiency measures are included. TEP believes, and Staff agrees, that the availability of financing for the Existing Homes Program would

increase participation, and thus increase the resulting societal benefits and savings reported for the Existing Homes Program.

213. Staff Recommendations.

- Staff has recommended approval of the Residential Energy Efficiency Financing Program with a two-year pilot as described herein.
- Staff recommends that the Commission not approve TEP's request that the DSM Surcharge for the Residential Energy Financing Program be collected only from Residential customers.

214. Measurement, Evaluation, and Research. Measurement, Evaluation, Research shall be in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415, including the following database activities:

- As part of Program operation, TEP would request the Lender to provide the necessary data elements to populate the tracking database and provide periodic reporting and data collection.
- TEP would establish systems to collect the data needed to support effective Program management, transfer of funds from TEP to the loan loss reserve accounts, reporting, and evaluation.

S. ENERGY CODES ENHANCEMENT PROGRAM

215. Program Description. Improved building energy codes are recognized as a simple and cost-effective means of achieving energy savings over the lifetime of new construction and newly renovated buildings. The TEP Energy Codes Enhancement Program ("ECEP") seeks to overcome barriers to the adoption of improved building codes.

216. Budget. TEP requested a budget of $49,335 for the first year (2011) of the Energy Codes Enhancement Program and a budget of $75,490 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

217. Program Objectives and Rationale. The objective of the TEP ECEP is to increase energy savings in new construction and renovated buildings, in both the Residential and Commercial sectors, by improving compliance with existing building energy codes and supporting updates to building codes.

218. Delivery and Marketing Strategy. The ECEP would target building committees and city councils, as well as building design officials including architects, engineers, contractors and builders. TEP Program staff would collaborate with regional and national organizations that track market trends and can offer guidance on best practices for energy code adoption and enforcement.

219. Program support to the target audience may include activities such as:

- Classroom, field and "brown bag" training sessions;
- Purchasing energy code books for officials that currently lack such resources;
- Supporting energy code-related certifications for code officials;
- Conducting energy code compliance assessments by 2017 to fulfill American Recovery and Reinvestment Act ("ARRA") requirements to demonstrate 90% energy code compliance (may be done in coordination with energy efficiency program Measurement, Evaluation and Research ("MER") activities); and
- Collaboration with the Southwest Energy Efficiency Project and other regional groups to support research on and adoption of building codes and equipment standards.

220. TEP staff would be responsible for administering the Program. Responsibilities for these staff would include planning, coordination and implementation of all Program activities.

221. Program marketing would be accomplished through direct outreach to municipal officials, participation in building code enhancement committees, cross-marketing with other TEP energy efficiency programs and through TEP websites.

222. Program Analysis/Issues. According to the U.S. Department of Energy[2], buildings use 39 percent of our total energy, two-thirds of our electricity, and one-eighth of our water. In light of the increasing cost of energy, building energy efficiency is a key component of sound public policy. One reason is that the benefits of more efficient construction often continue for the life of the structure, often 30 to 50 years.

223. DOE research[3] shows that contemporary energy codes could save about 330 Trillion BTU by 2030, almost 2 percent of total current residential energy consumption. There

[2] U.S. Department of Energy website: http://www.energycodes.gov/why_codes/
[3] Ibid.

would also be comparable savings in consumer energy bills, air pollution and greenhouse gas emissions. As is discussed below, however, Arizona is a "home rule" state with no mandatory state-wide energy efficiency building code.

224. Although many counties and cities within the state have adopted an EE building code, some municipalities lack the resources and knowledge to effectively enforce existing building codes or implement an energy efficiency-specific code. Many municipal code officials lack the resources to stay current on market trends relevant to building codes, especially given current economic conditions. In jurisdictions that currently lack any type of building code, public officials could benefit from information and assistance in developing and advocating the adoption of a building code.

225. In addition to the lack of information and resources impacting the development and enforcement of building codes at the governmental level, building design and construction professionals could likely benefit from additional education and training on code requirements.

226. The primary market barriers to achieving maximum energy efficiency from building related codes are as follows:

- Lack of knowledge and resources to facilitate compliance with existing codes,
- Inconsistency in codes across the state, and
- Lack of resources to advocate for adoption of new codes.

227. Cost-Effectiveness. TEP has not provided an estimate of energy savings from implementation of the Energy Codes Enhancement Program. Rather, development of tracking metrics and deemed savings methodologies form an integral part of the Program. Energy savings from the Program would be determined upon completion of the Measurement, Evaluation and Research phase of the Program.

228. Staff Recommendations. Advocacy of energy codes is an appropriate component of TEP's 2012 Energy Efficiency Implementation Plan, given the high potential for long-term energy savings. Therefore, Staff has recommended approval of TEP's Energy Codes Enhancement Program, subject to implementation of the MER and Reporting protocols stated herein.

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T. Education and Outreach

229. Program Description. The Education and Outreach ("E&O") Program is an existing program approved in Decision No. 70402 (July 3, 2008). TEP is requesting budget approval to continue this program, which is being modified through the transfer of its school-based energy education components and its on-line audit function to subprograms of the Behavioral Comprehensive Program.

230. The revised E&O Program would be responsible for overall marketing and general consumer education. In order to reflect this change in focus, TEP is proposing to rename the E&O Program as the Consumer Education and Outreach ("CEO") Program.

231. With the school-based energy education activities and measures and the on-line audit function moved into the Behavioral Comprehensive Program, the CEO Program would market TEP's energy efficiency and renewable programs[4], including Time of Use ("TOU") rates:

- Develop brochures and communication materials that showcase all available EE and Renewable Programs,
- Develop and maintain communication materials related to general energy saving information,
- Provide labor and materials to staff trade shows and community events,
- Develop and maintain web content to educate consumers on energy use and TOU rate choices, and
- Cross communication of EE Programs and general energy saving information.

232. Program Objectives and Rationale. The E&O Program is intended to increase participation in the Company's other DSM/EE programs and intended to promote conservation by customers.

233. Cost-effectiveness. The CEO Program markets the entire TEP portfolio, promotes conservation generally and educates customers about TOU rates. It does not produce direct savings. The 2012 budget, with the school-based energy education and on-line audit function

[4] Marketing materials for TEP energy efficiency programs include information concerning TEP's renewable programs, providing an added benefit from the funding used to market energy efficiency.

removed, would be approximately $194,000, or less than 1 percent of the total Implementation Plan budget for 2012.

234. Staff Recommendation.

- Staff has recommended that the Education and Outreach (or Consumer Education and Outreach) Program be approved for continuation, with the modifications proposed.

U. Program Development, Analysis And Reporting Software ("Program Development")

235. Description. This budget item provides program support and covers costs relating to the Implementation Plan as a whole, including program design, database design and development, and technical support. Included in this budget item are the resources necessary for meeting reporting requirements under the Electric Energy Efficiency Rates.

236. Objectives and Rationale. Program Development includes:

- Incremental cost studies,
- Measure and program research and benefit-cost analysis,
- Codes and Standards research and analysis,
- Education and training on new technologies,
- Program design, development and analysis, and
- Software for tracking and reporting to remain in compliance with the Electric Energy Efficiency Rules.

237. Cost-Effectiveness. Program Development costs are associated with administering the Implementation Plan as a whole. These costs are not attributable to one energy efficiency program or measure, but are required to facilitate the energy efficiency goals for all programs and measures. Cost-effectiveness, as such, can not be assessed for this budget item, but the Program Development costs should represent a limited portion of the total budget.

238. Projected Program Development costs for 2011 equal approximately 3.47 percent of the total Implementation Plan budget, declining to approximately 2.62 percent in 2012. (In

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comparison, incentives represent, respectively, approximately 51 percent and 54 percent of the 2011 and 2012 budgets.)

239. Staff Recommendation. Staff has recommended that the budget amounts allocated to program development, analysis and reporting software costs be included in the budget as shown in the application.

V. MEASUREMENT, EVALUATION AND RESEARCH; REPORTING: ALL PROGRAMS

240. Measurement, Evaluation, and Research. At a minimum, Measurement, Evaluation, and Research ("MER") shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415.

241. Reporting. At a minimum, Reporting shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415.

W. BUDGET FLEXIBILITY

242. TEP has requested the ability to shift up to 25 percent of its approved funds from Residential to Commercial sector programs, or from Commercial to Residential sector programs, based on program activity. The Company has also requested that it be allowed to increase the total budget for the energy efficiency programs by up to 25 percent, where cost-effective. The Company states that this type of flexibility maximizes participation in successful programs and allows it to continue accepting applications from customers in cases where an individual program may be over-subscribed.

243. Shifting of Funds. Funding for the Residential and Commercial sectors is approximately equal under the proposed Implementation Plan budgets for 2011 and 2012. (The Home Energy Reports subprogram targets Residential customers and its budget should be considered part of the funding for the Residential sector.) While the Commission has allowed utilities to shift energy efficiency program funding among programs or measures within the Residential sector, or among program or measures within the Commercial sector, recent practice has been to limit shifting from sector to sector, to ensure that both Residential and Commercial customers both have a reasonable opportunity to participate in energy efficiency programs.

Allowing funding shifts among programs or measures within a sector allows a reasonable degree of flexibility without the potential impact to the equitable access to participation in energy efficiency programs by Residential and Commercial customers.

244. Increase to Total Budget. With a projected budget for 2012 of $24.7 million, the up 25 percent flexibility proposed by TEP could result in an increase of over $6 million, depending on customer participation and actual costs. Although actual spending may be either over or under the level projected for the Implementation Plan, and the Company should be allowed some flexibility to accommodate unanticipated levels of customer participation, the 25 percent level proposed by TEP is excessive. Allowing an increase of up to 5 percent would provide TEP with flexibility in responding to higher-than-anticipated customer participation, but would better limit potential costs.

245. Staff Recommendations.

- Staff has recommended that the Company be allowed to shift funding from measure to measure, or from less active to more active programs, for up to 25% of the budget originally allocated to the less active program. Budget shifting may only be done within, and not between, the Residential and Non-Residential program sectors.

- Staff has recommended that the Company be allowed to increase the overall Implementation Plan budget by up to 5 percent, if the increases are allocated to Commission-approved cost-effective measures and programs.

X. DEMAND-SIDE MANAGEMENT SURCHARGE ("DSMS")

246. In TEP's Application, as updated on August 22, 2011, TEP is requesting recovery of the following costs through the DSMS: (i) DSM program costs, including $13.4 million from the period through 2011 (DSM costs minus the amount recovered through the existing DSM adjustor) and $24.7 million in spending projected for 2012 ; (ii) the DSM Performance Incentive, in the amount of $16 million; and (iii) the Company's proposed Authorized Revenue Requirement True-up ("ARRT") Mechanism, in the amount of $17 million.

247. DSM program costs. The DSMS should include recovery for the projected cost of the TEP's Implementation Plan, and should reflect any actions taken by the Commission with respect to the Implementation Plan. TEP states that the budget proposed for the program is designed to provide approximately 7 percent more in savings than is required in order to meet the

2012 incremental savings goal. Although the budget could be reduced by 7 percent to more closely match the spending required to meet the 2012 goal, such a reduction would also eliminate any margin for error in meeting that goal.

248. DSM Performance Incentive. Currently, the performance incentive is based on 10 percent of the net benefits from the DSM portfolio, excluding the LIW, E&O and Direct Load Control Programs, with a cap based on 10 percent of DSM spending. The Company proposes to modify the spending cap to a hard dollar cap based on a percentage of net benefits (up to 10 percent). TEP also proposes to apply the gross revenue conversion factor from the last rate case (1.66) to the performance incentive, in order to arrive at a "pre-tax" level for the incentive.

249. The structure of TEP's current performance incentive, which is recovered through the DSM adjustor, was approved by the Commission in TEP's last rate case, in Decision No. 70628. The benefit-based cap and conversion factor proposed by TEP for the Performance Incentive would significantly alter the type and level of cost recovered through the DSM adjustor. Although the DSM adjustor rate may be reset annually to reflect fluctuations in costs already approved for recovery (such as program costs that vary according to participation levels), it is not appropriate for a reset outside a rate case to include major changes to the type or level of costs recovered through the DSM adjustor. Changes to the adjustor, including changes to how the Performance Incentive is calculated, should be made within a rate case.

250. ARRT. The ARRT Mechanism proposed by TEP is designed to recover revenue lost due to implementation of the EE Standard. Recovery of net lost revenue can only be addressed during a rate case. The ARRT Mechanism may be addressed in TEP's next rate case, if TEP so requests, and if TEP documents its request in the rate application.

251. TEP requested that, if the ARRT is not approved, the Commission grant TEP a waiver of the energy efficiency Rules until the ARRT or another "adequate" remedy is in place. Staff recommends that no waiver of the energy efficiency rules be granted to TEP at this time.

252. DSMS Reset Level. The current DSMS is $0.001249 per kWh. TEP has requested to increase the DSMS to $0.006343 per kWh, based on its proposals, as discussed herein. Based on the analysis indicated above, including the need to exclude the ARRT and to retain the existing

method for calculating the Performance Incentive, Staff has recommended a DSMS of $0.003812 per kWh. The impacts, based on average Residential usage, are shown in the table below:

Residential Usage	kWh/ month	Curent DSMS/kWh	Current Bill Impact/month	TEP Proposed DSMS/kWh	TEP Proposed DSMS Impact/month	Staff Proposed DSMS/kWh	Staff Proposed DSMS Impact/month
Summer Average	1,100	$0.001249	$1.37	$0.006343	$6.98	$0.003812	$4.19
Winter Average	680	$0.001249	$0.85	$0.006343	$4.31	$0.003812	$2.59
Annual Average	880	$0.001249	$1.10	$0.006343	$5.58	$0.003812	$3.35

253. Recommendations. Recommendations regarding the DSMS are listed below:

- Staff has recommended that the DSMS include: (i) the program spending approved by the Commission in this Decision; and (ii) the Performance Incentive, as calculated in the manner set in the last rate case.
- Staff has also recommended that calculation of the DSMS take into account the current DSM balance, but not include the Company's proposed ARRT at this time.
- Staff has recommended that the DSMS be reset to $0.003812 per kWh.

254. Adjustor Reset and Reporting Requirements. The Company requested that the current April 1 surcharge filing requirement and semi-annual DSM reporting (March 1 and September 1) requirements be superseded by the reporting requirements of A.A.C. R14-2-2409. TEP plans to file for an adjustor rate reset annually, as part of its Implementation Plan filings, beginning in June 2012, with the actual reset to take effect in January 2012.

- Staff has recommended that the current surcharge filing and DSM reporting requirement be superseded by the reporting requirements of A.A.C. R14-2-2409.
- Staff has also recommended that, in any year during which the Company does not file an Implementation Plan, or does not address the DSM adjustor reset within its Implementation Plan, an adjustor reset application should be filed separately, no later than April 1.

...

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...

Y. CALCULATING COST-EFFECTIVENESS

255. Staff recommends that, in all future DSM Implementation Plans, the Company use the same input values and methodology as Staff for calculating the present value benefits and costs to determine benefit-cost ratios.

Z. SUMMARY OF RECOMMENDATIONS

256. Staff has made the following recommendations:

Overall

- In cases where a measure is not approved, the funding associated with that measure should be used to fund cost-effective measures within the same program, if possible.
- The Company should have the flexibility to transfer funding among cost-effective measures, within each program, to accommodate varying participation levels.
- The Company should have the flexibility to move up to 25% of funding from program to program within each sector, to accommodate varying participation levels. However, funding may not be transferred out of the Low-Income Weatherization Program.
- The Company should track federal standards, including those for lighting, to ensure that measures promoted by the TEP Implementation Plan offer cost-effective savings over and above current baselines.

Appliance Recycling

- The TEP Appliance Recycling Program should be approved and it should include both the refrigerator and freezer measures.
- The Company should offer a $30 incentive, rather than the $35 incentive proposed, but the overall budget for incentives should not be decreased.

Multi-Family Housing Efficiency

- The proposed Multi-Family Program should be approved, with older, less efficient and low-income complexes as a primary focus for the Multi-Family Program's activities.

Efficient Products

- The Efficient Products Program should be approved and continue to offer CFLs, with the addition of the Variable Speed Pool Pump, Advanced Power Strip and Pool Pump Timer measures.

- The Residential LED Light measure should not be approved at this time.

- The lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions should be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

Low-Income Weatherization

- The Low-Income Weatherization Program should be approved for continuation as part of TEP's Implementation Plan.

- TEP should be allowed to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"), so that the eligibility levels remain consistent over time.

Residential New Construction

- The Tier 1 measure should be approved for continuation.

- The Tier 2 and Tier 3 measures should be discontinued once the Residential New Construction Program has met its existing commitments for Tier 2 and Tier 3 homes.

Existing Homes and Audit Direct Install

- The Existing Homes and Audit Direct Install Program should be approved for continuance.

Shade Tree

- The Shade Tree Program should be approved for continuance.

Residential and Small Commercial Direct Load Control

- The Residential and Small Commercial Direct Load Control Program be approved to continue.

Bid for Efficiency

- The TEP Bid for Efficiency Pilot Program should be approved as a two-year pilot program as discussed herein.

- Individual project incentives under this program should be capped at 60 percent of the incremental costs of the efficiency measures included in the project.

...

Retro-Commissioning

- The TEP Retro-commissioning Program should be approved.

Schools Facilities

- The School Facilities Schools Program should be approved.

CHP

- The CHP Joint Program should be approved.

Small Business Direct Install

- The Small Business Direct Install Program should be approved to continue, with the proposed new measures.

C&I Comprehensive

- The C&I Comprehensive Program should be approved, except for the proposed additional measure LED Street and Parking Lights.

Commercial Direct Load Control

- The C&I Direct Load Control Program should be approved for continuation.

Commercial New Construction

- The Commercial New Construction Program, including the high-performance glazing measure, should be approved for a second two-year period.
- TEP should implement the recommendations in the "Assessment of Baseline Practices for Commercial New Construction" prepared by Navigant Consulting, including modification of Program performance thresholds (for public buildings) and Program applications to differentiate between public and private sector facilities.
- Measurement & Evaluation statistics for the Program should be included in the DSM reports filed with the Commission.
- TEP should continue the Commercial New Construction Program's outreach efforts by targeting building owner, developer and design professional organizations, lenders and lender industry associations, and local building code officials.
- Information announcing the availability of the Program should occupy a more prominent position on the TEP website.

Behavioral Comprehensive

- The Behavioral Comprehensive program, and all its subprograms, should be approved.

Residential Energy Financing

- The Residential Energy Efficiency Financing Program should be approved for a two-year pilot as described herein.
- TEP's request that the DSM Surcharge for the Residential Energy Financing Program be collected only from Residential customers should not be approved.

Energy Codes Enhancement

- TEP's Energy Codes Enhancement Program should be approved, subject to implementation of the MER and Reporting protocols stated herein.

Education and Outreach

- The Education and Outreach (or Consumer Education and Outreach) Program should be approved for continuation, with the modifications proposed.

Program Development

- The budget amounts allocated to program development, analysis and reporting software costs should be included in the budget be approved, as shown in the application.

Budget Flexibility

- The Company should be allowed to shift funding from measure to measure, or from less active to more active programs, for up to 25 percent of the budget originally allocated to the less active program. Budget shifting should only be done within, and not between, the Residential and Non-Residential program sectors.
- The Company should be allowed to increase the overall Implementation Plan budget by up to 5 percent, if the increases are allocated to cost-effective measures and programs.

DSMS

- The DSMS should include: (i) the program spending approved in this Decision; and (ii) the Performance Incentive, as calculated in the manner set in the last rate case.

...

- Calculation of the DSMS should take into account the current DSM balance, but not include the Company's proposed ARRT at this time.
- No waiver of the energy efficiency rules be granted to TEP at this time.
- The DSMS should be reset to $0.003812 per kWh.

Adjust Reset and Reporting Requirements

- The current surcharge filing and DSM reporting requirement should be superseded by the reporting requirements of A.A.C. R14-2-2409.
- In any year during which the Company does not file an Implementation Plan, or does not address the DSM adjustor reset within its Implementation Plan, an adjustor reset application should be filed separately, no later than April 1.

Calculating Cost-Effectiveness

- Staff recommends that, in all future DSM Implementation Plans, the Company use the same input values and methodology as Staff for calculating the present value benefits and costs to determine benefit-cost ratios.

CONCLUSIONS OF LAW

1. TEP is an Arizona public service corporation within the meaning of Article XV, Section 2, of the Arizona Constitution.

2. The Commission has jurisdiction over TEP and over the subject matter of the application.

3. The Commission, having reviewed the application and Staff's Memorandum dated November 16, 2011, concludes that it is in the public interest to approve the TEP 2011-2012 Energy Efficiency Implementation Plan, with the modifications discussed herein.

ORDER

IT IS THEREFORE ORDERED that Tucson Electric Power Company Implementation Plan is approved, with the modifications discussed herein.

IT IS FURTHER ORDERED that, in cases where a measure is not approved, the funding associated with that measure shall be used to fund cost-effective measures within the same program, if possible.

. . .

IT IS FURTHER ORDERED that Tucson Electric Power Company shall have the flexibility to transfer funding among cost-effective measures, within each program, to accommodate varying participation levels.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall have the flexibility to move up to 25 percent of funding from program to program within each sector, to accommodate varying participation levels. Funding may not be transferred out of the Low-Income Weatherization Program.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall track federal standards, including those for lighting, to ensure that measures promoted by the Tucson Electric Power Company Implementation Plan offer cost-effective savings over and above current baselines.

