ORIGINAL

0000168386

BEFORE THE ARIZONA CORPORATION CO

RECEIVED

2016 FEB 12 P 4:41

AZ CORP COMMISSION
DOCKET CONTROL

COMMISSIONERS
DOUG LITTLE - CHAIRMAN
BOB STUMP
BOB BURNS
TOM FORESE
ANDY TOBIN

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2016 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-15-0239 **NOTICE OF FILING DIRECT TESTIMONY OF TUCSON ELECTRIC POWER COMPANY**

Tucson Electric Power Company, through undersigned counsel, hereby files the Direct Testimony of Carmine Tilghman and Craig Jones.

RESPECTFULLY SUBMITTED this 12th day of February 2016.

TUCSON ELECTRIC POWER COMPANY

By _____

Michael W. Patten
SNELL & WILMER L.L.P
One Arizona Center
400 East Van Buren Street 1900
Phoenix, Arizona 85004
Tucson Electric Power Company
and

Bradley S. Carroll
Tucson Electric Power Company
88 East Broadway Blvd., MS HQE910
P. O. Box 711
Tucson, Arizona 85702
Attorneys for Tucson Electric Power Company

Original and 13 copies of the foregoing
filed this 12th day of February, 2016, with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copies of the foregoing hand-delivered/mailed
this 12th day of February, 2016, to the following:

Jane Rodda, Chief Administrative Law Judge
Hearing Division
Arizona Corporation Commission
400 West Congress
Tucson, Arizona 85701

Wesley Van Cleve
Brian Smith
Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Bob Gray
Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Daniel Pozefsky
Chief Counsel
RUCO
1110 West Washington Street, Suite 220
Phoenix, Arizona 85007

Court S. Rich
Rose Law Group pc
7144 E. Stetson Dr., Suite 300
Scottsdale, Arizona 85251

By Jaclyn Howard

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
DOUG LITTLE - CHAIRMAN
BOB STUMP
BOB BURNS
TOM FORESE
ANDY TOBIN

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2016 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN..	DOCKET NO. E-01933A-15-0239

Direct Testimony of

Carmine Tilghman

on Behalf of

Tucson Electric Power Company

February 12, 2016

TABLE OF CONTENTS

Exhibits:

I. INTRODUCTION.

Q. Please state your name and business address.

A. Carmine Tilghman, 88 East Broadway, Tucson, Arizona 85701.

Q. What is your position with Tucson Electric Power Company ("TEP" or the "Company")?

A. I am the Senior Director of Energy Supply for Tucson Electric Power Company ("TEP" or "the Company") and UNS Electric ("UNS Electric").

Q. Please describe your background and work experience.

A. I served in the United States Navy from 1984–1993 as a Nuclear Reactor Operator in Submarine Service. From 1993-1995, I worked as a Power Plant Operator for the Biosphere II Project in Oracle, Arizona.

I was hired by TEP in 1995 as a Power Plant Operator. In 1996, I moved into TEP's Wholesale Marketing Department where I held several positions in Energy Trading, Marketing, Project Management, and Scheduling before being promoted to Supervisor/Manager in 2003. From 2003-2008, I held supervisory positions in Trading, Scheduling, and Procurement before taking over Utility Scale Renewable Energy Development in 2008.

In 2010, I took over all aspects of renewable energy development for both TEP and UNS Electric, Inc. In my current position, I am responsible for the renewable resources and renewable resource programs for the Companies, including compliance with the Arizona Corporation Commission's ("Commission") Renewable Energy Standard and Tariff Rules ("REST Rules") (A.A.C. R14-2-1801 through R14-2-1818)). In 2013, I added

oversight of the Wholesale Marketing department to my duties, and in 2014 was promoted to Senior Director.

I received my Bachelor of Science in Business Management from the University of Phoenix in 2000 and Master of Business Administration from the University of Phoenix in 2002.

Q. What is the purpose of your Direct Testimony?

A. The purpose of my testimony is to provide general information relative to the Company's 2016 Renewable Energy Standard and Tariff ("REST") Implementation Plan ("IP" or "Plan"); including specific information on the Company's request to continue and expand its utility-owned distributed generation program and its proposal for a new residential community solar program.

II. OVERVIEW OF 2016 REST PLAN.

Q. What is the purpose of the Company's REST Implementation Plan Filing?

A. The Company's REST implementation filing is designed to provide the Arizona Corporation Commission ("ACC" or "Commission") a plan for review and approval that describes how the Company intends to comply with Arizona's renewable portfolio standard ("RPS") for the next calendar year.

Specific rules governing REST Implementation Plans are set forth in the Arizona Administrative Code R14-2-1813, and require, among other things, that certain information be included within each Affected Utility's IP, filed by July 1 for the ensuing year. The minimum required information includes:

1. A description of the eligible renewable energy resources, identified by technology, proposed to be added by year for the next five years and a description of the kW and kWh to be obtained from each of these resources;
2. The estimated cost of each eligible renewable energy resources proposed to be added, including cost per kWh and total cost per year;
3. A description of the method by which eligible renewable energy resource is to be obtained, such as self-build, customer installation, or request for proposals;
4. A proposal that evaluates whether the Affected Utility's existing rates allows for the ongoing recovery of the reasonable and prudent costs of complying with these rules, including a Tariff application that meets the requirements of (ACC) R14-2-1808 and addresses the Sample Tariff set forth in Appendix A if necessary; and
5. A line item budget that allocates specific funding for Distributed Renewable Energy resources, for the Customer Self-Directed Renewable Energy Option, for power purchase agreements, for utility-owned systems, and for each Eligible Renewable Energy Resource described in the Affected Utility's implementation plan.

Additionally, under A.A.C. R14-2-1813.C, the Commission may hold a hearing to determine whether an Affected Utility's implementation plan satisfies the requirements of these rules.

The Company's 2016 IP is designed to meet the specific requirements associated with the REST rules for 2016. Those requirements include serving a minimum 6% of the Company's retail sales with renewable resources, and 30% of that value from distributed generation resources as defined by the RPS.

Q. What are the key components of the Company's 2016 REST Plan?

A. TEP's Plan is designed to achieve 2016 REST requirement of providing six (6) percent of retail sales (or 543,825 megawatt hours ("MWh")) from renewable generating resources as cost-effectively as possible. Key components of the Plan include: i) new renewable energy resources intended to be added through 2019; ii) new and existing programs and budgets; and iii) proposed rates and REST tariffs. To fund these efforts, TEP is proposing to recover approximately $48 million through the REST tariff. The estimated cost to implement the Plan is approximately $57 million, which will be partially offset by applying approximately $9 million of carryover funds from the 2014 budget. In order to implement the Plan, TEP requests that the Commission approve an increase in the REST surcharge from $0.00800 per kWh for 2015 to $0.01300 per kWh for 2016, as well as an increase in the surcharge caps across rate classes. The increase in the budget and the surcharge result primarily from: (i) an increase in difference between the cost of renewable generation compared with conventional generation, and (ii) higher volumes of purchased renewable energy from third-party purchased power agreements.

The Company's Plan also includes a request to expand the TEP-Owned Residential Solar ("TORS") program and a new Residential Community Solar ("RCS") program. TEP is not proposing any new incentives for residential or non-residential solar distributed generation or solar water heating. TEP's Plan provides for renewable generation to meet the 2016 annual compliance requirement, with the exception of the residential portion of the annual Distributed Renewable Energy requirement set forth in A.A.C. R14-2-1805. Therefore, TEP will require a waiver for the residential portion of the Distributed Renewable Energy Requirement set forth in A.A.C. R14-2-1805(D). For more detailed information, please see attached Exhibit A – TEP's 2016 Renewable Energy Standard Implementation Plan and Exhibit B - Supplement to TEP's 2016 Plan.

Q. Please provide an overview of what the proposed REST budget covers.

A. The Company's proposed REST budget, shown as Exhibit 1 in the Company's REST filing, provides funding for utility-scale energy contracts (above market costs as defined in the REST), customer sited DG (REC payments), training and contractor costs, IT integration costs, program labor and administration, and research and development costs. Specific line values are contained in the exhibit and are consistent with prior years' budget and expenses.

Q. Is the Company proposing changes to the REST surcharge and the monthly surcharge caps?

A. Yes. The Company has proposed new kWh surcharges and customer caps, consistent with previously established methods, in order to recover the proposed budgeted amount shown in Exhibit 1 of the Plan. These proposed surcharge and cap changes are shown on Exhibit 6 of the Company's REST Plan.

Q. Is the REST surcharge used to fund the TORS Program or the Residential Community Solar Program?

A. No. None of the costs associated with the Company's current TORS or proposed Residential Community Solar Program are recovered through the REST surcharge. The Company would recover any cost(s) associated with the program(s) in a manner similar to all other utility capital investments, which is done in a general rate case based on known and measurable values that meet the definition of "used and useful" and are subject to prudency review by the Commission. Program expenses would be included in the Company's request for costs recovery. Revenue generated from the program would also be included as an offset to the program expenses. The tariff associated with this program is designed to mirror a customer's expected average usage and monthly bill, and is described more thoroughly in the next section.

III. UTILITY-OWNED DISTRIBUTED GENERATION PROGRAM.

Q. Please describe the Company's proposed extension and expansion of the existing TEP -Owned Residential Solar program?

A. The Company's TORS program is a continuation of the program approved by the Commission in TEP's 2015 REST Implementation Plan. When the Company created the TORS program, it was intended to be an on-going program. Although the Company did not initially propose the program to be a one-time pilot program, the Commission approved the TORS program as a pilot program and the Company understands that Commission approval would be necessary for any expansion of the TORS program beyond the $10 million and 600 systems approved in Decision No. 74884 (December 31, 2014).

The TORS program set forth in the 2016 Plan is identical to that which was proposed, evaluated, and approved in the 2015 Plan. Given the significant interest in the program from its customers, TEP is simply requesting authority to expand the amount that it can spend on the program beyond what was approved in 2015 Plan.

Under the TORS program, the Company owns and operates a solar facility on a customer's premise, and in exchange the customer receives a fixed energy rate that is roughly equivalent to their average bill today.

As an example, a customer signs up as an interested party and completes the initial pre-qualification checklist. Assuming the customer is qualified (roof condition, ownership, payment history, etc.), the Company assigns one of our solar contractors to that customer for a site visit, system design, and program explanation. A package of information is provided to the customer explaining the program and the customers' proposed fixed rate,

which is based off the customer's previous 12 months usage.

The fixed rate is calculated as follows:

Previous 12 months annual usage: 11,400 kWh

Equivalent net-zero PV system size (based on 1,900 kWh/kW): 6 kW

Fixed monthly energy rate (Tariff rate x net-zero system size):

$16.50/kW x 6 kW = $99.00

A typical customer who uses 11,400 kWh annually averages 950 kWh per month. At $0.10 per kWh, this customer would pay $95 per month in energy charges, slightly less than the fixed energy rate associated with the program. Once all of the taxes, fees, and surcharges are calculated the customer's expected monthly total bill is roughly the same as it is without participating in the program.

The fixed energy rate ($99 per month in the example) would remain fixed for up to 25 years, which is the expected life of the PV system.

There is NO capital cost recovery of the TORS program through the annual REST implementation plan or its associated budget and tariff. Cost recovery and prudency for TEP's program will be determined through the Company's next general rate case, subject to Commission review and approval.

Q. Are there other costs and/or revenues associated with the TORS program?

A. Yes. Once a customer has their system installed, they must pay a $250 processing fee. This fee only applies to customers who actually have a PV system installed; this is not an application fee. This fee is used to cover the incremental labor and administrative costs associated with the program.

Continuation and expansion of the program would be covered through the processing fee described above. For fairness, any other costs (such as production meter sockets, disconnects and meters, inventory, energy accounting, billing, reporting, etc.) are treated the same way as costs associated with third-party or customer owned facilities. These costs are either embedded within existing personnel who provide that service for solar installations, or recovered through the REST budget (such as providing production meter installation packages to solar installers). As neither customers nor third-party owners are charged for these services, customers participating in the TEP program are treated the same.

Q. What mechanisms are in place to ensure that the TORS program is not subsidized by other utility services?

A. As described above, there are no capital expenditures associated with this program being recovered through the REST plan, and all incremental administrative costs are paid for through the processing fee. The program was carefully designed to ensure that all other services associated with the program utilized the same protocols, processes, and services as those utilized by third party providers to ensure that no benefits were being given to one program over another.

Q. Does the Company recover its full cost allocation from the fixed tariff rate that customers pay?

A. No. As thoroughly described in the Company's 2015 Implementation Plan and supported by both RUCO and Staff, there is still a cost-shift (as defined by the Company and acknowledged by the Commission in Docket No. E-01345A-13-0248) from participants to non-participants. This cost shift is approximately $0.02/kWh.

Q. How has the Company promoted or marketed the program to achieve the more than 5,000 customers who have expressed interest in participating in the program?

A. The Company has not marketed the program. The initial media coverage and press releases associated with the 2015 REST plan (typically covered by local media) generated the initial interest. The Company also included information about the program in its electronic customer newsletter, which currently has a distribution list of more than 80,000 customers. Additionally, the Company posted program information and Frequently Asked Questions on the Company's website. The only other marketing has been through word of mouth from our customers and installers. As of January 20, 2016, the Company had a total of 5,164 customers sign up on the program interest list.

Q. How many customers are currently receiving service under the approved TORS tariff?

A. The Company has completed installation of 75 systems as of February 10, 2015 under the TORS program and those customers are receiving service under the TORS tariff. There are currently 158 pending installations and a total of 344 systems in process. The Company anticipates hitting the installation caps set in Decision No. 74884 by approximately August 2016. (Note: Once the solar installers were selected through the RFP process and the program was ready for customer rollout, program participation has been limited to approximately 200 applications every two to three months in order to

ensure the Company does not exceed the current Commission limitation of $10 million/600 customers).

Q. Has there been any noticeable impact on the third-party solar provider installations?

A. No. In fact, solar applications and installations are currently higher today than they were prior to implementation of the program. In 2014, the Company received 2,663 residential PV applications representing more than 19 MW of capacity. In 2015, the Company received 4,044 residential PV applications representing more than 29 MW of capacity. However, in 2015 the Company had filed a proposed change to net metering, which was subsequently withdrawn and put into the Company's rate case. The impact of that filing caused a run up in applications in May and June of 2015, arguably resulting in a higher yearend total than would have otherwise been reached.

However, if the Company compares the 4th quarter of 2014 with the 4th quarter of 2015, there is still an increase in applications even with the pending request to change the current net metering tariff. For the 4th quarter of 2014, TEP accepted 855 residential PV applications with a capacity of 6,223 kW. For the 4th quarter in 2015, when the Company's TORS program was in operation, the Company accepted 880 residential PV applications with a total capacity of 6,436 kW. These numbers do not include any applications associated with the Company's program.

Q. Was the TORS program designed as a research and development ("R&D") program?

A. No. The TORS program was not designed to be primarily an R&D program. The Company created the program and the associated tariff to be applicable to all interested and qualified customers. The Company did not propose, nor was the program restricted to

only specific R&D concepts. It was also was not created nor restricted to specific locations, feeders, or customers. The Company stipulated that we had reserved the right, and the opportunity, to utilize a portion of the program to address R&D concepts and issues, specifically related to operation of and communication with advanced inverters through secure networks that could potentially interface with the Company's system control network.

With that said, the TORS program does present the potential for R&D opportunities. Therefore, the Company set aside a portion of the program resources and targeted a specific substation (West Ina substation) for the purpose of identifying and targeting customers attached to that specific substation.

Prior to the public release of the program, the Company targeted those customers who had registered interest and were fed from that particular substation. The West Ina substation is a candidate for additional resources to alleviate potential overload conditions, while representing the most centric facility with the ability to install a communications network. The Company continues to work on this facility and had provided more specific information through our participation in the Commission ordered advisory committee, which TEP has satisfied through its joint participation with Arizona Public Service ("APS"). As described in the Company's response to Staff's Data request (Staff Data Request 1.21) (attached as Exhibit C), participation in the Advisory Committee established by APS, who has an identical requirement, achieves compliance without duplication. All of the required participants – including TEP - have participated in this advisory committee and provided data relative to the specific work being done at each utility.

Q. What is the Company's response to the claim by the Energy Freedom Coalition of America ("EFCA") that TEP has failed to comply with the provision of Decision No. 74884 (December 31, 2014) that requires TEP to make public reports on the program's results?

A. The specific order that EFCA is referring to states, *"IT IS FURTHER ORDERED that TEP should form an advisory committee that should advise the Company on a defined set of research goals. This advisory committee would be convened by TEP and include representatives involved in technological and operational aspects of rooftop solar and supporting infrastructure. This group of stakeholders should include, but not be limited to: Commission Staff, the Electric Power Research Institute ("EPRI"), the Residential Utility Consumer Office ("RUCO"), other Arizona electrical utility system operators or engineers, a rooftop solar industry representative, an inverter manufacturer representative, and university power system engineering departments. The group should review the direction of the project and provide feedback on program design. Reports on the program results as well as any research findings should be made public."*

As briefly discussed above, TEP participated in the Advisory Committee established by APS, because APS has an identical advisory committee requirement as TEP. Therefore, as set forth in TEP's response to Staff Data Request 1.21:

"In order to achieve compliance while minimizing a duplication of efforts, TEP chose to participate in the advisory committee established by Arizona Public Service Company ("APS"). This committee has representatives from multiple utilities (TEP, APS, Hawaii Electric Company), universities (ASU & UA), Solar Electric Power Association, Electric Power Research Institute, the Commission and its Staff, Residential Utilities Consumer Organization, National Renewable Energy Laboratory, and others who were invited to participate. The committee will be meeting regularly to address a range of issues facing

utilities and program design, but it is too early to provide definitive public feedback on any findings."

EPRI has agreed to be lead analyst in this process, and will be providing documentation of findings when completed. Each participating Company, including TEP, will make this data publicly available. It should be noted that not only have Commission Staff and rooftop solar industry representatives been present at these proceedings, so has Commissioner Bob Burns, who authored the amendment requiring the advisory committee (Revised Bob Burns Amendment No. 1 in Docket No. E-01933A-14-0248). Other than Staff's initial data request (which covered all four requirements from Decision No. 74884), no other entity has raised an issue regarding compliance with this order.

During Commissioner Burns technical workshop held On October 25, 2015, I was specifically asked by the Commissioner's Policy Advisor how the Company was complying with the advisory committee provision in Decision No. 74884. I provided a similar answer to one provided to Staff and as restated within this testimony. No follow up questions or concerns were raised by the Commissioner or his Policy Advisor regarding our compliance.

Additionally, even though APS has an identical requirement contained in their 2015 Implementation Plan (Decision No. 74878) and no information has been made public by either Company, EFCA did not raise this concern in APS's annual REST Implementation filing.

Finally, EFCA seems to imply that there was a specific time or date required for the release of information, or that there was a requirement that this information be released as a condition of continuing this program. Neither is true. This process, as all parties

involved will attest to, is complex and time-consuming. The information that ultimately comes from this process will be provided when it is completed.

Q. Does the Company use any specific criteria in its TORS program for siting solar facilities or in the system design in order to provide grid benefits not typically associated with third-party or customer owned facilities?

A. Yes. Although the associated program tariff allows all qualified TEP customers to participate in the program, the Company requires our alliance contractors (participating solar installers) to design each PV facility within a limited orientation range that is heavily biased to the west. To the greatest extent possible, the design of each participating customer's PV facility focuses on maximizing generation during the late afternoon in an attempt to better align production with TEP's summer peak in the late afternoon. Each system must also be designed within a limited capacity range based on the customer's usage to mitigate the Company's concerns with reverse power flow.

In contrast to the TORS approach, a typical customer-owned or leased PV facility is designed for maximum production throughout the year, regardless of when that production occurs and its impact to the overall grid.

Q. Is there any concern that the utility is violating the Commission Order's "cost parity" stipulation?

A. No. The cost parity contained in Decision No. 74884 reads as follows:

"IT IS FURTHER ORDERED that Tucson Electric Power Company should ensure that the cost of the utility-owned residential distributed generation program is similar to that of third-party programs. Accordingly, TEP should commit to cost parity with current net metering rates, and if rate design is addressed in the future in a way that materially impacts existing net energy metering participants, TEP should evaluate options for

existing solar customers, as well as TEP DG customers, to minimize any cost parity issues between the two groups and unintended impacts."

Currently, there have been no changes to the current net metering rates, nor has rate design been changed for 2016. The rates associated with the company's proposal, as well as those for net metering customers, remain unchanged from the analysis completed in 2015. That analysis is still valid for 2016 and showed the Company's program providing superior benefits to our customers who are contracted with third-party solar providers. If, and when, the Commission adopts new net metering rules or when rate design is addressed in the future in a way that materially impacts existing net energy metering participants, TEP will, as required, evaluate options for those existing solar customers, as well as customers participating in the TORS program, to minimize any cost parity issues.

Q. Please discuss further the cost-shift, or cost differential to ratepayers, and the associated revenue between a non-participating customer, a net-zero customer, and a UODG customer.

A. Decision No. 74884, at Pages 8 and 9, set forth Staff's analysis comparing these hypothetical customers. Below is the summary table and discussion of the Staff's comparison.

	Existing Customer	Net-Zero Customer	Customer under Proposed TEP Program
Customer Charge	$10.00	$10.00	
Delivery Margin	$20.20		
Fixed Costs	$30.80		
Fuel	$32.00		
Monthly Payment			$93.00
Total Monthly Payment (absent taxes and surcharges)	$93.00	$10.00	$93.00

Decision No. 74884 stated that Staff believed that: *"TEP's program would enable the Company to retain the revenue stream from a customer who has rooftop solar in a way that does not occur with net-metering. Because of this, TEP's proposal may ameliorate the contentious issue of cost-shifting between rooftop and non-rooftop customers. Customers taking service under TEP's proposal would be paying costs through the fixed charge that otherwise would be passed to other customers through the lost fixed cost recovery ("LFCR") charge."*

As can be seen in Staff's analysis, the Company is able to minimize the cost-shifting to non-solar customers through the utilization of the fixed energy rate program. Assuming full recovery of the customer charge, delivery margin, and fixed costs ($61.00), the Company would still receive the additional $32.00 associated with the base rate fuel charge. As the customer's charge is designed to mirror a net-zero customer, this fuel

charge can be considered a "savings" and therefore applied to the cost of the PV system. This further reduces the cost burden to all ratepayers by having a single ratepayer pay a significant portion of the PV facility cost while still paying their share of the associated fixed system costs. Under the traditional net-zero customer shown in Staff's example, the Company would ultimately move the remaining $51.00 of unrecovered fixed costs to non-solar customers.

