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BEFORE THE ARIZONA CORPORATION COMMISSION

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Arizona Corporation Commission

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SEP 8 2010

AZ CORP COMMISSION
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IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY FOR
APPROVAL OF ITS DEMAND-SIDE
MANAGEMENT PROGRAM PORTFOLIO
PLAN.

DOCKET NO. E-01933A-07-0401

**APPLICATION FOR APPROVAL
OF PROPOSED RESIDENTIAL
ENERGY ASSESSMENT
PROGRAM**

**(EXPEDITED TREATMENT
REQUESTED)**

Tucson Electric Power Company ("TEP" or "Company"), through undersigned counsel, hereby requests that the Arizona Corporation Commission ("Commission") approve the proposed Residential Energy Assessment Program ("REAP" or "Program"), attached as Exhibit 1. The Company requests that review and approval of this Program coincide with Commission Staff's review of the Company's previously filed Existing Homes Program. The Company further requests expedited review so that the REAP can be implemented beginning in January 2011.

The REAP is designed to help homeowners improve the efficiency of their homes. The Program includes: (1) residential energy audits to determine inefficiencies; (2) reporting and explanation of the audit to the homeowner; (3) recommended energy efficiency upgrades prioritized by cost effectiveness; and (4) a list of available TEP programs that may offset the cost of the recommended improvements. As additional incentive for participating in the audit, each home will receive up to ten compact fluorescent bulbs and one Advanced Power Strip, in addition to efficiency tips and education.

The REAP will be used in conjunction with TEP's Existing Homes Program. As part of the energy audit, customers will be provided information on available rebates and Building Performance Institute-qualified contractors certified to make efficiency upgrades. The REAP will also inform customers of applicable time of use or other conservation oriented rates.

1 TEP anticipates providing \$350 of the \$450 assessment cost in addition to the bulbs and power
2 strip. Customers will pay only a \$99 assessment fee as well as the costs of any upgrades minus applicable
3 rebates.

4 TEP looks forward to implementing this Program because no structured, on-site residential energy
5 assessment is currently offered to customers in TEP's service territory.

6 TEP is not requesting a change to its DSM charge related to the REAP at this time. TEP intends
7 to include the REAP costs in its upcoming annual DSM charge adjustment. TEP estimates that the REAP
8 will result in a \$0.000059 per kWh increase to the DSM charge, which would be an increase in the
9 average residential bill of \$0.63 per year.

10 Based on the foregoing, the Company respectfully requests expedited review and approval of the
11 REAP, coinciding with review and approval of the Existing Homes Program. TEP would like to
12 implement both programs in January of 2011.

13 RESPECTFULLY SUBMITTED this 8th day of September 2010.

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1 Original and 13 copies of the foregoing
2 filed this 8th day of September 2010 with:

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7 Copy of the foregoing hand-delivered/mailed
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Exhibit 1

Tucson Electric Power Company Residential Energy Assessment Program

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Program Concept and Description

The Residential Energy Assessment Program (“REAP” or “Program”) is an energy efficiency program designed to help homeowners improve the efficiency of their homes. The Program includes: (1) residential energy audits to determine inefficiencies; (2) reporting and explanation of the audit to the homeowner; (3) recommended energy efficiency upgrades prioritized by cost effectiveness; and (4) a list of available Tucson Electric Power Company (“TEP”) programs that may offset the cost of the recommended improvements.

The energy audit will be conducted and explained by an efficiency expert.¹ The holistic energy analysis approach that will be used will identify unseen inefficiencies as well as issues related to comfort, health and safety. At the conclusion of the home assessment, the contractor will provide a detailed report of efficiency measures prioritized by cost effectiveness.² The report will also contain an estimate of the actual energy and dollar savings possible through the recommended upgrades. At this time, the recommended measures will be limited to duct sealing, air sealing, ceiling insulation, shade screens, and HVAC equipment replacement.³

In addition to providing and explaining the assessment report, the contractor will install up to ten compact fluorescent lamps (“CFLs”) and one Advanced Power Strip per home. The contractor will educate the homeowner about applicable TEP rebates and simple behavioral modifications to increase efficiency. Educational materials will be provided to the homeowner, including information about available rate plans that promote conservation.