Appliance Recycling

IT IS FURTHER ORDERED that the Tucson Electric Power Company Appliance Recycling Program is approved and shall include both the refrigerator and freezer measures.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall offer a $30 incentive, rather than the $35 incentive proposed, but that the overall budget for incentives shall not be decreased.

Multi-Family Housing Efficiency

IT IS FURTHER ORDERED that the proposed Multi-Family Program is approved, with older, less efficient and low-income complexes as a primary focus for the Multi-Family Program's activities.

Efficient Products

IT IS FURTHER ORDERED that the Efficient Products Program is approved, and shall continue to offer CFLs, with the addition of the Variable Speed Pool Pump, Advanced Power Strip and Pool Pump Timer measures.

IT IS FURTHER ORDERED that the Residential LED Light measure is not approved at this time.

. . .

IT IS FURTHER ORDERED that the lifespan of CFL measures shall be re-evaluated for Tucson Electric Power Company's next Implementation Plan, and any changes to these assumptions shall be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

Low-Income Weatherization

IT IS FURTHER ORDERED that the Low-Income Weatherization Program is approved for continuation as part of Tucson Electric Power Company's Implementation Plan.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall be allowed to tie the eligibility level for the Tucson Electric Power Company LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"), so that the eligibility levels remain consistent over time.

Residential New Construction

IT IS FURTHER ORDERED that the Tier 1 measure is approved for continuation.

IT IS FURTHER ORDERED that the Tier 2 and Tier 3 measures shall be discontinued once the Residential New Construction Program has met its existing commitments for Tier 2 and Tier 3 homes.

Existing Homes and Audit Direct Install

IT IS FURTHER ORDERED that the Existing Homes and Audit Direct Install Program is approved for continuance.

Shade Tree

IT IS FURTHER ORDERED that the Shade Tree Program is approved for continuance.

Residential and Small Commercial Direct Load Control

IT IS FURTHER ORDERED that the Residential and Small Commercial Direct Load Control Program is approved to continue.

Bid for Efficiency

IT IS FURTHER ORDERED that the Tucson Electric Power Company Bid for Efficiency Pilot Program is approved as a two-year pilot program as discussed herein.

. . .

IT IS FURTHER ORDERED that individual project incentives under this program shall be capped at 60 percent of the incremental costs of the efficiency measures included in the project.

Retro-Commissioning

IT IS FURTHER ORDERED that the Tucson Electric Power Company Retro-commissioning Program is approved.

Schools Facilities

IT IS FURTHER ORDERED that the School Facilities Schools Program is approved.

CHP

IT IS FURTHER ORDERED that the CHP Joint Program is approved.

Small Business Direct Install

IT IS FURTHER ORDERED that the Small Business Direct Install Program is approved to continue, with the proposed new measures.

C&I Comprehensive

IT IS FURTHER ORDERED that the C&I Comprehensive Program is approved, except for the proposed additional measure LED Street and Parking Lights.

Commercial Direct Load Control

IT IS FURTHER ORDERED that the C&I Direct Load Control Program is approved for continuation.

Commercial New Construction

IT IS FURTHER ORDERED that the Commercial New Construction Program, including the high-performance glazing measure, is approved for a second two-year period.

IT IS FURTHER ORDERED that Tucson Electric Power Company implement the recommendations in the "Assessment of Baseline Practices for Commercial New Construction" prepared by Navigant Consulting, including modification of Program performance thresholds (for public buildings) and Program applications to differentiate between public and private sector facilities.

IT IS FURTHER ORDERED that Measurement & Evaluation statistics for the Commercial New Construction Program shall be included in the DSM reports filed with the Commission.

1 IT IS FURTHER ORDERED that Tucson Electric Power Company shall continue the
2 Commercial New Construction Program's outreach efforts by targeting building owner, developer
3 and design professional organizations, lenders and lender industry associations, and local building
4 code officials.
5 IT IS FURTHER ORDERED that information announcing the availability of the
6 Commercial New Construction Program shall occupy a more prominent position on the Tucson
7 Electric Power Company website.
8 *Behavioral Comprehensive*
9 IT IS FURTHER ORDERED that the Behavioral Comprehensive Program, and all its
10 subprograms, is approved.
11 *Residential Energy Financing*
12 IT IS FURTHER ORDERED that the Residential Energy Efficiency Financing Program is
13 approved for a two-year pilot as described herein.
14 IT IS FURTHER ORDERED that Tucson Electric Power Company's request that the DSM
15 Surcharge for the Residential Energy Financing Program be collected only from Residential
16 customers is not approved.
17 *Energy Codes Enhancement*
18 IT IS FURTHER ORDERED that Tucson Electric Power Company's Energy Codes
19 Enhancement Program is approved, subject to implementation of the MER and Reporting
20 protocols stated herein.
21 *Education and Outreach*
22 IT IS FURTHER ORDERED that the Education and Outreach (or Consumer Education
23 and Outreach) Program is approved for continuation, with the modifications proposed herein.
24 *Program Development*
25 IT IS FURTHER ORDERED that the budget amounts allocated to program development,
26 analysis and reporting software costs shall be included in the budget are approved, as shown in the
27 application.
28 . . .

Budget Flexibility

IT IS FURTHER ORDERED that Tucson Electric Power Company shall be allowed to shift funding from measure to measure, or from less active to more active programs, for up to 25 percent of the budget originally allocated to the less active program. Budget shifting shall only be done within, and not between, the Residential and Non-Residential program sectors.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall be allowed to increase the overall Implementation Plan budget by up to 5 percent, if the increases are allocated to cost-effective measures and programs.

DSMS

IT IS FURTHER ORDERED that the DSMS shall include: (i) the program spending approved by this order; and (ii) the Performance Incentive, as calculated in the manner set in the last rate case.

IT IS FURTHER ORDERED that calculation of the DSMS shall take into account the current DSM bank balance, but shall not include Tucson Electric Power Company's proposed ARRT at this time.

IT IS FURTHER ORDERED that no waiver of the energy efficiency rules be granted to TEP at this time.

IT IS FURTHER ORDERED that the DSMS shall be reset to $0.003812 per kWh.

Adjust Reset and Reporting Requirements

IT IS FURTHER ORDERED that the current surcharge filing and DSM reporting requirement shall be superseded by the reporting requirements of A.A.C. R14-2-2409.

IT IS FURTHER ORDERED that, in any year during which Tucson Electric Power Company does not file an Implementation Plan, or does not address the DSM adjustor reset within its Implementation Plan, an adjustor reset application shall be filed separately, no later than April 1.

IT IS FURTHER ORDERED that Tucson Electric Power Company file a tariff in compliance with this Decision within 30 days of the effective date of this Decision.

. . .

Calculating Cost-Effectiveness

IT IS FURTHER ORDERED that, in all future DSM Implementation Plans, Tucson Electric Power Company use the same input values and methodology as Staff for calculating the present value benefits and costs to determine benefit-cost ratios.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION

CHAIRMAN COMMISSIONER

COMMISSIONER COMMISSIONER COMMISSIONER

IN WITNESS WHEREOF, I, ERNEST G. JOHNSON, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this _____day of _____, 2011.

ERNEST G. JOHNSON
EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

SMO:JMK:lhm/CH

SERVICE LIST FOR: Tucson Electric Power Company
DOCKET NO. E-01933A-11-0055

Mr. Michael W. Patten
Roshka DeWulf & Patten
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Mr. Steven M. Olea
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Ms. Janice M. Alward
Chief Counsel, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

ORIGINAL

OPEN MEETING

MEMORANDUM

RECEIVED

2012 FEB 29 A 8: 13

AZ CORP COMMISSION
DOCKET CONTROL

Arizona Corporation Commission
DOCKETED
FEB 29 2012
DOCKETED BY

EXHIBIT
S-4
ADMITTED

TO: THE COMMISSION

FROM: Utilities Division

DATE: February 28, 2012

RE: TUCSON ELECTRIC POWER COMPANY- APPLICATION FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN (DOCKET NO. E-01933A-11-0055)

STAFF UPDATE

Staff has prepared amendments relating to three alternative proposals: (i) Staff's Proposed Order, with Staff's Proposed Amendment No. 1 to update the Demand-side Management Surcharge ("DSMS"), and Staff's Proposed Amendment No. 2 to establish a deferral account to track lost fixed costs arising from Tucson Electric Power energy efficiency programs; (ii) Staff's Proposed Order with Staff's Proposed Amendment No. 3, to establish a conditional waiver of the 2012 Energy Efficiency Standard and reset the DSMS to reflect the lower spending levels; and (iii) TEP's Proposed Order, revised to reflect TEP's Proposed Modified Implementation Plan, with Staff's Proposed Amendment No. 4.

Staff's Proposed Amendment No. 1. The amendment would change the DSMS in the Proposed Order from $0.003812 per kWh to $0.003877 per kWh. This change reflects updated information from TEP regarding its program spending through December 2011 and a recalculation of the DSMS to reflect TEP's projected sales in 2012. The use of one year of projected sales conforms to the terms of the existing Settlement Agreement (Decision No. 70628). Any over- or under-collection would be taken into account at the next DSMS adjustor reset.

Staff's Proposed Amendment No. 2. The amendment would authorize TEP to defer unrecovered fixed costs associated with energy efficiency savings, using a methodology approved by Staff. The deferral account would allow TEP, which is currently subject to a general rate case stay-out provision, to address the recovery of fixed costs.

Staff's Proposed Amendment No. 3. The amendment would waive the Energy Efficiency Standard for 2012, but not the cumulative 2020 standard, and would reset the DSMS to $0.002326. The conditional waiver sets spending at no less than 2010 levels, bases Performance Incentives on methodology determined in the last rate case, requires an annual true-up and bases recovery from all customers on a per-kWh basis.

Staff's Proposed Amendment No. 4. The amendment would address Staff's concerns (addressed in more detail below) regarding the Modified Implementation Plan proposed by TEP (Attached).

Of the three alternatives, Staff recommends approval of Alternative (i), Staff's Proposed Order, with Staff's Proposed Amendment No. 1 to update the DSMS, and Staff's Proposed Amendment No. 2 to establish a deferral account.

TEP'S PROPOSED MODIFIED IMPLEMENTATION PLAN

On January 31, 2012, TEP filed its Proposed Modified Implementation Plan ("Modified Plan") which included (i) the programs recommended by Staff at 75% of the proposed budget; (ii) an Interim Performance Incentive; (iii) no Authorized Revenue Recovery True-up ("ARRT"); (iv) a proposed budget (inclusive of the current uncollected balance and performance incentives) of $29,694,240; (v) the 2013 Implementation Plan budget at the same level as 2012, but allowing TEP to propose modifications intended to improve 2013 Implementation Plan effectiveness; and (vi) a proposed per-kWh Demand-Side Management Surcharge ("DSMS") of $0.003608 for residential customers, with a proposed 4.19% rate for all other customer classes. (The 4.19 percent would apply to all charges, except taxes and other governmental charges.)

TEP states that its proposed Modified Plan provides it with "a reasonable opportunity to meet the EE Standard for 2012 and possibly for 2013."

Staff's Comments

True-up. TEP's proposals regarding the Interim Performance Incentive are based significantly on projections of savings, participation and activity levels. Staff notes that actual savings, participation and activity levels are likely to vary from projections and that these variations may impact the amount due the Company from any approved performance incentives, in addition to impacting the Demand-Side Management ("DSM") bank balance (which tracks the difference between the amount taken in through the DSM adjustor and actual spending). If the Commission approves the Modified Plan, Staff recommends that TEP file for a DSMS reset in April of 2013, including a true-up of the Base Performance Incentive and Other Performance Metric Incentives, as well as a true-up of any under- or over-collection in the DSM bank balance.

Verification of Net Benefits. TEP has proposed a Base Performance Incentive based on Net Benefits and without a cap based on spending, along with an additional incentive (Other Performance Metrics) based partly on Net Benefits per customer dollar spent. TEP should include information supporting the Net Benefits claimed for purposes of calculating the true-up in the reset application.

Total New Performance Incentive for 2012 at 120% of Goal. If the Commission approves the Modified Plan, the Interim Performance Incentive should treat $8,695,654 calculated as 120 percent of the Goal as a hard dollar cap. If Net Benefits are higher than anticipated, it could

result in an unpredictable impact on both the Base and the Other Metrics components of the Interim Performance Incentive. Designating an explicit cap would control performance incentive costs, make them more predictable, and protect ratepayers.

Total New Performance Incentive for 2012 at 80% of Goal. Under TEP's proposal, should the Company fall short of achieving 80% for any metric that is part of the Interim Performance Incentive, the Company would still collect a minimum of 80% on that metric. In total, this would mean that the Company would collect at least 80% of the $7,246,379 Goal, or $5,797,103, regardless of its performance.

Staff believes the Interim Performance Incentive should not have a minimum. With any minimum, let alone a minimum equal to 80 percent of the Goal, there is a risk that the Company could receive a performance incentive that is too high relative to the actual energy savings achieved. (For example, it would be inequitable for TEP to receive an Interim Performance Incentive equivalent to 80 percent of the Goal, if the savings it actually achieved were equivalent to only 50 percent of the Goal.)

The Company states that its recommended methodology has been proposed, in part, to address lost fixed cost recovery. However, for there to be lost fixed costs associated with energy efficiency, there have to be savings associated with energy efficiency, meaning sales the utility has foregone as a result of the Company's energy efficiency programs. It makes no sense to guarantee recovery for lost fixed costs at a level higher than what the utility may actually experience.

Staff is also concerned that this proposal, with its high guarantee, is not designed to incentivize energy efficiency above the "floor." Generally, more per-unit effort is required to achieve savings at the higher levels of energy efficiency, than at the lower levels, where efficiency is made easier by the availability of "low hanging fruit." An Interim Performance Incentive which includes a high guaranteed "floor" payment could limit the incentive to achieve energy efficiency savings, particularly at higher levels.

Staff recommends that the Company's Interim Performance Incentive track with its actual achievements with respect to both Net Benefits and Other Performance Metrics. In addition, if the actual and verifiable Net Benefits achieved are less than 50 percent of the Goal, TEP should be reimbursed for only its prudently incurred costs associated with the portfolio and Other Performance Metrics, but should receive no Interim Performance Incentive.

Basis of the DSMS Charge. Staff modified tables provided by TEP to clarify the differing impacts of the per-kWh and bill percentage billing proposals. As both tables demonstrate, the 4.19 percent rate proposed by the Company for Non-residential customer classes instead of the usual per-kWh rate, would result in impacts that vary markedly among the classes, benefitting some at the expense of others. For example, smaller Non-residential customers listed in the table would experience a large percentage increase, while the larger Non-

residential customers would see decreases. Staff believes this is inequitable. In order to maintain equity, Staff recommends that all customers pay the DSMS on the same per-kWh basis.

Differences in DSM Charge in a Month

Sample of Nonresidential Customers in a winter month	$0.003608 per kWh	4.19% of bill before taxes and assessments	Difference	% Difference
Private Street & Area Lighting (GS-51) (201 kWh)	$0.73	$1.82	$1.09	149.3%
General Service (GS-10) (165,000 kWh)	$595.32	$721.52	$126.20	21.2%
Large General Service (I-13) (545,600 kWh and 200 kW)	$1,968.52	$1,221.68	-$746.84	-37.9%
Large Light and Power (LLP-14) (5,762,400 kWh and 12,096 kW)	$20,790.74	$15,777.45	-$5,013.29	-24.1%

Monthly Bill Impact of DSM Charge

Sample of Nonresidential Customers in a winter month	Monthly Bill with $0.003608 per kWh	Monthly Bill with 4.19% of bill before taxes and assessments	Difference	% Difference
Private Street & Area Lighting (GS-51) (201 kWh)	$51.75	$52.99	$1.24	2.4%
General Service (GS-10) (165,000 kWh)	$19,245.57	$19,380.89	$135.32	0.7%
Large General Service (I-13) (545,600 kWh and 200 kW)	$35,532.08	$34,701.25	-$830.83	-2.3%
Large Light and Power (LLP-14) (5,762,400 kWh and 12,096 kW)	$430,323.60	$424,968.91	-$5,354.69	-1.2%

Cost-Effectiveness. The Company has also proposed to amend the language with respect to calculating cost-effectiveness. Staff does not concur with TEP's proposal to retain a third party and, moreover, this method would be inconsistent with the method for calculating cost-effectiveness used with other utilities. Staff has proposed compromise language similar to that proposed in the APS Settlement Agreement.

Recommendation

Staff recommends that, of the three alternative proposals, the Commission approve Staff's Proposed Order, including Staff's Proposed Amendment No. 1 to update the DSMS, and

Staff's Proposed Amendment No. 2 to establish a deferral account to track lost fixed costs arising from TEP's energy efficiency programs.

Steven M. Olea
Director
Utilities Division

SMO:JMK:kdh\CHH

ORIGINATOR: Julie McNeely-Kirwan

PROPOSED STAFF AMENDMENT NO. 1

TIME/DATE PREPARED:

COMPANY: Tucson Electric Power Company AGENDA ITEM NO.

DOCKET NO. E-1933A-11-0055 OPEN MEETING DATE:

Page 58, line 1, DELETE "$0.003812" and **REPLACE WITH** "$0.003877"

Page 58, Lines 3-8, DELETE the existing bill impact table and **REPLACE WITH:**

Residential Usage	kWh/month	Current DSMS/kWh	Current Bill Impact/month	Staff Proposed DSMS/kWh	Staff Proposed DSMS Impact/month
Summer Average	1100	$0.001249	$1.37	$0.003877	$4.26
Winter Average	680	$0.001249	$0.85	$0.003877	$2.64
Annual Average	880	$0.001249	$1.10	$0.003877	$3.41

Page 58, Line 14-1/2, DELETE "$0.003812" and **REPLACE WITH** "$0.003877"

Page 63, Line 4, DELETE "$0.003812" and **REPLACE WITH** "$0.003877"

Page 68, Line 18, DELETE "$0.003812" and **REPLACE WITH** "$0.003877"

Make all conforming changes.

THIS AMENDMENT:

_____ Passed _____ Passed as amended by _____

_____ Failed _____ Not Offered _____ Withdrawn

STAFF PROPOSED AMENDMENT NO. 2

TIME/DATE PREPARED:

COMPANY: Tucson Electric Power Company AGENDA ITEM NO.____

DOCKET NO(S). E-01933A-11-0055 OPEN MEETING DATE:

Page 57, line 26, **INSERT New Findings of Fact:**

"The Energy Efficiency Rules require TEP to reduce its kWh sales. To the extent that TEP recovers its fixed costs through its kWh charges, a reduction in kWh sales could affect TEP's ability to recover its fixed costs and could therefore negatively affect TEP's financial health. In addition, TEP is currently subject to a general rate case stay-out provision, approved by the Commission in TEP's last rate case."

"Staff recommends that TEP be authorized to defer the unrecovered fixed costs related to lost revenues associated with energy efficiency savings incurred following the effective date of this Decision, for consideration in its next rate case. Tucson Electric Power Company should file in this Docket, within 30 days of the effective date of this Decision, its proposed methodology for calculating and recording the unrecovered fixed costs. This methodology should be approved by Staff before Tucson Electric Power Company may record any amounts in a deferral account. Tucson Electric Power Company should file, as a compliance item in this Docket, quarterly reports of the account, detailing the current balance and all transactions recorded during the quarter, including the calculations used to determine the recorded amounts. The reports should be filed each April, July, October and January, covering the preceding calendar quarter."

Page 68, line 16, **INSERT New Ordering Paragraphs:**

"IT IS FURTHER ORDERED that Tucson Electric Power Company is hereby authorized to defer the unrecovered fixed costs related to lost revenues associated with energy efficiency savings incurred following the effective date of this Decision, for consideration in its next rate case. Tucson Electric Power Company shall file in this Docket, within 30 days of the effective date of this Decision, its proposed methodology for calculating and recording the unrecovered fixed costs. This methodology shall be approved by Staff before Tucson Electric Power Company may record any amounts in the deferral account. Tucson Electric Power Company shall file, as a compliance item in this Docket, quarterly reports of the account, detailing the current balance and all transactions recorded during the quarter, including the calculations used to determine the recorded amounts. The reports shall be filed each April, July, October and January, covering the preceding calendar quarter."

Make all conforming changes.

THIS AMENDMENT:

_____ Passed _____ Passed as amended by _____

_____ Failed _____ Not Offered _____ Withdrawn

PROPOSED STAFF AMENDMENT NO. 3

TIME/DATE PREPARED:

COMPANY: Tucson Electric Power Company AGENDA ITEM NO.

DOCKET NO. E-01933A-11-0055 OPEN MEETING DATE:

On page 57, line 26, INSERT new Findings of Fact:

252. Although the cumulative 2020 standard should not be waived, compliance with the Energy Standard for 2012 should be waived.

253. The waiver for 2012 should take place under the following conditions: (i) spending for the energy efficiency portfolio should not decrease below the level recorded for 2010 in the Semi-Annual Progress Report filed on March 1, 2011 (exclusive of the cost for the baseline study); (ii) the Performance Incentives for 2010 and 2011 should be calculated based on actual spending during those years, and on the current methodology, as determined in the last rate case; (iii) the 2012 Performance Incentive should be projected based on 2010 spending levels and using the current methodology, as determined in the last rate case; (iv) all projections, including the projected Performance Incentive, must be trued-up at the next reset; and (v) the DSMS should be calculated on a per-kWh basis based on projected annual kWh sales for 2012 (adjusted for Lifeline sales), and should include the current under-collected balance, the projected 2012 spending level and the Performance Incentives as described in this paragraph.