In RUCO's comments regarding TEP's 2015 TORS program, RUCO stated that *"According to RUCO's analysis, TEP's unique program design can deliver solar energy at rates 30% below the non-participant cost of a comparable NEM based system."* (RUCO's comments in Docket No. E-01933A-14-0248, Dated Oct 17, 2014, Page 4). This analysis is consistent with the figures shown in Staff's analysis above, and is a testament to the unique and cost-effective program design offered by TEP and its ratepayers.

Q. Are there additional public interests that justify or support the Company's proposal to continue its TORS program?

A. Yes. TEP customers' reception of this program has been overwhelming. As previously noted, there are more than 5,100 customers that have signed up on-line expressing interest in the program. Based on the Company's initial customer response through the 2015 program, approximately 50% of customers who have expressed interest, completed an application and are determined to have a premise suitable for a PV facility end up signing an agreement to have a PV facility installed. There are a large number of interested customers who cannot participate in the program given the limitations currently in place under Decision No. 74884.

RUCO very succinctly expressed a number of reasons why this program is of societal benefit in their 2015 REST comments:

1. The program provides customer choice.
2. Lower subsidies and long-term benefits
3. Utility involvement helps propagate solar in a sustainable manner
4. Utilities can help maximize the value and reliability of DG through advanced inverters, geo-targeting, and communication technology.
5. Creates a balanced portfolio that mitigates risk, while representing only a small portion of installed DG.
6. The utility is in a unique position to maximize the value of DG resources to the grid, including:
    a. Lower total costs of the energy system for all ratepayers.
    b. Capacity savings.
    c. Ensuring over-sized systems are not installed, ensuring maximum customer participation and prudency.
    d. Ensuring customers receive better and more comprehensive services.
    e. Boost cost-effectiveness of existing demand side management programs.

In RUCO's comments on TEP's 2016 REST plan, RUCO again supported the continuation and expansion of the Company's TORS program due to the lower than expected costs associated with the Company's program. On average, the Company spends $0.92 per watt on panels and inverters and has an average third-party installation costs (which includes all balance of system costs) of $1.26 per watt. As such, the Company expects to average approximately $2.18 per watt for complete installation of all 600 PV facilities. Because the Company utilizes multiple vendors, suppliers, and installers – all of which were procured through a competitive procurement process - this value is not fixed and represents a weighted average of all costs.

Also, this program has not only offered our customers with an additional solar option, it has provided for an enhanced partnership between TEP and the three solar alliance contractors performing the installations. It has created an opportunity for these installers to offer an alternative to customers beyond the traditional purchase or leased option. More importantly it has provided an option to a class of TEP customers who wish to participate in solar but prefer to work with TEP and not a third-party.

Additionally, it should be noted that, as set forth in the Decision No. 74884, the Commission that Staff believed that approval of this program *"is an attempt to balance the various competing considerations that rapid technological change has produced at this time."* The continuation of this program attempts to maintain that balance while providing an alternative customer option. As the value of this program was previously established under the existing rate structure, it is reasonable to continue to offer this program to our customers.

Finally, as a regulated Public Service Corporation under the jurisdiction of the Arizona Corporation Commission who has an obligation to serve all customers under the Company's Certificate of Convenience and Necessity, the Company is subject to regulatory scrutiny and prudency review that third-party entities, such as those represented by the Energy Freedom Coalition of America, are not subject. This regulatory scrutiny and prudency review is designed to ensure that investments made by the regulated entity are reasonable and provide benefits to the ratepayer.

IV. RESIDENTIAL COMMUNITY SOLAR PROGRAM.

Q. Please describe the Company's proposed Residential Community Solar program, and how it differs from the Company's existing Bright Tucson Community Solar program ("BTCS").

A. In approving TEP's 2015 REST Implementation Plan, the Commission noted that "the Company has indicated that it believes that larger scale distributed generation facilities located in TEP's grid, possibly 1MW or so, and structured similarly to TEP's proposed Company-owned DG program, could provide most of the benefits of rooftop DG at a reduced cost" (Decision No. 74884, Finding of Fact 40) and ordered the Company to provide a report on the *"feasibility, costs, benefits, and other aspects of larger scale distributed generation options, either company-owned or through purchased power agreements and if Tucson Electric Power Company wishes, an implementation proposal, as part of their REST activities."* As a result, TEP's 2016 REST Plan includes a new Residential Community Solar tariff that will provide customers with more options for going solar, while enabling the Company to build more cost-effective utility-scale community solar facilities.

This program combines the concept of a larger PV system interconnected to the distribution system with the extremely popular concept of the fixed rate tariff associated with the Company's TORS program. The Company's current BTCS program allows customers the option of signing up for blocks of energy (each block is 150 kWh) at a $0.02 per kWh premium, which is then applied to their monthly bill. In exchange, the customer receives a proportional discount of their fuel surcharge and their REST surcharge while locking in the current base fuel rate for up to 20 years. As an example, if a customer had an average monthly consumption of 900 kWh, and signed up 450 kWh under the BTCS program (3 blocks of 150 kWh each), the customer would receive a 50%

discount of their monthly fuel and REST surcharges. There is no time commitment and the customer may elect to discontinue participation at any time.

The Company's proposed RCS program is a hybrid of the Company's existing BTCS program and the more recently approved TORS program. Customers choosing to participate would pay a fixed energy rate, similar the TORS Program. The Company proposes to spend up to $10 million to develop a solar facility of approximately 5 MW in size and interconnect this facility to the Company's distribution system. Depending on the level of customer interest and participation, the Company could expand the program to meet customer demand. As with all renewable energy contracts or capital expenditures, the Commission determines the prudency through the Company's annual REST Implementation Plans and general rate cases.

The proposed RCS program would operate much like the TORS Program. The customer's equivalent net-zero value ("Solar Rate Capacity") would be calculated in the same manner (previous annual consumption / average solar production per kW); the customer would enjoy a fixed monthly solar payment based upon their Solar Rate Capacity and the proposed tariff of $17.50 per kW; the rate would be evaluated annually and raised or lowered if consumption increased or decreased by fifteen percent (15%); and there will be similar regulatory out and termination clauses. (See 2016 REST Plan Exhibit 8 (proposed Residential Community Solar Tariff)).

Although similar, a number of differences exist between the TORS Program and the Residential Community Solar Program, including:

- The capacity associated with a customer's equivalent Solar Rate Capacity calculation would be deducted from the larger facility's overall capacity, rather than a stand-alone system on the customer's property.

- The fixed contract term would be 10 years, rather than 25 years.
- The Residential Community Solar tariff would use a price of $17.50 per kW to calculate the fixed rate, as opposed to $16.50 for the TORS program. The slightly higher rate reflects that customers can go solar without placing a solar facility on their property and being exposed to: potential insurance implications, roof maintenance or repair costs, construction disruptions, possible tax consequences, or the general long term commitment to their physical property that a PV system installation requires.
- Due to the lower cost of developing a utility-scale facility compared to a rooftop facility, the revenue associated with the program will further reduce the amount of unrecovered fixed costs shifted to other, non-solar customer classes.
- The customer would not have the option to purchase the system (or any portion thereof).
- The customer would pay an early termination fee based on the number of months remaining on contract. Capacity made available by a customer terminating their participation would be available for other customers who wanted to participate in the program.

By building larger distributed community facilities of approximately 5 MW the Company can achieve several benefits, including:

- Greater cost-effectiveness of construction due to economies of scale. The typical third-party residential rooftop solar installation costs are reported to be around $2.50 - $2.85 per watt, while the Company's current TORS program installation costs are less than $2.20. Even so, TEP calculates a grid-tied community DG facility to cost approximately $1.60-$1.70 per watt, a savings of approximately forty percent (40%) over smaller scale third-party rooftop installations and 25% over the TORS program. This price differential would result in significant savings

for the same number of participating customers, or a significant increase in the number of participating customers for the same level of investment.

- Greater cost-effectiveness of operations and maintenance expenses, due to economies of scale of the larger facilities
- Advanced inverter functionality can be incorporated into the utility's grid Operations Management System through pre-existing sub-station and feeder circuit communications network and enhance system reliability.
- Single, larger facilities would be able to utilize existing communications infrastructure at a much lower cost.

Q. Why is the Company proposing an alternative community solar program while simultaneously proposing to expand the TORS program?

A. The popularity of the Company's existing TORS program demonstrates the desire of TEP's customers to have more solar energy options. Roughly twenty-five percent (25%) of the customers who indicated strong interest in the TORS program and initiated the application process were unable to participate for a variety of reasons, such as expensive upgrades to their roof or point of interconnection, insufficient roof space, or too much shading. A program such as the proposed Residential Community Solar program would enable these, and other customers unable to put solar on their rooftop, to enjoy the benefits of going solar with a fixed rate while supporting the Company's overall expansion of its renewable resource portfolio.

Q. Why is the Company's proposal limited to residential customers?

A. There are several reasons the program is limited to residential customers:

1. Customers are required to enter into long-term contracts (10 years) and the contract is tied to the service point (address where the meter is located). Most businesses do not own their building or facility and would not be allowed to

contractually obligate the specific service point.

2. Business entities are afforded additional tax incentives such as accelerated and bonus depreciation, making the purchase option more attractive than what is available to residential customers.

3. The Company is required to develop implementation plans that are designed to meet, or least show the Commission how the Company intends to meet, the state's renewable energy requirements. The Company has sufficient RECs and additional options (including TEP ownership on customer's premise) to meet the non-residential DG requirement. As such, one of the Company's reasons for designing a new community solar program was to assist the Company in meeting the residential DG requirement. This is more thoroughly described in the Company's REST Plan, with a significant discussion on the reasoning and rationale for the allowance of these credits towards the residential DG requirement.

Q. Would third-party installers, or neighborhood community associations be eligible to offer a similar community solar program?

A. No. Third-parties are not allowed to utilize a regulated utility's distribution system. In those states where third-parties are able to offer a community solar program, they must have either a virtual net metering program or established distribution wheeling charges. At present, neither exists in the State of Arizona.

As the sole owner of the distribution system, TEP is uniquely positioned to offer this program. Due to the structure of the fixed tariff, the Company is able to recover its distribution system costs from the participating customer while shifting a significantly lower amount of the solar costs to non-participating customers. This is simply another benefit of a utility-owned system whereby TEP can provide a more cost-effective program than third-parties.

Q. In light of the fact that TEP has a rate case pending that includes proposed changes to both rate design and net metering, why should the Commission authorize the Company to both expand its TORS program and establish a new RCS program?

A. The proposed expansion of the TORS and creation of the RCS program have been proposed in the Company's 2016 REST Plan in order to provide our customers with additional solar options while meeting (or attempting to meet) the state RPS. The Company's current rate case and the proposed changes have not been approved, nor is any decision on the Company's rate case expected before December 2016.

In addition, the Company's proposed rates would not become effective until 2017, and should have no bearing on the Commission's decision on the proposed programs in this 2016 REST Plan.

Q. Why is the Company proposing a flat rate tariff for the RCS?

A. The Company chose to offer the flat rate tariff to be consistent with the Company's TORS program. The flat rate tariff has been extremely popular with our customers, as it is easy to understand. As previously discussed in the Company's 2015 filing when determining the cost structure for the TORS program (and highlighted above in Staff's analysis concerning recovery of costs), the Company utilized the traditional cost of service model to determine the amount of revenue required on a "per kW" basis when calculating the tariff rate.

As it has been established numerous times, there is a significant cost shift from a NEM solar customer to a non-solar customer when using volumetric rates under the traditional cost of service model using a historical test period. As such, the TORS model calculated a rate that was representative of the customers' average monthly bill (without solar).

Please refer to testimony by TEP witness Craig Jones for more specific information regarding the program's calculated rate for the TORS program. As previously discussed, a cost-shift of approximately $0.02 per kWh, still existed.

Under the RCS program, the Company calculated a rate that is slightly higher than the TORS program in order to not only better recover the Company's cost of service, but also to reduce the cost shift even further. This concept is consistent with the definition of Green Pricing, as defined by the Renewable Energy Standard and Tariff as *"a rate option in which a customer elects to pay a tariffed rate premium for electricity derived from Eligible Renewable Energy Resources"* A.A.C. R14-2-1801.J.

Q. Has the Company made any specific requests regarding the DG requirement in conjunction with their proposed RCS program?

A. Yes. The Company has specifically requested the Commission allow the associated capacity and renewable energy credits associated with the program be applied towards meeting the REST's residential DG energy requirement. In the Company's REST Plan (pages 10 through 18), the Company provides a detailed discussion on this issue.

Briefly recapping the discussion in the Plan, there is a small provision in the DG requirement of the Renewable Portfolio Standard that requires DG to be located on a customer's premise, which is not consistent with the industry's standard definition of DG. The Solar Energy Industry Association ("SEIA"), a national organization that represents the solar trade industry, defines DG to be at or near the load. The Arizona definition arbitrarily and unnecessarily restricts distributed generation resources from being deployed in the most cost effective manner. As such, the Company has requested that the proposed residential community solar program be counted towards meeting the DG compliance target.

V. OTHER 2016 PROGRAMS.

Q. Are any of the other programs in the 2016 REST new or significantly modified?

A. Yes. As ordered in the Company's 2015 REST IP, the Company has completed its energy storage solicitation and has provided information on that solicitation. The Company filed a supplement to TEP's 2016 REST Plan on September 16, 2015 thoroughly describing the process, results, and recommendations of the Company (attached as Exhibit B).

The Commission has previously ordered in Decision No. 74884 that costs associated with the proposed energy storage, if approved, should be collected through the Company's Purchased Power and Fuel Adjuster Clause ("PPFAC"). The Company has requested approval of two projects, with a combined average monthly impact of $0.13 per month per customer.

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
DOUG LITTLE - CHAIRMAN
BOB STUMP
BOB BURNS
TOM FORESE
ANDY TOBIN

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2016 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-15-0239

Direct Testimony of

Craig A. Jones

on Behalf of

Tucson Electric Power Company

February 12, 2016

Q. Please state your name and address.

A. My name is Craig A. Jones. My business address is 88 East Broadway Blvd., Tucson, Arizona 85701.

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

A. I am employed by Tucson Electric Power Company ("TEP"), a wholly-owned subsidiary of UNS Energy Corporation ("UNS Energy") as the Manager of Pricing. As the Manager of Pricing, I am responsible for various rate-related matters including monitoring and coordinating the determination of customer pricing options with any necessary support to justify the creation of the various rate structures for all the regulated subsidiaries of UNS Energy, including TEP, UNS Electric, Inc. ("UNS Electric" or the "Company") and UNS Gas, Inc. ("UNS Gas"). This includes overseeing the development of the cost-of-service analysis and rate design in general rate cases.

Q. Please describe your educational background.

A. I graduated from the University of Missouri Columbia in December 1980 with a Bachelor of Science Degree in Agricultural Engineering. In May 1981, I received a Bachelor of Science Degree in Agricultural Mechanization. I have completed much of the course work required for a Master's Degree in Agricultural Engineering at the University of Missouri - Columbia. I am qualified as an Engineer-in-Training under the laws of the State of Missouri.

Q. Please describe your professional background and experience.

A. In February 1983, I joined the Staff of the Missouri Public Service Commission as a Rate Engineer. My responsibilities included analyzing and making recommendations relating to purchased gas adjustment filings, actual cost adjustment filings, rate cases, certificate of service applications, intrastate pipeline applications and applications to establish new local distribution systems. I left the Missouri Public Service Commission in December 1994 to take a position with the New York State Electric and Gas Corporation ("NYSEG"). My responsibilities at NYSEG included establishing prices to be used in "repackaged" contract offerings, training co-workers and end-users with respect to the application of new rates and service concepts, and complying with Commission filing requirements, including the calculation and filing of the monthly gas cost adjustment filings with the New York Public Service Commission.

I left NYSEG in April 1998 to take a position as Rates Manager with Citizens Energy Group (formerly Citizens Gas & Coke Utility) ("Citizens") in Indianapolis, Indiana. In March 2004, I was promoted to Manager Rates and Regulatory Affairs. I was responsible for various rate-related matters associated with both the natural gas and steam utilities operated by Citizens, including the annual filings for approval of a fuel cost adjustment for the steam utility and the development of the monthly gas cost adjustment filings, various miscellaneous tariff filings, special contracts, and numerous other rate-related activities for the gas and steam utilities, including cost of service and rate design in general rate cases.

In November 2009, I left my position at Citizens and joined TEP as the Manager of Pricing. Since joining TEP, I have provided pre-filed direct testimony and live testimony in the UNS Gas 2011 general rate case (Docket No. G-04204A-11-0158), and pre-filed testimony in TEP's last two general rate cases (Docket Nos. E-01933A-12-0291 and E-01933A-15-0322) and UNS Electric's last two general rate cases (Docket Nos. E-04204A-

12-0504 and E-04204A-15-0142). I have actively participated in the Arizona Corporation Commission's ("Commission") Decoupling Workshops, Line Extension reviews and the filing of TEP's Community Solar tariff and other Pricing and Regulatory activities.

Q Have you previously testified before any other regulatory agencies?

A. Yes. I testified before Indiana Public Service Commission on numerous occasions, including in Cause Nos. 41969-FAC01-FAC15, 41969-FAC03(S1), 41969-FAC06(S1), 41605, 41824, 42578, 42726, 42767, 43025, 43463 37399-GCA68, 37399-GCA68(S1), 37399-GCA69, and 37399-GCA77. I also testified before the Missouri Public Service Commission on several occasions regarding rates, tariffs, and certificate applications.

Q. Could you please summarize your Direct Testimony?

A. My testimony will provide an overview of how the $16.50 per kW used to price the TEP-Owned Residential Solar ("TORS") program was created as part of the approval of the Company's 2015 Renewable Energy Standard and Tariff ("REST") plan. The details of the plan are described in the Company's witness Carmine Tilghman's Direct Testimony submitted in this docket. I also describe the *de minimis* impact the TORS program and the Residential Community Solar ("RCS") program have on TEP's fair value or its authorized fair value rate of return.

Q. How did the Company arrive at a charge of $16.50 per KW of solar load as the amount it would apply to a TORS program customer's bill?

A. Initially, the Company calculated a bill that a "typical" residential customer might expect to realize on an average monthly basis using the Commission approved rates in place at the time the TORS program was proposed. The average monthly bill was calculated using the residential R-01 tariffed rates, including the monthly customer charge, the tiered delivery rates and the base power charge. The estimated bill also used typical summer load (for 5

months) and typical winter load (for 7 months) to arrive at the average annual monthly bill. The estimated bill was based on kWh energy charges only and did not include Rider charges, taxes, or fees. The original average monthly bill amount of approximately $93 per month ($92.51 per month) was based on a residential customer who used an average of 877 kWh per month or an annual load of approximately 10,500 kWh. Assuming a typical solar system is sized to generate approximately 1,900 kWh per kW of system size, it was determined a system would need to be 5.53 kW to produce the approximate annual load requirement of this "typical" customer. Dividing the $93 ($92.51) average monthly bill by 5.53 kW produced a charge of about $16.70 per kW. This was adjusted to a $16.50 per kW charge for purposes of the tariff.

Q. Why did the Company propose $16.50 per kW instead of $16.70?

A. Since actual system sizes will vary and many of the assumptions will vary by specific customer's circumstances, the Company believed a charge of $16.50 was reasonable for purposes of initiating the program. This charge was the equivalent of what the customer would have paid if they were a full requirements customer.

Q. In Mr. Tilghman's testimony he references a typical "net-zero" distributed generation customer's annual consumption of 11,400 kWh. Please explain the difference.

A. For ease of calculation and as an example, Mr. Tilghman uses values that are easily divisible and represent whole numbers such as 11,400 kWh, 1,900 kWh per kW, and 6 kW. While representative of a net zero customer, they are not the actual values used to determine the average customer bills referenced above.

Q. Does that larger volume of 11,400 kWh referenced by Mr. Tilghman impact the $16.50 per kW charge you calculated based on a "typical" full requirements customer using approximately 10,500 kWh annually?

A. No. If the full requirements customer bill was calculated using all of the same assumptions the per-kW rate would have still been in the $16.50 per kW range. The Company believed the $16.50 per kW rate is reasonable as a proxy for the charges a full requirements customer would have paid.

Q. Does the Company still believe the $16.50 per kW rate is reasonable?

A. Yes. This rate is appropriate for the term of the agreement since the fixed costs associated with serving this customer are made at the time service is initiated. For customers initiating service after new rates are approved in the Company's next rate case, it would be appropriate to consider an adjustment to the rate for customers participating in the program in the future (no rate change would apply to customers already participating in the program). In conjunction with a new rate case, the Company will review the data and determine if an adjustment is warranted. If so, a change to the rate may be considered.

Q. Does the TORS customer contribute the same level of taxes as a full requirements customer?

A. Yes, the amount of taxes paid by the TORS customer will be generally the same as a full requirements customer. The only difference is the rate is locked in for the term of the agreement so that tax payment will only change as the taxing authorities adjust the level of taxes the Company must apply to the bill.

Q. Does the expansion of the TORS program or the implementation of the RCS program have any significant fair value impacts on TEP?