The REAP is designed to be utilized with TEP’s Existing Homes Program. Thus, as part of the energy audit, customers will be provided with rebate information and Building Performance Institute (“BPI”) qualified contractors who are certified to make efficiency upgrades. Once a customer contacts an approved contractor, a firm cost for recommended repairs will be given to the customer. The contractor will then be able to access a secure website containing the details of the customer’s energy assessment. Upon completion of all work, the actual savings provided by each measure will be known.

Target Market

The target market for this Program is single family homeowners. Detached homes, townhomes, and other residential buildings of up to four units also will be invited to participate in the Program. Residential customers considering installation of renewable resources will be informed of the Program to encourage maximizing efficiency prior to installing other resources.

¹ TEP issued a request for proposals (“RFP”) on August 5, 2010, to select an implementation contractor capable of supplying trained energy auditors to conduct the on-site energy assessments. TEP expects the contractor will use the Real Home Analyzer or second version E-net Green software to conduct the audits. TEP will implement the energy assessments in-house, or through the Existing Homes Program Implementation Contractor if an acceptable bid is not received.

² The assessment report will only recommend improvements that are cost effective using the Societal Cost Test methodology required by the Arizona Corporation Commission.

³ Additional measures may be included in the future if the incremental cost of additional measures is reduced to allow new measures to screen the cost-effectiveness test.

Current Baseline Conditions

There are currently no structured, on-site, residential energy assessment programs offered to customers in the TEP service territory. Customers currently have access to an on-line self-assessment, but it does not provide detailed energy savings by measure.

Program Eligibility

Program eligibility is limited to residential customers in existing 1- 4 family, owner-occupied homes currently serviced by TEP.

Program Objective and Rationale

The REAP's objective is to facilitate consumer understanding of the value and advantages of an energy efficient home. TEP's first year goal (for 2011) is 1,000 energy audits completed. Through the REAP, TEP also seeks to overcome the current market barriers to increasing energy efficiency, as shown in Table 1.

Table 1. Market Barriers and Program Elements

Market Barrier	Program Element
<ul style="list-style-type: none"> • Lack of information regarding energy use, appropriate efficiency upgrades, and cost effectiveness 	<ul style="list-style-type: none"> • Comprehensive energy assessment and explanation of results to customer • Real Home Analyzer or second version E-net Green software generated energy savings and prioritized recommendations
<ul style="list-style-type: none"> • Lack of knowledge regarding costs • Inability to overcome upfront costs of upgrades 	<ul style="list-style-type: none"> • Explanation of lifecycle cost vs. first cost • Explanation of incentives available through the Existing Homes Program • Explanation of available financing options
<ul style="list-style-type: none"> • Shortage of qualified contractors capable of performing efficiency upgrades • Customer difficulty locating qualified contractors 	<ul style="list-style-type: none"> • Training, mentoring ,and certification for auditors and contractors⁴ • List of qualified contractors that meet program standards

⁴ This market barrier is specifically being addressed in TEP's Existing Homes Program.

Administration and Delivery Strategy

TEP will serve as the program administrator for the REAP, providing marketing, planning, technical support, and evaluation. TEP expects to use an implementation contractor to conduct the energy assessments, to deliver and explain the resulting reports to the homeowner, and to complete all remaining customer education/assistance.⁵ TEP may take on the proposed duties of the implementation contractor in the event that no acceptable bids are received as part of the RFP issued on August 5, 2010.