254. For future resets, the DSMS should be reset annually either in an implementation plan or in a separate application filed no later than April 1. The EE rules require an implementation plan to be filed by June 1 in every odd year, but the utility has the option to file annually. In years when the utility does not file an implementation plan, TEP should file for a reset of the adjustor rate, or file to indicate why a reset is not necessary.

255. Based on the above, the DSMS should be set at $0.002326.

Page 58, line 1, DELETE "$0.003812" and **REPLACE WITH** "$0.002326"

THIS AMENDMENT:

_____ Passed _____ Passed as amended by _____

_____ Failed _____ Not Offered _____ Withdrawn

PROPOSED STAFF AMENDMENT NO. 3

TIME/DATE PREPARED:

COMPANY: Tucson Electric Power Company AGENDA ITEM NO.

DOCKET NO. E-01933A-11-0055 OPEN MEETING DATE:

Page 58, Lines 3-8, DELETE the existing bill impact table and **REPLACE WITH:**

Residential Usage	**kWh/month**	**Current DSMS/kWh**	**Current Bill Impact/month**	**DSMS with Conditional Waiver**	**Bill Impact of DSMS with Conditional Waiver**
Summer Average	1100	$0.001249	$1.37	$0.002326	$2.56
Winter Average	680	$0.001249	$0.85	$0.002326	$1.58
Annual Average	880	$0.001249	$1.10	$0.002326	$2.05

Page 58, Line 14-1/2, DELETE "$0.003812" and **REPLACE WITH** "$0.002326"

Page 63, Line 4, DELETE "$0.003812" and **REPLACE WITH** "$0.002326"

Page 68, DELETE Lines 16-17

Page 68, Line 18, DELETE "$0.003812" and **REPLACE WITH** "$0.002326"

THIS AMENDMENT:

_____ Passed _____ Passed as amended by _____

_____ Failed _____ Not Offered _____ Withdrawn

PROPOSED STAFF AMENDMENT NO. 3

TIME/DATE PREPARED:

COMPANY: Tucson Electric Power Company AGENDA ITEM NO.

DOCKET NO. E-01933A-11-0055 OPEN MEETING DATE:

On page 69, line 5, INSERT New Ordering Paragraphs:

"*Waiver*

IT IS FURTHER ORDERED that Tucson Electric Power Company is granted a waiver from the Energy Efficiency Standards for 2012, but that the Company is not granted a waiver from the cumulative 2020 Energy Efficiency Standard.

IT IS FURTHER ORDERED that annual spending for the energy efficiency portfolio should not decrease below the level recorded for 2010 in the Semi-Annual Progress Report filed on March 1, 2011 (exclusive of the cost for the baseline study).

IT IS FURTHER ORDERED that the Performance Incentives for 2010 and 2011 should be calculated based on actual spending during those years and calculated using the current methodology, as determined in the last rate case.

IT IS FURTHER ORDERED that the 2012 Performance Incentive should be projected based on 2010 spending levels and calculated using the current methodology, as determined in the last rate case, and trued-up at the next reset.

IT IS FURTHER ORDERED that the DSMS should be calculated on a per-kWh basis based on projected annual kWh sales for 2012 (adjusted for Lifeline sales), and should include the current under-collected balance, the projected 2012 spending level as described in Finding of Fact No. 253 and the Performance Incentives as described in Finding of Fact No. 253.

IT IS FURTHER ORDERED that Tucson Electric Power Company file annually for a reset, or to indicate that a reset is not necessary, either in an implementation plan or in a separate application filed no later than April 1 each year, beginning in 2013, until further order of the Commission.

Make all conforming changes.

THIS AMENDMENT:

_____ Passed _____ Passed as amended by _____

_____ Failed _____ Not Offered _____ Withdrawn

PROPOSED STAFF AMENDMENT NO. 4
(TO COMPANY'S PROPOSED MODIFIED IMPLEMENTATION PLAN)

TIME/DATE PREPARED: _____

COMPANY:TUCSON ELECTRIC POWER COMPANY AGENDA ITEM NO.

DOCKET NO(S). E-01933A-11-0055 OPEN MEETING DATE:

Page 63, Line 23, After "Plan" **INSERT** ", as modified by the Commission,"

Page 65, Line 9, After "will" **DELETE** "be banded at 80% to 120% of the target performance incentive of $7,246,379." and **REPLACE WITH:**

"have a target performance incentive of $7,246,379, with a hard dollar cap at 120% of the target, equal to $8,695,654. With the exception of the hard dollar cap, the Company's Interim Performance Incentive should track with its actual achievements with respect to both Net Benefits and Other Performance Metrics. In addition, if the actual and verifiable Net Benefits achieved are less than 50% of Goal, TEP should be reimbursed for its prudently incurred costs associated with the portfolio and Other Performance Metrics, but should receive no Interim Performance Incentive. "

Page 67, Line 5, After "Implementation Plan." **INSERT:**

"However, TEP will file for a reset of the DSM adjustor mechanism in April of 2013, and include a true-up of the Interim Performance Incentive based on actual Net Benefits achieved, as well as a true-up of any over- or under-collection. Included with the reset filing must be information supporting the Net Benefits claimed for purposes of calculating the true-up."

Page 67, Line 8-1/2, After "to $0.003608 per kWh" **DELETE** "for residential customers and to a 4.19% rate on all charges (except taxes and other governmental assessments) for all other customer classes." and **REPLACE WITH** "for all customer classes."

**** Make all conforming changes**

THIS AMENDMENT:

_____ Passed _____ Passed as amended by _____

_____ Failed _____ Not Offered _____ Withdrawn

PROPOSED STAFF AMENDMENT NO. 4
(TO COMPANY'S PROPOSED MODIFIED IMPLEMENTATION PLAN)

TIME/DATE PREPARED: _____

COMPANY:TUCSON ELECTRIC POWER COMPANY AGENDA ITEM NO.

DOCKET NO(S). E-01933A-11-0055 OPEN MEETING DATE:

Page 68, Line 1, After "Plan" **INSERT** ", as modified above,"

Page 73, Line 22, After "Modified Implementation Plan" **INSERT** ", as modified herein"

Page 73, Line 26, After "reset to $0.003608 per kWh" **DELETE** "for residential customers and to a 4.19% rate on all charges (except taxes and other governmental assessments) for all other customer classes." and **REPLACE WITH** "for all customer classes."

Page 74, DELETE Lines 12 through 26, INSERT New Ordering Paragraph:

"IT IS FURTHER ORDERED that "Tucson Electric Power Company shall use the inputs and methodology that Commission Staff uses when calculating the present value of benefits and costs for DSM measures in its Societal Cost Test. Commission Staff will regularly re-evaluate such inputs and methodologies, considering comments from Tucson Electric Power Company and other stakeholders."

**** Make all conforming changes**

THIS AMENDMENT:

_____ Passed _____ Passed as amended by _____

_____ Failed _____ Not Offered _____ Withdrawn

TEP'S PROPOSED MODIFIED IMPLEMENTATION PLAN

BEFORE THE ARIZONA CORPORATION COMMISSION

GARY PIERCE
Chairman
BOB STUMP
Commissioner
SANDRA D. KENNEDY
Commissioner
PAUL NEWMAN
Commissioner
BRENDA BURNS
Commissioner

TEP's Proposed Modified Implementation Plan

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN	DOCKET NO. E-01933A-11-0055 DECISION NO._____ ORDER

Open Meeting
December 13 and 14, 2011
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Tucson Electric Power Company ("TEP" or "the Company") provides electric service within portions of Arizona, pursuant to authority granted by the Arizona Corporation Commission ("Commission").

2. TEP provides service in the counties of Cochise and Pima. The Company has approximately 400,000 customers, 365,000 of whom are Residential and 36,000 of whom are Commercial or Industrial, along with a small number of Mining, Public Street and Highway lighting and Resale customers.

Implementation Filing

3. On January 31, 2011, TEP filed its application for approval of the Company's Energy Efficiency Implementation Plan for 2011-2012 ("Implementation Plan"). On August 22, 2011, the Company filed updated information concerning several elements of the original filing, including the Residential Financing Program, the budgets, Implementation Plan savings, the

Authorized Revenue Requirement True-up ("ARRT") and the Demand-side Management ("DSM") Adjustor.

4. The Implementation Plan and updated filing address the following issues and Company proposals:

i. *TEP Portfolio of Programs for 2011-2012.* The existing and proposed DSM programs and measures proposed for the Company's DSM through the 2012 program year;

ii. *DSM Performance Incentive.* TEP is proposing a performance incentive of $16.4 million for two years, based on a modification of the performance incentive structure.

iii. *Authorized Revenue Requirement True-up ("ARRT") Mechanism.* The ARRT Mechanism is intended to recover the revenue requirements associated with energy efficiency kWh savings until approval of decoupling or a similar mechanism in the Company's next rate case. TEP has proposed an updated ARRT of $16.7 million over two years; and

iv. *Proposed Demand-Side Management ("DSM") Surcharge ("DSMS").* The proposed DSMS is the rate, per kWh, at which the Company would recover its proposed DSM costs, DSM Performance Incentive, and ARRT.

Scope and Structure of Program Review

5. *Existing and Proposed Programs.* The TEP Implementation Plan is organized into four parts: (i) Residential; (ii) Commercial; (iii) Behavioral; and (iv) Support. For purposes of review, each sector has been addressed in the above order: New (Proposed) and Existing (with modifications proposed) programs and Existing (without modifications proposed). The programs have been reviewed in the order indicated by Program Description Tables 1-4, herein.

6. Summarized descriptions are provided for existing programs, but the focus of Staff's review and analysis was new programs, proposed changes to existing programs and new Implementation Plan components or enhancements, along with the Company's proposals regarding the ARRT and the methodology for calculating the DSMS. Measures previously determined by Staff to be cost-effective were re-evaluated for cost-effectiveness if current information indicated that re-evaluation was necessary. Information from the August 2011 update has been incorporated into this review.

7. TEP Implementation Plan. The tables below list programs by sector, and indicate whether each program is new (proposed) or existing (with or without proposed modifications). A brief description is also provided. More detailed program descriptions are presented herein, in the order indicated in the following tables.

PROGRAM DESCRIPTION – TABLE 1 (Residential)

RESIDENTIAL SECTOR		
Program Name	New (Proposed), Existing with modifications proposed or Existing without modifications proposed	Description
Appliance Recycling	New (Proposed)	Removes and recycles inefficient refrigerators and freezers.
Multi-Family	New (Proposed)	Promotes direct install of energy efficient measures at apartment complexes consisting of more than four apartments.
Efficient Products (formerly the CFL Buy-Down Program)	Existing, with additional measures proposed	Program currently promotes CFLs. The Company has proposed including advanced power strips, and energy efficient pool pumps and timers.
Low Income Weatherization	Existing, with expanded eligibility proposed (eligibility to track with that of federal LIHEAP Program)	Assists in making low-income homes more energy efficient.
Residential New Construction	Existing, no modifications proposed	Promotes the building of more efficient new homes.
Existing Homes and Audit Direct Install (formerly the Residential HVAC Program)	Existing, no modifications proposed	Promotes energy efficiency in existing homes.
Shade Tree	Existing, no modifications proposed	Promotes planting of desert-adapted shade trees in locations designed to enhance energy efficiency.
Residential Direct Load Control–Pilot	Existing, no modifications proposed	Reduced use of AC units through Utility control.

PROGRAM DESCRIPTION – TABLE 2 (Commercial)

COMMERCIAL SECTOR		
Program Name	New (Proposed) or Existing	Description
Bid for Efficiency – Pilot	New (Proposed)	Customers or project sponsors develop a holistic EE project then bid competitively for incentives within broad program guidelines.
Retro-Commissioning	New (Proposed)	Involves using a systematic approach to identifying building equipment or processes that are not achieving optimal performance or results in an existing facility.
Schools Facilities	New (Proposed)	A program similar to the TEP C&I Comprehensive Program, but with a separate budget specifically for school facilities.
CHP Joint Program – Pilot	New (Proposed)	Joint program in cooperation with Southwest Gas to promote increased development of CHP installations.

Small Business Direct Install	Existing, with new measures proposed	Persuade small business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program.
C&I Comprehensive	Existing, with new measures proposed	Persuade business customers to install high-efficiency equipment at their facilities and encourage contractors to provide turn-key installation services to business customers.
Commercial Direct Load Control	Existing, no modifications proposed	A third-party implementation contractor negotiates load reduction agreements with multiple customers and "aggregates" these customers to provide TEP a guaranteed load reduction upon request.
Commercial New Construction	Existing, with proposed new measure	A re-branding of the Efficient Commercial Building Design Program intended to assist customers in designing and constructing energy efficient buildings.

PROGRAM DESCRIPTION – TABLE 3 (Behavioral)

Behavioral Sector		
Program Name	New (Proposed) or Existing	Description
Behavioral Comprehensive	New (Proposed) and Existing Components	A variety of educational/behavioral programs, including direct canvassing, K-12 education, community education, in home energy use monitors and CFL giveaway outreach events.
Home Energy Reports	Existing, no modifications proposed	Energy reports comparing a customer's usage to that of their neighbors. Reviewed herein as part of the Behavioral Comprehensive Program.

PROGRAM DESCRIPTION – TABLE 4 (Support)

Support Sector		
Program Name	New (Proposed) or Existing	Description
Residential Energy Financing	New (Proposed)	Low-interest unsecured loans for energy efficiency measures installed in existing homes
Energy Codes Enhancement Program	New (Proposed)	Seeks to improve the level of compliance with existing local building energy codes and supports the periodic updating of these codes.
Education and Outreach	Existing. On-line Energy Audits and Academic Education components transferred to Behavioral Comprehensive sector programs.	Education programs designed to increase participation in the TEP Implementation Plan and promote changes in behavior.
Support and Program Development	Existing, tracks with portfolio program requirements	Costs for program design, development and resources necessary to meet reporting requirements of the EE Standard

BUDGETS: 2011 and 2012

8. Below are the proposed budgets for the TEP Implementation Plan, by sector, program and category for 2011 and 2012. Although the budgets for two years are included herein, the programs will not conclude at the end of those two years but, instead, will continue until further Commission action. The Implementation Plan budgets were updated in August 2011, in the Notice of Filing Updated Information In Support of [the] 2011-2012 Electric Energy Efficiency Implementation Plan. The tables below reflect the updated budgets.

9. Proposed costs for the DSM performance incentive and the ARRT are not included in this table.

UPDATED TEP EE IMPLEMENTATION PLAN BUDGET 2011 TABLE

Sector	Program Name	Incentives	Program Delivery	Program Marketing	Program Administration	Evaluation	Total
Residential	Efficient Products	$1,291,500	$418,603	$256,515	$49,296	$80,637	$2,096,550
	Appliance Recycling	$0	$20,713	$5,178	$14,085	$1,599	$41,574
	Residential New Construction	$1,140,000	$476,800	$200,000	$17,850	$73,386	$1,908,036
	Existing Homes/Audit Direct Install	$1,154,360	$618,697	$265,959	$17,850	$61,706	$2,118,572
	Shade Tree	$200,000	$78,853	$13,943	$14,085	$12,275	$319,155
	Low-Income Weatherization	$525,000*	$48,568	$5,736	$14,085	$17,802	$611,190
	Multi-Family	$0	$0	$0	$0	$0	$0
	Residential Direct Load Control (Pilot)	$0	$655,000	$98,250	$12,750	$19,150	$785,150
	Subtotal	**$4,310,860**	**$2,317,232**	**$845,580**	**$140,000**	**$266,554**	**$7,880,227**
Commercial	C&I Comprehensive	$2,165,375	$1,125,568	$329,094	$28,169	$145,928	$3,794,134
	Commercial Direct Load Control	$650,000	$625,283	$0	$10,563	$50,000	$1,335,846
	Small Business Direct Install	$1,505,956	$654,855	$324,122	$14,085	$99,961	$2,598,978
	Commercial New Construction	$279,310	$59,695	$33,900	$14,085	$15,480	$402,469
	Bid for Efficiency (Pilot)	$0	$34,160	$4,441	$7,042	$1,826	$47,469
	Retro-Commissioning	$0	$0	$0	$0	$0	$0
	Schools Facilities	$0	$0	$0	$0	$0	$0
	CHP Joint Program (Pilot)	$0	$20,000	$2,000	$0	$0	$22,000
	Subtotal	**$4,600,640**	**$2,519,560**	**$693,557**	**$73,944**	**$313,194**	**$8,200,896**
Behavior	Home Energy Reports	$247,500	$85,913	$16,671	$35,211	$15,412	$400,706
	Behavioral Comprehensive	$110,450	$300,794	$50,000	$14,085	$19,013	$494,341
	Subtotal	**$357,950**	**$386,706**	**$66,671**	**$49,296**	**$34,425**	**$895,048**
Support	Education and Outreach	$0	$350,000	$16,530	$9,859	$7,528	$383,917
	Residential Energy Financing	$4,000	$85,000	$36,399	$14,085	$3,331	$142,815
	Codes Support	$0	$41,250	$6,188	$0	$1,898	$49,335
	Program Development, Analysis and Reporting Software[1]	$0	$630,238	$0	$0	$0	$630,238
	Subtotal	**$4,000**	**$1,106,488**	**$59,117**	**$23,944**	**$12,756**	**$1,206,305**
	TOTAL	**$9,273,450**	**$6,329,987**	**$1,664,925**	**$287,183**	**$626,930**	**$18,182,475**
Percentage of Total Budget		**51%**	**35%**	**9%**	**2%**	**3%**	**100%**

*For the Low-Income Weatherization Program, payments to the community action agencies responsible for managing and implementing the weatherization projects are classified as incentives.

[1] Although classified as delivery costs by the Company, this budgetary item relates more to overall Implementation Plan management than to the delivery of specific programs.

UPDATED TEP EE IMPLEMENTATION PLAN BUDGET 2012 TABLE

Sector	Program Name	Incentives	Program Delivery	Program Marketing	Program Administration	Evaluation	Total
Residential	Efficient Products	$1,571,232	$417,639	$298,331	$50,775	$93,519	$2,431,495
	Appliance Recycling	$189,000	$562,822	$60,146	$14,507	$33,059	$859,533
	Residential New Construction	$915,000	$565,505	$200,000	$18,386	$67,956	$1,766,846
	Existing Homes/Audit Direct Install	$2,253,180	$698,233	$442,712	$18,386	$102,375	$3,514,886
	Shade Tree	$200,000	$84,336	$14,217	$14,507	$12,522	$325,582
	Low-Income Weatherization	$525,000	$53,207	$5,782	$14,507	$17,955	$616,451
	Multi-Family	$40,950	$94,234	$13,518	$14,507	$6,528	$169,738
	Residential Direct Load Control (Pilot)	$40,000	$105,370	$21,806	$13,133	$4,508	$184,816
	Subtotal	$5,734,362	$2,581,346	$1,056,511	$158,707	$338,422	$9,869,348
Commercial	C&I Comprehensive	$2,557,394	$1,162,607	$372,000	$29,014	$164,841	$4,285,856
	Commercial Direct Load Control	$1,452,000	$1,259,079	$0	$10,880	$30,000	$2,751,959
	Small Business Direct Install	$1,753,478	$676,286	$364,465	$14,507	$112,349	$2,921,085
	Commercial New Construction	$279,310	$62,676	$34,199	$14,507	$15,628	$406,319
	Bid for Efficiency (Pilot)	$330,000	$85,253	$53,983	$14,507	$19,350	$503,092
	Retro-Commissioning	$110,000	$24,141	$20,121	$14,507	$6,751	$175,520
	Schools Facilities	$78,158	$52,287	$6,914	$14,507	$6,075	$157,941
	CHP Joint Program (Pilot)	$0	$20,000	$2,000	$0	$0	$22,000
	Subtotal	$6,560,340	$3,342,329	$853,681	$112,430	$354,993	$11,223,772
Behavior	Home Energy Reports	$513,200	$69,283	$29,124	$36,268	$25,915	$673,790
	Behavioral Comprehensive	$602,380	$698,765	$50,000	$14,507	$54,626	$1,420,279
	Subtotal	$1,115,580	$768,048	$79,124	$50,775	$80,541	$2,094,069
Support	Education and Outreach	$0	$350,000	$17,026	$10,155	$7,544	$384,724
	Residential Energy Financing	$7,995	$375,415	$37,458	$14,507	$7,270	$442,645
	Codes Support	$0	$56,180	$8,427	$7,979	$2,903	$75,490
	Program Development, Analysis and Reporting Software	$0	$649,145	$0	$0	$0	$649,145
	Subtotal	$7,995	$1,430,740	$62,911	$32,641	$17,717	$1,552,004
	TOTAL	$13,418,277	$8,122,464	$2,052,227	$354,552	$791,673	$24,739,193
Percentage of Total Budget		54%	33%	8%	1%	3%	100%

SAVINGS: 2011 AND 2012

10. TEP reports that the Company anticipates meeting the EE standards for both 2011 and 2012. Based on the August 2011 filing, the Company anticipates total savings of approximately 311,146,000 kWh (or 311,126 MWh) for 2011 and 2012. The following table

shows TEP's projected savings by year, and the percentage of cumulative savings, as compared to the previous year's retail sales (2010 retail sales are actual, but 2011 sales are forecast).