A. No. First, as noted in Decision No. 74884 (December 31, 2014)(approving the TORS program), the current fair value of the TORS expansion and the RCS is zero because the Company has not constructed any of the assets associated with the program. Moreover, given that TEP's fair value rate base is over $2.2 billion (as found in TEP's last rate case (Decision No. 73912 (June 27, 2013)), the inclusion of an additional $15 million for the TORS expansion and $10 million for the RCS program would have a *de minimus* impact on TEP's fair value rate base. Further, with respect to impact on TEP's fair value rate of return, TEP's rate of return will not increase upon completion of the programs and may, in fact be, very slightly less. Regardless, the impact on fair value rate of return is *de minimus*. Participation in the programs will be by existing TEP customers who are already providing revenues to TEP. The tariff rates are intended to be revenue neutral as compared to the current bill. The programs are not designed to generate additional revenue. Therefore, TEP will not increase its revenue recovery even though it is investing in facilities. The *de minimus* impact of such a small program was acknowledged in Decision No. 74884.

Q. Does this conclude your Direct Testimony?

A. Yes, it does.

Exhibit A

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
SUSAN BITTER SMITH - CHAIRMAN
BOB STUMP
BOB BURNS
DOUG LITTLE
TOM FORESE

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2016 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-15-0239 **APPLICATION**

Tucson Electric Power Company ("TEP" or the "Company"), through undersigned-counsel, hereby submits its 2016 Renewable Energy Standard and Tariff ("REST") Implementation Plan ("Plan") for Arizona Corporation Commission ("Commission") approval, in compliance with A.A.C. R14-2-1801 *et seq.*

TEP's Plan is designed to achieve 2016 REST requirement of providing six (6) percent of retail sales (or 543,825 megawatt hours ("MWh")) from renewable generating resources as cost-effectively as possible. Key components of the Plan include: i) new renewable energy resources intended to be added through 2019; ii) new and existing programs and budgets; and iii) proposed rates and REST tariffs.[1] To fund these efforts, TEP is proposing to recover approximately $48 million through the REST tariff. The estimated cost to implement the Plan is approximately $57 million, which will be partially offset by applying approximately $9 million of carryover funds from the 2014 budget. In order to implement the Plan, TEP requests that the Commission approve an increase in the REST surcharge from $0.00800 per kWh for 2015 to $0.01300 per kWh for 2016, as

[1] For its Plan, Exhibit 3 (AMCCCG) and Exhibit 5 (New Implementation Plan New Resource Costs) are confidential and will be provided to Commission Staff upon execution of a protective agreement.

well as an increase in the surcharge caps across rate classes. The increase in the budget and the surcharge result primarily from: (i) an increase in difference between the cost of renewable generation compared with conventional generation, and (ii) higher volumes of purchased renewable energy from third party PPAs.

The Company's Plan also includes a request to expand TEP Residential Solar Program and a new Residential Community Solar Program. TEP is not proposing any new incentives for residential or non-residential solar distributed generation or solar water heating. TEP's Plan provides for renewable generation to meet the 2016 annual compliance requirement, with the exception of the residential portion of the annual Distributed Renewable Energy Requirement set forth in A.A.C. R14-2-1805(D). Therefore, TEP will require a waiver for the residential portion of the Distributed Renewable Energy Requirement set forth in A.A.C. R14-2-1805(D).

TEP believes it is in the public interest to implement cost-effective, customer-based solutions to meet the Company's REST requirements while providing safe, reliable and affordable energy to all its customers. Accordingly, TEP requests the Commission to issue an order prior to December 31, 2015, to be effective January 1, 2016 that:

1. Approves of its 2016 Renewable Energy Implementation Plan; and
2. Provides a waiver from compliance with the residential portion of the annual Distributed Renewable Energy Requirement set forth in A.A.C. R14-2-1805(D).

RESPECTFULLY SUBMITTED this 1st day of July 2015.

TUCSON ELECTRIC POWER COMPANY

By _____

Michael W. Patten
SNELL & WILMER L.L.P
One Arizona Center
400 East Van Buren Street 1900
Phoenix, Arizona 85004
Tucson Electric Power Company
and

Bradley S. Carroll
Tucson Electric Power Company
88 East Broadway Blvd., MS HQE910
P. O. Box 711
Tucson, Arizona 85702
Attorneys for Tucson Electric Power Company

Original and 13 copies of the foregoing
filed this 1st day of July, 2015, with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copies of the foregoing hand-delivered/mailed
this 1stday of July, 2015, to the following:

Dwight Nodes, Acting Chief Administrative Law Judge
Hearing Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Janice M. Alward, Chief Counsel
Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Steve Olea, Director
Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

By _____

Tucson Electric Power

2016 Renewable Energy Standard Implementation Plan

TABLE OF CONTENTS

ATTACHED EXHIBITS

Exhibit 1: Line Item Budget

Exhibit 2: Definition of Market Cost of Comparable Conventional Generation ("MCCCG")

Exhibit 3: Above-Market Cost of Comparable Conventional Generation by Technology ("AMCCCG")*

Exhibit 4: Implementation Plan New Resources

Exhibit 5: Implementation Plan New Resource Costs *

Exhibit 6: Rider-6 Renewable Energy Standard Tariff and Statement of Charges

Exhibit 7: Customer Load Percentage Analysis

Exhibit 8: Residential Community Solar Tariff

Exhibit 9: Renewable Energy Credit Purchase Program

* Confidential

I. EXECUTIVE SUMMARY

Tucson Electric Power Company ("TEP" or "Company") hereby submits its 2016 Implementation Plan ("Plan") in compliance with the Arizona Corporation Commission's ("Commission") Renewable Energy Standard and Tariff ("REST") Rules pursuant to A.A.C R14-2-1813. The cost-effective strategy set forth in the Plan demonstrates TEP's commitment to fulfilling the REST requirements for 2016 and beyond. Key components of the Plan include: new renewable energy resources to be added through 2020; proposed and existing Company programs and budgets; and related REST tariff.

Pursuant to A.A.C. R14-2-1804 and R14-2-1805, TEP must obtain six percent (6%) of its 2016 annual retail sales from renewable resources; and thirty (30) percent of that renewable energy must come from distributed generation ("DG") resources. Further, TEP must meet one-half of its annual DG requirement from residential applications and the remaining one-half from non-residential, non-utility applications. TEP plans to satisfy these REST requirement using existing utility-scale renewable generation and credits; power purchase agreements ("PPA") with renewable developers; new utility-owned renewable generation; and DG resources.

To fund these efforts, TEP is proposing to recover approximately $48 million through the REST tariff. The estimated cost to implement the Plan is approximately $57 million, which will be partially offset by applying approximately $9 million of carryover funds from the 2014 budget. This funding is necessary to cover the cost of renewable energy purchases in excess of the cost of conventional generation; legacy performance-based incentive payments; and program, outreach and administrative costs.

The cost of renewable energy is included in two components of TEP's rates – the REST surcharge and the Purchased Power and Fuel Adjustment Clause ("PPFAC"). The market price for conventional generation in TEP's Plan is approximately thirty percent (30%) below the price for conventional generation that was included in its 2015 REST Plan. As a result of these lower conventional prices and an increased amount of purchased energy from existing PPAs, the cost of renewable energy in excess of

conventional generation included in TEP's Plan is approximately $16 million higher last year and the offsetting decrease in the cost of conventional generation will be reflected in TEP's PPFAC. TEP expects its annual REST budgets for 2017 through 2020 to average approximately $45 million. (See Exhibit 1).

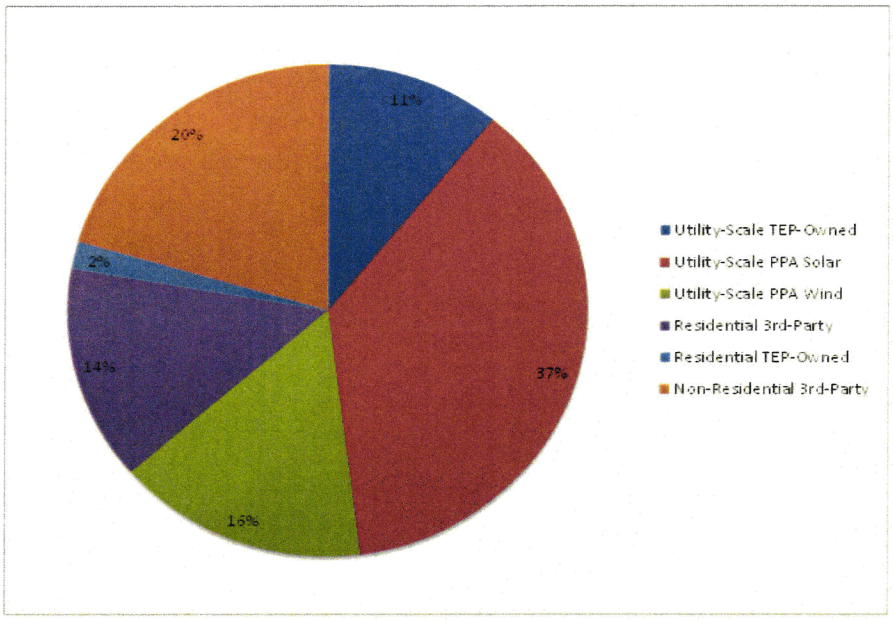
TEP's Plan demonstrates the Company's commitment to meeting the renewable energy requirements in the most cost effective manner and is in the public interest. TEP's Plan provides for renewable generation to meet the 2016 annual compliance requirement. However, as the Company no longer receives Renewable Energy Credits ("REC") from customer-based installations, TEP will require a waiver for the residential portion of the DG requirement set forth in A.A.C. R14-2-1805(D). TEP respectfully requests that the Commission approve the Plan, as well as its associated budget and tariff, prior to December 31, 2015 to be effective January 1, 2016.

II. TEP 2016 IMPLEMENTATION PLAN COMPONENTS

For 2016, TEP's total renewable generation requirement is six percent (6%) of retail kWh sales, a level projected to equal 543,825 megawatt hours ("MWh"). The REST targets two resource categories: utility-scale generation and DG.

TEP's Plan will allow the Company to provide 6% of its retail energy requirements from renewable resources in 2016 and continue its efforts to maintain a diversified and cost-effective renewable resource portfolio as set forth in Graph 1.

Graph 1. TEP's 2016 Renewable Resource Portfolio



A. Utility-Scale Renewable Generation

TEP will satisfy the 2016 utility-scale requirement through the total output of renewable resources of 326 megawatts ("MW") (see Table 1) – this total is comprised of solar photovoltaic ("PV") systems with a combined rated capacity of approximately 236 MW as well as wind and other renewable resources with a combined rated capacity of approximately 90 MW. Of this total, 266 MW will come from renewable PPAs currently in effect or with anticipated completion dates in 2016. The remaining 60 MW will come from TEP-owned facilities.

The combination of TEP-owned generation facilities and PPAs should allow the Company to continue to meet and exceed its renewable energy requirements for the next five years. Graph 2 shows how TEP's current and planned resources will allow the Company to satisfy its utility-scale requirement through approximately 2020. Table 1 details TEP's utility-scale projects, including existing systems and planned resources.

Graph 2. Renewable Energy Standard Targets

Note: Graph 2 does not include carryover credits

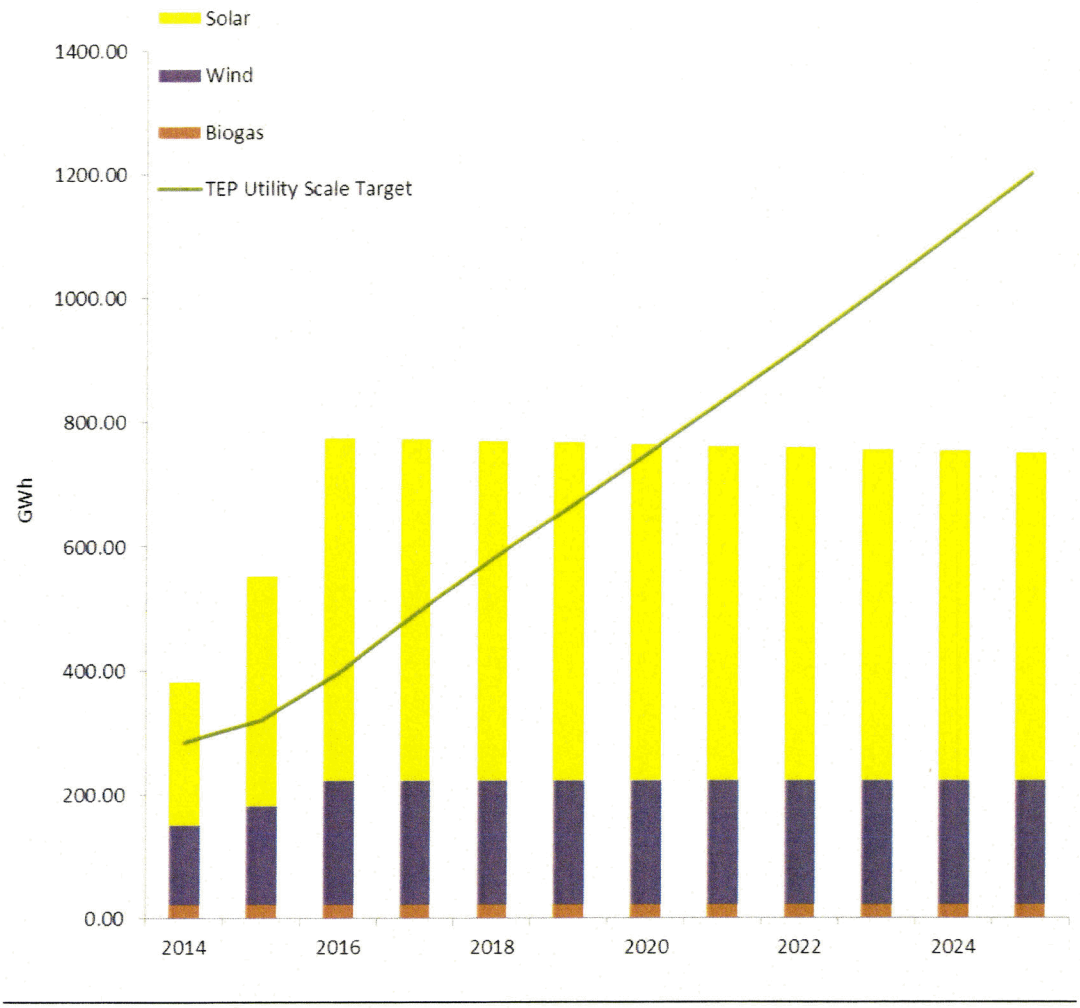


Table 1. Utility Scale Generation

	Project	Capacity MW	Annual MWh	Technology	Expected In-Service Date	TEP Owned
	Existing Renewable Generation					
	SGS (4.6 + 1.81)	6.40	7,265	Fixed PV	Operational	Yes
	UASTP I	1.60	2,981	SAT PV	Operational	Yes
*	Macho Springs	50.40	130,244	Wind	Operational	No
	Picture Rocks	25.00	57,372	SAT PV	Operational	No
	Avra Valley	34.41	75,930	Fixed PV	Operational	No
	Avalon Solar	35.00	82,563	Fixed PV	Operational	No
	UASTP III	5.00	7,835	Fixed PV	Operational	Yes
	Solon Prairie Fire	5.00	7,835	Fixed PV	Operational	Yes
	Gatos Montes	6.00	10,303	Fixed PV	Operational	No
	Cogenra	1.38	2,650	LCPV	Operational	No
	Amonix UASTP	2.00	4,049	CPV	Operational	No
	E.On Tech Park	6.60	15,300	SAT PV	Operational	No
	Valencia Solar	13.20	26,768	SAT PV	Operational	No
	White Mountain Solar	10.00	19,947	Fixed/LCPV	Operational	Yes
*	Sundt Augmentation	5.00	14,310	Steam Aug	Operational	Yes
	Fort Huachuca PHI	17.20	38,635	Fixed PV	Operational	Yes
	SunPower (OH & HQ)	0.62	2,076	Fixed PV	Operational	Yes
*	Sundt Landfill Gas	4.00	21,100	Biogas	Operational	Yes
	Total Existing	**228.81**	**527,164**			
	Bright Tucson Solar Buildout Plan					
	Project	**Capacity MW**	**Annual MWh**	**Technology**	**Expected In-Service Date**	**TEP Owned**
	Fort Huachuca PHII	5.00	11,231	Fixed PV	15-Nov	Yes
	Total Future - BTSBP	**5**	**11,231**			
	Future Renewable Generation					
	Avalon Solar II	21.00	49,787	SAT PV	15-Dec	No
*	Red Horse (Wind)	30.00	70,956	Wind	15-Aug	No
*	Red Horse (Solar)	41.00	120,610	Solar	15-Aug	No
	Total Future – Pending (Contracts)	**92.00**	**241,353**			
	Total Planned Generation (Contracts)	**326**	**779,748**			
	Total Planned Generation thru 2016	**326**	**779,748**			

* Notes AC Capacity

B. Bright Tucson Solar Buildout Plan

TEP's solar ownership plan ("Bright Tucson Solar Buildout Plan" or "Buildout Plan") has accounted for a portion of the Company's compliance with the REST utility-scale requirement. TEP's 2011 proposed investment of $28 million in the Buildout plan was approved by the Commission in Decision No. 72033 and subsequently affirmed in Decision No. 72736. TEP subsequently received Commission approval in Decision No. 74165 to invest an additional $28 million in the Bright Tucson Solar Buildout Plan in 2014 and another $12 million in 2015. The combined $40 million was designated for the development of a solar array at the U.S. Army's Fort Huachuca. Phase I of Ft. Huachuca was completed at the end of 2014. Phase II is currently under construction, and is expected to be commercially operational by the first quarter of 2016.

The Bright Tucson Solar Buildout Plan continues to be an essential component of the Company's renewable energy strategy, however, going forward the Company will no longer request recovery of costs related to new investments through the REST. TEP will continue to invest in renewable technologies in the future as the Company transitions to a more sustainable resource portfolio but will recover those costs through traditional methods. Through the Bright Tucson Solar Buildout Plan and other projects, TEP expects to own approximately eighteen (18) percent of its renewable energy portfolio by the end of 2016.

Table 2 and Table 3 show forecasted revenue requirements associated with the Company's Buildout program by category and project.

Table 2. Revenue Requirement for the Bright Tucson Solar Buildout Plan

Revenue Requirement	2016	2017	2018	2019	2020
Carrying Costs	$4,085,866	$531,329	$475,422	$310,061	$ -
Book Depreciation	4,388,532	600,000	600,000	600,000	-
Property Tax Expense	392,960	-	-	65,013	-
O&M	498,667	69,525	71,611	73,759	-
Lease Expense	-	-	-	-	-
Total Revenue Requirement	$ 9,366,025	$ 1,200,854	$ 1,147,033	$ 1,048,833	$ -

Table 3. Estimated Annual REST Budget for the Bright Tucson Solar Buildout Plan

Utility Owned Solar Projects by Year	2016	2017	2018	2019	2020
2012 - HQ Rooftop 0.05 MW	$ 25,584	$ -	$ -	$ -	$ -
2014 - Springerville Expansion 10 MW	4,202,501	-	-	-	-
2014 - Ft Huachuca 17.5 MW	3,105,501	-	-	-	-
2015 - AREVA 5 MW	840,169	-	-	-	-
2016 - Ft Huachuca 4.5 MW	1,192,271	1,200,854	1,147,033	1,048,833	-
Annual Revenue Requirement	**$9,366,025**	**$1,200,854**	**$1,147,033**	**$1,048,833**	**$ -**

C. Energy Storage Solicitation

As part of TEP's 2015 REST Implementation Plan, the Company included its intent to issue a solicitation for energy storage capacity. The Commission ordered TEP to include information on the energy storage solicitation in the Company's 2016 REST Implementation Plan, including customer rate impacts and other information relevant to the Commission's consideration of the results in TEP's Plan.

In June 2015, TEP issued a solicitation to lease a utility-scale 10 MW capacity Energy Storage System ("ESS"). The goal of the solicitation is to review the cost effectiveness of available technologies and product offerings. The solicitation was administered through a third party independent monitor, Accion Group, LLC, who used various channels of media to reach out to as many companies representing as many technologies as possible. At the time of this filing, over 100 companies had registered on the independent monitor's request for proposal ("RFP") website with twenty-one (21) qualified vendors (those vendors who have a verifiable history of ESS management and possess the financial wherewithal to provide long term security) submitting bids. Those bids are currently under review.

The Company believes that as higher penetration levels of intermittent and variable renewable generation are integrated into the grid, utilities will need additional, more flexible resources to manage

these intermittent resources while providing ancillary services such as operating capacity, voltage control, VAR support, and frequency control.

In addition, these new storage technologies and resources create cost recovery issues that will have an impact on all customers. Although these new storage technologies will be used to mitigate the impacts of the variable generation, there is no clear guidance on how their costs should be recovered. As such, the Company requested guidance from the Commission in the 2015 REST Implementation Plan. Staff recommended, and the Commission ordered, that the "current preference for cost recovery of a project resulting from Tucson Electric Power's energy storage solicitation is through the PPFAC". TEP expects to provide the Commission with additional information regarding the outcome of its ESS solicitation and evaluation in August 2015, including potential customer rate impacts in the Company's PPFAC.

D. TEP-Owned Residential Solar Program

In the Company's 2015 REST Implementation Plan, the Commission approved the first year of a TEP-Owned Residential Solar Program. Per Commission order (Decision No. 74884) the overall program costs are capped at $10 million and TEP has limited the size of the Program to a maximum of 600 residential customers. In the first half of 2015, the Company completed an RFP for local installers, solar PV panels, and inverters. Contracts were awarded to three local solar PV installers, a solar PV panel manufacturer, and a solar PV inverter company.

While the program was being designed, TEP created a list of interested customers. At the time of this filing, the Company had approximately 3,400 customers on the list who had heard about the program via press releases, website announcements and word-of-mouth.

Thirty (30) customers from the general interest list were invited via email to participate in a soft launch of the program beginning in late April 2015. This soft launch was done to ensure that processes and workflows for the programs worked as planned. Twenty-three (23) customers responded to the invitation and eighteen (18) met all the TEP-Owned Residential Solar Program requirements. Ten (10) of those customers have executed contracts, initiating the installation process, while eight (8) customers are still reviewing their contracts. As of this submittal, one (1) system has been installed, inspected and commissioned.