Inquiring consumers will receive Program and contact information to schedule an energy assessment. The implementation contractor will be responsible for determining eligibility. After the assessment is conducted, the auditor will refer the customer to a TEP-approved and certified BPI contractor. The BPI contractor will be responsible for conducting combustion safety testing, installation of recommended measures, and blower-door/duct testing at the completion of the efficiency upgrades. They will also be responsible for updating the energy assessment records with final test results and reporting.

The features of the home energy audit are as follows:

- assessment cost of \$99 per home as opposed to the current market cost of approximately \$450 - TEP proposes to pay the balance up to \$350;
- blower door⁶ and a duct blaster⁷ tests;
- assessment report recommending efficiency upgrades prioritized by cost effectiveness;
- list of approved BPI contractors available to complete the recommended measures;
- promotion of the thermal envelope measures included in the Existing Homes Program, including duct sealing, air sealing, attic insulation, window shade screens, and replacement of inefficient heating, cooling, and water heating equipment;
- installation of up to ten CFLs and one Advanced Power Strip per home; and education regarding behavioral changes, other TEP efficiency programs, rate options, and contact information to assist with after assessment questions.

Incentive Design and Administration

The incentives for this Program include: (1) the significantly subsidized assessment costs; and (2) installation of up to ten CFLs and one Advanced Power Strip. TEP intends for consumers to pay the \$99 assessment cost directly to the auditor. TEP will pay the remaining amount, up to \$350, directly to the implementation contractor. TEP anticipates monthly invoicing on behalf of the contractor, and will provide payment within 30 days of completion of the home assessment. Payment to the contractor is contingent upon the contractor providing TEP with all project documentation; all applications for payment will be thoroughly reviewed for completeness, accuracy, and consistency of data.

⁵ Including scheduling customer assessments, screening applicants, referring certified contractors, installation of direct-install components, data storage, and reporting; the contractor will also participate in Program promotions and marketing.

⁶ A blower door test is a diagnostic test to determine the air tightness of the home.

⁷ A duct blaster test is a diagnostic test to measure leakage in the home's duct system.

Marketing and Communications

The marketing and communications strategy for the REAP is consistent with the broader Existing Homes Program, which includes:

- promotions on TEP's website;
 - advertising in major newspapers and other print media in the service region;
 - brochures and other collateral pieces such as bill inserts;
 - high bill inquiries;
 - trade ally marketing efforts; and
 - contractor enrollment and training.
-

Program Implementation Schedule

Assuming Commission approval by the end of October 2010, TEP anticipates Program implementation on or about January 1, 2011. TEP's goal for the first year of the Program is 1,000 audits by the end of 2011.

Monitoring and Evaluation Plan

TEP's Measurement, Evaluation, and Research contractor, Navigant Consulting, will be conducting Program measurement, verification, and quality assurance. TEP also anticipates mailing homeowner surveys to all Program participants who receive an audit.

Program Costs

The annual budget is based on 1,000 home assessments in 2011, and is provided in Table 2.

Table 2. 2011 Program Budget

TEP Energy Assessment Program (2011)			
Incentives per Measure	Maximum Incentive / Measure	Units	Total
Screw in CFL - Direct Install	\$16.20	1000	\$16,200
Advanced Power Strips - Direct Install	\$20	1000	\$20,000
Behavioral changes	\$350	1000	\$350,000
Total Financial Incentives			\$386,200
Program Delivery - Energy Assessment			
Program Delivery			\$19,500
Energy Audit Software Set-Up Fee			\$52,272
Energy Assessment License Fee (Est. \$20/audit)	\$20	1000	\$20,000
Total Program Delivery			\$91,772
Program Marketing			
			\$47,797
Program Administration			
			\$6,500
Measurement, Evaluation and Research			
			\$10,645
Total Program Costs - Incentive			\$386,200
Total Program Costs - Non-Incentive			\$156,715
TOTAL PROGRAM COSTS			\$542,915
Incentives as % of Total Budget			71%