Year	Retail Energy Sales (MWh)	Projected Incremental Annual Energy Savings (MWh)	Projected Cumulative Annual Energy Savings (MWh)	Cumulative Annual Savings as a % of previous year Retail Sales	Cumulative EE Standard
2010	9,291,788				
2011	9,335,237	135,781	135,781	1.46%	1.25%
2012		175,365	311,146	3.33%	3.00%

RESIDENTIAL PROGRAMS

A. APPLIANCE RECYCLING

11. Program Description. TEP's proposed new Appliance Recycling Program ("Appliance Program") is designed to remove and recycle inefficient working refrigerators and freezers. TEP cites national studies indicating that approximately 20% of customers have at least one secondary inefficient refrigerator or freezer in their home, suggesting a significant potential for energy savings in this sector. The goal is to recycle 5,400 units per year, for 2011-2013. The Appliance Program would offer residential customers a $35 incentive, plus free pick-up and recycling for working, but inefficient, refrigerators and freezers.

12. The Appliance Recycling Program permanently removes inefficient appliances that might otherwise remain in service, either at the customer's home, or elsewhere through donation or resale. In addition, the recycling program removes the usual barriers to taking these appliances offline by eliminating both the cost and the inconvenience associated with disposing of inefficient appliances.

13. Program Objectives and Rationale. Second refrigerators and freezers are usually older models and are often less efficient and more costly to operate than up-to-date efficiency appliances. TEP estimates an average monthly dollar savings of $8.47 for refrigerators and $6.55 for freezers for its customers. Savings can go higher. For example, the TEP Green Energy site estimates that a standard, non-Energy Star side-by-side standard refrigerator (15 to 20 years old),

uses an average of 190 kWh per month and costs $17.10 to operate, while the comparable Energy Star refrigerator uses 44 kWh per month and costs $3.96. The Energy Star site notes that replacing a refrigerator from the 1970s can save more than $200 per year, while replacing a refrigerator from the 1980s can save over $100 per year. Another consideration is that the existing inefficiencies of older refrigerators and freezers may be magnified by storage in garages or on porches, causing them to expend more power in order to keep their contents cool, and making them even more costly for consumers to operate.

14. Eligibility. The Program is open to TEP residential customers with operable inefficient refrigerators or freezers of between 10 and 30 cubic feet in size. Households are limited to two recycling rebates per year.

15. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

16. Delivery and Marketing Strategy. The Appliance Program would utilize an experienced appliance recycling contractor, JACO, to: (i) market the program; (ii) verify customer's eligibility; (iii) process incentives; (iv) pick up eligible appliances; and (v) responsibly recycle the appliances.

17. The TEP application emphasizes that prompt processing of incentive payments is essential to customer satisfaction.

18. Program Analysis/Issues. The JACO recycling facility in Phoenix will recycle all the appliances picked up from the TEP service territory. JACO was chosen because the company has a recycling center in Phoenix capable of meeting the TEP Appliance Recycling Program's needs. (It would not be cost-effective for JACO to set up a facility in the TEP territory, because JACO would require at least 10,000 units per year for three years to cover the estimated $250,000 in construction costs.) JACO will set up a local office and storage facility for the TEP area, and will store appliances locally until they can be transported in quantity, in order to minimize shipping costs.

19. JACO's website states that it completely deconstructs each unit and safely disposes of toxins and ozone-depleting chlorofluorocarbon gases (CFC-11). JACO ensures that over 95%

of the components and materials are recycled or "eliminated in an environmentally responsible way."

20. Cost-Effectiveness. Based on Staff's analysis, the refrigerator measure has a benefit-cost ratio of 2.91 and the freezer measure has a benefit-cost ratio of 2.21, making both measures cost-effective.

21. Staff Recommendation. Staff has recommended that the TEP Appliance Recycling Program be approved and that it include both the refrigerator and freezer measures.

22. Staff has also recommended that the Company offer a $30 incentive, rather than the $35 incentive proposed, but that the overall budget for incentives not be decreased. A $30 incentive would be consistent with the incentives offered under the Arizona Public Service Company ("APS") and the Salt River Project ("SRP") appliance program, and would allow more TEP customers to participate, potentially removing more inefficient appliances from the grid. (The proposed total incentive budget is $189,000. A per-unit incentive of $35 would allow 5,400 TEP customers to participate, while an incentive of $30 would allow 6,300 to participate.)

23. Staff has also recommended that the Appliance Recycling Program be expanded to include non-residential customers with extra working refrigerators or freezers eligible for recycling, with the same limit of two appliances per year, per customer. Expanding eligibility to non-residential customers with eligible appliances would provide more TEP customers, particularly small businesses, with an opportunity to participate in the Appliance Recycling Program. Such expanded eligibility potentially enhances participation levels and could help to get additional inefficient appliances permanently off the grid.

B. Multi-Family Housing Efficiency Program

24. Program Description. The proposed new Multi-Family Housing Efficiency Program ("Multi-Family Program") would promote energy efficiency in the residential multi-family sector, to properties with five or more units. The Multi-Family Program is designed to overcome barriers typical to the multi-family housing market, which has limited participation in energy efficiency programs.

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25. The Multi-Family Program would offer property owners and managers the following options: (i) direct installation of CFLs, low-flow showerheads and faucet aerators; and (ii) improvements to common areas handled by the Small Business Direct Install Existing Facilities ("SBDIEF") Program. Once the Multi-Family Program has ramped up and matured, TEP will look into developing a third track for existing complexes that are not part of a major renovation or rehabilitation. If cost-effective, and if approved by the Commission, this third track would focus on improvements to the building shell, including insulation and air sealing.

26. Objectives and Rationale. Multi-family housing offers large potential savings through economies of scale, but this has been a difficult sector to reach, in part because owners may not directly benefit from improving energy efficiency. By reducing key market barriers and targeting key decision makers, the Multi-Family Program may produce energy savings in this under-addressed market segment.

27. The objectives of the Multi-Family Program are to:

- Reduce peak demand and overall energy consumption in the multifamily housing market segment;
- Promote energy efficiency retrofits of both dwelling units and common areas in this market segment;
- Increase overall awareness about the importance and benefits of energy efficiency improvements to the landlord and property ownership community; and
- Help meet the energy savings targets of the TEP DSM Implementation Plan.

28. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

29. Delivery and Marketing Strategy. Delivery of the direct installation, rehabilitation and new construction components of the Program will be handled by an implementation contractor.

30. Marketing and communications strategies will include website updates, local newspapers and radio, bill messages and bill inserts, training seminars, call center on-hold messages, direct mail promotion, outreach to rental housing industry associations, and work with

contractors and industry specialists. A primary emphasis will be placed on larger, older, and less efficient complexes.

31. Program Analysis/Issues. Barriers to energy efficiency programs in the multi-family market segment include: (i) split incentives, (ii) lack of capital, and (iii) lack of information about energy efficiency improvements. These barriers are described in more detail, below.

32. Split Incentives. "Split incentives" describes the problem that arises in promoting energy efficiency in rental units. The builders who construct rental properties, and the owners who would be responsible for upgrades, do not usually pay the energy bills. Consequently, builders and owners do not directly benefit from the lower energy costs that arise from investing in efficiency measures, reducing or eliminating their incentive to participate in energy efficiency programs. At the same time, the renters who would benefit from lower energy bills have no direct influence over original construction and, with respect to renovations or retrofits, may not have the authority, the incentive or the means to invest in energy efficiency for housing they do not own.

33. Lack of Capital and Awareness. Other problems can include a lack of capital for improvements and a lack of awareness about energy efficiency. The Multi-Family Program would address both through direct installation of low cost energy efficiency improvement in existing complexes and through energy efficiency improvements to common areas through the Small Business Direct Install Existing Facilities Program.

34. Commercial Versus Residential Multi-Family Housing. Another issue is that ownership and decision-making tends to vary for multi-family housing, depending on the number of units. Properties with 2-4 dwelling units typically fall under residential financing guidelines and, for these smaller properties, the decision-makers are usually individuals. Larger properties with 5 dwelling units or more typically fall under commercial lending guidelines and decision-makers (at least for larger complexes) are typically corporate, institutional, or trusts (e.g., Real Estate Investment Trusts). As such, the decision-making process and access to capital varies between these two market segments. With this distinction in mind, the Company believes that the 2-4 unit market segment can be best served by the Residential Existing Home and Audit Direct

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Install Program, while the 5+ Multifamily Housing market segment would be served by the proposed Multifamily Program.

35. Cost-Effectiveness. Based on Staff's analysis, the benefit-cost ratio for each of the three proposed direct install measures is approximately 2.1, making all three measures cost-effective.

36. As noted elsewhere, improvements to common areas will be a part of the Small Business Direct Install Existing Facilities Program. Costs and savings associated with the common area improvements will, accordingly, be tracked as a part of that program.

37. Staff Recommendation. Staff has recommended that the proposed Multi-Family Program be approved, but that older, less efficient and low-income complexes be a primary focus for the Multi-Family Program's activities.

RESIDENTIAL EXISTING PROGRAMS (WITH PROPOSED MODIFICATIONS)

C. Efficient Products

38. Program Description. This is an existing Residential program previously approved by the Commission in Decision No. 70383 (June 13, 2010), with proposed new measures. The Efficient Products Program (formerly called the CFL Buy-Down Program) would promote the purchase of energy efficient retail products through in-store buy-down promotions. In addition to the existing CFL measure, four new measures are proposed for the Efficient Products Program, beginning in 2012. The measures and proposed incentives are as follows: (i) Variable Speed Pool Pump ($200 per unit); (ii) Pool Pump Timer ($75 per unit); (iii) Residential LED light ($30 per bulb) and (iv) Advanced Power Strips ($10 per sensor). CFL incentives vary by type of CFL, but the average is $1.14 per unit.

39. Program Objectives and Rationale. The new measures will offer residential customers additional opportunities to increase energy efficiency. The Efficient Products Program promotes market transformation through retail partnerships, training for retail staff, and increased stocking and selection of efficient retail products.

40. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

41. Delivery and Marketing. TEP is not proposing any significant changes in implementation approach or delivery strategy, except for the addition of new measures starting in 2012. Delivery channels for the new measures will continue to be via a combination of both buy-downs and possible mail-in rebates with participating retailers. Program marketing is primarily through mass-market channels (e.g., radio, newspaper, website, etc.) and through education and training of participating retailers.

42. Program Analysis/Issues. While there are reports questioning the life expectancy of CFLs in practice, there is currently very little actual study data on the lifespan of CFLs. (Verification testing requires only that eight out of ten units operate for 40% of rated life.) Assumptions regarding the lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions should be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

43. Cost-Effectiveness. To be cost-effective, an energy efficiency measure should have a benefit-cost ratio above 1.0, based on a comparison of avoided costs with costs incurred to purchase and deliver an energy efficiency measure. The existing CFL measure was found to be cost-effective when it was approved, with a 1.6 benefit-cost ratio, and the most recent semi-annual DSM filing (for January through June 2011) reported demand and energy savings for 2010 that were significantly above projections, indicating a higher than anticipated benefit-cost ratio.

44. Three of the proposed new measures have benefit-cost ratios above 1.0, while one does not. The Variable Speed Pool Pump has a benefit-cost ratio of 1.4, the Advanced Power Strips have a benefit-cost ratio of 1.8, and the Pool Pump Timer measure has a benefit-cost ratio of 2.4. The Residential LED light has a benefit-cost ratio of 0.77, well below 1.0. The lower benefit-cost ratio is largely due to energy savings that are low compared to the cost of the measure.

45. Staff Recommendations.

- Staff has recommended that the Efficient Products Program be approved, and continue to offer CFLs, with the addition of the Variable Speed Pool Pump, Advanced Power Strip and Pool Pump Timer measures.

- Staff has also recommended that the Residential LED Light measure not be approved at this time, but that the budget associated with Residential LED Light

measure be re-allocated to the Efficient Products Program measures approved by the Commission.

- Staff has recommended that the lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

D. Low-Income Weatherization

46. Program Description. The Low-Income Weatherization ("LIW") Program is an existing program designed to conserve energy and lower utility bills for TEP households with limited incomes. The primary goal of the LIW Program is to fund weatherization for low-income homes, to reduce energy costs and improve comfort and safety for low-income customers. The LIW Program also conserves energy, and reduces both electric and gas consumption.

47. Program Objectives and Rationale. The objective of the Program is to coordinate with the Arizona Energy Office (now the Governor's Office of Energy Policy ("OEP")) to follow state Weatherization Assistance Program rules in using TEP ratepayer funds to lower household energy consumption for low-income customers and increase the number of weatherized homes.

48. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

49. Delivery and Marketing Strategy. The Program is delivered through the Tucson Urban League ("TUL") and Pima County Community Services ("PCCS"). Due to the popularity of the Program, revenues are not allocated to advertising and promotion. Promotion takes place through presentations to community organizations, through information left at community and recreation centers, and through calls directed from TEP. TEP also promotes the Program on its website and through speaking engagements and outreach presentations.

50. Program Analysis/Issues. TEP is proposing to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"). Currently, eligibility for the TEP LIW Program is set at 150 percent of the federal poverty level, while the federal LIHEAP eligibility level is set at 200 percent. Increasing the TEP LIW eligibility level would allow the Program to serve more customers, and tracking the TEP

level with the level set by LIHEAP (whether increasing or decreasing) would streamline the administrative process for community action agencies delivering the Program.

51. Cost-Effectiveness. The benefit-cost ratio for the Low-Income Weatherization Program is 1.03, slightly above the level required for cost-effectiveness.

52. Staff Recommendation. The Low-Income Weatherization Program enhances the energy efficiency of low-income Residential household on a cost-effective basis, reducing utility costs and improving the health and safety for low-income customers.

- Staff has recommended that the Low-Income Weatherization Program be approved for continuation as part of TEP's Implementation Plan.
- Staff has also recommended that TEP be allowed to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"), so that the eligibility levels remain consistent over time.

E. Residential New Construction

53. Program Description. The Residential New Construction Program, also known as the Zero Net Energy Homes Program, is a continuation of the existing program design that was approved by Decision No. 71638 (April 14, 2010). The Residential New Construction Program is designed with an incentive schedule that awards larger incentives for more efficient homes. The incentive schedule for the Residential New Construction Program provides a $400 incentive for each Tier 1 home, a $1,500 incentive for each Tier 2 home, and a $3,000 incentive for each Tier 3 home.

54. To qualify for an incentive, homes must be tested by an approved energy rater, and meet one of the three tiers in the Program based on a Home Energy Rating System ("HERS") Index score. On the HERS index scale, a score of 100 is considered the average efficiency of baseline new construction, while a HERS index score of 0 represents a home that produces all of its energy through on-site generation from renewable energy. In other words, the lower the HERS score, the more efficient the home. Under the Residential New Construction Program, Tier 1 requires a minimum HERS score lower than or equal to 85, Tier 2 requires a HERS score lower than, or equal to, 70, and Tier 3 requires a HERS score lower than, or equal to 45.

55. Program Objectives and Rationale. The objectives of the Residential New Construction Program are to advance energy efficient building practices through builder training, and to increase customer awareness of the benefits associated with energy efficient construction, combined with application of renewable technologies, such as solar photovoltaic and solar hot water systems consistent with achieving the goals of the Arizona Renewable Energy Standard.

56. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

57. Delivery and Marketing Strategy. Program delivery is provided by TEP staff, and participation of independent RESNET approved home energy raters. TEP provides outreach to targeted builders, conducts builder training on marketing ENERGY STAR homes and on the ENERGY STAR performance standard, and mentors participating builders and raters.

58. The Program is marketed to select builders primarily through direct business-to-business contacts. The Program is marketed to consumers at home shows, parade of homes, and other events focused on homebuilding as advertised through mass market and targeted media outlets.

59. Program Analysis/Issues. In Decision No. 71638, Tier 2 and Tier 3 were added to the existing Residential New Construction Program, with monetized carbon values taken into account in calculating cost-effectiveness. (TEP included potential costs of complying with carbon dioxide (CO2) regulation in its benefit-cost calculations.) Without the monetized carbon value, Tier 2 had a benefit-cost ratio of 0.75, well below the 1.0 benefit-cost ratio required for cost-effectiveness. No benefit-cost analysis of Tier 3 was done because, according to information provided by TEP, the only difference between Tier 2 and Tier 3 were the additional costs for solar measures.

60. Staff did not recommend approval of the Zero Net Homes Program, as proposed, but found that Tier 2 had a benefit-cost ratio of 1.1, if the Company's lowest proposed CO2 value was included.

61. The Commission approved the Zero-Net Energy Homes Pilot Program in April 2010, stating "The Commission believes that TEP's Pilot Program advances the Company's efforts

with regard to energy efficiency and broadens its current program offerings." The Decision also noted that "inclusion of a modest CO2 value in determining the proposal's cost effectiveness is appropriate, particularly for a pilot project and in light of likely Federal action addressing carbon within the proposed pilot project timeframe."

62. To date, no federal action has taken place which creates a clearly monetized value for the avoided costs of complying with carbon dioxide regulation. Without a monetized value, Staff practice has been to assume that the value of avoided emissions, although unknown, is greater than zero, and likely to make measures with benefit-cost ratios close to 1.0 cost-effective in practice.

63. Cost-Effectiveness. Benefit-cost ratios for the three New Residential Construction tiers were re-evaluated to determine cost-effectiveness based on current information, and taking into account the absence of federal regulations regarding carbon. Staff included gas savings for Tier 1 and Tier 2 (for duel fuel homes) when calculating updated cost-effectiveness.

64. Based on the Societal Test, and without monetized carbon values, the benefit-cost ratio for Tier 1 homes is 1.17, making the Tier 1 measure cost-effective. The benefit-cost ratio for Tier 2 is 0.88, making Tier 2 too low to be considered cost-effective, even taking into account the non-monetized environmental savings.

65. Staff Recommendation. Staff has recommended that the Tier 1 measure be approved for continuation, but has recommended that the Tier 2 and Tier 3 measures not be continued. If the Commission does not approve the Tier 2 and Tier 3 measures, Staff has recommended that they be discontinued once the Residential New Construction Program has met its existing commitments for Tier 2 and Tier 3 homes.

F. Existing Homes and Audit Direct Install

66. Program Description. The Existing Homes and Audit Direct Install ("Existing Homes") Program is an existing program that replaced the former Residential HVAC Program (approved by Decision No.72028 in December 10, 2010). No modification of this Program is being proposed in the current filing.

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67. The Existing Homes Program is targeted to existing homes in need of energy efficiency improvements. The Program has two components, an initial energy audit with direct install of CFLs and advanced power strips, followed by identification of actionable, larger scale home energy efficiency improvements and referral to local Building Performance Institute ("BPI") certified contractors to implement major home energy improvements such as insulation, air-sealing and HVAC. Rebates are paid to contractors for HVAC and thermal envelope measures, with incentives ranging from $250 to $1,700 per measure. The current average total incentive per participating home is approximately $1,000. TEP plans to submit the Existing Home Program to EPA with a request to utilize EPA labeling as Home Performance with ENERGY STAR.

68. *Program Objectives and Rationale*. The Existing Homes Program achieves energy and demand savings from the installation of energy efficient measures and contributes toward transforming the industry to emphasize best practice building science principles. The Existing Homes Program invests in training and mentorship of participating contractors to understand the "house as a system" building science and to achieve BPI certification. TEP has included a Residential Financing Pilot Program in this Plan for 2011-2012 which will be used to enhance participation in this program.

69. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

70. Delivery and Marketing Strategy. TEP provides program management oversight and marketing. A third party implementation contractor will be responsible for recruitment, training, and mentorship of participating contractors and trained energy auditors, data tracking, rebate processing and technical support. Auditors will provide referrals to BPI certified contractors and referral information will be reported to TEP. Measure installation to residential customers will be provided by participating independent contractors. In 2011-2012, program delivery will be coordinated with APS and Southwest Gas Corporation ("Southwest Gas") to address programming overlap among the utilities.

71. TEP provides program marketing and customer awareness-building through website promotion, community interest groups, mass-market channels (e.g. radio, newspaper, etc.),

brochures and bill inserts, high bill inquiries, trade ally marketing efforts, contractor enrollment and training

72. Cost-Effectiveness. The enhanced Existing Homes Program was approved in December 2010, with a benefit-cost ratio of 1.06, making the Program cost-effective. No modifications of the Program have been proposed, so a re-calculation of cost-effectiveness was not necessary.

73. Staff Recommendation. Staff has recommended that the Existing Homes and Audit Direct Install Program be approved for continuance.

G. Shade Tree

74. Program Description. The Shade Tree Program is an ongoing element of the Implementation Plan, approved in Decision No. 70455 (August 6, 2008). No modifications have been proposed for the Shade Tree Program. The Shade Tree Program promotes energy conservation and environmental benefits by motivating customers to plant desert-adapted trees in locations where the trees will provide shade and reduce HVAC load. TEP customers are allowed to purchase shade trees for $8.00 per tree, if they agree to plant the trees on the east, west, or south sides of their homes.

75. Program Objectives and Rationale. The objectives of the Program are to promote the strategic planting of trees to provide shade, thereby reducing the cooling load of homes and associated energy usage and to educate school-age children and the public on the conservation and environmental benefits of planting trees.

76. In addition, there are Community and the Schools tree planting projects, but these must meet the planting criteria outlined for planting residential trees.

77. Budget. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program. Program funds are leveraged with a significant in-kind contribution of labor, material and technical support from individuals and the community.