In pursuit of technical research and development goals, discussed in more depth in following paragraphs, the Company has also prioritized the participation of an additional fifty-seven (57) customers. These customers were identified from the interest list as being located on particular feeder circuits within the Company's distribution network that meet loading and communication criteria. Once installations have been completed on these circuits, TEP will begin to incorporate the systems into the energy management system in order to directly communicate with the PV systems.

The Company plans to complete the broader launch in July 2015 and notify interested customers that the TEP-Owned Residential Program has launched and that applications are available to be submitted to TEP. Due to time needed for installation of the arrays, the Company anticipates that customers who sign up towards the end of 2015, will not have their arrays installed until the beginning of 2016.

Decision No. 74884 requires the Company to provide an annual report that discusses several key aspects of utility DG ownership including: (1) information regarding specific feeder capacity limits impacted by program installations; (2) avoided system reinforcements or capital improvements due to the program installations; (3) operational impacts of the proposed distribution management system with

respect to voltage and frequency control; and (4) any potential opportunities to study energy storage and PV coordination management at the feeder level.

With regards to (1), (2) and (3) the Company's engineering and distribution planning groups have identified several feeders that would potentially benefit from additional generation capacity, in this case solar DG. This information is being used to prioritize, on a geographical basis, potential customers of the TEP-Owned Residential Solar Program. As systems are installed on identified feeders, the Company will monitor, assess and report on the operational effects on feeders, avoided system reinforcements, and voltage and frequency support. In addition to the current utility-scale energy storage project solicitation (with regards to (4) above), TEP will consider potential storage and PV coordination management study opportunities. This will be an ongoing process as additional arrays are deployed onto TEP's distribution grid.

TEP is proposing to expand the TEP-Owned Residential Solar Program in 2016, by investing up to an additional $15 million and expanding participation by up to an additional 1,000 customers.

E. Residential Community Solar Program

As part of TEP's 2015 REST Implementation Plan (Decision No. 74884), the Commission ordered the Company to provide a report on the *"feasibility, costs, benefits, and other aspects of larger scale distributed generation options, either company-owned or through purchased power agreements and if Tucson Electric Power Company wishes, an implementation proposal, as part of their REST activities."* TEP's Plan includes a new Residential Community Solar tariff that will provide customers with more options for going solar, while enabling the Company to build more cost-effective utility-scale community

solar facilities.

In 1999, more than 16 years ago, the Commission initiated the development of a mandatory environmental portfolio standard. By 2000, Arizona had one of the nation's first renewable energy standards, known as the Environmental Friendly Portfolio Standard. The Commission found the standard to be in the public interest, in part by relying on a critical Finding of Fact that should apply to all decisions regarding renewable energy:

"The development of renewable resources should be designed to achieve maximum benefit for the money spent." (Decision No. 62506, Fact 38, page 25)

In 2006, the Commission approved the REST (Decision No. 69127).[1] Since its adoption, affected utilities have strived to not only achieve, but exceed, the standard. The Commission has supported the utilities' efforts to "achieve the maximum benefit for the money spent" by approving specific programs, clarifying vague provisions, or providing exceptions when in the public interest.

In the context of the requirement to provide information regarding the "feasibility, costs, benefits, and other aspects" of larger scale DG, the Company would like to focus on the definition of DG included in the REST, the rationale for having DG and the requirements pertaining to implementing DG. There are several definitions relating to DG in the REST, and while all are similar to standard industry definitions, they all contain a singular provision unique to Arizona requiring that the generation be sited on a

---

[1] This reference is provided as Appendix A and contains A.A.C. R14-2-1801 through 1815, which thoroughly describe the provisions and requirements set forth in the REST. The Decision itself contains nearly 57 pages of Findings of Fact providing a summary of discussions, filings, and comments from interested parties throughout the development of the current standard.

customer's premises. This requirement prevents affected utilities from (i) using all DG resources in meeting the REST standard and, more importantly, (ii) maximizing the benefits of investing in DG that can be placed anywhere on the Company's distribution system and not just limiting DG to that which is on the customer's premises.

There does not appear to be any specific rationale in the record pertaining to the requirement that DG must be sited solely on a customer's premises. It is noted in the Commission's own analysis following approval of the REST rules[2] that the use of distributed resources will ensure that a percentage of the Annual Renewable Energy Requirement will come from Arizona resources. However, there is no need for the resource to be located on a customer's premises to achieve that objective.

In Decision No. 69127 (November 14, 2006), the Commission Staff's Economic, Small Business, and Consumer Impact Statement[3] emphasized the reliability benefits of using renewable resources in Arizona, such as fewer supply disruptions and less volatile price fluctuations. While acknowledging a "major emphasis in the proposed Renewable Energy Standard and Tariff Rules on Distributed Resources", it only stipulates an increase in reliability of service to areas with distributed resources and an avoidance of negative impacts of cost run ups due to natural disasters such as hurricanes. Again, the above are all benefits that can be achieved through DG located anywhere on an affected utility's distribution system.

---

[2] Decision No. 69127, Appendix B, page 22.

[3] Filed as part of the decision (Decision 69127, Appendix C).

Even if the basis for limiting DG to a customer's premises was to force the deployment of customer sited generation, it is a moot point in todays' world of renewable energy. Customer based solutions are no longer tied to cash incentives whereby the utility would take title to REC's, and the customer has multiple options including outright ownership, leasing structures, utility rooftop programs, and community solar.

The definitions associated with DG included in the REST are provided below, with the specific customer premises provision emphasized.[4]

"**Distributed Generation**" means electric generation *sited at a customer premises*, providing electric energy to the customer load on that site or providing wholesale capacity and energy to the local Utility Distribution Company for use by multiple customers in contiguous distribution substation service areas. The generator size and transmission needs shall be such that the plant or associated transmission lines do not require a Certificate of Environmental Compatibility *(CEC)* from the Corporation Commission.

"**Distributed Solar Electric Generator**" means electric generation *sited at a customer premises*, providing electric energy from solar electric resources to the customer load on that site or providing wholesale capacity and energy to the local Utility Distribution Company for use by multiple customers in contiguous distribution substation service areas. The generator size and transmission needs shall be such that the plant or associated transmission lines do not require a Certificate of Environmental Compatibility

[4] These definitions are contained in R14-2-1801 and R14-2-1802 of the renewable Energy Standard and Tariff.

from the Corporation Commission.

"**Distributed Renewable Energy Resources**" are applications of the following defined technologies that are *located at a customer's premises* and that displace Conventional Energy Resources that would otherwise be used to provide electricity to Arizona customers:

As a reference, the Solar Electric Industry Association (SEIA) defines DG as "electricity that is produced at or near the point where it is used. Distributed solar energy can be located on rooftops or ground-mounted, and is typically connected to the local utility distribution grid." [5]

There was considerable discussion throughout the development of the REST regarding the benefits of DG. Nearly 10 years later these discussions continue, and while there still remains some disagreement to the extent of these benefits, they all revolve around the notion that the generation resides near the load. Numerous comments included in the REST decision's Findings of Fact state that the benefits of DG within major load pockets enhances system reliability, relieves stress on the grid and reduces the need for unsightly or unpopular transmission lines. Additionally, it is noted that DG – as with ALL generation resources located within the load pocket – are available during transmission and substation outages. While this particular benefit is not unique to renewable resources, it does highlight a benefit of DG.

Regardless of the extent of the benefits that are actually realized from DG, the overriding concept – and benefit – is that the generator is located at or near the source of load irrespective of the generator's

---

[5] http://www.seia.org/policy/distributed-solar.

exact location or to which side of the meter it is attached . The idea that it must be located on a customer's premise diminishes the ability of an affected utility from (i) complying with the REST mandate in the most cost effective manner, and (ii) realizing widespread deployment and benefits associated with DG. DG should not be confused with, or associated with, the idea that it must be customer owned, behind the meter, limited in size, or even tied to a specific load. In fact, as the Commission acknowledged in previous decisions, the current standard allows for DG systems to be located on the utility side of the meter, owned by the utility for residential customers and is not limited in size (as long as a CEC is not required).

Most recently, TEP, Arizona Public Service, and UNS Electric all requested that the Commission address the issue of meeting the DG requirements when the companies were no longer taking title to customers' RECs. This issue was addressed by the Commission in Decision No. 74753, more commonly referred to as the "Track and Record" decision. Although the original intent of this docket was to develop a new methodology for utilities to comply with the REST requirements that was not based solely on the use of RECs, the Commission ultimately concluded that the affected utilities should request annual waivers based on overall development within their respective regions.

Since the REST requirements only pertain to affected utilities, it is incumbent upon the utilities to propose the most cost-effective solutions and alternatives to meet the REST requirements. Simple modifications to the interpretation of DG would enable the continuation of customer sited DG as it exists today, and would also enable the affected utilities and their customers to realize greater benefits through the widespread use of larger scale, considerably more cost effective, DG facilities to meet the current DG

requirements included in the REST.

These simple changes are as follows:

"Distributed Generation" means electric generation sited at a customer premises ***or directly connected to the Company's distribution system***, providing electric energy to the customer load on that site or providing wholesale capacity and energy to the local Utility Distribution Company for use by multiple customers in contiguous distribution substation service areas. The generator size and transmission needs shall be such that the plant or associated transmission lines do not require a Certificate of Environmental Compatibility from the Corporation Commission.

"Distributed Solar Electric Generator" means electric generation sited at a customer premises ***or directly connected to the Company's distribution system***, providing electric energy from solar electric resources to the customer load on that site or providing wholesale capacity and energy to the local Utility Distribution Company for use by multiple customers in contiguous distribution substation service areas. The generator size and transmission needs shall be such that the plant or associated transmission lines do not require a Certificate of Environmental Compatibility from the Corporation Commission.

"Distributed Renewable Energy Resources" are applications of the following defined technologies that are located at a customer's premises ***or directly connected to the Company's distribution system***, and that displace Conventional Energy Resources that would otherwise be used to provide electricity to Arizona customers:

While the Company is not requesting that the Commission consider changes to the definition of

DG[6] as part of TEP's REST implementation plan, it is important to highlight how this narrowly defined concept of DG limits the affected utilities ability to maximize benefits for the money spent.

This definition of DG is significantly flawed and contradicts the Commission's own finding of fact that *"The development of renewable resources should be designed to achieve maximum benefit for the money spent."* This limitation is the exact concept that the Company would like to Commission to consider when determining the Company's request for approval of its new Residential Community Solar Tariff and allowing the Company to utilize RECs associated with the capacity subscribed under the program for compliance.

There is not, however, anything in the current definition of DG that would prevent a utility from building a larger scale solar facility, as long as it is sited on a customer's premises (which could be achieved through a land lease) and provides energy to multiple customers in contiguous distribution substation service areas.

TEP believes it can achieve greater DG benefits from deploying more cost effective, larger scale solar installations and is requesting the Commission approve the Company's proposed Residential Community Solar tariff in TEP's 2016 Implementation Plan. The REST Rules do not preclude affected utilities from satisfying a portion of the residential DG requirement from utility-owned generators. The only limitations included in the REST Rules apply to satisfying the non-residential portion of the DG requirement.

If approved, the Company would build a utility-owned solar facility connected to the distribution

---

[6] Changing the definitions contained with the Arizona Administrative Code R14-2-1801 and R14-2-1802 would encompass a broader hearing process.

system which would then serve multiple customers through TEP's contiguous service area. Residential customers could apply to be served from the solar facility and be billed using the Company's new Residential Community Solar tariff. The REST's distributed renewable energy provision does not include any locational restrictions, and only requires the Company meet one-half of its distributed renewable energy from "residential applications". By providing TEP's customers with an option to participate in the newly created Residential Community Solar program, it will also allow the Company to assign the associated capacity and renewable energy credits associated with the program towards meeting the REST's residential DG energy requirement.

(i) **Program Details**

The Company's proposed Residential Community Solar program is a hybrid of the Company's existing Bright Tucson Community Solar program and the more recently approved TEP Residential Solar program. Customers choosing to participate would pay a fixed energy rate, similar the TEP-Owned Residential Solar Program. The Company proposes to spend up to $10 million to develop a solar facility of approximately 5 MW in size and interconnect this facility to the Company's distribution system. Depending on the level of customer interest and participation, the Company could expand the program to meet customer demand. As with all renewable energy contracts or capital expenditures, the Commission determines the prudency through the Company's annual REST Implementation Plans and general rate cases.

The proposed Residential Community Solar program would operate much like the TEP-Owned Residential Solar Program. The customer's equivalent net-zero value ("Solar Rate Capacity") would be

calculated in the same manner (previous annual consumption / average solar production per kW); the customer would enjoy a fixed monthly solar payment based upon their Solar Rate Capacity; the rate would be evaluated annually and raised or lowered if consumption increased or decreased by fifteen percent (15%); and there will be similar regulatory out and termination clauses. (See Exhibit 8 Residential Community Solar Tariff).

Although similar, a number of differences exist between the TEP-Owned Residential Solar Program and the Residential Community Solar Program, including:

- The capacity associated with a customer's equivalent Solar Rate Capacity calculation would be deducted from the larger facility's overall capacity, rather than a stand-alone system on the customer's property.
- The fixed contract term would be 10 years, rather than 25 years.
- The Residential Community Solar tariff would use a price of $17.50 per kW to calculate the fixed rate, as opposed to $16.50 for the TEP-Owned Residential Solar Program. The slight premium in the rate reflects that customers can go solar without placing a solar facility on their property and being exposed to: potential insurance implications, roof maintenance or repair costs, construction disruptions, possible tax consequences, or the general long term commitment to their physical property that a PV system installation requires. In addition, TEP's proposed Residential Community Solar tariff will reduce the amount of unrecovered fixed costs shifted to other, non-solar customer classes.
- The customer would not have the option to purchase the system (or any portion thereof).

- The customer would pay an early termination fee based on the number of months remaining on contract. Capacity made available by a customer terminating their participation would be available for other customers who wanted to participate in the program.

By building larger distributed community facilities of approximately 5 MW the Company can achieve several benefits, including:

- Greater cost-effectiveness of construction due to economies of scale. The typical residential rooftop solar installation costs between $2.50 - $2.85 per watt. TEP calculates a grid-tied community DG facility to cost approximately $1.60 - $1.70 per watt– a savings of approximately forty percent (40%) over smaller scale rooftop installations. This price differential would result in significant savings for the same number of participating customers, or a significant increase in the number of participating customers for the same level of investment.
- Greater cost-effectiveness of operations and maintenance expenses, due to economies of scale of the larger facilities
- Advanced inverter functionality can be incorporated into the utility's grid Operations Management System through pre-existing sub-station and feeder circuit communications network and enhance system reliability.
- Single, larger facilities would be able to utilize existing communications infrastructure at a much lower cost.

The popularity of the Company's existing TEP-Owned Residential Solar Program demonstrates

the desire of TEP's customer's to have more solar energy options. Roughly twenty-five percent (25%) of the customers who indicated strong interest in the TEP-Owned Residential Solar Program and initiated the application process were unable to participate for a variety of technical reasons, such as expensive upgrades to either their roof or point of interconnection, or simply a lack of sufficient roof space. A program such as the proposed Residential Community Solar program would enable these and other customers to enjoy the benefits of going solar with a fixed rate while supporting the Company's overall expansion of its renewable resource portfolio.

F. Distributed Generation Incentive Program

TEP is not proposing any new incentives for residential or non-residential solar DG or solar water heating. DG installations are occurring at a rapid pace despite the lack of utility incentives. While many issues may affect future adoption rates for solar DG – including changes to tax incentives, net metering rates or other Commission policies – the Company does not believe new incentives will be required to maintain an adequate pace for solar DG installations in 2016.

TEP anticipates that sufficient renewable DG resources will be generated in its service territory to meet the 2016 residential and non-residential DG targets. However, since the Company no longer pays incentives necessary to acquire RECs from qualifying DG projects, it will not have an adequate number of RECs necessary to meet the REST requirements for 2016 related to the residential DG carve-out provision of A.A.C. R14-2-1805(D). TEP does have enough projects associated with RECs to meet the non-residential DG carve-out provision. As a result, TEP is requesting a waiver of the residential DG requirement. Table 4 shows the Company's projections for 2016 DG compliance (as a percentage of

retail sales), as well as the capacity and expected production from DG facilities that the Company holds title to the REC's.

Table 4. DG Compliance

2016	Est. DG Req't (kWh)	Capacity (kW)	Est. REC's Available
Residential	81,573,750	32,030	62,947,228
Non-Residential	81,573,750	47,030	90,862,229

In the Company's request for a waiver of the residential DG requirement, TEP requests that the Commission consider the additional 35,520 kW of residential DG capacity that is currently operational or under construction.

TEP is including in the Plan funds for performance-based incentives ("PBI") awarded in prior years, before those incentive programs were discontinued. To fund these programs, the budget for the proposed incentive program is $7,192,720.

G. Market Cost of Comparable Conventional Generation

Consistent with the REST Rules, TEP calculates program expenses using the Market Cost of Comparable Conventional Generation ("MCCCG"). Details on the methodology for the MCCCG calculation are included in Exhibit 2 attached hereto. The annual MCCCG rates are calculated in advance and stated as a single dollar per MWh value by technology type. The expenses are based on the PPA pricing after subtracting the corresponding MCCCG based on projected hourly energy profiles and are included in Exhibits 3 (AMCCG)(confidential) and Exhibit 5 (Implementation Plan New Resource Costs)

(confidential).[7] Exhibit 4 (Implementation Plan New Resources) shows associated energy production. The profiles are determined by TEP's production cost model. The MCCCG will be included for wind, PV systems, concentrated solar with storage, and bio-fueled renewable resources.

H. Metering Costs

The Company continues to receive greater than anticipated demand for residential DG– over 3,500 applications are anticipated for 2015, even with the continued elimination of incentives. The Company plans to continue providing DG production meters for residential and commercial installations, as well as the associated metering sockets and safety equipment for each residential installation. The costs of these necessary components are shown in Table 5. The Company anticipates 2,750 DG installations in 2016 (1,700 third party residential installations, 1,000 TEP-owned residential installations, and 50 commercial installations), therefore the Plan budgets $697,975 for these metering costs in 2016.

Table 5. Metering Costs

Components for 3rd party residential solar install	Cost	Components for TEP-owned residential solar install	Cost	Components for 3rd party non-residential solar install	Cost
Net Meter	$ 129.77	Net Meter	$ -	Net Meter	$ -
Production Meter	39.45	Production Meter	39.45	Production Meter	206.05
AC Disconnect	86.91	AC Disconnect	84.79	AC Disconnect	-
Labels	9.66	Labels	11.39	Labels	-
Meter Sockets	37.57	Meter Sockets	36.33	Meter Sockets	-
Total Material Per Install	$ 303.36	*Total Material Per Install*	$ 171.96	*Total Material Per Install*	$ 206.05
Total Estimated Residential DG Installs	1,700	Total Estimated TEP-Owned Installs	1,000	Total Estimated Non-Residential DG Installs	50
Total Estimated Meter Budget	$ 515,712	*Total Estimated Meter Budget*	$ 171,960	*Total Estimated Meter Budget*	$ 10,303
				Total Meter Material Budget	$ 697,975

[7] Exhibits 3 and Exhibit 5 will be provided to Commission Staff upon execution of a Protective Agreement.

III. THE PLAN BUDGET

As stated previously, TEP is proposing to recover approximately $48 million through the REST tariff to fund the Plan. The estimated cost to implement the Plan is approximately $57 million, which will be partially offset by applying approximately $9 million of carryover funds from the 2014 budget. The Plan's detailed budget is attached as Exhibit 1, which includes a breakdown of the costs for utility-scale energy, residential and non-residential DG programs, research and development, outside services support and reporting, technology, and education and outreach. Table 6 includes a high level Plan budget.

Table 6. Plan Budget by Category

Category	Budget
Utility Scale	$ 47,368,944
Existing Large Commercial PBIs	7,192,720
Associated Costs (Education & Outreach, Technical Training, I.T., Metering, Labor, and R&D)	2,084,185
2016 Program Cost	**$ 56,645,849**
Carryover Funds	8,809,321
Total 2016 Plan	**$ 47,836,528**

IV. THE 2016 REST TARIFF

The Company's REST tariff (Rider-6) and proposed Statement of Charges (both clean and redline versions setting forth revisions to the REST surcharge and customer caps are attached as Exhibit 6[8]. TEP's Plan includes an increase in the REST surcharge to $0.01300 per kWh– from its 2015 level of $0.0080 per kWh – with customer caps by class. The caps were developed using the proportional cap allocation method previously approved by the Commission. Under this methodology, the caps for all customer classes should increase in 2016. Table 7 details the Company's proposed budget for 2016, delineated by rate class. Table 8 shows the currently approved surcharge caps by rate class and the caps proposed for the Plan.

[2] Customer Load Percentage Analysis is set forth in the attached Exhibit 7.

Table 7. 2016 Budget by Rate Class

Rate Class	2015 Approved Budget	2016 Proposed Budget
Residential	$ 14,632,164	$ 18,677,315
Small General Service	10,244,784	16,265,080
Large General Service	5,727,369	8,646,389
Industrial & Mining	2,496,000	3,813,236
Lighting (PSHL)	256,281	423,386
Total	**$ 33,356,598**	**$ 47,825,407**

Table 8. 2015/2016 Surcharge Caps by Rate Class

Rate Class	2015 Approved Caps	2016 Proposed Caps
Residential	$ 3.76	$ 4.56
Small General Service	$ 100.00	$ 150.00
Large General Service	$ 1,015.00	$ 1,500.00
Industrial & Mining	$ 8,000.00	$ 12,000.00
Lighting (PSHL)	$ 100.00	$ 150.00
Per kWh to All Classes	**$ 0.0020**	**$ 0.0030**

V. RENEWABLE ENERGY BALANCING, INTEGRATION, AND FIELD TESTING

TEP typically commits a portion of its REST budget to provide technical research and support for the adoption of renewable energy. Table 9 outlines TEP's proposed budget for this work in 2016. TEP plans to continue its commitment to furthering the integration of renewable energy on its system by participating in the following projects.