Estimated Energy Savings and Environmental Benefits

The Program's estimated energy savings by Program element are provided in Tables 3, 4, and 5. Table 6 provides estimated energy savings per home for the entire energy assessment Program and the associated environmental benefits are detailed in Table 7. Due to this Program's utilization of benefits associated with the Existing Homes Program, the particular mix of efficiency measures will differ for each home. The estimated energy savings for all efficiency measures in the Existing Homes Program are included in the Existing Homes filing. Even if customers do not make upgrades incented through the Existing Homes Program, the energy

Tucson Electric Power Company Energy Assessment Program

assessment will estimate all savings from all modifications to the home. TEP will use a before and after energy assessment to determine actual energy savings resulting from customer participation.

Table 3. 2011 CFL Estimated Energy Savings per Home

CFLs	
Weighted Average Incandescent Wattage (W)	64
Weighted Average CFL Wattage (W)	15
Coincidence Factor	0.08
Average # CFLs installed per HH audit	10
Non-Coincident Demand Savings (kW)	0.69
Total Gross Annual Energy Savings (kWh)	419

Table 4. Advanced Power Strip Estimated Energy Savings per Home for 2011

Advanced Power Strip	
Total Gross Daily Energy Savings (kWh)	0.22
Coincident Savings (kW)	0.011
Coincidence Factor	.81
Non-Coincident Demand Savings (kW)	0.014
Total Gross Annual Energy Savings (kWh)	82

Table 5. Behavioral Change Estimated Energy Savings per Home for 2011

Behavioral Change Savings	
TEP's Total Residential Sales for 2008 (MWh)	3,905,697
Total Number of Customers	364,755
Number of Light Customers	1,153
Annual Average Residential Customer Consumption (kWh)	10,742
Assumed Behavioral Savings per year (% of Energy Sales)	2%
Annual Average Behavioral Savings (kWh)	215

Table 6. Total Program Expenditures and Forecasted Energy Savings for 2011

Participation inflation rate	0
Admin inflation rate	0
Total budget	\$542,915
Incentives	\$386,200
Admin/Implementation Costs	\$156,715
Incentives as % of budget	71%
Implementation to incentives	41%
Projected Participation	1,000
Coincident peak savings (kW)	42
Non-Coincident peak savings (kW)	108
Energy Savings (kWh)	715,509

Table 7. 2011 and Lifetime Program Environmental Benefits

Gas	Annual Metric Tons Reduced
CO2	695
NOx	1
SOx	1
Gas	Lifetime Metric Tons Reduced
CO2	4,821
NOx	7
SOx	6

Program Cost Effectiveness

The REAP meets measure level cost effectiveness for two of the three measures offered, and will meet program level cost effectiveness. In order to encourage homeowners to install energy saving measures, TEP is proposing to incent the contractors for a significant portion of the cost of the assessment. Because TEP is willing to incent a large portion of the cost to develop this market, the percentage of ‘incentive to incremental cost’ falls outside of the normally acceptable range. TEP is seeking Commission approval of this anomaly because the detailed energy assessment is a critical component of this Program and the Existing Homes Program.

The measure level cost effectiveness (without non-incentive Program costs) and the program level cost effectiveness (including non-incentive Program costs) were assessed using the Societal Cost test, as recognized by the Commission. Table 8 provides a summary of the benefit/cost analysis results for measures in this Program.

Table 8. Individual Measures’ Benefit-Cost Analysis Results

Measure	Societal Benefit-Cost Ratio
Smart Strip –Direct Install	3.3
CFL- Direct Install	15.4
Behavioral Changes	0.2
Program Level	1.3

Tucson Electric Power Company Energy Assessment Program

In addition to estimating the savings from each measure, this analysis relies on a range of other assumptions and financial data provided in Table 9.