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78. Delivery and Marketing Strategy. TEP provides DSM funds for the planting of trees within the guidelines that provide kWh savings. TEP partners with Trees for Tucson, a local non-profit organization that manages and administers the Program.

79. Due to the popularity of the Program, DSM revenues are not normally allocated for advertising and promotion. TEP employees currently inform customers about the Program during speaking engagements and outreach presentations. Other efforts entail website promotion, newspaper advertising, planting and care brochure, presentations at schools, tree tours, and tree care workshops.

80. Cost-Effectiveness. In Decision No. 70455, Staff calculated the benefit-cost ratio for this Program at 3.14, making it highly cost-effective. No modifications have been proposed for this Program.

81. Staff Recommendation. Staff has recommended that the TEP Shade Tree Program be approved for continuance.

H. Residential and Small Commercial Direct Load Control – Pilot

82. Program Description. TEP is requesting budget approval to continue this program with no additional modifications. The Residential and Small Commercial Direct Load Control ("DLC") Program was first approved in Decision No. 71846 (August 25, 2010). With the DLC Program TEP intends to better manage peak demand and to mitigate system emergencies through direct load control of residential central air-conditioners ("AC").

83. The DLC Program will use two-way communication that sends load control signals to equipment at the home and provides interval consumption data back to TEP for all participants. The two-way communication will allow TEP to provide usage and billing information to customers via an in-home display or the Internet.

84. Participants will receive either: (i) a free thermostat that can be programmed manually or remotely via the Internet; or (ii) a load control device placed on their air conditioning unit. In exchange, customers will permit TEP to cycle AC units or raise thermostat temperature settings for a limited number of hours or events per year. It is expected that TEP will

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call roughly 8 to 10 load control events each year. Customers would have the option to change thermostat settings or override cycling strategies during a control event, but could risk penalty if they do so repeatedly.

85. Program Objectives and Rationale. The DLC Program pilot is intended to control air conditioners during peak hours as a cost-effective means to reduce peak system load.

86. Delivery and Marketing Strategy. The Program's delivery strategy includes a third party implementation contractor, Tendril Networks, whose responsibilities include provision of load control equipment and control software that can be used by TEP to call and monitor load control events, training on software and assistance in designing effective load control strategies, recruitment of participants, participant tracking, technology installation, marketing, and call center/customer satisfaction.

87. Recruitment is based on specific criteria to ensure participants represent the population of eligible customers. Participants are required to have functioning broad band connection and would receive a $50 incentive. Customers also receive an internet-enabled programmable thermostat that will be installed by a qualified contractor at no cost to the customer. Residential recruitment started in June 2011 with an email marketing request for applications. Installation of program devices is underway.

88. Cost-Effectiveness. As discussed in Decision No. 71846, Staff calculated a benefit-cost ratio of 1.39 for the DLC Program.

89. Staff Recommendation. Staff has recommended continuation of the Residential and Small Commercial Direct Load Control Program.

90. Measurement, Evaluation, and Research. As discussed in Decision No. 71846, TEP intends for an independent evaluation contractor to conduct a process evaluation, an impact evaluation and a technology assessment.

91. Reporting. Reporting shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2409.

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I. Bid for Efficiency

92. Program Description. Under TEP's Bid for Efficiency Program ("BFE Program"), customers or project sponsors would conceive their own projects and then bid competitively for incentives within broad program guidelines. TEP would then select winning applicants based on specified criteria.

93. BFE Program participants and project sponsors may include commercial customers, Energy Service Companies ("ESCOs") or other aggregators who organize proposals that involve multiple sites.

94. Program Objectives and Rationale. The BFE Program seeks to encourage customers and project sponsors to think holistically regarding energy systems and to develop projects designed to optimize system energy use by encouraging a systems approach to energy efficiency.

95. The BFE Program would provide an incentive for participants to use multiple EE approaches at one or several sites simultaneously. The subject Program attempts to address customer market barriers such as small savings levels at multiple sites, longer payback periods and organizing implementation contractors.

96. TEP's implementation goals for the Program are as follows:

- Ensure projects are submitted, approved, implemented and verified in a timely manner;
- Allow each project to be customer-driven; responsibility will be placed on the customer (or project sponsor) to select appropriate trade and professional allies to design and implement the project and to prepare the incentive application;
- Encourage implementation of multiple measures for comprehensive projects; and
- Encourage aggregated applications that involve implementation at multiple sites.

97. Budget. TEP requested a budget of $47,469 for the first year (2011) of the BFE Program and a budget of $503,092 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

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98. Delivery and Marketing. The BFE Program will focus on market segments with significant savings potential, unique load or energy savings characteristics, and those that require specialized delivery or support services. The target market consists primarily of larger customers and customer groups that may include grocery stores, convenience stores, or data centers, business sectors that have historically been hard to reach.

99. Eligibility. Any entity, customer, or project sponsor may participate if the proposal meets the minimum application requirement of 200,000 kWh in savings for the first year. Electric loads may be aggregated among multiple facilities to meet the kWh threshold. Eligible project sponsors may include, but are not limited to TEP customers, ESCOs and engineering / architecture firms. Any third-party project sponsor must submit an application with the consent and support of the identified TEP customer. To provide participants with maximum flexibility, the Program will not explicitly specify eligible measures, but, pre- and post-installation metering will be required to ensure that savings estimates are in line with actual savings produced by the projects. All proposed measures must meet the following requirements:

- Produce a measurable and verifiable reduction in energy consumption;
- Produce savings through an increase in energy efficiency or better utilization of energy through improved production equipment or controls;
- Be installed in a retrofit application;
- Have a useful life of five years or greater; and
- Prove cost effective using the Societal Cost Test (applies to total project including all measures).

100. Examples of eligible measures include, but are not limited to, installation of Premium® efficiency motors, lighting system upgrades, HVAC system improvements, heat recovery systems, and energy system control upgrades. Project sponsors are free to propose measures, as long as the above requirements are met. TEP anticipates an average incentive of $0.15 / kWh, based on multiple measures with varying savings. With average savings of 400,000 kWh per project, the average incentive would be $60,000.

101. The following implementation process is proposed for the BFE Program:

- TEP, and/or its implementation contractor ("IC"), will advertise the BFE Program to target customers and trade allies;
- Customers or trade allies will submit bids for its EE projects.
- TEP/IC will evaluate projects and make awards;
- TEP/IC will perform pre-installation metering;
- Customer will implement the proposed project;
- TEP will pay 50 percent of the incentive amount prior to installation;
- TEP/IC will perform post-installation metering; and
- TEP will pay the remaining incentive amount based on the actual M&V energy savings (based on first year operation).

102. TEP proposes to implement the BFE Program as a pilot during 2011 and 2012. Pilot results would be evaluated in 2013. If the market response and measure savings indicate the Program is cost-effective, and achieving substantial savings, the Company would include the full Program offering in its 2014 DSM Implementation Plan.

103. Program Analysis/Issues. The BFE concept is being used by several other western utilities, including San Diego Gas & Electric in California and Xcel Energy in Colorado. With a focus on whole-building efficiency, coupled with the ability of participants to select from a wide range of potential efficiency measures, the BFE Program could offer an opportunity to customers and project sponsors to design cost-effective energy efficiency projects.

104. Under TEP's proposal, 50 percent of the incentive for each project is paid prior to measure installation, with the remaining incentive amount based on the actual energy savings, paid after the first year of operation. Staff believes this payment sequence offers an important "true-up" opportunity that ensures projects receive incentives proportionate to their actual energy efficiency. However, Staff is concerned that there are no limits proposed for the maximum incentive available to an individual project. Therefore, Staff recommends that incentives be capped at 60 percent of the incremental cost of the efficiency measures utilized in the project.

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105. TEP estimates annual energy savings of 400,000 kWh, and peak demand savings of 36.53 kW for each of the 10 projects anticipated during the two-year pilot program. Based on these anticipated savings, Staff has determined that the BFE Program would have a benefit / cost ratio of 1.86, indicating that the Program would be cost-effective.

106. Staff Recommendations

- Staff has recommended that the TEP Bid for Efficiency Pilot Program be approved as a two-year pilot program as discussed herein.
- Staff has further recommended that individual project incentives under this program be capped at 60 percent of the incremental costs of the efficiency measures included in the project.

J. RETRO-COMMISSIONING PROGRAM

107. Program Description. TEP's proposed Retro-Commissioning Program ("RCx Program") would identify deficiencies in existing facilities and makes necessary adjustments to produce energy savings and other benefits such as occupant comfort. The proposed new RCx Program is geared to assist owners of large existing commercial and industrial facilities in improving energy performance. TEP states that improvements made in response to RCx efforts are comparatively inexpensive to implement and typically offer paybacks of less than two years.

108. The RCx Program would begin with a Screening Energy Audit. Participants then proceed, if eligible for the RCx Program, through a three part retro-commissioning study: (i) the Operations and Maintenance Review Phase (operational procedures and maintenance practices); (ii) the Systems Commissioning Phase (performance testing, trending and metering), and (iii) the Systems Optimization Phase (high performance building operation strategies).

109. A 2009 study of retro-commissioning by Lawrence Berkley National Laboratories noted a median savings of 16 percent of whole building energy costs across 561 projects. Documented benefits of RCx programs include, but are not limited to the following:

- Up to 15 percent energy savings
- Reduced occupant complaints and improved occupant comfort
- Increased equipment life
- Increased facility documentation
- Facility staff training

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110. Program Objectives and Rationale. The Program would target large facilities which have lighting, cooling, and ventilation as their largest energy uses. Large office and retail facilities represent the most effective building type for the RCx approach.

111. Budget. TEP has requested a two-year budget for the RCx Program totaling $175,520. Incentives comprise $110,000, with program delivery, administration, marketing and evaluation costs accounting for the balance of the budget.

112. Delivery and Marketing Strategy. TEP would offer an online application for customers interested in the RCx Program on the TEP website. The screening audit would provide the customer with a basic energy audit, identifying basic equipment upgrades and control strategies that would result in energy savings for the customer. The audited facilities would also receive ENERGY STAR® Portfolio Manager ratings to benchmark the facility versus similar facilities in the area. The energy audit would be provided free of charge to all eligible applicants and will be used to determine eligibility for participation in subsequent phases of the RCx Program. The Program is designed so that customers can move to progressively higher levels of examination and analysis, only after they have implemented measures identified in the Screening Audit, and later, the Operations and Management Review phases of the Program.

113. For selected customers, and subsequent to the Screening Energy Audit, TEP would perform an Operations and Maintenance ("O&M") Review of the subject facility's energy usage, to evaluate operational procedures and maintenance practices related to major equipment. The result of this review would be a list of facility improvement measures with estimated cost and savings values. Customers would also receive training on O&M best practices and guidance on implementing facility improvements. The O&M Review would be provided by TEP at no cost to the customer.

114. For selected customers that implement recommendations identified in the O&M Review, TEP would offer Systems Commissioning services. Systems Commissioning services utilize advanced performance testing, trending and metering procedures that identify further opportunities for energy system repairs, upgrades and replacements. Measures identified during this phase include repairs, upgrades and capital planning that would allow existing systems to

operate within the parameters developed during the O&M review. Systems Commissioning services would be paid by the Program.

115. The final phase of the RCx Program is known as Systems Optimization. This phase of the Program builds on work completed in prior Program phases by introducing cutting-edge practices developed for today's high performance buildings. Services for this phase would be provided by the Program for selected customers who implement recommendations identified during the Systems Commissioning phase of the Program.

116. Eligibility. The RCx Program will be available to TEP commercial and industrial customers with at least one meter on an eligible rate schedule. In addition, the facility must contain a minimum of 100,000 square feet of conditioned space and have at least one full-time facility operations/management staff.

117. Program Analysis/Issues. Presently, the lack of knowledge by building operators, the lack of qualified workers, and the upfront costs of the audit and associated equipment optimization are barriers to improving the energy efficiency of commercial and industrial facilities. The TEP Retro-Commissioning Program intends to overcome these barriers by providing facility owners with the information necessary to identify energy-saving opportunities and manage energy consumption at their facilities.

118. Cost-Effectiveness. TEP estimates annual energy savings of 200,000 kWh, and peak demand savings of 18.26 kW for each of the five projects anticipated through the end of 2012. Based on these anticipated savings, Staff has determined that the BFE Program would have a benefit-cost ratio of 2.38, indicating that the Program would be cost-effective.

119. Staff Recommendations. Staff has recommended that the TEP Retro-commissioning Program be approved.

K. SCHOOL FACILITIES PROGRAM

120. Program Description. Schools represent a market segment that has historically been underserved. TEP has proposed a School Facilities Program ("Schools Program") to increase participation in energy efficiency retrofits by schools.

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121. The TEP Schools Program would be open to participation by all existing kindergarten through twelfth grade school facilities in the TEP service territory, including charter schools. The proposed Schools Program would utilize the same delivery method and pay incentives for the same energy efficiency measures as are found in the existing TEP C&I Comprehensive Program ("C&I Program"), but the Schools Program would only service eligible schools. TEP proposes to pay up to 100 percent of the incremental cost of the efficiency measures for the Schools Program, as compared to up to 85 percent for measures in the existing C&I Program.

122. The Schools Program would utilize an upstream market incentive design that provides incentives directly to contractors installing the energy efficiency measures. Specifically, the Schools Program would offer the following products and services:

- Educational and promotional pieces designed to assist contractors with the marketing of the Schools Program to schools; and
- Education and promotional efforts for schools and contractor allies on how the Schools Program functions, what energy efficiency technologies are offered, what incentives are provided and the benefits of the measures.

123. The lighting measures included in the Schools Program are:

- Retrofit of T12 fluorescent lighting with T8 lighting;
- Retrofit of standard T8 lighting to premium T8 lighting;
- Retrofit of high intensity discharge lighting with T8 or T5 lighting;
- Replacement of incandescent lamps with screw-in compact fluorescent lamps ("CFL");
- Retrofit of existing incandescent and CFL exit signs with LED or electroluminescent exit signs;
- Lighting system occupancy sensors; and
- Delamping and reduced lighting power density.

124. The HVAC measures included in the Schools Program are:

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- High efficiency air conditioners and heat pumps (incentives vary by SEER rating);
- Programmable thermostats; and
- Shade screens and window films to reduce solar heat gain.

125. The Schools Program would also include variable speed drive motors to optimize performance, vendor miser sensors which turn off or turn down refrigeration and lighting in vending machines when not in use, and smart strips to better control plug loads. Whole building custom incentive applications would also be considered where appropriate. Table 1-1 below presents a summary of the incentives offered for each measure.

Table 1-1
School Facilities Efficiency Incentive Summary

Lighting Measures	Incentive
Replace T12 systems with T8	$55/fixture
Energy Efficient Integral Compact Fluorescent Lighting	$11/lamp
Replace Incandescent & CFL Exit Signs	$55/sign
Install Occupancy Sensors on Lighting Fixtures	$96/sensor
Daylighting Controls	$751/kW base load
Hard Wire CFL	$15/bulb
HIDs to T8/T5	$96/fixture
Induction Lighting	$196/lamp
Outdoor CFL	$9/lamp
Reduced Lighting Power Density (LPD)	$4,472/customer
Screw-in Cold Cathode CFL	$12/bulb
T8 to Premium T8	$21/lamp
Delamping	$6/fixture
HVAC Measures	
Programmable Thermostats	$204/thermostat
High-efficiency Packaged AC and Heat Pumps (<65,000 btuh)	$440 to $1,321 (depending on size and SEER rating)
Shade Screens	$4/sq.ft.
Window Films	$3/sq.ft.
Motors	
Variable Speed Drives	$377/HP
Plug Loads	
Beverage Controls ("Vending Miser")	$199/sensor

Snack Controls (Vending Miser")	$103/sensor
Advanced Power Strips – Load Sensor	$32/strip
Advanced Power Strips – Occupancy Sensor	$90/strip
Advanced Power Strips – Timer Plug Strip	$19/strip
Whole Building	
Custom Measures	$6,535/customer

126. Budget. The Program will begin in 2012 with a proposed first-year budget of $157,941. See The TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

127. Delivery and Marketing. Schools that are interested in the Schools Program would apply for participation using an on-line proposal generation and project tracking system. This Internet-based system would provide an analysis of project costs and projected savings. Projects that are selected by TEP based on projected energy savings would utilize contractors to provide turn-key installation services to schools. Incentives would be paid directly to the contractors.

128. TEP would assign an in-house program manager to oversee the Schools Program, provide guidance on Schools Program activities and provide a point of contact for schools that are interested in participation, or have questions or concerns regarding the Schools Program. The implementation contractor would be responsible for program administration, application and incentive processing, monitoring activities of installation contractors, participation tracking and reporting, and overall quality control and management of the delivery process. In addition, the implementation contractor would conduct outreach to contractors, marketing and promotion to schools, and education and training on the benefits and functioning of the Schools Program.

129. Installation contractors would promote the Schools Program directly to schools, provide turn-key installation services and have access to the Schools Program Internet processing system to prepare proposals.

130. Program Analysis/Issues. The Schools Program lists a total of 30 individual energy efficiency measures that are eligible for incentives. This program is designed to install multiple measures on a "whole building" basis, where measures tend to complement or reinforce one another and, for this reason, cost-effectiveness is calculated on a per-project basis, where savings

and costs from a typical set of project measures are compared. The Schools Program also encourages the creative combination of listed measures with other measures that are not on the Schools Program's incentive list by offering a "custom measures" category. Proposed "custom measures" must demonstrate energy savings and pass the Societal Cost Test.

131. In order to evaluate the Schools Program at the project level, Staff analyzed a typical school energy efficiency project that included delamping a portion of the school facility and replacing the remaining lighting fixtures with T8 upgrades. In addition, the model project includes data for programmable thermostats, occupancy sensors, energy efficient exit signage, vending machine controls and advanced timer power strips. By combining these particular measures, and using anticipated savings values for each measure, Staff determined that this "typical" school project would cost approximately $2,821 dollars in incentives while saving approximately 40,956 kWh of energy and 4.13 kW of demand load.

132. Cost-Effectiveness. Based on these anticipated savings, Staff has determined that the typical School Facilities Program project would have a benefit-cost ratio of 1.71, indicating that the Schools Program would be cost-effective. Staff further believes that this ratio is indicative of the benefits of similar projects that would be completed under the Schools Program.

133. Staff Recommendations. Staff has recommended that the School Facilities Program be approved.

L. Combined Heat and Power – Pilot

134. Program Description. TEP is requesting budget approval for a new Combined Heat and Power ("CHP") Pilot Program in 2011. The TEP CHP Pilot Program is a proposed Joint Utility Program to be implemented in cooperation with Southwest Gas. Distributed Generation ("DG') is defined in A.A.C. R14-2-2401 as "the production of electricity on the customer's side of the meter, for use by the customer, through a process such as CHP." R14-2-2401 goes on to define CHP as "combined heat and power, which is using a primary energy source to simultaneously produce electrical energy and useful heat." TEP proposes this program as a pilot to assist in developing methods and procedures for future joint utility programs with Southwest Gas or other utilities. TEP proposes to provide support for the existing Southwest Gas DG Program (Decision

No. 69917, September 27, 2007) by sharing costs for marketing and outreach, training, and design. Specifically, TEP would pay up to 10 percent of the design costs for a CHP installation. TEP would cooperate with Southwest Gas on marketing and outreach strategy to maximize the effect of marketing and outreach expenses.

135. Program Objectives and Rationale. The primary goal of the Program is to provide support for the existing Southwest Gas DG Program, specifically for CHP projects. TEP states that the market potential for CHP is substantial and could contribute significantly to energy conservation in Arizona, and could accrue significant societal and customer benefits as well. According to TEP, CHP is an affordable, clean, and reliable way to meet a customer's energy needs. With gas used as the primary fuel, the process is far more efficient than electricity or gas use alone because the waste heat is used as well. The economics of the CHP system depends on effective use of the thermal energy in the exhaust gases. Exhaust gases are primarily used for heating the facility and could also be applied to heat recovery steam generators (HRSG) to produce additional electric power.

136. Delivery and Marketing Strategy. Program delivery, incentives, and administration; as well as the marketing and communications strategy would be provided by Southwest Gas through its DG Program. TEP would assist with marketing and outreach, design assistance, and interconnection design expertise. TEP would assign an in-house program manager to coordinate joint program delivery with Southwest Gas.

137. Cost-Effectiveness. TEP's analysis of this program showed a benefit-cost ratio of 8.5. Although Staff's analysis indicated a lower benefit-cost ratio of 6.5, it still indicated a cost-effective program based upon avoided provision of TEP capacity and energy.

138. Staff Recommendation. In Staff's opinion, this program could increase the amount of CHP in TEP's service area, and, due to CHP's inherent efficiencies, increase the efficiency of energy use. Staff has recommended approval of the CHP Pilot Program.

M. Small Business Direct Install

139. Program Description. TEP is requesting budget approval to continue this program and approval of these additional measures:

- Shade Screens
- Window Films
- Induction Lighting
- LED Channel Signs
- Outdoor CFL
- Reduced LPD
- T8 to Premium T8
- Premium T8 Lighting
- Beverage Controls
- Snack Ctrls ("vending miser")
- Refrigerated Display
- Automatic Door Closers
- Refrigerated Display Gaskets
- Advanced Power Strips - Occupancy Sensors
- Advanced Power Strips - Timer Plug Strip
- Advanced Power Strips - Load Sensor

140. The Small Business Direct Install Program is an existing program, approved by the Commission in Decision No. 70457 (August 6, 2008). The Program offers incentives for a select group of retrofit and replace-on-burnout energy efficiency measures in existing facilities. Eligible customers include customers who qualify for TEP's Rate 10 - Small General Service pricing plan (typically an aggregate monthly demand of 200 kW or less). The Program offers incentives for the installation of energy efficiency measures, including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air, and refrigeration measures. Incentives for lighting measures range from $7 to $65, HVAC measures range from $125 to $675, and Refrigeration measures average $127.