Table 9. TEP's Integration Initiatives by Project

Renewable Integration Initiatives	
Energy Storage and Grid Operations Study	$ 38,000
Solar Test Yard Maintenance and Equipment	50,000
Field and Lab PV Component Degradation Analysis	50,000
Solar and Wind Forecast Integration Portal	100,000
UWIG, SEPA, AWEA Membership Dues	15,000
Total	**$ 253,000**

A. PV Panel Lab Degradation Testing

In order for TEP to adequately maintain its existing and future portfolio of PV generation, degradation problems that are specific to the Tucson environment need to be identified early in order to prepare for failures in the field. TEP plans to continue to use the University of Arizona's ("UA") state-of-the-art PV panel degradation laboratory to test panels either currently in use or proposed for use in TEP facilities, including panels used in the TEP-Owned Program. This testing is designed to reduce the long-term operations and maintenance cost of these facilities. The proposed budget for such research and testing is $50,000.

B. Solar Test Yard Maintenance

TEP regularly performs technical analysis on existing and developing PV technologies in its widely regarded test yard facility. Data collected from the test yard helps the Company solicit partners to

provide funding for research projects. This collaboration and grant funding allows TEP to optimize investments in appropriate technology for the long-term benefit of customers. The proposed budget for maintaining this existing technology and managing the many interconnections in the yard, including labor, is $50,000.

C. Solar and Wind Forecast Integration Portal

Since 2013, TEP has partnered with the UA's Departments of Physics and Atmospheric Sciences to create and implement a Solar and Wind Integration Forecasting portal. The tool is now functional and is being actively used in TEP's Wholesale Marketing and Operations departments. The forecasting portal has been key in helping TEP understand and integrate the amount of renewables on its grid. TEP has a dedicated weather forecaster working with the UA, to ensure that the forecasts would be effectively utilized for operational decisions. The proposed budget for this program is $100,000.

D. Energy Storage and Grid Operations Study

As part of the Plan, the Company is requesting funding to conduct an Energy Storage and Grid Operations Study. TEP continues to experience a very high penetration of DG, and the long-term effects of these systems on the grid are not fully understood. This proposed study will help the Company identify how energy storage, combined with updates to grid operations, might mitigate any negative impacts of DG. The proposed budget for this study is $38,000.

E. UVIG, SEPA, AWEA Dues

To facilitate its compliance with the REST, TEP actively participates in three renewable industry associations: the Utility Variable (Energy) Integration Group ("UVIG"), the Solar Electric Power Association ("SEPA"), and the American Wind Energy Association (AWEA). High penetrations of solar

and wind make UVIG (a variable generation group) relevant, while SEPA and AWEA provide resources and expertise that help the Company manage renewable programs and stay informed on issues facing the industry. The proposed budget for these groups' fees is $15,000.

VI. CONCLUSION

TEP's 2016 REST Implementation Plan was developed to allow the Company to cost-effectively comply with the REST requirements. The Company believes that the proposed Plan is prudent and is in the public interest. The Company respectfully requests that the Commission adopt TEP's 2016 REST Implementation Plan as submitted, including a waiver of the residential portion of the Distributed Renewable Energy requirement.

Exhibits

Exhibit 1
Line Item Budget

Exhibit 1

TEP Renewable Energy Standard Tariff

Line Item Budget

	Approved 2015	2016	2017	2018	2019	2020
Total REST Budget & Tariff Collection:	**$ 33,291,969**	**$ 47,836,529**	**$ 47,790,347**	**$ 45,638,929**	**$ 43,868,828**	**$ 41,224,021**
Utility Scale Energy						
Above Market Cost of Conventional Generation (See Exhibit 2 for method)	$ 22,971,774	$ 38,002,919	$37,254,475	$35,096,322	$33,361,316	$31,699,574
Net TEP owned*	$ 8,022,530	$ 9,366,025	$ 1,200,854	$ 1,147,033	$ 1,048,833	$ -
Total	**$ 30,994,304**	**$ 47,368,944**	**$38,455,329**	**$36,243,355**	**$34,410,149**	**$31,699,574**
Customer Sited Distributed Renewable Energy:						
Residential PV Up-Front Incentive (UFI)	$ -	$ -	$ -	$ -	$ -	$ -
Non-Residential UFI	$ -	$ -	$ -	$ -	$ -	$ -
Annual Performance-Based Incentive (PBI)	$ 7,214,196	$ 7,192,720	$ 7,192,720	$ 7,192,720	$ 7,192,720	$ 7,192,720
Residential/Non-Residential Solar Water Heating UFI	$ -	$ -	$ -	$ -	$ -	$ -
Annual meter reading cost	$ 35,363	$ 35,363	$ 35,363	$ 35,363	$ 35,363	$ 35,363
Consumer Education and Outreach	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Total	**$ 7,349,559**	**$ 7,328,083**	**$ 7,328,083**	**$ 7,328,083**	**$ 7,328,083**	**$ 7,328,083**
TEP internal and contractor training costs	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**
Information Systems Integration Costs	**$ 100,000**	**$ 75,000**	**$ 75,000**	**$ 75,000**	**$ 75,000**	**$ 75,000**
Metering: Direct material cost for DG production meters and associated items	**$ 501,680**	**$ 697,975**	**$ 732,873**	**$ 769,517**	**$ 807,993**	**$ 848,392**
Program Labor and Administration						
Internal Labor	$ 468,442	$ 556,944	$ 573,652	$ 590,861	$ 608,587	$ 626,845
External Labor	$ 302,401	$ 216,903	$ 223,410	$ 230,112	$ 237,016	$ 244,126
Materials, Fees and Supplies	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000
AZ Solar website	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000
Total	**$ 834,843**	**$ 837,847**	**$ 861,062**	**$ 884,974**	**$ 909,603**	**$ 934,971**
Renewable Energy Balancing, Integration, and Field Testing						
Renewable Integration and Operations Study	$ 38,000	$ 38,000	$ 38,000	$ 38,000	$ 38,000	$ 38,000
Solar and Wind Forecast Integration Portal	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Solar Test Yard monitoring, production analysis, and equipment maintenance	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Field and Lab Degradation Analysis	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
UWIG, SEPA, AWEA membership dues	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
Total	**$ 253,000**	**$ 253,000**	**$ 253,000**	**$ 253,000**	**$ 253,000**	**$ 253,000**
2015 Program Cost Subtotal	**$ 40,118,386**	**$ 56,645,849**	**$47,790,347**	**$45,638,929**	**$43,868,828**	**$41,224,021**
Carry forward of 2014 General REST Funds	$ 6,826,417	$ 8,809,321	$ -	$ -	$ -	$ -
Grand Total to be collected in tariff	**$ 33,291,969**	**$ 47,836,529**	**$47,790,347**	**$45,638,929**	**$43,868,828**	**$41,224,021**

Exhibit 2
Definition of Market Cost of Comparable Conventional Generation

Exhibit 2

Market Cost of Comparable Conventional Generation

2016 Renewable Energy Standard and Tariff

OVERVIEW

Consistent with the Renewable Energy Standard Tariff ("REST") Rules passed by the Arizona Corporation Commission ("Commission"), Tucson Electric Power Company's ("TEP") Renewable Energy Standard and Tariff Implementation Plan contemplates recovery of expenses in excess of the Market Cost of Comparable Conventional Generation ("MCCCG")." The Commission provided guidance on defining MCCCG in the context of its REST Rules and identified the MCCCG as "the Affected Utility's energy and capacity cost of producing or procuring the incremental electricity that would be avoided by the resources used to meet the Annual Renewable Energy Requirement, taking into account hourly supply and demand circumstances. Avoided costs should include any avoided transmission, distribution, and environmental compliance costs." This exhibit defines the methodology for developing the MCCCG rate for the Company.

METHODOLOGY

Annual MCCCG rates shall be calculated in advance and stated as a single $/MWh value by renewable technology type. The renewable technology types will be based on projected hourly energy profiles for each type of renewable resource. Annual MCCCG rates will include renewable resources such as wind resources, fixed photovoltaic systems, concentrated solar with storage, single-axis tracking photovoltaic systems, and bio-fueled resources. Specific MCCCG rates would be developed as needed when new renewable technologies or new purchase power agreements are added to the Company's renewable portfolio. Annual MCCCG rates will capture the value of the seasonality and time of day delivery by deriving an average of on and off peak dispatch costs weighted by on and off peak renewable generation. MCCCG rates shall be calculated each year using the companies production cost simulation software 'Planning & Risk'. The hourly MCCCG rate determination criteria are shown in Table 1 below by comparing the types of renewable generation with the resource dispatch type. All projected MCCCG

hourly rates are based on a 'Planning & Risk' production cost simulation that forecasts adequate generation and transmission capacity to meet all firm load obligations including system reserve requirements. Finally, the cost of renewable generation above the annual MCCCG rates will be recovered through the REST Adjustor Mechanism and REST Tariff.

Table 1 - MCCCG Hourly Rate Determination Matrix

<table>
<tr><td colspan="6"></td><td colspan="4">Types of Renewable Generation Resources</td></tr>
<tr><td rowspan="5">Resource Dispatch Type</td><td colspan="2"></td><td>Dispatchable Renewable Generation</td><td>Firm Renewable Generation</td><td>Non-Firm Renewable Generation</td><td>Curtailable Non Firm Renewable Generation</td></tr>
<tr><td colspan="2">Wholesale sales transaction served from existing resource portfolio</td><td colspan="4" rowspan="2">The MCCCG rate will be based on projected incremental production costs to serve firm load and wholesale sales opportunities for that hour. Costs will include any projected transmission, distribution and environmental compliance costs.</td></tr>
<tr><td colspan="2">No market transactions. Generation available from thermal resource portfolio.</td></tr>
<tr><td colspan="2">Day, week or month ahead purchase transaction to serve firm load requirements.</td><td colspan="4">The MCCCG rate will be based on the projected day, week or month-ahead firm purchase power transactions committed for that hour. Costs will include any projected transmission, distribution and environmental compliance costs.</td></tr>
<tr><td colspan="2">Spot market transaction to serve firm load requirements.</td><td colspan="4">The MCCCG rate will be based on the projected Palo Verde spot market price for that hour.

Costs will include any projected transmission, distribution and environmental compliance costs.</td></tr>
</table>

CALCULATION

$$MCCCG_{on} = Annual\ Average\ On\ Peak\ MCCCG\ Rate = \frac{\sum_{i=1}^{8760} PR_i * G_i * X_i}{\sum_{i=1}^{8760} G_i * X_i}$$

$$MCCCG_{off} = Annual\ Average\ Off\ Peak\ MCCCG\ Rate = \frac{\sum_{i=1}^{8760} PR_i * G_i * (1 - X_i)}{\sum_{i=1}^{8760} G_i * (1 - X_i)}$$

$MCCCG_{Annual\ Rate}$ = Average of on and off peak MCCCG rate weighted by projected on and off peak renewable generation.

It is assumed that there is a specific MCCCG rate for each renewable technology type.

Where

PR_i = Projected Planning & Risk dispatch cost ($/MWh) for hour i=1,2,…,8760.

G_i = Projected energy generation in renewable technology resource profile for hour i=1,2,…,8760.

$$X_i = \begin{cases} 1\ if\ hour\ i\ is\ an\ on\ peak\ market\ hour \\ 0\ Otherwise \end{cases} for\ i = 1,2,\ldots 8760$$

Table 2 – TEP's 2016 MCCCG Annual Rates

Renewable Technology	MCCCG Annual Rates	$/MWh
	Solar PV	$39.36
	AZ Wind	$36.20
	Biomass	$36.60
	NM Wind	$35.64
	Solar CSP	$39.43

Exhibit 3
Above-Market Cost of Comparable Conventional Generation by Technology *

Confidential
To be provided pursuant to the terms of the protective agreement in this docket

Exhibit 4
Implementation Plan New Resources

Exhibit 4
Implementation Plan New Resources

IMPLEMENTATION PLAN

Table 1 - Targeted Resources

No.		Ownership[1]	Targeted Completion	2008-2016 Total MW (AC)	2008-2016 Total MW (DC)	Targeted Energy Production (MWh or Equivalent)						No.
						2016	2017	2018	2019	2020	Total	
	Targeted Generation Resources:											
1	Picture Rocks	PPA	COMPLETE	20.00	25.00	57,372	57,086	56,800	56,516	56,234	284,008	1
2	Avra Valley	PPA	COMPLETE	25.00	34.41	75,930	75,550	75,173	74,797	74,423	375,873	2
3	Avalon Solar	PPA	COMPLETE	28.34	35.00	82,563	82,151	81,740	81,331	80,924	408,709	3
4	Gatos Montes	PPA	COMPLETE	4.92	6.00	10,303	10,252	10,201	10,150	10,099	51,004	4
5	Cogenra	PPA	COMPLETE	1.10	1.38	2,650	2,636	2,623	2,610	2,597	13,116	5
6	Amonix UASTP	PPA	COMPLETE	1.20	2.00	4,049	4,029	4,009	3,989	3,969	20,046	6
7	E.On Tech Park	PPA	COMPLETE	4.80	6.60	15,300	15,224	15,148	15,072	14,997	75,741	7
8	Valencia Solar	PPA	COMPLETE	10.00	13.20	26,768	26,634	26,501	26,368	26,237	132,508	8
9	Red Horse (Solar)	PPA	8/30/2015	41.00	51.25	120,610	120,007	119,407	118,810	118,216	597,052	9
10	Avalon Solar II	PPA	COMPLETE	16.80	21.00	49,787	49,538	49,290	49,044	48,799	246,458	10
11	Springerville 4.6	TEP	COMPLETE	3.68	4.60	5,179	5,153	5,128	5,102	5,076	25,639	11
12	Springerville 1.0 Expansion	TEP	COMPLETE	1.28	1.80	2,086	2,075	2,065	2,054	2,044	10,324	12
13	UASTP I	TEP	COMPLETE	1.28	1.60	2,981	2,966	2,951	2,937	2,922	14,757	13
14	Solon Prairie Fire	TEP	COMPLETE	4.00	5.00	7,835	7,796	7,757	7,718	7,679	38,784	14
15	UASTP III	TEP	COMPLETE	4.00	5.00	7,835	7,796	7,757	7,718	7,679	38,784	15
16	Sundt Augmentation	TEP	COMPLETE	5.00		14,310	14,238	14,167	14,096	14,026	70,837	16
17	White Mountain Solar	TEP	COMPLETE	8.25	10.00	19,947	19,847	19,748	19,649	19,551	98,743	17
18	Fort Huachuca PHI	TEP	COMPLETE	13.60	17.20	38,635	38,442	38,249	38,058	37,868	191,252	18
19	SunPower (OH & HQ)	TEP	COMPLETE	0.44	0.62	2,076	2,066	2,055	2,045	2,035	10,277	19
22	Fort Huachuca PHII	TEP	1/31/2016	4.00	5.00	11,231	11,175	11,119	11,063	11,008	55,596	
23												
24	***Wind:***											22
25	Macho Springs	PPA	COMPLETE	50.40		130,244	130,244	130,244	130,244	130,244	651,218	23
26	Red Horse (Wind)	PPA	8/30/2015	30.00		70,956	70,956	70,956	70,956	70,956	354,780	24
31	***Biomass/Biogas:***											29
32	Sundt Landfill Gas	PPA	COMPLETE	4.00		21,100	21,100	21,100	21,100	21,100	105,500	30
33												31
34	***Total Targeted Generation***			***283.09***	***246.7***	***779,748***	***776,961***	***774,188***	***771,428***	***768,683***	***3,871,007***	32
35												33

Notes:

[1]All utility-owned and Third Party generation projects are developed through a competitive RFP process, and all DE systems are built independently by Third Party developers and installers.

Exhibit 5
Implementation Plan
New Resource Costs *

Confidential
To be provided pursuant to the terms of the protective agreement in this docket

Rider R-6
Renewable Energy Standard and Tariff (REST) Surcharge
REST-TS1 Renewable Energy Program Expense Recovery

APPLICABILITY
Mandatory, non-bypassable surcharge applied to all energy consumed by all Customers throughout Company's entire electric service area.

RATES
For all energy billed which is supplied by the Company to the Customer. The REST surcharge shall be applied to all monthly bills. The REST rates are shown in the TEP Statement of Charges.

Notes:

1. A Large Commercial Customer is one with monthly demand greater or equal to 200 kW but less than 3,000 kW.
2. An Industrial Customer is one with monthly demand equal to or greater than 3,000 kW.
3. For non-metered services, the lesser of the load profile or otherwise estimated kWh required to provide the service in question, or the service's contract
4. kWh shall be used in the calculation of the surcharge.

This charge will be a line item on customer bills reading "Renewable Energy Standard Tariff."

Per Decision No. 73637 effective March 21, 2013, any Customer who has received incentives on and after January 1, 2012 under the REST Rules, shall pay the average of the REST surcharge paid by members of their Customer class. Any Customer who has a renewable installation without incentives that is interconnected with TEP's system on and after February 1, 2013 shall pay the average of the REST surcharge paid by members of their Customer class. The average price by class is shown in the TEP Statement of Charges

TEP STATEMENT OF CHARGES
For all additional charges and assessments approved by the Arizona Corporation Commission (ACC) see the TEP Statement of Charges which is available on TEP's website at www.tep.com.

RULES AND REGULATIONS
The standard Rules and Regulations of the Company as on file with the ACC shall apply where not inconsistent with this Rider.

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.

REDLINE

TEP

Tucson Electric Power

Tucson Electric Power Company

~~Fifth~~Sixth Revised Sheet No.: 801-1

Superseding ~~Fifth~~Sixth Revised Sheet No.: 801-1

TEP STATEMENT OF CHARGES

Description	Rate	Effective Date	Decision No.
Rider R-1 – Purchased Power and Fuel Adjustment Clause (PPFAC)	$0.006820 per kWh	April 1, 2015	74974
Rider R-2 – Demand Side Management Surcharge (DSMS) RESIDENTIAL: NON-RESIDENTIAL: FREEPORT-MCMORAN COPPER AND GOLD (25 MW and above):	$0.002311 per kWh 2.466% Exempt	January 6, 2015	74885
Rider R-3 – Market Cost of Comparable Conventional Generation (MCCCG) Calculation as Applicable to Rider-4 NM-PRS	$0.028653 per kWh	April 1, 2015	74973
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Lifeline Discount, Rate R-06-01 Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13 Solar Block Energy Rate for Municipal Service, Rate PS-40	 $0.050198 per kWh $0.050324 per kWh $0.048475 per kWh $0.049371 per kWh $0.049086 per kWh	February 1, 2011	71835[1]
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for Small General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13	 $0.053463 per kWh $0.053274 per kWh $0.053227 per kWh	July 1, 2013	73912
Rider R-6 – Renewable Energy Standard and Tariff Surcharge REST-TS1 Renewable Energy Program Expense Recovery Monthly Cap For Residential Customers: For Small General Service Customers: For Large General Service Customers: For Large Light & Power Customers: For Lighting Customers:	$0.~~0080050~~013000 per kWh Monthly Cap $ ~~3,794.70~~ per month $ ~~100.00~~150.00 per month $~~1,015.00~~1,600.00 per month $~~8,000.00~~12,000.00 per month $ ~~100.00~~150.00 per month	~~January 1, 2015~~Pending	~~74884~~Pending

[1]The Rider R-5 approved by Decision No. 71835 is closed for new enrollment as of July 1, 2013

Filed By: Kentton C. Grant
Title: Vice President of Finance and Rates
District: Entire Electric Service Area

Rate: Statement of Charges
Effective: July 1, 2013
Decision No.: 73912

TEP STATEMENT OF CHARGES

Description	Rate	Effective Date	Decision No.
Rider R-6 – Renewable Energy Standard and Tariff Surcharge REST-TS1 Renewable Energy Program Expense Recovery Average price by class: Monthly Cap For Residential Customers: For Small General Service Customers: For Large General Service Customers: For Large Light & Power Customers: For Lighting Customers:	Monthly Cap $ 3.50 per month $ 20.00 per month $ 1,249.12 per month $12,000.00 per month $ 11.74 per month	January 1, 2014	73912
Rider R-8 Lost Fixed Cost Recovery (LFCR) Mechanism – Energy Efficiency Lost Fixed Cost Recovery (LFCR) Mechanism – Distributed Generation	0.4149% 0.3126%	August 1, 2014	74593
Rider R-9 – Environmental Compliance Adjustor (ECA)	$0.000191 per kWh	May 1, 2015	73912

CLEAN

Tucson Electric Power

Tucson Electric Power Company

Sixth Revised Sheet No.: 801-1

Superseding Fifth Revised Sheet No.: 801-1

TEP STATEMENT OF CHARGES

Description	Rate	Effective Date	Decision No.
Rider R-1 – Purchased Power and Fuel Adjustment Clause (PPFAC)	$0.006820 per kWh	April 1, 2015	74974
Rider R-2 – Demand Side Management Surcharge (DSMS) RESIDENTIAL: NON-RESIDENTIAL: FREEPORT-MCMORAN COPPER AND GOLD (25 MW and above):	 $0.002311 per kWh 2.466% Exempt	January 6, 2015	74885
Rider R-3 – Market Cost of Comparable Conventional Generation (MCCCG) Calculation as Applicable to Rider-4 NM-PRS	$0.028653 per kWh	April 1, 2015	74973
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Lifeline Discount, Rate R-06-01 Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13 Solar Block Energy Rate for Municipal Service, Rate PS-40	 $0.050198 per kWh $0.050324 per kWh $0.048475 per kWh $0.049371 per kWh $0.049086 per kWh	February 1, 2011	71835[1]
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for Small General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13	 $0.053463 per kWh $0.053274 per kWh $0.053227 per kWh	July 1, 2013	73912
Rider R-6 – Renewable Energy Standard and Tariff Surcharge REST-TS1 Renewable Energy Program Expense Recovery <u>Monthly Cap</u> For Residential Customers: For Small General Service Customers: For Large General Service Customers: For Large Light & Power Customers: For Lighting Customers:	$0.013000 per kWh <u>Monthly Cap</u> $ 4.70 per month $ 150.00 per month $ 1,600.00 per month $12,000.00 per month $ 150.00 per month	Pending	Pending

[1]The Rider R-5 approved by Decision No. 71835 is closed for new enrollment as of July 1, 2013

Tucson Electric Power

Tucson Electric Power Company

Alternate Sixth Revised Sheet No.: 801-2

Superseding Fifth Revised Sheet No.: 801-2

TEP STATEMENT OF CHARGES

Description	Rate	Effective Date	Decision No.
Rider R-6 – Renewable Energy Standard and Tariff Surcharge REST-TS1 Renewable Energy Program Expense Recovery Average price by class: Monthly Cap For Residential Customers: For Small General Service Customers: For Large General Service Customers: For Large Light & Power Customers: For Lighting Customers:	 Monthly Cap $ 4.12 per month $ 32.06 per month $ 1,249.12 per month $12,000.00 per month $ 19.05 per month	Pending	Pending
Rider R-8 Lost Fixed Cost Recovery (LFCR) Mechanism – Energy Efficiency Lost Fixed Cost Recovery (LFCR) Mechanism – Distributed Generation	 0.4149% 0.3126%	August 1, 2014	74593
Rider R-9 – Environmental Compliance Adjustor (ECA)	$0.000191 per kWh	May 1, 2015	73912

Filed By: Kentton C. Grant
Title: Vice President of Finance and Rates
District: Entire Electric Service Area

Rate: Statement of Charges
Effective: July 1, 2013
Decision No.: 73912

Exhibit 7
Customer Load Percentage Analysis

TEP Exhibit 7 – Load Percentage Analysis

2016 Company Proposed Plan

Customer Class	Total Revenue	Percent of Revenue	Average Bill	Monthly Cap	Percent of Bills at Cap	Percentage to Total Load
Residential	$18,677,315	39.1%	$4.02	$4.56	75.1%	40.7%
Small Commercial	$16,265,080	34.0%	$32.06	$150.00	8.2%	23.7%
Large Commercial	$8,646,389	18.1%	$1,200.02	$1,500.00	50.6%	13.0%
Industrial & Mining	$3,813,236	8.0%	$12,000.00	$12,000.00	100.00%	22.3%
Lighting (PSHL)	$423,386	0.9%	$19.05	$150.00	0.74%	0.4%
Total	$47,825,407	100.0%				100.0%

Exhibit 8
Rider- 17 Residential Community Solar Tariff

Rider R-17
Residential Community Solar Program

AVAILABILITY
Available throughout the Company's entire electric service area where the facilities of the Company are of adequate capacity and configuration and are adjacent to the premises.