Table 9. Other Financial Assumptions

Other Financial Assumptions	
Measure Life CFL and Power Strip (yrs)	9 and 12
Program Life (yrs)	5
Non-Incentive Costs/unit	\$157
TRC Discount Rate	8.03%
Social Discount Rate	4.00%
NTG Ratio	100%

Tucson Electric Power Company Energy Assessment Program

Incentive Calculations Residential Energy Assessment (Home Audit)

Existing Homes Program - Home Audit Component

PROGRAM DATA		RATE DATA		OPERATING DATA		OTHER FACTORS	
CFL Measure Life (yrs):	9	Rate:	0.00	On-Pk Op. Ratio*:	60%	Line Loss Factor - Demand:	9.5%
Smart Strip Measure Life (yrs):	12	\$/kWh:	\$0.10	Off-Pk Op. Ratio*:	40%	Line Loss Factor - Energy:	9.5%
Behavioral Measure Life	1	\$/kWh, On-Peak:	\$0.10	Summer Ratio:	42%	Capacity Reserve Margin:	0%
Program Life (yrs):	5	\$/kWh, Off-Peak:	\$0.10	Winter Ratio:	58%	Application	Retrofit
CFL Demand AC (\$/kV):	\$75.73			In-Service Rate	100%	Cost Basis:	Full Install
CFL Summer On-pk Energy AC (\$/kWh):	\$0.09			Smart Strip Coincidence Factor	81%		
CFL Summer Off-pk Energy AC (\$/kWh):	\$0.05			CFL Coincidence Factor	8%		
CFL Winter On-pk Energy AC (\$/kWh):	\$0.06			Behavior Coincidence Factor	100%		
CFL Winter Off-pk Energy AC (\$/kWh):	\$0.04						
Smart Strip Demand AC (\$/kV):	\$80.30						
Smart Strip Summer On-pk Energy AC (\$/kWh):	\$0.10						
Smart Strip Summer Off-pk Energy AC (\$/kWh):	\$0.06						
Smart Strip Winter On-pk Energy AC (\$/kWh):	\$0.06						
Smart Strip Winter Off-pk Energy AC (\$/kWh):	\$0.05						
Behavioral Change Demand AC (\$/kV):	\$49.44						
Behavioral Change Summer On-pk Energy AC (\$/kWh):	\$0.07						
Behavioral Change Summer Off-pk Energy AC (\$/kWh):	\$0.03						
Behavioral Change Winter On-pk Energy AC (\$/kWh):	\$0.04						
Behavioral Change Winter Off-pk Energy AC (\$/kWh):	\$0.03						
Administrative Cost (\$/audit)	0						
Discount Rate:	8.03%						
Societal Discount Rate:	4.00%						
NTG Ratio:	100%						

Unit Type	DEMAND/ENERGY SAVINGS			INCENTIVE CALCULATIONS			CUSTOMER COST/SAVINGS			WGT. Factors for Program Cost	% Incent	Societal			
	Annual Energy Savings (KWh)	On-pk Energy Savings (KWh)	Off-pk Energy Savings (KWh)	IRP Benefit (\$)	Societal PV Benefit (\$)	Recommended Incentive (\$)	Program Cost (\$)	NPV Cost (\$)	Incr. Cost*** (\$)				Cost Savings (\$)	Payback w/incl. (yrs)	
Smart Strip (1 unit)	82	0.011	49	50	65	20	100%	20	30	8	2.5	0.00	11%	NA	3.3
CFL (10 units)	419	0.055	251	210	250	16	100%	16	194	42	0.4	0.00	59%	NA	15.4
Behavioral changes	215	0.025	107	102	11	350	100%	63	39	21	2.9	-13.43	30%	NA	0.2
Total (Audit & DJ)	715	0.091	408	362	326	386	100%	99	263	71	1.4	-4.03	100%	NA	3.3

* Weighted average value. Source: TEP CFL MAS sheet.
 ** The ratios are our best engineering assumptions, pending detailed MER work.
 *** "Total" row calculates incremental cost of the whole audit while the other values in this column are incremental costs of each individual measure derived from total incremental cost of audit. This division of incremental cost is on the basis of measure savings.