141. Program Objectives and Rationale. The Small Business Direct Install Program is designed to address certain barriers to this market segment, including limited investment capital, limited awareness of energy cost savings, and required short-term payback. The Program's purpose is to persuade small business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program.

142. Budget. See TEP EE Implementation Plan Budget Table herein which lists the sector, projected costs per category, and total budget for each program. The Small Business Direct Install Program shows total costs for 2011-12 of $7.6 million.

143. Delivery and Marketing Strategy. The Program is operated as an "up-stream" market program, with incentives offered to prequalified contractors who can provide turn-key installation services for customers. The intention is to reduce the measure payback to one year or less. The Program also includes consumer and trade ally educational and promotional pieces designed to provide decision makers in the small business market with the information necessary to make informed choices (and increase awareness).

144. The marketing strategy includes educational seminars tailored to the small business market, major media advertising, website promotion, outreach and presentations at professional and community forums, and direct outreach to customers who meet the criteria for the Program.

145. Cost-Effectiveness. The original Program approved with Decision No. 70457 showed an overall benefit-cost ratio of 1.87 and a range of measure benefit-cost ratios ranging from 1.04 to 3.6. In this filing, the new proposed measures range from 1.4 to 10.8 with an overall benefit-cost ratio of 3.4.

146. Staff Recommendation. Staff recommends approval to continue the Small Business Direct Install Program, with the proposed new measures.

N. Commercial & Industrial ("C&I") Comprehensive

147. Program Description. TEP is requesting budget approval to continue the C&I Comprehensive Program and approval of additional measures listed below:

- Heat Pump Water Heaters - Tier 1
- CO Sensors
- CO2 Sensors
- Cooling Tower Sub cooling
- Economizers
- High Perf Glazing
- PTAC/PTHP
- Shade Screens
- Window Films
- EMS - Lighting Schedule
- Induction Lighting
- LED Channel Signs
- LED Pedestrian Signals
- LED Traffic Lights
- LED Street and Parking Lights
- Outdoor CFL

- T8 to Premium T8
- Green Motor Rewind
- Beverage Controls ("vending miser")
- Snack Controls ("vending miser")
- Efficient Compressors
- Efficient Condensers
- Floating Head Pressure Controls
- Refrigerated Display Automatic Door Closers
- Refrigerated Display Gaskets
- Coin Operated Washers - Tier 1
- Coin Operated Washers - Tier 2
- Advanced Power Strips - Occupancy Sensors
- Advanced Power Strips - Timer Plug Strip
- Advanced Power Strips - Load Sensor

148. Incentives for the above measures range from under $2 up to $200, except those for chillers and heat pumps/air conditioners. The average incentive for chillers is $13,465. Heat pump and air conditioning incentives average, respectively, $556 and $575.

149. The C&I Comprehensive Program is an existing program, approved by the Commission in Decision No. 70403 (July 3, 2008) under the name of Non-Residential Existing Facilities Program. The Program provides prescriptive incentives to large commercial customers who are under TEP's Rate 13 and Rate 14 pricing plans (typically an aggregate monthly demand exceeding 200 kW) for the installation of energy-efficiency measures, including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air and refrigeration measures. Prescriptive incentives are offered for a schedule of measures in each of these categories. Customers can also propose their own innovative energy efficiency solutions by offering a custom energy efficiency measure. The average incentive for custom projects is $4,270.

150. Program Objectives and Rationale. The C&I Comprehensive Program is designed to address the barriers to this market segment, including limited awareness and lack of knowledge about the benefits and costs of energy efficiency improvements, performance uncertainty associated with energy efficiency projects, and the required short-term payback. The program's purpose is to encourage large business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the Program and provide turn-key installation services to small business customers.

151. Budget. The Summary Implementation Plan Implementation Costs for 2012, Table 3-11 in the filing, shows projected costs by category, and total budget for each program. The C&I Comprehensive Program shows total utility cost of $4.28 million and total lifetime net benefits of $20 million.

152. Delivery and Marketing Strategy. The Program is delivered by a third party implementation contractor who provides program administration, application review, participation tracking and reporting, project quality control, and technical support. In addition to the implementation contractor, key partnering relationships and marketing outreach include: the local architectural and engineering community, electrical, mechanical and building contractors, equipment manufacturers, distributors and vendors, professional and trade service associations, and the educational and promotional pieces designed to assist facility operators and decision makers with the information necessary to improve the energy efficiency of their facilities.

153. Cost-Effectiveness. With Decision No. 70403, the Commission approved this program's predecessor, the Non-Residential Existing Facilities Program which showed a benefit-cost ratio of 2.5 using Staff's methodology. The new measures described in this filing show similar cost effectiveness, except for one measure, the LED Street and Parking Lights which both TEP and Staff show a benefit-cost ratio less than one. Therefore, Staff does not recommend approval of this measure.

154. Staff Recommendation. Staff recommends approval of the C&I Comprehensive Program, except for the proposed additional measure LED Street and Parking Lights.

O. C&I Direct Load Control

155. Program Description. The C&I Direct Load Control Program is an existing program, approved previously by as the Commercial and Industrial Demand Response Program in Decision No. 71787 (July 12, 2010). TEP is requesting budget approval to continue this program with no additional modifications.

156. This is a commercial and industrial load curtailment program. Customers are compensated with incentives for their participation at negotiated levels that vary depending on

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multiple factors including the size of the facility, amount of kW under load control, and the frequency with which the resource can be utilized.

157. Program Objectives and Rationale. Commercial and industrial load represents a total of approximately 22 percent of system demand during peak hours in the late afternoon and evening during summer months. Modification of controls for chillers, rooftop AC units, lighting, fans, and other end uses is capable of reducing power demand at peak times. In addition, the Program may be used to support standard benefits of demand-response programs which include avoided firm capacity required to meet reserve requirements, reduced or avoided open-market power purchases during periods of high energy prices, and greater grid stability and reduction in outages due to reduced grid demand.

158. Delivery and Marketing Strategy. The Program is delivered on a turnkey basis by a third-party implementation contractor, who negotiates load reduction agreements with multiple customers and "aggregate" these customers to provide TEP a confirmed and guaranteed load reduction capacity available upon request. The contract between TEP and the demand response ("DR") aggregator, EnerNOC, is similar to a power purchase agreement in that EnerNOC is obligated to provide megawatts of load curtailment while maintaining a degree of flexibility in how the curtailments are achieved. Incentives are provided by EnerNOC and customized based on a variety of factors, including the amount of load that can be reduced.

159. Recruitment is targeted to help ensure that customers invited to participate are able to provide reliable and significant load control reductions.

160. Cost Effectiveness. With Decision No. 71787, the Commission approved the original Program, showing a Staff-determined benefit-cost ratio of 2.47. Since TEP is making no modifications to the Program, it remains a cost-effective program.

161. Staff Recommendation. Staff has recommended approving the C&I Direct Load Control Program for continuation.

P. Commercial New Construction Program

162. Background. On August 6, 2008, in Decision No. 70459, the Commission approved the Efficient Commercial Building Design Program for TEP. The Program was

approved on a two-year pilot basis. On July 1, 2010, TEP filed an application for approval to continue the Program for an indefinite period. In December, 2010, TEP informed Commission Staff that a request for continuation would be contained in TEP's 2011 Energy Efficiency Implementation Plan ("EE Plan"). TEP filed the EE Plan on February 1, 2011, and rebranded the Efficient Commercial Building Design Program as the "Commercial New Construction Program." TEP is also proposing one additional measure for this Program, high-performance glazing.

163. Program Description. The Commercial New Construction Program is geared toward the building owner/developer by incenting the increased use of energy efficiency measures during the design phase of a commercial building's development. Program incentives are based on improved building energy efficiency compared to a baseline design, as determined by a building energy simulation program such as the Department of Energy's eQUEST program. The Building Design Incentive is limited to a maximum of $75,000 per project and the Design Assistant Incentive is limited to a maximum of $10,000 per design team.

164. Program Objectives and Rationale. Commercial New Construction provides incentives to offset the additional design cost of alternative, more energy-efficient designs. The Program is performance-based and includes design assistance for the design team, performance-based incentives for the building owner/developer, and energy design information resources. Design assistance involves efforts to integrate energy efficiency into a customer's design process as early as possible.

165. In addition to the design incentives and performance-based incentives for the building owner/developer, this Program provides technical support services to the design community.

166. Budget. TEP requested a budget of $402,469 for 2011 for the Commercial New Construction Program and a budget of $406,319 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

167. Eligibility. All new commercial building projects and major renovations to existing buildings in the TEP service territory that receive or will receive electric service from TEP are

eligible to participate in the Program. Major renovation for this purpose would be a substantial or significant change to an existing structure, such as completely gutting a building and installing insulation, new windows, and new HVAC equipment.

168. Delivery and Marketing. TEP will continue to market the Program to building owners, developers and members of the design team. The Program uses a variety of educational and promotional pieces to assist building owners and developers with the necessary information to understand various energy efficiency options, and to encourage them to discuss these options with their design professionals early in the design process. TEP will continue to promote the Program through focused outreach to the building development community.

169. Cost Effectiveness. Although the original pilot did not enjoy a high level of participation due primarily to the poor economic environment, participation has grown dramatically during the first half of 2011. TEP reports a total of ten Program applications that would produce a total energy savings of 1,635,490 kWh. Based on these estimated savings, Staff has calculated the benefit-cost ratio for the Program as 2.70. The proposed new measure, high-performance glazing, has a calculated benefit-cost ratio of 1.14.

170. Staff believes that offering incentives and technical guidance during the design stage of commercial building projects is an important method of implementing energy efficiency measures. Staff further believes that by increasing the visibility of the Program through better online marketing and continued use of educational seminars, participation in the Program can be further increased. Therefore, Staff has recommended that the Program be approved for continuance.

171. Program Analysis/Issues. The subject Program is a continuation of the Program formerly known as "Efficient Commercial Building Design" that was originally approved as a two-year pilot on August 6, 2005, under Decision No. 70459.

172. The implementation of the original pilot occurred during the start of the current economic downturn. The financial environment resulted in a near total halt in loans for all types of commercial building development projects, as well as a concomitant decrease in overall building project activity.

173. Staff believes that the financial climate played a major part in the lower than anticipated participation in the original pilot, and that the reduction in new buildings within TEP's service area directly affected participation in the pilot. Participation in the Program grew dramatically during the first half of 2011, with TEP reporting the completion of two Design Assistance projects and the receipt of eight New Construction applications. Staff believes that this trend of increasing participation in the Program will continue.

174. Staff has recommended that TEP continue its outreach efforts to building owner, developer and design professional organizations (e.g. American Institute of Architects, American Society of Professional Engineers, Urban Land Institute, National Association of Office and Industrial Properties, etc.). Staff further recommended that TEP extend its outreach activities to include banks and other lending institutions that service the building design and construction industry. In addition, TEP should communicate with local building code officials to apprise them of Program benefits and encourage the adoption of higher performance building and energy codes.

175. Baseline Study. At the inception of this pilot program, TEP had not conducted a formal baseline study of new commercial construction design characteristics. In preparing the analysis for the pilot program, the baseline performance conditions of new commercial construction projects were estimated based on best available knowledge of current market conditions and design practices. To confirm the baseline assumptions made in the preparation of this plan, TEP hired Navigant Consulting ("Navigant") to conduct a formal baseline study of commercial building practices. Funding for this baseline study was approved by Decision No. 71109 on June 5, 2009.

176. The study, entitled "Assessment of Baseline Practices for Commercial New Construction", dated June 25, 2010, was submitted by TEP to Staff at the time that TEP filed its application to continue the pilot program. The objective of this report was to determine how commercial buildings are currently being designed and specified within TEP's service area. The baseline study concluded that, except for federal and state buildings, new commercial construction in the TEP service area is generally built to code. Where buildings are constructed above code . . .

requirements, it is generally in pursuit of LEED (Leadership in Energy and Environmental Design) certification.

177. The baseline study offered several recommendations for TEP to consider in relation to the pilot program. A summary of those recommendations includes:

- Federal and other government buildings are generally mandated to build above code. Therefore, TEP should consider modifying its Program applications to determine whether a building is public or private, and require higher savings for public buildings.
- TEP should monitor code changes and talk to code officials on a regular basis.
- TEP should provide education to the building industry to define an integrated design approach and help this to become standard practice.
- TEP should encourage the use of commissioning agents (perhaps through specific incentives) to ensure that buildings operate as specified by design.
- TEP should consider adding a prescriptive path to the Program to provide incentives for specific technologies, such as high R value roofs and walls, variable speed drives and high efficiency motors, higher efficiency lighting systems.
- The Report states that the most important recommendation is "...to educate architects about life-cycle costs and how to sell these ideas to clients, educate owners who are buying from private developers, and educate the market about considering life cycle costs versus first costs in determining the value of a building..."

178. Staff Recommendations. Staff generally concurs with the recommendations of the baseline study with the exception that TEP should first ascertain the cost-effectiveness of using third-party commissioning agents. Staff has made the following additional recommendations:

- Staff has recommended that the Program, including the high-performance glazing measure, be approved for a second two-year period.
- Staff has further recommended that TEP implement the recommendations in the "Assessment of Baseline Practices for Commercial New Construction" prepared by Navigant Consulting, including modification of Program performance thresholds (for public buildings) and Program applications to differentiate between public and private sector facilities.
- Staff has further recommended that Measurement & Evaluation statistics for the Program be included in the DSM reports filed with the Commission.

- Staff has further recommended that TEP continue Program outreach efforts by targeting building owner, developer and design professional organizations, lenders and lender industry associations, and local building code officials.

- Staff has further recommended that information announcing the availability of the Program occupy a more prominent position on the TEP website.

Q. BEHAVIORAL COMPREHENSIVE

179. Program Description. The proposed Behavioral Comprehensive Program ("Behavioral Program") consists of six educational subprograms. The focus of the Behavioral Program is to educate Residential customers on how changes in behavior, including purchasing decisions, can improve energy efficiency. Most of the subprograms include low-cost measures, such as CFLs, faucet aerators, LED nightlights and refrigerator thermometers, in addition to the educational components.

180. The table below lists and describes the six subprograms that make up the Behavioral Comprehensive Program. More detailed program descriptions are provided in the following paragraphs:

Subprogram	New (proposed) or existing	Descriptions
Home Energy Reports	Approved on April 7, 2011, Decision No. 72254.	Comparison of energy use to that of neighbors. An on-line energy audit component will also be added in 2012.
Direct Canvassing	New (proposed)	Door to door awareness and direct install campaign
K-12 Education	New (proposed). Consists of redesigned energy education for 6th, 7th and 8th grades, and will absorb the existing school-based energy education components from the Education and Outreach Program.	Classroom education including take home direct install kits
Community Education	New (proposed)	"Train the trainer" approach, with hands-on energy efficiency training

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In home Energy Use Monitors	Approved as part of the Residential Direct Load Control Pilot, August 25, 2010, Decision No. 71846.	A sub-pilot of the smart meter program. Displays near-real time usage information
CFL Giveaway	New (proposed)	CFL bulb giveaway at outreach events

181. Home Energy Reports. Although budgeted separately, the Home Energy Reports subprogram is part of the overall Behavioral Comprehensive Program. The existing Home Energy Reports are designed to instigate behavioral changes in customers' energy consumption by (i) making customers aware of their energy consumption; and then (ii) allowing them to compare that usage to similarly situated homes. The subprogram targets habitual behaviors (e.g., lights and thermostats), purchasing behaviors (standard versus energy efficient appliances), and participation in demand-side management programs.

182. In addition, the on-line energy audit function that is currently part of the Education and Outreach Program will transition to the Home Energy Report subprogram during the first half of 2012.

183. Direct Canvassing. The direct canvassing initiative is a grass-roots, door-to-door approach to promoting energy efficiency, and is designed to reach neighborhoods difficult to reach through traditional messaging. The subprogram would use trained volunteers from local community organizations to talk to customers about energy efficiency. Two CFLs would be left with each customer, along with program materials for appropriate TEP DSM programs.

184. K-12 Education. In addition to energy based class room curriculum, students would be instructed in energy saving approaches for their homes. Students in grades 6-8 would be provided with a take home kit which includes CFLs and refrigerator thermometers, as well as educational materials on how to reduce energy use.

185. Beginning in 2012, the K-12 subprogram will also offer the academic support activities currently offered under the Education and Outreach ("E&O") Program. These activities include the Insulation Station, the Energy Patrol, the Electri-City exhibit at the Tucson Children's Museum and Energy Conservation Bike/Solar Generation Presentations. The E&O Program's

school-based energy education activities will be transferred to the K-12 subprogram, to consolidate school-based energy education into one subprogram.

186. Community Education. The Community Education Program would engage community groups and work with public entities with "train the trainer" hands-on energy efficiency seminars. Community trainers would be given a broad based review of energy, efficiency and comfort principles. The seminars include hands-on training with a wide sample of materials such as weather stripping, low flow showerheads, caulk or foam sealant and CFLs.

187. CFL Giveaway. The Compact Fluorescent Light Give-Away Program will complement TEP's presence at community events, and its overall education and outreach efforts, and efficiency messaging. Free CFLs will be made available both at community events and to community organizations, including those involved in our Community Education Program.

188. In-home Display. The In-Home Display measure is part of the Residential Direct Load Control Program already approved by the Commission in Decision No. 71846. The In-home Display works by providing a digital readout showing customers their current cost of energy in cents per hour and their cumulative cost for the month. Participating customers are provided with interval energy usage data in several formats on a personal web portal or on an additional physical home display device.

189. Budget. The cost for the web portal and in-home displays are included in, and budgeted with, other communicating equipment provided to customers participating in the Residential Direct Load Control program. See TEP EE Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

190. Behavioral Comprehensive Program Overall Objectives and Rationale. The energy-related behaviors intended to be influenced by the Behavioral Comprehensive subprograms include the following:

- Habitual behaviors
  - Adjust thermostat setting
  - Turn off unnecessary lights
- Small purchasing and maintenance behaviors
  - Purchase and install faucet aerators and low flow shower heads

- Purchase and install compact fluorescent lights
- HVAC maintenance

- Larger purchasing decisions
  - Purchase an ENERGY STAR appliance
  - Purchase higher EE heating and cooling system through participation in a TEP DSM Program

191. Delivery and Marketing Strategy. All TEP residential customers would be eligible for this program. Delivery would be made through implementation contractors and TEP resources.

192. Program Analysis/Issues. The Company initially proposed to leave some elements of school-based energy efficiency education, such as the Insulation Station and the Energy Patrol, with the current Education and Outreach program. TEP is now proposing to consolidate the school-based energy education activities within the K-12 subprogram.

193. The Company's current proposal is reasonable. Consolidation of school-based energy efficiency education within the K-12 subprogram is likely to improve efficiency, limit duplication of administration effort and expenditure, and reduce confusion between the proposed K-12 subprogram and the existing Education and Outreach Program.

194. Cost-Effectiveness. Cost-effectiveness for measures associated with the proposed new Behavioral Comprehensive subprograms are listed in the table below. For the K-12 Education and Community Education Program, cost-effectiveness of the associated measures was calculated based on the entire kit.

Subprogram	Measures	Benefit-cost Ratios
Direct Canvassing	CFLs	2.8
K-12 Education	CFLs, Faucet Aerator, LED nightlight, Refrigerator thermometer	3.0
Community Education	CFLs, Showerhead, Faucet Aerator, LED nightlight, Refrigerator thermometer	1.57
CFL Giveaway	CFLs (18 Watt/23 Watt)	1.99/2.7

195. Staff Recommendations.

- Staff has recommended that the Behavioral Comprehensive program, and all its subprograms, be approved.

R. Residential Energy Efficiency Financing

196. Program Description. TEP was ordered to file an energy efficiency financing program in Decision No. 72028 (December 10, 2010). TEP is requesting approval for a new Residential Energy Efficiency Financing pilot program to provide customers with the capital needed to make cost-effective energy efficiency upgrades to their homes. TEP believes that a two-year pilot program would allow sufficient time for the Company to evaluate the Program, including participation, default rates, and overall value to customers. TEP's proposed Program elements include:

- Loan commitment of $2,000,000 per year for two years; this would provide approximately 424 loans per year based on an average $4,722 loan amount;
- Loans available only on energy efficiency measures meeting the Commission-required cost effectiveness test;
- Low interest rates provided by a combination of an interest rate buy-down and a 10% loan loss reserve account;
- Limited ratepayer exposure to default risk (10% of the loan commitment);
- Funding provided through an approved Demand-Side Management ("DSM") surcharge charged to residential customers;
- Affordable residential financing for energy efficient measures;
- Convenient customer access to and repayment of the financing;
- Standard finance product offering for all eligible, approved borrowers;
- Leveraged financing;
- Accurate Truth-in-Lending notifications and billing to customers provided by an experienced third party lender; and
- Community involvement in forming and marketing the Program.

197. TEP proposes to increase the DSM surcharge for residential customers by $0.00018 per kWh to fund the Program during the two year pilot program. The average annual cost to each residential customer would be $1.90. TEP proposes that the DSM Surcharge necessary to fund

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this program be collected only from residential customers, as the loan instruments described are restricted to residential customers.