APPLICABILITY
To all Standard Residential Customers, who would otherwise be eligible for Net Energy Metering under the company's Rider R-4 tariff, and has the legal authority to enter into a contractual agreement for the premise which will be assigned under this tariff. Participation under the TEP Residential Community Solar program is limited, and in the Company's sole discretion, to the amount of solar generation available and subscription will be made on a first come, first served basis.

Customers being served under self-generation riders or plans may not purchase power under the TEP Residential Community Solar tariff (including, but not limited to Net Metering for Certain Partial Requirements Service Rider-4 and Non-Firm Power Purchase from Renewable Energy).

CHARACTER OF SERVICE
The service shall be single-phase or three-phase, 60 Hertz, and at one standard nominal voltage as mutually agreed and subject to availability at point of delivery.

RATE
A Customer will enter into a contract with the Company for a fixed charge rate for their total net monthly bill before taxes, assessments and other governmental charges. The fixed rate will be $17.50 per kW based on the equivalent capacity of solar equipment necessary to meet the customer's most recent 12 month historical usage, based on current average annual fixed solar photovoltaic production within TEP's service territory, as determined by TEP. This is a fixed rate per kW for the term of the contract but does not guarantee a monthly bill lower than would otherwise be realized if the customer were service under a standard offering tariff.

The Company shall either own and operate, or enter into a Power Purchase Agreement for the energy output of, a solar generating facility ("TEP Residential Community Solar Facility") within the Company's service territory and interconnected to the Company's distribution system. The equivalent capacity of solar equipment necessary, as calculated to determine the individual customer's fixed contract rate, shall be satisfied with the capacity provided by the TEP Residential Community Solar Facility. Subscription for each individual customer's solar capacity needs under this tariff shall be limited to the TEP Residential Community Solar Facility's overall capacity (cumulative customer solar capacity shall not exceed solar facility rating).

The Company shall provide all of the Customer's electricity requirements at the contractual fixed rate, up to 115% of the Customer's contractually established historical annual usage. If in any calendar year a Customer's usage exceeds 115% of the Customer's contractually established average historical annual usage, the customers' fixed energy rate shall be recalculated based on the new annual consumption data for the most recent year.

Additionally, if in any calendar year a Customer consumes less than 85% of the contractually established average historical annual usage, the Customer's fixed energy rate shall be recalculated based on the new annual consumption data for the most recent year.

TERMS AND CONDITIONS OF SERVICE
1) Must have been an active Customer of the Company in good standing for no less than twelve months.

2) Customer will enter into a contract for 10 years. Customer must remain on TEP Residential Community Solar tariff for term of contract. Customer may terminate service under this tariff through early termination provision, or as otherwise agreed upon by the parties, as set forth in the contract.

3) Customer will continue to be charged for all other applicable Comission approved charges (except for the Lost Fixed Cost Recovery charge, the Environmental Compliance Adjustor charge and the Purchased Power and Fuel Adjustment Clause charge), Taxes and Assessments.

4) The terms and conditions discussed herein are not applicable to any other Company residential tariffs or riders.

5) Customer shall comply with all applicable federal, state, and local laws, regulations, ordinances and codes governing the production and/or sale of electricity.

6) A one-time taxable Processing Fee of $250 will be applied.

7) Customer will be subject to terms and conditions as set forth in the contract.

TEP STATEMENT OF CHARGES

For all additional charges and assessments approved by the Arizona Corporation Commission (ACC) see the TEP Statement of Charges which is available on TEP's website at www.tep.com.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the ACC shall apply where not inconsistent with this rate.

TAX CLAUSE

To the charges computed under this rider, 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.

Exhibit 9
Renewable Energy Credit Purchase Program

Renewable Energy Credit Purchase Program

TABLE OF CONTENTS

I. Frequently Asked Questions

What is Distributed Generation?

Distributed Generation (DG) is defined as electric generation sited at a customer premise, providing electric energy to the customer load on that site or providing wholesale capacity and energy to the local Utility Distribution Company for use by multiple customers in contiguous distribution substation service areas. The generator size and transmission needs shall be such that the plant or associated transmission lines do not require a Certificate of Environmental Compatibility from the Arizona Corporation Commission (ACC).

What are Distributed Renewable Energy Resources?

Distributed Renewable Energy Resources are applications of appropriate technologies that are located at a customer's premise that displace conventional energy resources that would otherwise be used to provide electricity to Arizona customers.

Tucson Electric Power Company (TEP or Company) provides programs consistent with these definitions and generally refers to these programs as DG programs. For more information on these and other definitions, please visit the ACC's Renewable Energy Standard and Tariff webpage at http://www.azcc.gov/divisions/utilities/electric/environmental.asp .

What is Net Metering?

Net Metering refers to the production of electricity from a qualifying renewable energy electric generator, such as photovoltaic (PV) panels, used to offset electricity provided by TEP. Customers deemed eligible for participation in TEP's Net Metering Tariff will be required to install a bi-directional meter capable of measuring the flow of electricity to and from the customer's premises. Net Metering customers may buy and sell electricity to and from TEP under the applicable terms and tariff rate.

No system may exceed 125% of connected load for that meter, where connected load is defined as the maximum demand divided by 0.6. For more information on Net Metering, please visit https://www.tep.com/customer/rates/ .

Why is TEP involved with DG?

The ACC, which regulates TEP and utilities like it in Arizona, enacted the Renewable Energy Standard and Tariff (REST) Rules in 2008. These rules require TEP to replace a substantial portion of its retail sales with renewable energy by investing in a variety of projects, including both utility-scale and DG projects. In order to comply with a portion of the REST Rules governing DG projects. TEP also supports the interconnection of customer-sited DG systems to its electrical grid, even if RECs were not purchased.

What is a TEP-qualified installer?

A TEP-qualified installer is an installer that has been evaluated by TEP personnel and deemed to have met the prerequisites for qualification. In order to become TEP-qualified, each installer must meet certain TEP requirements, including but not limited to annual submittal of the necessary paperwork contained within the "Installer's Packet". Each submittal must include, but is not limited to the following: an Installer's Agreement, a current and valid Arizona Registrar of Contractor's (AZROC) license appropriate for the solar technology being installed, Arizona business license in good standing, and similar information regarding any sub-contractor(s), if applicable. TEP will not, under any circumstances, issue or assign incentive payment(s) to an installer who is not TEP-qualified.

Where can I find more information?

For more information about TEP's renewable energy plans, please consult TEP's approved 2016 REST Implementation Plan, which can be found online at www.tep.com/Renewable/. Questions may be directed to (520) 917-3673.

What else do I need to know?

Each of the programs described herein, including all terms and conditions, are subject to change as dictated by program need and any and all regulatory authorities.

TEP's RECPP does not accommodate non-customer sited projects for any reason. "Solar Farms" or other utility-scale generation projects do not qualify under TEP's RECPP. These projects may participate in TEP's next request for proposals (RFP) for renewable energy.

TEP's RECPP does not allow for any aggregated or virtual net metering of a customer's loads under any circumstance.

II. Installer Qualifications

All systems interconnecting to TEP's system must be installed by an installer properly licensed by the state of Arizona and qualified to install solar projects. TEP will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

1. The installer must possess a valid license on file with the Arizona Registrar of Contractors (AZROC) with a license classification appropriate for the solar technology being installed. Alternatively, the installer must identify use of any sub-contractor(s) and ensure the subcontractor(s) maintain an appropriate license(s) on file with the AZROC for the solar technology being installed. Installers may not sub contract outside their scope of work per the AZROC rules; and
2. The installer must possess an Arizona business license that is active and in good standing.

   Installers must have completed the TEP Installer's Packet and have provided the above information to be retained on file with TEP. The installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed by the end of the calendar year and resubmitted for participation in the upcoming program year.

3. Self-Install. If a customer desires to install a PV system on their home, a licensed electrical contractor must perform all applicable connections as required by the customer's local jurisdiction. All project documentation is still required.

III. Net Metering

Customers interconnecting to TEP's system may have their solar PV net metered. All policies and procedures regarding interconnection must be followed prior to a net meter being set. All billing structures and rates are subject ACC approval.

IV. Prohibition of System Removal

Neither the Qualifying System nor any component thereof may be removed by any party, including but not limited to the applicant or future owners or occupants of the property until expiration of the Renewable Energy Credit Agreement or the last day of the final month of the final full calendar year of the applicable incentive payment term. If the Qualifying System or any component thereof is removed by any party in violation of this provision, the customer party to the Renewable Energy Credit Agreement shall immediately reimburse TEP a prorated amount of the incentive amount paid by TEP to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, TEP shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the original Renewable Energy Credit Agreement's contracted operational life of the original system has expired.

TEP shall attempt to monitor the number of missing or non-working distributed generation systems and shall summarize its observations in its annual Compliance Report.

For DG systems that did not receive incentives, the customer must still notify TEP as to whether the system will be relocated or deemed out of service. This is necessary for TEP's operations to maintain accurate records.

V. Other TEP Renewable Energy Programs

For customers who do not wish to operate a DG system, TEP offers several other renewable energy programs.

- Bright Tucson Community Solar Program: TEP offers an easy and affordable way for TEP customers to meet their electric needs with locally generated solar power by purchasing solar power in "blocks" of 150 kWh per month. A customer may buy some or all of their power through the program. For more information, please see TEP's Bright Tucson Community Solar webpage at www.tep.com/renewable/home/bright/.
- TEP-Owned Residential Solar Program: TEP will install, own, operate and maintain solar PV systems on eligible customer's homes. In exchange the customer would receive a fixed electric rate for up to 25 years. Please visit https://www.tep.com/renewable/home/residentialsolar/ for more program and eligibility information.
- Residential Community Solar Program: Eligible customer participating in this program would pay a fixed energy rate, in exchange for their solar energy production to be a portion of a larger utility-owned solar facility. No equipment would be installed on the customer's premise. For information please refer to tep.com.

VI. Incentives

TEP currently does not offer any new Up-Front Incentive (UFI) or Performance-Based Incentive (PBI) programs. Only customers who entered into a PBI contract with TEP in prior years will continue to receive ongoing incentive payments.

VII. General Interconnection Processes

a. Application Process

TEP's interconnection application process appears below. TEP requires strict adherence to this process. Any deviation from the requirements below may result in your application being denied. If you are working with an installer or contractor, please ensure that they follow the required processes explained below.

1st Step: Submittal of the Properly Completed TEP Online Application.

*Please visit www.tep.com/renewable for online application submission. Residential applications are to be submitted online. Non-Residential customers must submit paper applications.

2nd Step: Submittal of executed Attachments A & B

Attachment A: Notifies customer that they are subject to future rate changes, as approved by the ACC.

Attachment B: Confirms that the solar PV system was installed according to TEP's Service Requirements (SR), and DG Interconnection Requirements (DGIRs). These can be found at https://www.tep.com/customer/construction/esr/.

*** All residential application paperwork must contain the associated project number that is provided upon successful completion of online application**

3rd Step: Required program documents & other associated paperwork can be forwarded as follows:

Mail may be forwarded to the following address regardless of program:

Tucson Electric Power
Mail Stop HQE502
P.O. Box 711
Tucson, AZ 85702-0711

Emails may be sent to the following based on program:

Residential PV: sunshare@tep.com
Non-Residential Projects: commrenewables@tep.com

*** Paperwork sent directly to any specific employee Company email address may not be processed.**

4th Step: Confirmation or Denial of Project Application.

- Once received, TEP will match the application with the submitted Attachment A & B. It is the customer's and/or installer's responsibility to ensure that all forms are filled out completely and correctly. **Forms with**

missing and/or incorrect information will be placed in a "Missing information" status and will not be approved until corrected. Outdated forms will be rejected.

- TEP will evaluate each application for completeness. TEP will also verify, where an installer is used, that the installer is a TEP-qualified installer. If TEP has not received a completed installer packet, this will be required prior to application approval. Provided that the application meets TEP's requirements, and that the installer, if any, is TEP-qualified, TEP will issue the customer and installer a reservation confirmation letter and provisionally approve the application.

5th Step: Submittal of Jurisdictional Final Inspection.

1. Failure to obtain a jurisdictional final inspection within 180 days for residential projects, and 365 days for non-residential projects, of the date of the application confirmation letter will result in the revocation of a customer's interconnection application. If this occurs, the customer or installer must reapply to participate in the program subject to all policies, procedures and rates in effect at time of reapplication.
2. In the event that a jurisdictional final inspection is not completed within the required timelines and the customer or installer provides proof to TEP that a correctly completed application for a jurisdictional final inspection was made within the timeline required, TEP will neither process nor revoke the customer's reservation for 30 days to allow customer time to confirm with the inspecting jurisdiction when the inspection will occur. Provided that the customer provides TEP with an inspection date within those 30 days, the customer's reservation will be honored. If 30 days elapses with no information from the customer, the application will be terminated and the customer must reapply to participate in the program subject to policies, procedures and rates in effect at time of reapplication.

6th Step: Submittal of Certificate of Completion (COC) Form.

For all program applications: once the jurisdictional final inspection has been approved, the installer or customer must submit the appropriate COC. It is the responsibility of the installer to be sure that the COC contains the application Project Number, any COC's without a project number are considered incomplete and **will not be accepted**.

7th Step: TEP will confirm installation of system.

8th Step: TEP process of setting meters.

Upon receipt of the jurisdictional final inspection, as well as the COC, TEP will set a solar energy production meter and change the customer's revenue meter to a net energy revenue meter.

b. Restrictions/Important Notes:

1. TEP reserves the right to modify the business process to better serve customers or to increase efficiency. Please refer to www.tep.com/renewable for the most up-to-date information.
2. With the exception of minor system modifications during the procurement process, any material changes to a system made after the application is processed will result in cancellation of the existing application and

will require a new online application to be submitted. The reservation request may be denied because the request is not in compliance with program requirements (see specific technical sections below).

3. Project extensions will not be granted except as outline herein.
4. Receipt of the application is not valid until a properly completed application, appropriate disclaimers and a completed Installer's Packet has been received by TEP. Any application packets submitted incorrectly will be cancelled as will their corresponding online application.
5. TEP must receive the required program documents; RECPP Reservation Packet and approve the application, and reserve the funds prior to receiving the meters. ("installed" is defined as the date of the final clearance from the appropriate jurisdiction).
6. In order to participate in the RECPP, installers must have on file with TEP a completed Installer's Packet, including a New Supplier Fact Sheet. This document is available in the Installer's Corner at www.tep.com/renewable.

VIII. Other Incentives

A. Technologies without Technology Specific Criteria

Technology specific criteria have not yet been developed for the following qualifying technologies:

- Fuel Cells
- Other

For applicants requesting incentives for these technologies or for applicants requesting installation of a technology with specific project technology criteria, but where some criteria cannot be met, the applicant will need to submit design and output documentation.

Applicants installing these systems will, at a minimum, need to provide an energy savings and designed output report for the system. The report must include either a testing certification for a substantially similar system prepared by a publicly funded laboratory or an engineering report stamped by a qualified registered professional engineer. The engineering report and/or testing certification shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications. Additional information may be required as part of the RECPP requirements.

B. Non-Conforming Projects

Non-conforming projects will be identified as the Program evolves. Incentive levels for such projects will be calculated based on TEP engineering analysis, independent laboratory analysis, and/or professional engineering (PE) stamps. Non-conforming projects that prove combined economic and renewable energy value will be allowed appropriately calculated incentives within the RECPP. All incentives must be approved by the ACC.

C. Guidelines for Photovoltaic Projects Interconnecting Without Incentives

Customers may install grid-tied photovoltaic electric systems behind their meter without incentives. If a customer chooses to do so, the customer shall still notify TEP that a renewable energy generator is being connected to TEP's grid and complete any associated interconnection processes as defined above, or online at tep.com. The process for non-incentive utility interconnection, for both residential and non-residential projects, is available at www.tep.com/renewable.

All projects must adhere to applicable SRs and DGIRs. In addition to any applications required by the Renewable Resources department, all systems over 50 kW AC are required to submit Interconnection Applications to TEP's Energy Services department.

Appendix 1: Glossary of Terms

ACC – Arizona Corporation Commission.

AZROC – Arizona Registrar of Contractors.

Applicant – Utility customer of record for the Utility Revenue Meter located at the installation site; a builder of the structure (residential or non-residential) who will reserve and install the Qualifying system; or for an off-grid Qualifying System, the property owner for the installation site located within a Utility's service territory.

Arizona Business License – A business license issued by the ACC.

Cancelled – Reservation Status indicating that a Reservation has been terminated, funding is no longer allocated, and the utility has removed the reservation from the funding queue.

Cancellation – The termination of the Reservation.

Commissioned – Qualifying System certified to be in operation.

Commissioning Package – Written verification signed by the installer and the customer confirming that the system has been installed in conformance with the approved reservation and that the system is ready for operation.

Conforming Project – Any project utilizing a renewable technology listed in Attachment D.

Conformance Inspection – Inspection performed by the utility to verify that the system has been installed and operates in conformance with the Reservation application.

Customer – Utility customer of record for the Utility Revenue Meter located at the installation site or a builder of the structure (residential or non-residential) who will reserve and install the Qualifying System.

Extension – The extension of the Reservation Timeframe.

Installer – The entity or individual responsible for the installation of a qualifying system.

Installed – The date of the final clearance from the appropriate jurisdiction

Interconnection Inspection – Inspection performed by the utility to confirm that the system can be safely interconnected to the power grid.

Non-Conforming Project – Non-conforming projects include, but are not limited to, projects with staged completion dates, multi-customer or multi-system projects, projects involving more than one technology, projects requiring new or unique agreement terms, projects with technologies for which qualification standards have not been developed or projects requiring non-standard timeframes.

Performance Based Incentive (**"PBI"**) – Incentive based on a rate per actual kWh output or on equivalent kWh of energy savings.

Project Costs – System Costs plus financing costs.

Proof of Project Advancement – Documentation demonstrating that a project is progressing on schedule and is staged for Commissioning on or before the end of the Reservation Timeframe.

Qualifying System – Distributed renewable energy systems meeting the qualifications for production of qualified Renewable Energy Credits in Arizona acceptable to the Arizona Corporation Commission as they may be defined for affected utilities to meet any renewable energy standards.

Renewable Energy Credit ("REC") – One Renewable Energy Credit is created for each kWh, or kWh equivalent for non-generating resources, derived from an eligible renewable energy resource. RECs shall include all environmental attributes associated with the production of the eligible renewable energy resource.

Reservation – A dollar amount committed by the utility to fund a project if all program requirements are met.

Reservation Status – Indicator relating to approval or denial of a Reservation request. If a Reservation is approved, the Reservation Status is Reserved. If a Reservation request is denied, the Reservation Status is either Cancelled or Wait Listed.

Reserved – Status indicating the acceptance of a Reservation request.

Reservation Timeframe – The duration of the utility's funding commitment for a Reservation.

Retroactive System – A Renewable solar system installed before an application for incentive was received and approved by TEP.

System Costs – Costs associated with the Qualifying System components, direct energy distribution, system control/metering, and standard installation costs directly related to the installation of the Qualifying System.

Up Front Incentive ("UFI") – One time incentive payment based on system capacity or estimated energy kWh production rather than on measured system output.

Wait List – Status indicating Applicant has met program requirements, but the Utility has insufficient funding to commit to funding the project.

Exhibit B

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
SUSAN BITTER SMITH - CHAIRMAN
BOB STUMP
BOB BURNS
DOUG LITTLE
TOM FORESE

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2016 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-15-0239 **SUPPLEMENT TO TUCSON ELECTRIC POWER COMPANY'S APPLICATION**

Tucson Electric Power Company ("TEP" or the "Company") hereby supplements its Application in this docket to provide supplemental information on its Energy Storage System ("ESS") solicitation and evaluation.

I. BACKGROUND.

TEP filed its 2016 Renewable Energy Standard Tariff Plan on July 1, 2015 ("2016 Plan"). The Company included preliminary information regarding its ESS solicitation in the plan.[1] TEP indicated that, in June 2015, it had issued a solicitation to lease a utility-scale 10 MW capacity ESS, in order to review the cost-effectiveness of available technologies and product offerings. TEP retained Accion Group, LLC to be the third-party independent monitor for the ESS solicitation. Twenty-one qualified vendors submitted bids, as described in the plan. At the time of the filing of the 2016 Plan, the submitted bids were under review. In its 2016 Plan, TEP indicated that it would provide updated information on its ESS solicitation.

[1] See 2016 REST Plan at pages 7-8 located at http://images.edocket.azcc.gov/docketpdf/0000162410.pdf.

II. ESS SOLICITATION REPORT SUMMARY.

Attached to this filing is the public version of the Accion Group report.[2] This report contains a detailed evaluation of the solicitation, bid process, procurement site, technologies bid, and the evaluation process. The ESS solicitation provided the Company with an in-depth look at the complexity and breadth of the various technologies associated with storage. Further, the premise of the solicitation was to provide the Company with a technology that would primarily provide frequency response at pre-determined set points, followed by voltage & VAR support, ramp rate control, and energy storage as required.

The aggressive nature of the bidding companies far exceeded the expectations of the Company. Consequently, the Company was able to select two winning bids:

- One company will provide a 10 MW, Lithium Nickel-Manganese-Cobalt (NMC) facility; and
- A separate company will provide a 10 MW, Lithium Titanate (LTO) facility together with a 2 MW solar facility.

Each of these projects represents a significant opportunity for TEP, who will be able to (i) obtain up to 20 MW of total storage capacity for less than the Company's original cost estimate to acquire 10 MW and (ii) assess the operational impacts of two of the predominant Lithium technologies available today.[3] In order to protect the Company and its customers, these contracts are based on pay-for-performance, insulating the customer from poor-performance risks associated with new technologies such as energy storage.

---

[2] Due to the competitive nature of the solicitation, and the fact that these projects have not received authorization from the Commission to proceed and receive recovery, the names of the final project selections and associated bidders are being kept confidential. Also, pricing associated with the specific projects will not be released, as those prices are competitively sensitive.

[3] All but one of the bids involved Lithium-Ion ("Li-Ion") based battery solutions. This is because the Company provided the bidders with very detailed specifications for the storage solution; and it is evident that all of the Li-Ion technologies are capable of achieving those specifications. A copy of the technical specifications can be provided upon request.

III. ESTIMATED COST IMPACT TO CUSTOMERS.

TEP had requested guidance from the Commission in its 2015 REST Implementation Plan as to how the costs of new storage technologies should be recovered. The Commission ultimately ordered that the "current preference for cost recovery resulting for a project resulting from the [TEP's ESS] solicitation is through the [Purchased Power and Fuel Adjustor Clause ("PPFAC")]."[4] While the individual costs of the projects are to remain confidential, the overall impact to the customer can be seen below in Table 1:

Table 1. ESS Solicitation Estimated Customer Cost Impact

No.	TEP PPFAC Rate Calculation	Effective 4/1/15	Storage included	Difference	Avg increase for 800 kWh/month
1	Forward Component Rate	$ 0.003637	$ 0.003805	$ 0.000168	$ 0.1342
2	True-Up Component Rate	$ 0.003183	$ 0.003183	$ -	$ -
3	PPFAC Rate (L1+L2)	$ 0.006820	$ 0.006987	$ 0.000168	$ 0.134173
4	Average Base Rate April 1	$ 0.032335	$ 0.032335	$ -	$ -
5	Average Total Rate (L3+L4)	$ 0.039155	$ 0.039322	$ 0.000168	$ 0.134173

The overall annual costs associated with both projects have been hypothetically included in the Company's previously approved 2015 PPFAC to show the impact on a per-kWh basis. As noted in Table 1, by including the cost of both storage projects, the per-kWh impact is $0.000168, or a little over 13 cents per month for a customer whose average monthly usage is 800 kWh per month.

IV. CONCLUSION.

The Company firmly believes this is an extraordinarily cost-effective storage solution that presents an excellent opportunity for the Company to take a leading role in energy storage deployment. The Company requests specific authorization to proceed with these projects and recover

[4] *See* Decision No. 74884 (December 31, 2014) at pages 16, 21.

the annual costs associated with the projects through the Company's PPFAC, as part of the approval of its 2016 REST Implementation Plan.

RESPECTFULLY SUBMITTED this 16th day of September 2015.

TUCSON ELECTRIC POWER COMPANY

By _____

Michael W. Patten
SNELL & WILMER L.L.P
One Arizona Center
400 East Van Buren Street 1900
Phoenix, Arizona 85004
Tucson Electric Power Company

and

Bradley S. Carroll
Tucson Electric Power Company
88 East Broadway Blvd., MS HQE910
P. O. Box 711
Tucson, Arizona 85702
Attorneys for Tucson Electric Power Company

Original and 13 copies of the foregoing
filed this 16th day of September, 2015, with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copies of the foregoing hand-delivered/mailed
this 16th day of September, 2015, to the following:

Jane Rodda
Administrative Law Judge
Hearing Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Brian Smith
Wesley Van Cleve
Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Bob Gray
Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

By 

PUBLIC VERSION

TO

FINAL REPORT OF THE INDEPENDENT EVALUATOR
RE: TUCSON ELECTRIC POWER COMPANY, INC.
2015 ENERGY STORAGE SOLUTIONS
REQUEST FOR PROPOSALS PROCESS

September 4, 2015

ACCION GROUP, LLC
244 North Main Street
Concord, New Hampshire 03301
Telephone: 603-229-1644
Fax: 603-225-4923
Email: advisors@acciongroup.com
www.acciongroup.com

TABLE OF CONTENTS

FINAL REPORT OF THE INDEPENDENT EVALUATOR
RE: TUCSON ELECTRIC POWER COMPANY, INC.
2015 REQUEST FOR PROPOSALS FOR ENERGY STORAGE SOLUTIONS
September 4, 2015

I. EXECUTIVE SUMMARY

Accion Group, LLC ("Accion") was selected by Tucson Electric Power Company, Inc. ("TEP" or the "Company") to serve as the Independent Evaluator ("IE") for its 2015 Request for Proposals for Energy Storage Solutions ("RFP" or "ESS RFP"). This, our final report, reviews the action taken by TEP in the development and conduct of the 2015 Energy Storage Solutions, Bid receipts on June 19, 2015 and the initial ranking of Bids.

Tucson Electric Power Company issued this RFP on April 24, 2015. The IE reviewed the draft RFP documents prior to their release and reviewed the content and scope with TEP personnel. Prior to the receipt of Bids the IE participated in all exchanges with Bidders, including the Bidders' conference held on May 12, 2015, and the Pre-Bid Meeting and Site Visit on May 20, 2015.

The Company engaged the services of the IE to evaluate and monitor the RFP process to ensure the RFP was conducted fairly and without bias towards or against any Bidder. Accion has served in this capacity with the Company in the past, and is well acquainted with the protocols and standards employed by TEP, as well as the evaluation methodology the Company uses. Accion is also well acquainted with the TEP system and its needs.

The IE worked closely with TEP personnel throughout the RFP process. In addition, Accion created and operated the tepes.accionpower.com Website ("Website") used for all communications between prospective Bidders and TEP prior to the receipt of Bids, and through which TEP conducted the post-Bid exchanges with Bidders when clarification was required. Through the Website, Accion had access to all RFP-related materials, and reviewed all exchanges with Bidders prior to and after Bids were received. All communications were date and time stamped and retained for review by regulators, should that be requested.

The IE Website provided an online Bid Form that required Bidders to meet specific threshold standards and requirements before their Bid would be accepted. Potential Bidders were encouraged to ask questions during the Bidders' Conference and the Site Visit. All questions during the Bidders' Conference and the Sit Visit were answered in writing on the Website. Bidders were additionally encouraged to use the Q&A feature on the IE Website where TEP provided a timely response to each question. TEP also provided FAQs on the Website as a guide to assist Bidders in determining whether to participate in the RFP.

The IE was available to Bidders throughout the process. The RFP Website provided a direct message feature through which Bidders could contact the IE. The identity of the IE was well publicized and Bidders could easily find the IE's telephonic or email contact information, as some chose to do. Accion maintains a national practice and for that reason was known to a number of the registered Bidders before this process began.

The IE reviewed all questions posted on the RFP Website, and reviewed each answer prepared by TEP in response to questions. Questions and answers posted on the Website were available to all registered users. Additionally, Bidders were provided with a confidential "message board" for confidential exchanges with TEP. The IE monitored all message board exchanges between Bidders and TEP. Also, the IE responded to every direct contact from a Bidder. All questions, answers and message board exchanges are retained on the Website should a regulator desire to review the process.

The IE was contacted by potential and actual Bidders throughout the process, with the vast majority of those contacts being ones that were appropriately redirected to the Website Q&A feature. No Bidder contacted the IE claiming the RFP process, Bid process, or any aspect of the RFP was unfair, discriminatory, or in any way was biased for or against any Bidder or type of Bidder. As noted below, one individual contacted the IE as the Bid period closed asking to have the Bid period extended. That request was denied.

In summary, the IE believes the RFP was designed to be fair and adhered to the rules of the standards developed by the Arizona Corporation Commission ("ACC" or "Commission")[1]. All Bidders had access to the same information at the same time and had multiple opportunities before the Bid process commenced to identify what they believed to be shortcomings in the RFP, and to offer suggestions for making the RFP attractive to competitive Bidding. The IE met with Bidders during the site visit and met with each Short-listed Bidder during two days of face to face meetings between TEP personnel and each Short-listed Bidder. At no time did any Bidder who submitted a Bid present a complaint about the RFP process, standards or execution.

The IE believes the RFP was conducted fairly and that all Bids were evaluated using the same standards and procedures. Further, the IE conducted an independent review of all Bids and concurs with the final selections made by TEP.

II. INDEPENDENT EVALUATOR

A. ABOUT THE INDEPENDENT EVALUATOR

With more than thirty-five years of in-depth experience in electric, gas, and water utilities, Accion Group's diverse consortium of consultants provides insightful, candid, and practical advice to the utility industry and their associated government regulatory bodies. Headquartered in Concord, New Hampshire, with a branch office in suburban Washington, D.C. and consulting affiliates nationwide, Accion's specialties range from competitive procurement and utility management to construction monitoring and nuclear decommissioning.

Since its incorporation in 2001, Accion has been routinely involved in high-profile consulting engagements, thus securing a reputation as one of the premier firms providing independent review of utility procurement practices. Accion has served as Independent Evaluator, Independent Monitor, or

[1] Accion Group was retained by the ACC in 2003 to establish standards and processes for conducting competitive solicitations by utilities. Accordingly, Accion is well versed in the Commission expectations and goals for fair and impartial RFPs.

Independent Observer to state commissions for 84 competitive solicitations in markets including California, Hawaii, Georgia, Colorado, Oregon, Florida, Washington, and Arizona. Accion Group has also assisted utilities in the preparation for, and the conduct of, power supply solicitations in Maryland, Massachusetts and Nevada. Having reviewed proposals for generation by renewable sources (including wind, solar, bio-mass, wave action, storage, low-head hydroelectric, geothermal, and methane capture), as well as for generation by new-build facilities using nuclear power, natural gas, and coal fuels, our consultants are well-versed in the subtleties of utility procurement practices.

The evolution in the electric energy industry includes consideration of storage capability. Accion Group personnel have participated in solicitations for energy storage solicitations in Oregon and California where storage is being deployed in response to transmission constraints, instead of construction of new transmission lines.

Our ultimate goal as IE is the same as the purchasing utility and state regulators: ensuring the solicitation obtains the best deal possible for ratepayers, given current market and regulatory conditions in terms of both price and non-price factors.

B. THE IE'S ROLE IN TEP's RFP PROCESS

As IE, Accion reviewed the process designed by TEP prior to releasing the RFP. This review included the following:

- The Company's efforts to identify prospective Bidders and publicize the RFP;
- The terms and conditions that would control both the RFP process and any resulting contracts;
- The evaluation criteria and methodology to be employed;
- The procedures employed to ensure that all Bidders would have access to the same information at the same time; and,
- The form and content of all RFP documents.

Accion Group designed and operated a Website, *https://tepes.accionpower.com* ("Website"), for the exchange and capture of all RFP-related information, and monitored all Website activity. The Website facilitated our ability to closely monitor communications during the RFP process. Accion Group participated in the Bidders' Conference and reviewed the Company's response to each question posed by Bidders. Further, the IE attended each meeting with each Short-listed Bidder, at which time the Bidder was invited to provide details on equipment to be deployed and answered questions from TEP personnel and the IE.

TEP confirmed from the outset that there would be no Bids from any affiliate, so the code of conduct restrictions the IE normally requires were unnecessary in this RFP.

III. BACKGROUND

TEP commenced this RFP to determine the market willingness to provide energy storage in the Tucson environment. TEP arranged with the University of Arizona to provide a secure site at the

University's Energy Park, and TEP identified the possibility of siting storage units at an existing sub-station. Accordingly, TEP removed from the Bidder the obligation of finding a suitable site for the project.

As explained to the IE, TEP management determined that energy storage could be integrated into the company's portfolio of supply options to meet supply requirements during periods of high demand and constraint. To fully appreciate the available options, TEP imposed few constraints on designs and equipment. At the same time, to assure TEP that a successful Bidder would have the ability to complete the project, TEP imposed the following requirements:

- Experience in developing and operating at least 10 MW of energy storage;
- Market capitalization of at least $5 billion;
- The proposed facility would have the capability of providing a consistent 10 MW of capacity for 10 years; and
- The successful Bidder would be responsible for full decommissioning and site restoration at the end of the contract term.

Each Bid was subject to a $7,500 Bid fee to defray some of the cost of conducting the RFP.

The IE initially questioned the appropriateness of a market capitalization that exceeded TEP's value, but agreed to reserve judgment until after the Bidder conference in order to gauge market response to each requirement. The fact that 81 companies claimed to qualify as Bidders [2] convinced the IE that the requirement was not a barrier to participation by substantial and experienced developers.

IV. PROCUREMENT GUIDELINES

Accion Group worked with TEP to design a competitive Procurement Website to securely and efficiently manage the RFP process. Structured on Accion Group's proprietary Procurement Website platform, the underlying principles of the IE's RFP Procurement Website were to execute a solicitation process that met both ACC and Federal Energy Regulatory Commission ("FERC") standards, while providing information to Bidders in an equal, understandable, and transparent manner, and allowing all registrants to participate in the Bidding process with confidentiality. The IE's Website was designed to provide complete security for confidential documents and anonymity for Bidders, thus avoiding unequal treatment or unfair bias towards or against any Bidder. The Website facilitated exchanges with interested parties before the Bid date, managed Bidder Conference information, and handled Bids and post-Bid exchanges.

[2] Companies were required to present proof of $5 billion market capitalization at the time of bidding, so neither the IE nor TEP researched the qualifications of firms until bids were presented.

A. COMPLIANCE WITH FERC GUIDELINES

As noted, TEP confirmed there would not be an affiliate Bidder before the process was begun and, thus, the FERC solicitation requirements need not be met. However, as a standard practice Accion uses the FERC standards when conducting RFPs and when evaluating the fairness of a solicitation. The IE does this because the standards are known to the major market participants, and because the standards are sufficiently rigid to provide appropriate guidance to utilities.

In 1991, FERC first articulated these requirements in the case of Boston Edison Company re: Edgar Electric Company.[3] The Edgar case established three criteria that must be met if an affiliate is to be awarded a contract from an RFP: (1) the RFP must be designed and implemented without undue preference for the affiliate; (2) the analysis of proposals received must not favor the affiliate, particularly as to non-price factors; and (3) if the affiliate is selected for a contract, its selection must be based on a reasonable combination of price and non-price factors. These Edgar criteria were intended to both ensure ratepayers are protected and that transactions with an affiliate are above suspicion. On July 29, 2004, the FERC issued "Order Granting Authorization to Make Affiliate Sales"[4], which contained a set of guidelines that FERC uses today to evaluate the fairness of RFPs and ensure it satisfies the Edgar criteria. These guidelines are commonly referred to as the Allegheny guidelines. The Allegheny guidelines are described in the Order as follows:

> *The underlying principle when evaluating an RFP under the Edgar criteria is that no affiliate should receive undue preference during any stage of the RFP. The following four guidelines will help the Commission determine if an RFP satisfies that underlying principle.*
>
> 1. ***Transparency:*** *The competitive solicitation process should be open and fair.*
> 2. ***Definition:*** *The product or products sought through the competitive solicitation should be precisely defined.*
> 3. ***Evaluation:*** *Evaluation criteria should be standardized and applied equally to all Bids and Bidders.*
> 4. ***Oversight:*** *An independent third party should design the solicitation, administer Bidding, and evaluate Bids prior to the company's selection.*[5]

Whether serving as IE or Independent Monitor, Accion Group expects utilities to adhere to the highest standards for fairness and openness when conducting a competitive solicitation process. Similarly, Accion expects utilities to establish and follow RFP protocols that are free from actual or perceived bias. To this end, we look to the FERC-established Edgar criteria, along with the standards established by the Commission for competitive Bidding, to judge the quality of TEP's RFP process. To ensure transparency and fairness throughout the RFP process, TEP used Accion Group's IE Procurement Website platform to transmit the RFP, all related RFP documents and RFP information, and to

---

[3] *Edgar Electric Company*, 55 F.E.R.C ¶ 61,382 (1991)

[4] *Allegheny Energy Supply Company, LLC,* 108 F.E.R.C ¶ 61,082 (2004)

[5] 108 F.E.R.C ¶ 61,082 (2004) at 22

communicate with Bidders during the solicitation process. Doing so facilitated TEP's compliance with FERC's Allegheny guidelines and the Commission's rules on Request for Proposals Procedure under Chapter 515-3-4, "Integrated Resource Planning," of the Commission's General Rules.

As IE, Accion found that the Company's procurement process adhered to the FERC-established Allegheny guidelines outlined above. The IE Website functioned in a manner that met the strict protocols of transparency, definition, evaluation and oversight, as defined by FERC. In the remainder of this section, we present a detailed overview of how each of the four FERC Guidelines was met and documented on the Website.

1. Transparency Principle

Transparency is the free flow of information to all parties. (108 F.E.R.C ¶ 61,082 at 23)

The transparency principle requires the RFP process to be open and fair to all participants. The IE Website used for the TEP RFP provided all parties with Procurement Website access to the same information at the same time. Bidders were required to use the Website for access to all information, including documents provided by the Company and answers to questions posed by Bidders. All solicitation information was date-stamped when posted, and all RFP documents and data were able to be accessed by registered users at any time. Whenever a document was uploaded, a question was posed, an answer posted, or a calendar event listed, all registered users of the Website were able to view this information immediately. Automatic emails were sent to every registered user notifying them of the new information available and directing users to the specific site page where it could be located.

> *Instead of individually inviting specific Bidders, the utility should allow all interested parties to Bid on the RFP. All aspects of the competitive solicitation should be widely publicized. (108 F.E.R.C ¶ 61,082 at 23)*

The IE Procurement Website allowed all interested parties to register for complete access to the procurement site. Any individual or company visiting the site was welcomed to complete a pre-qualification questionnaire and submit their registration as a potential Bidder. Pre-qualification questionnaires were evaluated against set criteria to determine Bidder eligibility. Moreover, users could register as "non-Bidders" to have full access to the site, except for the ability to submit a bid and access to individualized, confidential Bid Books ("Bid Book"). The IE Procurement Website was available to the public and was also easily accessible via search engine and the Commission's Website. Announcements about the RFP were posted on the Website and available to the public. Registered users were sent automatically generated notices whenever an announcement was posted. The Website preserved a copy of every announcement, even after it was removed from public viewing.

> *"Any communication between RFP issuer and Bidder that are not part of the Bid should be made available to all other Bidders." (108 F.E.R.C ¶ 61,082 at 23)*

All communication between TEP and Bidders that was not specific to an individual Bid was made available to other Bidders through pages accessible on the IE Procurement Website. For example, all users registered to the site were able to access the "Q&A" page, where questions and answers were posted while maintaining Bidder confidentiality. When Bidders posed questions to TEP, the questions, along with

the answers, were posted to the "Q&A" page and an automatic email was sent to all registered users alerting them of new communication posted to the site. The Procurement Website's secure data collection feature ensured that the identity of the Bidders posing the questions remained anonymous. All questions posted during the Bidders' Conference were recorded and subsequently posted on the Website, along with answers from TEP.

Any communication between the Bidder and TEP relating to the Bidder's specific Bid proposal remained confidential, and was retained in a secure folder accessible only by the Bidder, TEP personnel and the IE.

Negotiation may occur after the Bidding; for example, when a Short List has been compiled or a winner has been selected. (108 F.E.R.C ¶ 61,082 at 26)

The Procurement Website was designed to manage the exchange of documents during post-Bid negotiations, mitigating any transparency concerns and providing a continued online conduit for information exchanges during the RFP process. Each Bidder received a secure Bid Book, through which information was exchanged with TEP. These Bid Books contain folders specifically designated for all messages between the Bidder and the Company, allowing for postings of contracts and negotiation-related communications. All communications and post-Bid negotiations were monitored by the IE, and the IE attended each discussion session, either in person or via teleconference. Each post-Bid document was date-stamped when uploaded to the respective Bid Book, providing the Company and the Commission with a permanent record of the solicitation and related negotiations.