198. Budgeting for the Residential and Non-residential sectors is approximately equal, and the cost for all of TEP's energy efficiency programs (including those restricted to Non-residential customers) is recovered through a single DSM adjustor surcharge. Establishing a separate DSM adjustor for the Residential Financing Program would be unnecessary, inequitable and time-consuming.

199. Program Objectives and Rationale. TEP believes that the Program's financing options would help cover the costs of energy efficiency measures, would improve customer participation in energy efficiency programs and would expand the pool of customers who can afford to participate in those programs. Although other vendors offer financing for their own individual products, the Program's comprehensive approach to home energy upgrades cuts across several potential products and includes efficiency measures not traditionally financed, such as air and duct sealing.

200. Prior to designing the Program, TEP developed key objectives for the Company's implementation of a financing program. Three objectives stood out from the rest as fundamental in order for TEP to provide a financing option: 1) the program design must eliminate the utility from any Truth-in-Lending Law regulation implications; 2) the program must provide a reasonable amount of funds at a reasonable interest rate and with a low initial investment; and 3) energy efficiency measures that qualify for TEP financing must have met the Commission's cost effectiveness test.

201. With these objectives, TEP hired Harcourt Brown Energy and Finance to assist with the evaluation, negotiations, and design of the Program. TEP selected a Third Party Financing model secured by a combination of a 10 percent loan loss reserve account and an interest rate buy-down, both funded from the DSM Surcharge, as the best program offering.

202. Target Market. The target market for this program is any residential customer in TEP's service territory who owns their home. Financing would be available for installation of approved and cost-effective energy efficiency measures.

203. Program Eligibility. Eligible properties would include single-family (1 to 4 unit), owner-occupied homes.

204. Budget. This is a financing program supporting other program efficiency measures. Therefore, there are no energy efficiency measures specifically under this program. Nonetheless, TEP expects annual costs as follows:

RESIDENTIAL ENERGY FINANCING BUDGET TABLE
Two-Year Pilot

	Loan Amount Available	Number of Loans	Reserve Funding	Interest Rate buy-Down Funding	Program Budget
Year 1	$100,000	21	$10,000	$4,000	$142,815
Year 2	$2,000,000	424	$200,000	$79,995	$442,645

205. Delivery and Marketing Strategy. TEP's strategy for Program delivery and administration is as follows:

- Coordination between the Lender and TEP on all fund transfers would be managed in-house by a single TEP Program Manager;
- The Program Manager would also provide overall management, marketing oversight, planning and tracking of customer and contractor participation; and
- The Program Manager would coordinate all activities necessary to develop application forms and contractor training.

206. Key partnering relationships would include Community interest groups; HVAC, insulation and air sealing contractors trained in Program procedures; and the Arizona Energy Office, Pima Community College, or other industry experts to provide training, education and awareness.

207. The Program would use contractors initially recruited for the Existing Homes Program, encouraging them to promote TEP financing when working with customers. TEP would provide an orientation of the Program which would outline Program requirements and contractors responsibilities as well as discuss reporting and data collection procedures. Contractors interested in participating in the Program must attend the orientation.

208. Program Marketing and Communication Strategy. TEP would provide Program marketing and customer outreach and awareness through a range of strategies including:

- Promotions on the TEP website about the benefits of purchasing high-efficiency equipment and home performance measures;
- Promotion through contractors and through community interest groups;
- Providing information through TEP's customer care center;
- Developing marketing pieces including brochures and other collateral pieces to promote the benefits of qualifying equipment, air sealing and duct sealing, and the financing program available to fund those measures; and
- Training and seminars for participating trade allies and contractors.

209. The advertising campaign would communicate that high-efficiency systems and home performance measures would help reduce customer energy bills, provide equal or better comfort conditions, and are beneficial for the environment.

210. Program Analysis and Issues. TEP originally proposed using the Pennsylvania Treasury as the third party lender. Interested parties had recommended making further effort to secure third-party lenders located in Arizona. TEP has now chosen Vantage West, a local Credit Union ("VW"), as the third-party lender with loans leveraged by a loss reserve account as well as the possibility of a combination of a 10 percent loan loss reserve account and an interest rate buy-down, all funded from the DSM Surcharge. The interest rate buy-down would bring the rate from VW's normal 11.099 percent down to 7.99 percent.

211. The Company notes that UNS Gas, Inc. requested a program nearly identical to the one requested here for TEP. The UNS Gas program was approved by the Commission in Decision No. 72062 (January 6, 2011).

212. Cost Effectiveness. There are no direct avoided cost benefits or energy savings from the residential financing program, and the total DSM Implementation Plan Cost for TEP would increase as a result of offering the Program. However, the indirect benefits and savings are measured at the program level where individual energy efficiency measures are included. TEP believes, and Staff agrees, that the availability of financing for the Existing Homes Program would

increase participation, and thus increase the resulting societal benefits and savings reported for the Existing Homes Program.

213. Staff Recommendations.

- Staff has recommended approval of the Residential Energy Efficiency Financing Program with a two-year pilot as described herein.
- Staff recommends that the Commission not approve TEP's request that the DSM Surcharge for the Residential Energy Financing Program be collected only from Residential customers.

214. Measurement, Evaluation, and Research. Measurement, Evaluation, Research shall be in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415, including the following database activities:

- As part of Program operation, TEP would request the Lender to provide the necessary data elements to populate the tracking database and provide periodic reporting and data collection.
- TEP would establish systems to collect the data needed to support effective Program management, transfer of funds from TEP to the loan loss reserve accounts, reporting, and evaluation.

S. ENERGY CODES ENHANCEMENT PROGRAM

215. Program Description. Improved building energy codes are recognized as a simple and cost-effective means of achieving energy savings over the lifetime of new construction and newly renovated buildings. The TEP Energy Codes Enhancement Program ("ECEP") seeks to overcome barriers to the adoption of improved building codes.

216. Budget. TEP requested a budget of $49,335 for the first year (2011) of the Energy Codes Enhancement Program and a budget of $75,490 for 2012. See the TEP Implementation Plan Budget Table, herein, which lists the sector, projected costs per category, and total budget for each program.

217. Program Objectives and Rationale. The objective of the TEP ECEP is to increase energy savings in new construction and renovated buildings, in both the Residential and Commercial sectors, by improving compliance with existing building energy codes and supporting updates to building codes.

218. Delivery and Marketing Strategy. The ECEP would target building committees and city councils, as well as building design officials including architects, engineers, contractors and builders. TEP Program staff would collaborate with regional and national organizations that track market trends and can offer guidance on best practices for energy code adoption and enforcement.

219. Program support to the target audience may include activities such as:

- Classroom, field and "brown bag" training sessions;
- Purchasing energy code books for officials that currently lack such resources;
- Supporting energy code-related certifications for code officials;
- Conducting energy code compliance assessments by 2017 to fulfill American Recovery and Reinvestment Act ("ARRA") requirements to demonstrate 90% energy code compliance (may be done in coordination with energy efficiency program Measurement, Evaluation and Research ("MER") activities); and
- Collaboration with the Southwest Energy Efficiency Project and other regional groups to support research on and adoption of building codes and equipment standards.

220. TEP staff would be responsible for administering the Program. Responsibilities for these staff would include planning, coordination and implementation of all Program activities.

221. Program marketing would be accomplished through direct outreach to municipal officials, participation in building code enhancement committees, cross-marketing with other TEP energy efficiency programs and through TEP websites.

222. Program Analysis/Issues. According to the U.S. Department of Energy[2], buildings use 39 percent of our total energy, two-thirds of our electricity, and one-eighth of our water. In light of the increasing cost of energy, building energy efficiency is a key component of sound public policy. One reason is that the benefits of more efficient construction often continue for the life of the structure, often 30 to 50 years.

223. DOE research[3] shows that contemporary energy codes could save about 330 Trillion BTU by 2030, almost 2 percent of total current residential energy consumption. There

[2] U.S. Department of Energy website: http://www.energycodes.gov/why_codes/
[3] Ibid.

would also be comparable savings in consumer energy bills, air pollution and greenhouse gas emissions. As is discussed below, however, Arizona is a "home rule" state with no mandatory state-wide energy efficiency building code.

224. Although many counties and cities within the state have adopted an EE building code, some municipalities lack the resources and knowledge to effectively enforce existing building codes or implement an energy efficiency-specific code. Many municipal code officials lack the resources to stay current on market trends relevant to building codes, especially given current economic conditions. In jurisdictions that currently lack any type of building code, public officials could benefit from information and assistance in developing and advocating the adoption of a building code.

225. In addition to the lack of information and resources impacting the development and enforcement of building codes at the governmental level, building design and construction professionals could likely benefit from additional education and training on code requirements.

226. The primary market barriers to achieving maximum energy efficiency from building related codes are as follows:

- Lack of knowledge and resources to facilitate compliance with existing codes,
- Inconsistency in codes across the state, and
- Lack of resources to advocate for adoption of new codes.

227. Cost-Effectiveness. TEP has not provided an estimate of energy savings from implementation of the Energy Codes Enhancement Program. Rather, development of tracking metrics and deemed savings methodologies form an integral part of the Program. Energy savings from the Program would be determined upon completion of the Measurement, Evaluation and Research phase of the Program.

228. Staff Recommendations. Advocacy of energy codes is an appropriate component of TEP's 2012 Energy Efficiency Implementation Plan, given the high potential for long-term energy savings. Therefore, Staff has recommended approval of TEP's Energy Codes Enhancement Program, subject to implementation of the MER and Reporting protocols stated herein.

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T. Education and Outreach

229. Program Description. The Education and Outreach ("E&O") Program is an existing program approved in Decision No. 70402 (July 3, 2008). TEP is requesting budget approval to continue this program, which is being modified through the transfer of its school-based energy education components and its on-line audit function to subprograms of the Behavioral Comprehensive Program.

230. The revised E&O Program would be responsible for overall marketing and general consumer education. In order to reflect this change in focus, TEP is proposing to rename the E&O Program as the Consumer Education and Outreach ("CEO") Program.

231. With the school-based energy education activities and measures and the on-line audit function moved into the Behavioral Comprehensive Program, the CEO Program would market TEP's energy efficiency and renewable programs[4], including Time of Use ("TOU") rates:

- Develop brochures and communication materials that showcase all available EE and Renewable Programs,
- Develop and maintain communication materials related to general energy saving information,
- Provide labor and materials to staff trade shows and community events,
- Develop and maintain web content to educate consumers on energy use and TOU rate choices, and
- Cross communication of EE Programs and general energy saving information.

232. Program Objectives and Rationale. The E&O Program is intended to increase participation in the Company's other DSM/EE programs and intended to promote conservation by customers.

233. Cost-effectiveness. The CEO Program markets the entire TEP portfolio, promotes conservation generally and educates customers about TOU rates. It does not produce direct savings. The 2012 budget, with the school-based energy education and on-line audit function

[4] Marketing materials for TEP energy efficiency programs include information concerning TEP's renewable programs, providing an added benefit from the funding used to market energy efficiency.

removed, would be approximately $194,000, or less than 1 percent of the total Implementation Plan budget for 2012.

234. Staff Recommendation.

- Staff has recommended that the Education and Outreach (or Consumer Education and Outreach) Program be approved for continuation, with the modifications proposed.

U. Program Development, Analysis And Reporting Software ("Program Development")

235. Description. This budget item provides program support and covers costs relating to the Implementation Plan as a whole, including program design, database design and development, and technical support. Included in this budget item are the resources necessary for meeting reporting requirements under the Electric Energy Efficiency Rates.

236. Objectives and Rationale. Program Development includes:

- Incremental cost studies,
- Measure and program research and benefit-cost analysis,
- Codes and Standards research and analysis,
- Education and training on new technologies,
- Program design, development and analysis, and
- Software for tracking and reporting to remain in compliance with the Electric Energy Efficiency Rules.

237. Cost-Effectiveness. Program Development costs are associated with administering the Implementation Plan as a whole. These costs are not attributable to one energy efficiency program or measure, but are required to facilitate the energy efficiency goals for all programs and measures. Cost-effectiveness, as such, can not be assessed for this budget item, but the Program Development costs should represent a limited portion of the total budget.

238. Projected Program Development costs for 2011 equal approximately 3.47 percent of the total Implementation Plan budget, declining to approximately 2.62 percent in 2012. (In

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comparison, incentives represent, respectively, approximately 51 percent and 54 percent of the 2011 and 2012 budgets.)

239. Staff Recommendation. Staff has recommended that the budget amounts allocated to program development, analysis and reporting software costs be included in the budget as shown in the application.

V. MEASUREMENT, EVALUATION AND RESEARCH; REPORTING: ALL PROGRAMS

240. Measurement, Evaluation, and Research. At a minimum, Measurement, Evaluation, and Research ("MER") shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415.

241. Reporting. At a minimum, Reporting shall be done in accordance with the Electric Energy Efficiency Rules, Section R14-2-2415.

W. BUDGET FLEXIBILITY

242. TEP has requested the ability to shift up to 25 percent of its approved funds from Residential to Commercial sector programs, or from Commercial to Residential sector programs, based on program activity. The Company has also requested that it be allowed to increase the total budget for the energy efficiency programs by up to 25 percent, where cost-effective. The Company states that this type of flexibility maximizes participation in successful programs and allows it to continue accepting applications from customers in cases where an individual program may be over-subscribed.

243. Shifting of Funds. Funding for the Residential and Commercial sectors is approximately equal under the proposed Implementation Plan budgets for 2011 and 2012. (The Home Energy Reports subprogram targets Residential customers and its budget should be considered part of the funding for the Residential sector.) While the Commission has allowed utilities to shift energy efficiency program funding among programs or measures within the Residential sector, or among program or measures within the Commercial sector, recent practice has been to limit shifting from sector to sector, to ensure that both Residential and Commercial customers both have a reasonable opportunity to participate in energy efficiency programs.

Allowing funding shifts among programs or measures within a sector allows a reasonable degree of flexibility without the potential impact to the equitable access to participation in energy efficiency programs by Residential and Commercial customers.

244. Increase to Total Budget. With a projected budget for 2012 of $24.7 million, the up 25 percent flexibility proposed by TEP could result in an increase of over $6 million, depending on customer participation and actual costs. Although actual spending may be either over or under the level projected for the Implementation Plan, and the Company should be allowed some flexibility to accommodate unanticipated levels of customer participation, the 25 percent level proposed by TEP is excessive. Allowing an increase of up to 5 percent would provide TEP with flexibility in responding to higher-than-anticipated customer participation, but would better limit potential costs.

245. Staff Recommendations.

- Staff has recommended that the Company be allowed to shift funding from measure to measure, or from less active to more active programs, for up to 25% of the budget originally allocated to the less active program. Budget shifting may only be done within, and not between, the Residential and Non-Residential program sectors.

- Staff has recommended that the Company be allowed to increase the overall Implementation Plan budget by up to 5 percent, if the increases are allocated to Commission-approved cost-effective measures and programs.

X. DEMAND-SIDE MANAGEMENT SURCHARGE ("DSMS")

246. In TEP's Application, as updated on August 22, 2011, TEP is requesting recovery of the following costs through the DSMS: (i) DSM program costs, including $13.4 million from the period through 2011 (DSM costs minus the amount recovered through the existing DSM adjustor) and $24.7 million in spending projected for 2012 ; (ii) the DSM Performance Incentive, in the amount of $16 million; and (iii) the Company's proposed Authorized Revenue Requirement True-up ("ARRT") Mechanism, in the amount of $17 million.

247. DSMS Reset Level. The current DSMS is $0.001249 per kWh. In its application, TEP had requested to increase the DSMS to $0.006343 per kWh, based on its proposal as updated on August 22, 2011, and assuming a 15 month recovery period. Based on Staff's analysis above and Staff's recommendation to exclude the ARRT and to retain the existing method for calculating

the Performance Incentive, Staff recommended that the DSMS be set at $0.003812 per kWh based on a 15 month recovery period. The impacts, based on the average Residential usage, are shown in the table below

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Residential Usage	kWh/ month	Curent DSMS/kWh	Current Bill Impact/month	TEP Proposed DSMS/kWh	TEP Proposed DSMS Impact/month	Staff Proposed DSMS/kWh	Staff Proposed DSMS Impact/month
Summer Average	1,100	$0.001249	$1.37	$0.006343	$6.98	$0.003812	$4.19
Winter Average	680	$0.001249	$0.85	$0.006343	$4.31	$0.003812	$2.59
Annual Average	880	$0.001249	$1.10	$0.006343	$5.58	$0.003812	$3.35

248. Recommendations. Recommendations regarding the DSMS are listed below:

- Staff has recommended that the DSMS include: (i) the program spending approved by the Commission in this Decision; and (ii) the Performance Incentive, as calculated in the manner set in the last rate case.
- Staff has also recommended that calculation of the DSMS take into account the current DSM balance, but not include the Company's proposed ARRT at this time.
- Staff has recommended that the DSMS be reset to $0.003812 per kWh.

249. Adjustor Reset and Reporting Requirements. The Company requested that the current April 1 surcharge filing requirement and semi-annual DSM reporting (March 1 and September 1) requirements be superseded by the reporting requirements of A.A.C. R14-2-2409. TEP plans to file for an adjustor rate reset annually, as part of its Implementation Plan filings, beginning in June 2012, with the actual reset to take effect in January 2012.

- Staff has recommended that the current surcharge filing and DSM reporting requirement be superseded by the reporting requirements of A.A.C. R14-2-2409.
- Staff has also recommended that, in any year during which the Company does not file an Implementation Plan, or does not address the DSM adjustor reset within its Implementation Plan, an adjustor reset application should be filed separately, no later than April 1.

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Y. CALCULATING COST-EFFECTIVENESS

250. Staff recommends that, in all future DSM Implementation Plans, the Company use the same input values and methodology as Staff for calculating the present value benefits and costs to determine benefit-cost ratios.

Z. SUMMARY OF RECOMMENDATIONS

251. Staff has made the following recommendations based on TEP's Implementation Plan filing, as updated on August 22, 2011:

Overall

- In cases where a measure is not approved, the funding associated with that measure should be used to fund cost-effective measures within the same program, if possible.
- The Company should have the flexibility to transfer funding among cost-effective measures, within each program, to accommodate varying participation levels.
- The Company should have the flexibility to move up to 25% of funding from program to program within each sector, to accommodate varying participation levels. However, funding may not be transferred out of the Low-Income Weatherization Program.
- The Company should track federal standards, including those for lighting, to ensure that measures promoted by the TEP Implementation Plan offer cost-effective savings over and above current baselines.

Appliance Recycling

- The TEP Appliance Recycling Program should be approved and it should include both the refrigerator and freezer measures.
- The Company should offer a $30 incentive, rather than the $35 incentive proposed, but the overall budget for incentives should not be decreased.

Multi-Family Housing Efficiency

- The proposed Multi-Family Program should be approved, with older, less efficient and low-income complexes as a primary focus for the Multi-Family Program's activities.

Efficient Products

- The Efficient Products Program should be approved and continue to offer CFLs, with the addition of the Variable Speed Pool Pump, Advanced Power Strip and Pool Pump Timer measures.

- The Residential LED Light measure should not be approved at this time.

- The lifespan of CFL measures should be re-evaluated for the Company's next Implementation Plan, and any changes to these assumptions should be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

Low-Income Weatherization

- The Low-Income Weatherization Program should be approved for continuation as part of TEP's Implementation Plan.

- TEP should be allowed to tie the eligibility level for the TEP LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"), so that the eligibility levels remain consistent over time.

Residential New Construction

- The Tier 1 measure should be approved for continuation.

- The Tier 2 and Tier 3 measures should be discontinued once the Residential New Construction Program has met its existing commitments for Tier 2 and Tier 3 homes.

Existing Homes and Audit Direct Install

- The Existing Homes and Audit Direct Install Program should be approved for continuance.

Shade Tree

- The Shade Tree Program should be approved for continuance.

Residential and Small Commercial Direct Load Control

- The Residential and Small Commercial Direct Load Control Program be approved to continue.

Bid for Efficiency

- The TEP Bid for Efficiency Pilot Program should be approved as a two-year pilot program as discussed herein.

- Individual project incentives under this program should be capped at 60 percent of the incremental costs of the efficiency measures included in the project.

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Retro-Commissioning

- The TEP Retro-commissioning Program should be approved.

Schools Facilities

- The School Facilities Schools Program should be approved.

CHP

- The CHP Joint Program should be approved.

Small Business Direct Install

- The Small Business Direct Install Program should be approved to continue, with the proposed new measures.

C&I Comprehensive

- The C&I Comprehensive Program should be approved, except for the proposed additional measure LED Street and Parking Lights.

Commercial Direct Load Control

- The C&I Direct Load Control Program should be approved for continuation.

Commercial New Construction

- The Commercial New Construction Program, including the high-performance glazing measure, should be approved for a second two-year period.
- TEP should implement the recommendations in the "Assessment of Baseline Practices for Commercial New Construction" prepared by Navigant Consulting, including modification of Program performance thresholds (for public buildings) and Program applications to differentiate between public and private sector facilities.
- Measurement & Evaluation statistics for the Program should be included in the DSM reports filed with the Commission.
- TEP should continue the Commercial New Construction Program's outreach efforts by targeting building owner, developer and design professional organizations, lenders and lender industry associations, and local building code officials.
- Information announcing the availability of the Program should occupy a more prominent position on the TEP website.

Behavioral Comprehensive

- The Behavioral Comprehensive program, and all its subprograms, should be approved.

Residential Energy Financing

- The Residential Energy Efficiency Financing Program should be approved for a two-year pilot as described herein.
- TEP's request that the DSM Surcharge for the Residential Energy Financing Program be collected only from Residential customers should not be approved.

Energy Codes Enhancement

- TEP's Energy Codes Enhancement Program should be approved, subject to implementation of the MER and Reporting protocols stated herein.

Education and Outreach

- The Education and Outreach (or Consumer Education and Outreach) Program should be approved for continuation, with the modifications proposed.

Program Development

- The budget amounts allocated to program development, analysis and reporting software costs should be included in the budget be approved, as shown in the application.

Budget Flexibility

- The Company should be allowed to shift funding from measure to measure, or from less active to more active programs, for up to 25 percent of the budget originally allocated to the less active program. Budget shifting should only be done within, and not between, the Residential and Non-Residential program sectors.
- The Company should be allowed to increase the overall Implementation Plan budget by up to 5 percent, if the increases are allocated to cost-effective measures and programs.

DSMS

- The DSMS should include: (i) the program spending approved in this Decision; and (ii) the Performance Incentive, as calculated in the manner set in the last rate case.

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- Calculation of the DSMS should take into account the current DSM balance, but not include the Company's proposed ARRT at this time.
- No waiver of the energy efficiency rules be granted to TEP at this time.
- The DSMS should be reset to $0.003812 per kWh.

Adjust Reset and Reporting Requirements

- The current surcharge filing and DSM reporting requirement should be superseded by the reporting requirements of A.A.C. R14-2-2409.
- In any year during which the Company does not file an Implementation Plan, or does not address the DSM adjustor reset within its Implementation Plan, an adjustor reset application should be filed separately, no later than April 1.

Calculating Cost-Effectiveness

- Staff recommends that, in all future DSM Implementation Plans, the Company use the same input values and methodology as Staff for calculating the present value benefits and costs to determine benefit-cost ratios.

AA. TEP'S PROPOSED MODIFIED IMPLEMENTATION PLAN

252. TEP filed Exceptions to Staff's Proposed Order on December 2, 2011. In those Exceptions, TEP asserted, among other things, that: (i) the Proposed Order as written was confiscatory and needed to be amended to provide TEP with recovery of lost fixed costs revenue resulting from TEP's compliance with the Commission's Electric Energy Efficiency Rules; (ii) if the Proposed Order was not amended to provide lost fixed cost recovery, then the Commission should grant TEP a waiver from the Electric Energy Efficiency Rules; and (iii) the Commission should approve a performance incentive that encouraged program efficiency and savings, and not program spending.

253. TEP's proposed Implementation Plan was initially considered at the Commission's January 10-11, 2012 Open Meeting. After extensive discussion of the issues regarding TEP's Implementation Plan, the matter was continued to allow TEP, Staff and other interested parties to discuss potential modifications to TEP's Implementation Plan that would resolve the concerns

raised in TEP's Exceptions, comments submitted by interested parties and the issues discussed at the Open Meeting.

254. On January 31, 2012, TEP filed a Notice of Filing Proposed Modified Implementation Plan. In its Notice, TEP indicated that, subsequent to the Open Meeting, TEP, Commission Staff and other interested parties, including RUCO, Southwest Energy Efficiency Project (SWEEP) and Arizonans for Electric Choice and Competition (AECC), met several times in person and by conference call to discuss a potential compromise solution. TEP stated that the participants were unable to develop a modified Implementation Plan that all participants could agree upon. However, through its Notice, TEP submitted a compromise Implementation Plan proposal that TEP believed was generally supported in concept by the participants.

255. TEP states that its modified Implementation Plan: (i) results in a reduced DSM program budget (ii) recovers certain costs over a longer timeframe; (iii) proposes a new interim performance incentive; (iv) does not include the ARRT; and (v) results in a lower DSMS than had been proposed by Staff in its Proposed Order. Moreover, TEP believes that this compromise position still provides net benefits to all customers, provides programs for customers to reduce their electric bill, provides stability to the DSM marketplace, and provides a bridge mechanism to TEP until long-term cost synchronization can be implemented.

256. Moreover, given the time that has passed since TEP filed its initial proposed 2011-2012 Implementation Plan, TEP's Modified Implementation Plan now covers 2012 and 2013. TEP proposes an annual overall budget of $29,694,240 for 2012 and the same budget for 2013. The DSMS will be calculated by combining the two budgets and will be based collection of the combined budgets over twenty-two (22) months.

257. The main elements of TEP's Modified Implementation Plan are as follows:

- **DSM Program-specific Budgets** – The 2012 total DSM program budget will be reduced by 25%. TEP will continue all existing programs and will implement new programs as anticipated by Staff's proposed order. TEP expects to meet the EE Standard for 2012 and believes that it could possibly meet the EE Standard in 2013

under this compromise, but may ultimately need to request a waiver from the Energy Efficiency Standards depending on program performance. The table below sets for the specific initial funding levels for each program:

Program	Original Program Cost	Modified Program Cost
Efficient Products	$2,431,495	$2,453,253
Appliance Recycling	$859,533	$755,095
Res. New Construction	$1,766,846	$1,011,949
Existing Homes and Audit Direct Install	$3,514,886	$2,304,525
Shade Tree	$325,582	$250,681
Low Income Weatherization [1]	$616,451	$526,464
Multi-Family	$169,738	$181,565
Residential Direct Load Control - Pilot	$184,816	$167,864
Residential Subtotal	**$9,869,348**	**$7,651,396**
C&I Comprehensive Program	$4,285,856	$3,728,462
Commercial Direct Load Control	$2,751,959	$1,431,445
Small Business Direct Install	$2,921,085	$2,044,806
Commercial New Construction	$406,319	$515,702
Bid for Efficiency - Pilot	$503,092	$388,846
Retro-Commissioning	$175,520	$336,493
Schools Facilities	$157,941	$170,049
CHP Joint Program - Pilot	$22,000	$22,000
Commercial Subtotal	**$11,223,772**	**$8,637,804**
Home Energy Reports	$673,790	$699,197
Behavioral Comprehensive Program	$1,420,279	$724,151
Behavioral Subtotal	**$2,094,069**	**$1,423,349**
Education and Outreach	$384,724	$155,250
Residential Energy Financing	$442,645	$315,405
Codes Support	$75,490	$73,288
Program Development, Analysis and Reporting Software	$649,145	$276,115

Support Subtotal	$1,552,005	$820,058
Total	$24,739,194	$18,532,606

(1) Low Income Weatherization – TEP will allocate additional funds to the LIW program if necessary.

- **New Interim Performance Incentive** – A new Interim Performance Incentive, similar to the proposal made by SWEEP, will be implemented. TEP will receive 7% of net benefits resulting from its Implementation Plan as well as additional funds for hitting certain performance metrics. The payments under this mechanism will be banded at 80% to 120% of the target performance incentive of $7,246,379. This mechanism will continue until replaced by another mechanism approved by the Commission. The table below sets forth the details of the mechanism:

TEP 2012 Interim Performance Incentive Structure

	DSM Program Year 2012		
	Part I - Base Performance Incentive		
(1)	DSM Budget		$18,532,606
(2)	Net Benefits		$69,233,980
(3)	Shared Savings		7%
(4)	**Base Energy Efficiency Shared Benefits (net benefits times 7.0%)**		**$4,846,379**
	Part II - Other Performance Metrics	**Target Number**	**Dollars**
(a)	Net Benefit per customer dollar spent (net benefits/actual spending)	$3.74	$1,500,000
(b)	Community workshops – 80 community weatherization workshops	80	$150,000
(c)	Community outreach – monthly outreach to Seniors on EE	12	$150,000
(d)	Loan program – train 25 contractors on TEP's new loan program	25	$150,000
(e)	Multi-family units – energy measures installed in 625 units	625	$150,000
(f)	Low Income Weatherization – 15% increase in participation over 2011	178	$150,000
(g)	Small Business – 15% increase in energy saving over 2011 (MWh)	TBD by evaluation(1)	$150,000
	Other Performance Metrics at 100% of Goal		**$2,400,000**

	Total New Performance Incentive for 2012		
	At 80% of Goal		$5,797,103
	At 100% of Goal		**$7,246,379**
	At 120% of Goal		$8,695,654

(1) 2011 saving results will be determined by a measurement and evaluation study to be completed by March 1st,2012, and filed with TEP's 2011 compliance report.

- **Overall 2012 Budget** – The overall budget for 2012 will be lower than the budget recommended by Staff in its Proposed Order. The Table below shows a comparison of the overall budget for TEP's filed plan for 2012 (as updated on August 22, 2011), Staff's Proposed Order for 2012 (adjusted by TEP for current timing), and the compromise position that sets forth the overall 2012 budget and as well as the combination of the 2012 and 2013 overall budgets used to calculate the DSMS.

TEP Overall Budget Comparison

	TEP's Proposal (August Supplement)	Staff ROO, adjusted for timing	2012 Compromise Agreement	2012-2013 Overall Compromise Agreement
		Budget		
2012 Program Budget	$24,739,192	$24,739,192	$18,532,606	$18,532,606
2013 Program Budget	NA	NA	NA	$18,532,606
Carry Over Balance	$5,614,113	$5,614,113	$2,807,057	$5,614,113
2010 Performance Incentive	$1,114,648	$1,114,648	$557,324	$1,114,648
2011 Performance Incentive	$6,706,524	$1,101,749	$550,874	$1,101,749
2012 Interim Performance Incentive	$8,577,172	$2,099,197	$7,246,379	$7,246,379
2013 Interim Performance Incentive	NA	NA	NA	$7,246,379
2011 ARRT	$3,877,937	NA	NA	NA
2012 ARRT	$12,890,440	NA	NA	NA
Total	**$63,520,027**	**$34,668,899**	**$29,694,240**	**$59, 388,480**

- **2013 Implementation Plan and Budget** - TEP may file a 2013 Implementation Plan only for the purpose of adding or modifying programs and related program specific budgets. All other aspects of TEP's Proposed 2012 Implementation Plan, as set forth herein, will remain unchanged in its 2013 Implementation Plan.

- **Demand-Side Management Surcharge (DSMS)** – DSMS will increase from $0.001249 per kWh to $0.003608 per kWh for residential customers and to a 4.19% rate on all charges (except taxes and other governmental assessments) for all other customer classes. The rate has been adjusted to reflect recovery of the proposed 2012 and 2013 budgets over 22 months. The Table below shows the average incremental increases and bill impacts by customer class. These DSMS rates will remain in effect until changed by further order of the Commission.

Average Bill Impact

	Current DSMS	Proposed DSMS	Dollar Increase	Total Bill % Increase
Residential	$1.10	$3.18	$2.08	2.39%
Small Commercial	$5.37	$18.51	$13.14	2.94%
Large Commercial	$199.84	$622	$422.11	2.80%
Industrial	$1,874	$4,481	$2,608	2.39%

263. We believe that TEP's proposed Modified Implementation Plan is a reasonable compromise to address the challenging issues related to TEP's compliance with the Commission's Electric Energy Efficiency Rules and that approval of the TEP's proposed Modified Implementation Plan for 2012 and 2013 is in the public interest. We are therefore approving an Implementation Plan budget of $29,694,240 for 2012 and $29,694,240 for 2013 with the specific program funding initially allocated as proposed by TEP in its Modified Implementation Plan. We are further approving the new Interim Performance Incentive proposed by TEP in its Modified Implementation Plan, which will remain in effect until further order of the Commission. We are also approving a DSMS that collects the combined 2012 and 2013 budgets over a twenty-two month period, which results in a DSMS rate of $0.003608 per kWh for residential customers and to a 4.19% rate on all charges (except taxes and other governmental assessments) for all other customer classes.

CONCLUSIONS OF LAW

1. TEP is an Arizona public service corporation within the meaning of Article XV, Section 2, of the Arizona Constitution.

2. The Commission has jurisdiction over TEP and over the subject matter of the application.

3. The Commission, having reviewed the filings in this Docket, concludes that it is in the public interest to approve TEP's Modified Implementation Plan, as discussed herein.

ORDER

IT IS THEREFORE ORDERED that Tucson Electric Power Company Modified Implementation Plan is approved, as discussed herein.

IT IS FURTHER ORDERED that, in cases where a measure is not approved, the funding associated with that measure shall be used to fund cost-effective measures within the same program, if possible.

. . .

IT IS FURTHER ORDERED that Tucson Electric Power Company shall have the flexibility to transfer funding among cost-effective measures, within each program, to accommodate varying participation levels.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall have the flexibility to move up to 25 percent of funding from program to program within each sector, to accommodate varying participation levels. Funding may not be transferred out of the Low-Income Weatherization Program.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall track federal standards, including those for lighting, to ensure that measures promoted by the Tucson Electric Power Company Implementation Plan offer cost-effective savings over and above current baselines.

Appliance Recycling

IT IS FURTHER ORDERED that the Tucson Electric Power Company Appliance Recycling Program is approved and shall include both the refrigerator and freezer measures.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall offer a $30 incentive, rather than the $35 incentive proposed, but that the overall budget for incentives shall not be decreased.

Multi-Family Housing Efficiency

IT IS FURTHER ORDERED that the proposed Multi-Family Program is approved, with older, less efficient and low-income complexes as a primary focus for the Multi-Family Program's activities.

Efficient Products

IT IS FURTHER ORDERED that the Efficient Products Program is approved, and shall continue to offer CFLs, with the addition of the Variable Speed Pool Pump, Advanced Power Strip and Pool Pump Timer measures.

IT IS FURTHER ORDERED that the Residential LED Light measure is not approved at this time.

. . .

IT IS FURTHER ORDERED that the lifespan of CFL measures shall be re-evaluated for Tucson Electric Power Company's next Implementation Plan, and any changes to these assumptions shall be incorporated into cost-effectiveness and savings calculations for the Efficient Products Program.

Low-Income Weatherization

IT IS FURTHER ORDERED that the Low-Income Weatherization Program is approved for continuation as part of Tucson Electric Power Company's Implementation Plan.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall be allowed to tie the eligibility level for the Tucson Electric Power Company LIW Program to the eligibility level set for the federal Low-Income Home Energy Program ("LIHEAP"), so that the eligibility levels remain consistent over time.

Residential New Construction

IT IS FURTHER ORDERED that the Tier 1 measure is approved for continuation.

IT IS FURTHER ORDERED that the Tier 2 and Tier 3 measures shall be discontinued once the Residential New Construction Program has met its existing commitments for Tier 2 and Tier 3 homes.

Existing Homes and Audit Direct Install

IT IS FURTHER ORDERED that the Existing Homes and Audit Direct Install Program is approved for continuance.

Shade Tree

IT IS FURTHER ORDERED that the Shade Tree Program is approved for continuance.

Residential and Small Commercial Direct Load Control

IT IS FURTHER ORDERED that the Residential and Small Commercial Direct Load Control Program is approved to continue.

Bid for Efficiency

IT IS FURTHER ORDERED that the Tucson Electric Power Company Bid for Efficiency Pilot Program is approved as a two-year pilot program as discussed herein.

. . .

IT IS FURTHER ORDERED that individual project incentives under this program shall be capped at 60 percent of the incremental costs of the efficiency measures included in the project.

Retro-Commissioning

IT IS FURTHER ORDERED that the Tucson Electric Power Company Retro-commissioning Program is approved.

Schools Facilities

IT IS FURTHER ORDERED that the School Facilities Schools Program is approved.

CHP

IT IS FURTHER ORDERED that the CHP Joint Program is approved.

Small Business Direct Install

IT IS FURTHER ORDERED that the Small Business Direct Install Program is approved to continue, with the proposed new measures.

C&I Comprehensive

IT IS FURTHER ORDERED that the C&I Comprehensive Program is approved, except for the proposed additional measure LED Street and Parking Lights.

Commercial Direct Load Control

IT IS FURTHER ORDERED that the C&I Direct Load Control Program is approved for continuation.

Commercial New Construction

IT IS FURTHER ORDERED that the Commercial New Construction Program, including the high-performance glazing measure, is approved for a second two-year period.

IT IS FURTHER ORDERED that Tucson Electric Power Company implement the recommendations in the "Assessment of Baseline Practices for Commercial New Construction" prepared by Navigant Consulting, including modification of Program performance thresholds (for public buildings) and Program applications to differentiate between public and private sector facilities.

IT IS FURTHER ORDERED that Measurement & Evaluation statistics for the Commercial New Construction Program shall be included in the DSM reports filed with the Commission.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall continue the Commercial New Construction Program's outreach efforts by targeting building owner, developer and design professional organizations, lenders and lender industry associations, and local building code officials.

IT IS FURTHER ORDERED that information announcing the availability of the Commercial New Construction Program shall occupy a more prominent position on the Tucson Electric Power Company website.

Behavioral Comprehensive

IT IS FURTHER ORDERED that the Behavioral Comprehensive Program, and all its subprograms, is approved.

Residential Energy Financing

IT IS FURTHER ORDERED that the Residential Energy Efficiency Financing Program is approved for a two-year pilot as described herein.

IT IS FURTHER ORDERED that Tucson Electric Power Company's request that the DSM Surcharge for the Residential Energy Financing Program be collected only from Residential customers is not approved.

Energy Codes Enhancement

IT IS FURTHER ORDERED that Tucson Electric Power Company's Energy Codes Enhancement Program is approved, subject to implementation of the MER and Reporting protocols stated herein, and the program shall be renamed the Energy Code and Standards Enhancement Program.

IT IS FURTHER ORDERED that Tucson Electric Power Company be granted a waiver from A.A.C. R14-2-2404(E) to allow Tucson Electric Power Company to also count toward meeting the Energy Efficiency Standard in A.A.C. R14-2-2404, for 2012 through 2020, up to one-third of the energy savings resulting from energy efficiency appliance standards, if the energy savings are quantified and reported through a measurement and evaluation study undertaken by Tucson Electric Power Company, and Tucson Electric Power Company demonstrates and documents its efforts in support of the adoption or implementation of the energy efficiency

appliance standards, but shall not be used in the energy savings calculation used to determine Tucson Electric Power Company's performance incentive.

Education and Outreach

IT IS FURTHER ORDERED that the Education and Outreach (or Consumer Education and Outreach) Program is approved for continuation, with the modifications proposed herein.

Program Development

IT IS FURTHER ORDERED that the budget amounts allocated to program development, analysis and reporting software costs shall be included in the budget are approved, as shown in the application.

. . .

Budget Flexibility

IT IS FURTHER ORDERED that Tucson Electric Power Company shall be allowed to shift funding from measure to measure, or from less active to more active programs, for up to 25 percent of the budget originally allocated to the less active program. Budget shifting shall only be done within, and not between, the Residential and Non-Residential program sectors.

IT IS FURTHER ORDERED that Tucson Electric Power Company shall be allowed to increase the overall Implementation Plan budget by up to 5 percent, if the increases are allocated to cost-effective measures and programs.

DSMS

IT IS FURTHER ORDERED that the DSMS shall include: (i) the program spending approved by this Order and (ii) the Interim Performance Incentive proposed by Tucson Electric Power Company in its Modified Implementation Plan.

IT IS FURTHER ORDERED that calculation of the DSMS shall take into account the current DSMS bank balance.

IT IS FURTHER ORDERED that the DSMS shall be calculated as discussed in herein and shall be reset to $0.003608 per kWh for residential customers and to a 4.19% rate on all charges (except taxes and other governmental assessments) for all other customer classes.

Adjust Reset and Reporting Requirements

IT IS FURTHER ORDERED that the current surcharge filing and DSM reporting requirement shall be superseded by the reporting requirements of A.A.C. R14-2-2409.

IT IS FURTHER ORDERED that, in any year during which Tucson Electric Power Company does not file an Implementation Plan, or does not address the DSM adjustor reset within its Implementation Plan, an adjustor reset application shall be filed separately, no later than April 1.

IT IS FURTHER ORDERED that Tucson Electric Power Company file a tariff in compliance with this Decision within 30 days of the effective date of this Decision.

. . .

Calculating Cost-Effectiveness

IT IS FURTHER ORDERED that, in all future DSM Implementation Plans, Tucson Electric Power Company use the same input values and methodology as Staff for calculating the present value benefits and costs to determine benefit-cost ratios.

IT IS FURTHER ORDERED that to ensure accurate and timely cost-effectiveness analysis through the use of one model and consistent input values, Staff should attempt to retain an independent third-party consultant possibly through entities such as the United States Department of Energy State and Local Energy Efficiency Action Network Technical Assistance Program or the National Association of Regulatory Utility Commissioners State Electricity Regulators Capacity Assistance and Training program, to assist a Staff-led working group including Tucson Electric Power Company and interested stakeholders, in (a) exploring effective options for cost-effectiveness analysis models; (b) selecting and securing one model to be used by Tucson Electric Power and Staff for cost-effectiveness analysis; (c) resolving any differences in key input values used in the analysis: (d) documenting the key input values in a Technical Reference Manual to be updated by Tucson Electric Power and filed with each Implementation Plan; and (e) creating templates for Implementation Plans and annual progress and status reports.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION

CHAIRMAN COMMISSIONER

COMMISSIONER COMMISSIONER COMMISSIONER

IN WITNESS WHEREOF, I, ERNEST G. JOHNSON, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this _____day of _____, 2011.

_____
ERNEST G. JOHNSON
EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

SMO:JMK:lhm/CH

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