2. Definition Principle

The product or products sought through the RFP should be defined in a manner that is clear and nondiscriminatory. (108 F.E.R.C ¶ 61,082 at 27)

Draft RFP documents were posted on the Website and anonymous comments were solicited from prospective Bidders, thereby ensuring that the products sought through the final version of the RFP were defined in a clear manner understandable to all Bidders. The Website also featured a "Q&A" page on which any registered user to the Website was able to post questions anonymously regarding products being sought in the RFP. The question submitted and the answer provided by the utility, Commission Staff, or the IE, and were accessible to registered users immediately after the information was posted.

If there are changes in the product specification, re-Bids should be allowed.

(108 F.E.R.C ¶ 61,082 at 27)

3. Evaluation Principle

RFPs should clearly specify the price and non-price criteria under which Bids will be evaluated. (108 F.E.R.C ¶ 61,082 at 29)

The RFP documents provided clear and complete product definitions and disclosure of the evaluation process. With respect to this aspect of the RFP, no prospective participants submitted questions or clarifications to the IE Website regarding either the product definitions or the evaluation process included in the RFP materials. In addition, Accion Group found the RFP documents to be

thorough, accurate, and complete. TEP's criteria for the project and the potential counter-party were well defined and presented so that all participants were aware of them.

> *RFP issuer and Bidders will usually need to divulge commercially sensitive information in the solicitation process. (108 F.E.R.C ¶ 61,082 at 31)*

In order to ensure confidentiality and security throughout the online Bidding process, the Procurement Website featured a 128 Bit security certificate to ensure the privacy and security of all transactions made through the solicitation platform. Furthermore, every Bidder automatically received a secure Bid Book folder for all Bid-related documents. This Bid Book served as a secure repository of confidential Bid-related information enabling Bidders, the IE, and the Company to securely post relevant documents and communications while maintaining Bidder anonymity and ensuring that commercially sensitive information was not inadvertently released to the public or to other Bidders. Only the named Bidder, the IE, certain TEP personnel, and the Company were able to access documents in each Bid Book folder.

In addition, the Website maintained comprehensive logs detailing when a user was logged in, and what actions were taken while on the Website (such as page views or document uploads and downloads). As a result, any questions regarding privacy or questionable access to documents could be answered by reviewing Website access and user logs, which confirm every action taken on the site.

4. Oversight Principle

> *Effective oversight of competitive solicitations can be accomplished by using an independent third party in the design, administration, and evaluation stages of the competitive solicitation process. (108 F.E.R.C ¶ 61,082 at 32)*

Accion's oversight as IE began before the draft RFP was released for public review. All aspects of the RFP were managed through the Website, ensuring security, transparency, and confidentiality, while also creating a permanent log of all RFP activity. All registration, pre-qualification, Bidding, communication, Q&A, and post-Bid exchanges were handled through the Website's secure online RFP management system, allowing Accion to provide effective oversight of the entire RFP process, and making review of the process possible with date-stamped entries. These Website records and logs serve as a permanent record of TEP's solicitation process, providing the Company and the Commission with the date and time of every action taken by Bidders, the utility, the Commission, and the IE.

> *A minimum criterion for independence is that the third party has no financial interest in any of the potential Bidders, including the affiliate, or in the outcome of the process. In this context 'independence' means that the third party's decision-making process is independent of the affiliate and all Bidders. (108 F.E.R.C ¶ 61,082 at 33)*

Accion had no financial interest in any of the potential Bidders, TEP, TEP affiliates, or in the outcome of the process, and would not have accepted this engagement if there had been even the appearance of a conflict of interest. This independence is periodically reviewed by the Commission.

> *The independent third party should be able to make a determination that the RFP process is transparent and fair. The independent third party's role as the sole link for transmitting information between potential Bidders and RFP issuer would also help to ensure that the*

RFP design will not favor any particular Bidder, particularly an affiliate. (108 F.E.R.C ¶ 61,082 at 35)

The IE Procurement Website served as the sole link for all interactions between Bidders and the RFP issuer, and provided all Bidders with 24-7, real-time access to updates, documents, announcements, and all Bid-related communications and information. The Website allowed the IE to monitor every question, comment, document upload, and interaction during the solicitation. Because anonymity, confidentiality, and security are fundamental built-in components of the RFP Website platform, the IE is able to make a demonstrably strong judgment as to the fairness of TEP's RFP process.

B. PROCUREMENT WEBSITE

Once the IE released the TEP RFP Website, general information relating to the ESS solicitation was available to the public, and individuals were able to register on the Website as either Bidders or Non-Bidders. Upon registration, each individual received an automatic email notification acknowledging successful registration to the Site along with an individual User ID and automatically generated password. In addition, they received an attached "Website Tutorial" explaining use of the Website and Bid process, offering a brief overview of the Website as registrants proceeded through the RFP process, including flow of communications, accessing and uploading documents and how to ask questions. The use of Screen Captures from the actual RFP site further served to make the process user-friendly. The Tutorial was also available to all public users as a link on the Website navigation bar.

In addition to the Website Overview provided to all IE Website users, the IE Website provided a Bidders' Tutorial in the Documents section for all potential Bidders to follow step-by-step instructions to process online Bids. The tutorial covered the steps taken to submit the pre-qualification form, complete and submit an online Bid, and uploading documents.

Once a Bidder started a Bid, the Bidder was automatically provided with a confidential, personal Bid Book that provided a secure platform where all documentation and all communication between TEP and Bidders was captured. This created a permanent record of all interactions. Once the Bid period closed, nearly all exchanges[6] between TEP and a Bidder were done through the Message Board and the individual, secure Bid Book. Both TEP and the Bidder could upload memos and other documents through the message board that were also recorded in the Bid Book, and the Website generated an automatic email to alert the other party of the interaction. Non-Bidders had access to all public information other than the Bid Form.

Communication with Bidders also consisted of the IE and TEP sending "blast" emails from the Website, which made certain that registrants received the same information pertaining to RFP developments at the same time. For example, in the days prior to the Bid submission date Bidders were sent a reminder.

[6] As noted, discussions were conducted with Short-listed Bidders. Those discussions were monitored by the IE.

TEP and Accion collaborated to produce Announcements, Calendar events, Frequently Asked Questions ("FAQ"), RFP documents, and a Question and Answer ("Q&A") page on the Website in order to provide all registrants with up-to-date information.

All registered users of the Website received automatic email announcements whenever an announcement, document or FAQ was posted, and when the schedule was adjusted.

RFP INFORMATION WAS ACCESSIBLE AND CLEAR

a. Frequently Asked Questions ("FAQs")

The FAQs page displayed answers to the most commonly asked questions about the Website and the ESS RFP. TEP's FAQs were accessible to the public and included topics that ranged from Interconnection, Technology, Terms, and Website Operation and what to do if a Bidder had a question that involved confidential information regarding a project. If the answer to a question was not available on this page, Bidders were instructed to check the Q&A page to see if their question was previously answered. If their question was not answered on the FAQs page, they were instructed to post their question on the Q&A page, and to not contact TEP directly.

b. Questions and Answers ("Q&A")

All registered users of the RFP Website had the ability to anonymously submit questions via the online Question and Answer page.

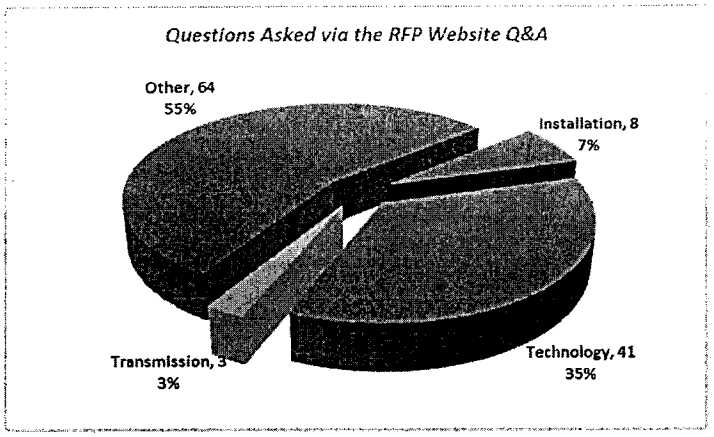
Questions and Answers were visible to all public and registered users of the Website immediately after being posted. The Company and the IE automatically received an email notification of the questions posted, without identifying the individual posting the inquiry. TEP responded to Bidders by posting answers to questions on the Website. When a question was posted the individual who posed the question received an automatically generated email from the Website with the answer.

A total of 116 questions were posted on the Q&A page prior to the Bid date, and TEP or the IE answered all questions. Most questions were answered within two (2) business days of being posted to the Website, with the majority of questions answered within 24 hours of being asked. The technical nature of some questions required longer response time, but the IE believes all questions were addressed in sufficient time to be employed by Bidders when developing Bids. The anonymity of the Q&A page ensured that all Bidders had immediate access to questions and answers that were posted, and that TEP considered questions without regard for the source.

The Website sorted all questions by four categories: Installation, Technology, Transmission and Other. The ability to sort the Q&A's by category on the Q&A page provided ease in determining where Bidders had concerns without TEP or the IE having to review them individually and or manually sort by topic. Seven percent of the questions related to Installation, three percent were transmission related, thirty-five percent were in the technology category and the remaining fifty-five percent of the questions asked via the Q&A were in the "Other" category. Once the Bid date passed, the opportunity to ask questions via the Q&A was terminated; the Bidders were directed to ask questions regarding their Bids using the "Messages" feature only.

Figure 1

The IE believes the public Q&A feature permitted all Bidders to have access to the same information at the same time, because all questions were visible as soon as the individual posted the query. Similarly, all Bidders had access to the answers provided by TEP personnel. TEP personnel referred all inquiries to the Website, and the IE believes no TEP personnel provided information via email or otherwise to any prospective Bidder.



The IE believes all Bidders were provided access to the same information at the same time, and that all information exchanged between TEP and Bidders was through the Website. Accordingly, the IE believes all Bidders were treated in the same manner and that the Company has available, for its review, a complete record of the RFP.

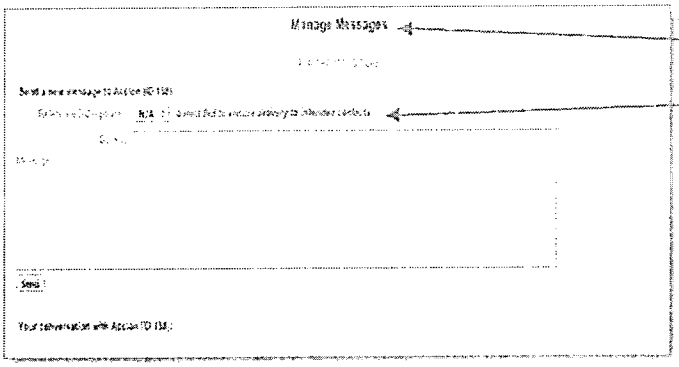
In addition to the features available to Bidders on the IE Website, the IE responded to emails and telephone calls in the event Bidders were confused and selected "contact the IE" instead of posting a question on the Q&A page. Typically, the Bidder desired guidance on the RFP process, and then proceeded unaided once redirected to the IE Website.

The questions raised in the Q&A provided another opportunity for the IE and TEP to gauge the clarity of the RFP materials. The IE believes the public Q&A feature permitted all Bidders to have access to the same information at the same time.

c. Message Board

The "Messages" feature was activated for registered Bidders after the Bidders' Conference on May 12, 2015. On the RFP Website, Bidders were able to correspond with the Company through the confidential 'Messages' link on the navigation bar. This correspondence was monitored by the IE, but was not available to persons other than the individual Bidder and TEP personnel. Prior to the Bid due date, the Messages feature was used only for questions that disclosed confidential Bid-specific information, and therefore, could not be asked via the Q&A. If a message was not confidential information unique to the Bidder, the questioner was redirected to the Q&A.

Figure 2



The 'Manage Messages' page allowed Bidders to type a question into a text box, and give the message a subject name. Bidders had the option to select if the message corresponded to a specific Bid.

The Company responded via the same method, and the conversation was preserved on the Manage Messages page.

TEP personnel referred all inquiries to the Website, and the IE believes TEP personnel did not provide information via email or otherwise to any prospective Bidder. All correspondence exchanged via the Message board was preserved for review by the Commission.

There were 72 messages exchanged via the Message Board on the Website. Bidders submitted 44 Messages to the Company, and 28 Messages were submitted by TEP/Administration either responding to specific Bidders' questions, or requesting Bid clarifications. The considerable number of communications via the Message Board signified there were robust exchanges with Bidders, but more importantly, quantified documentation of the exchanges.

C. POTENTIAL BIDDERS

When the IE RFP Website was released, a notice was sent to all individuals who previously registered with TEP as desiring to receive notice of RFPs and to a RFP "contact list" of individuals who registered on the Accion Power Website for notification when the RFP Website was launched. The IE sent a notice of the RFP to individuals who have participated in other energy storage solicitations that Accion Group conducted. TEP also released a notice to a variety of media sites. The IE is satisfied that TEP used reasonable efforts to disseminate information about this RFP. There were 166 persons registered on the IE Website; 81 as Bidders from 12 states, and 85 registered Non-Bidders.

This response rate confirms that the market was well aware of this RFP.

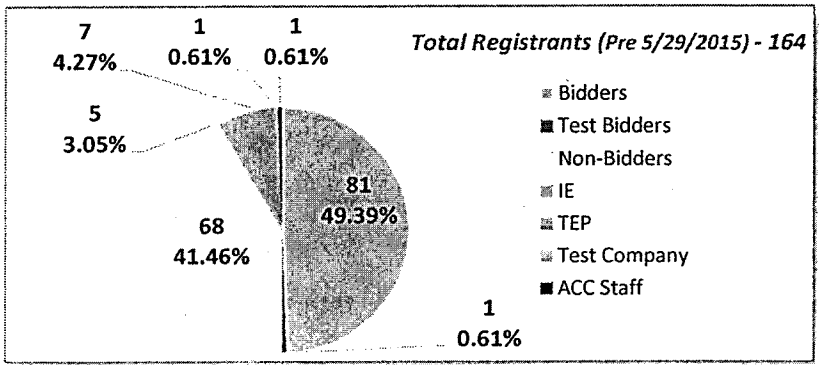
Figure 3

States Represented	# of Bidders/Non-Bidders Registered
Alabama	2
Arizona	25
California	57
Colorado	7
Connecticut	1
District of Columbia	1
Georgia	3
Idaho	2

States Represented	# of Bidders/Non-Bidders Registered
Illinois	6
Indiana	1
Massachusetts	7
Michigan	3
Missouri	2
Nevada	1
New Hampshire (IE/Admin)	7
New York	12
North Carolina	5
Oregon	6
Rhode Island	1
Tennessee	3
Texas	9
Virginia	1
Washington	3
Wisconsin	2
Total	**166**

The following figures show the breakdown of all registered users on the TEP RFP Website.

Figure 4

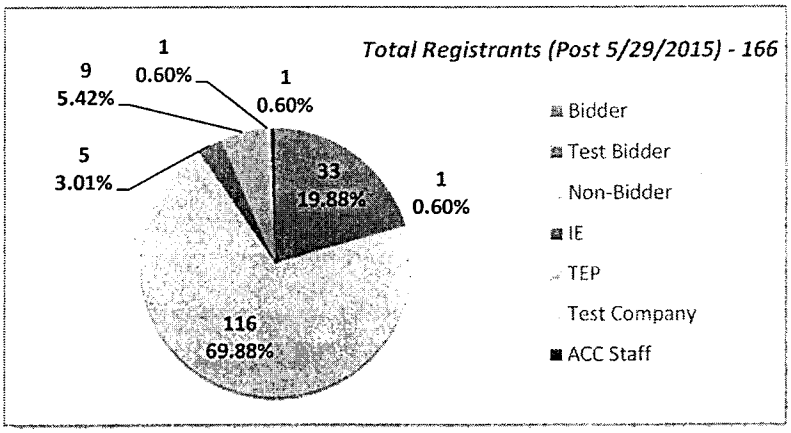


The initial Registered Users on the Website were those who registered prior to the mandatory site visit.

On May 29, 2015, TEP conducted the site visit at the Energy Park and a potential sub-station site. The RFP clearly stated that participation was mandatory for each Bidder in order to proceed with the process.

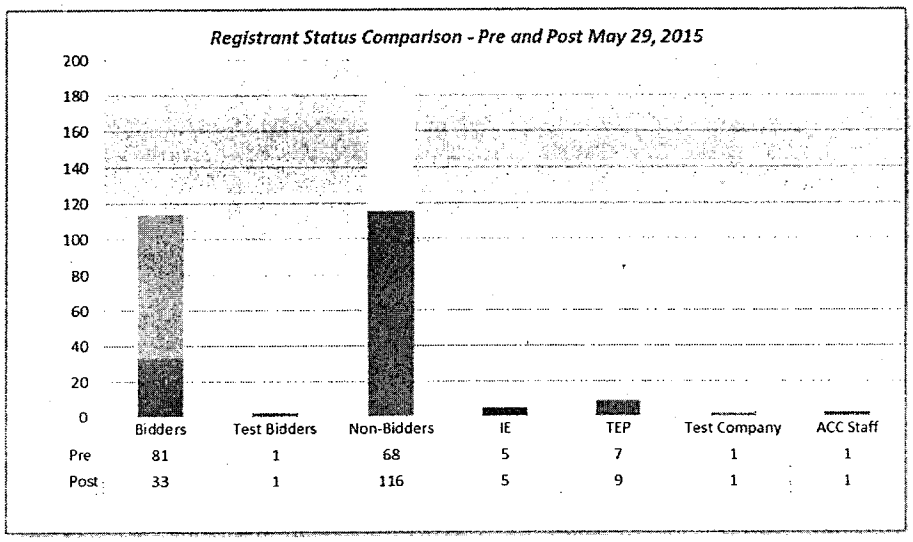
Figure 5

After the site visit Bidders who did not appear on the site visit sign-in were contacted by the IE to confirm they had not attended, either in person or by a representative. Those who were confirmed to have foregone the site visit were removed from the active Bidder category on the IE Website, which resulted in them not being permitted to pursue with the Bid process.



A comparison of the expression of interest in the RFP before the Site Visit, and the serious Bidders after the Site Visit is shown on the following figure.

Figure 6



D. RFP DOCUMENTS

The RFP documents were prepared by TEP and shared with the IE before being released via the IE Website. The IE worked closely with TEP personnel to prepare the materials so they accurately reflected the product being requested, and so there was no ambiguity in any of the required specifications. The IE believes the RFP Documents provided all necessary detail to permit a qualified Bidder to understand the terms and conditions of the RFP, and to prepare a responsive Bid. Particular attention was paid to ensure that there was no bias for or against any storage type or any of the identified technology options. This was of concern to TEP personnel because the company was agnostic as to technology and wanted to use the RFP process to investigate energy storage options.

The RFP terms, such as pricing structure, creditworthiness, transmission interconnection, and reliability, were equally applicable to all Bidders and no Bidder contacted the IE to identify confusion with the requirements or any perceived bias.

E. BIDDERS' CONFERENCE

Potential Bidders and interested persons were invited to participate in a Bidders' Conference at which they could ask questions regarding the RFP. In addition they were encouraged to post anonymous questions, via the Q&A feature available on the Website. As discussed earlier in this report, each question was reviewed by TEP, and the IE before being posted on the IE Website. A number of potential Bidders availed themselves of these opportunities and when the Q&A page was closed to new questions, 116 questions were received through the Q&A. In the interest of efficiency, and to avoid unnecessary expense for Bidders, the Bidders Conference was conducted as a webinar. The Bidders' Conference resulted in an additional 45 questions, which were posted with answers on the RFP Website.

TEP held the online Bidder Conference on May 12, 2015, to answer questions and seek input on the RFP from registered Bidders.

Conference call information was sent starting on May 6, 2015, to those who had registered for the Bidder Conference.

> *From: tepie@acciongroup.com*
> *To: [Bidder]*
> *Subject: TEP Bidder Conference Reminder*
>
> *You are receiving this message as you have registered for the TEP Bidder Conference call for today at 1:00pm PPT.*
> *Access to the webinar is limited to those that registered.*
> *Please do not share the call-in details with others to ensure all those that registered can attend the conference.*
> *https://tepes.accionpower.com*
> *Logged: 5/12/2015 11:19:06 AM*

TEP personnel gathered questions posed during the Bidder Conference and on May 29, 2015, a PDF file of written responses to each of the forty-five (45) questions raised at the Conference were posted to the Documents page on the Website. Bidders were advised that the written responses were to be relied upon when preparing Bids. 100 persons participated in the webinar Bidder Conference.

F. SITE VISIT

The site visit was conducted on May 20, 2015, beginning at 10:00 AM local time. Pre-registration was required to meet security concerns, and to ensure that sufficient refreshments were available to keep all participants properly hydrated. A total of 38 potential Bidders attended the site visit. A list of attendees was posted on the IE Website and used to confirm which firms met the minimum requirement of attending the site visit.

During the site walk at the Energy Park and at the sub-station a total of 52 questions were asked by potential Bidders. TEP provided written responses to each question, with the final responses posted

on the IE Website on June 10, 2015. Bidders were advised that the written answers should be used when preparing Bids.

VI. BID RECEIPT

Bids were initially due on June 17, 2015, however the date was extended to June 19, 2015 to afford Bidders additional time to refine Bids. Two (2) weeks prior to the initial Bid closure date, the IE sent the following reminder to all Bidders registered on the TEP Website that Bids were due June 17, 2015, at 1:00 PM PPT.

> *From: tepie@acciongroup.com*
> *To: [Bidder]*
>
> *Subject: TEP ESS Bid Close in 2 Weeks*
> *The TEP ESS Bid period will end in two weeks on Friday June 17, 2015 at 1:00pm PPT. Please use the https://tepes.accionpower.com to submit your Bid(s) before the deadline in order to be accepted.*
>
> *The Bid form has been updated to include additional pricing options and are highlighted in the attached document. You may submit up to 3 pricing options per Bid. Please create a new Bid if you would like to offer more pricing options.*
>
> *If you have any **non-project specific** questions regarding the form, please ask them on the **Q&A** page and TEP will respond promptly.*
>
> *For any **project specific** questions, please contact TEP through **Messages** on the Website.*
>
> *For information regarding payment of Bid fees, please refer to the **Independent Evaluator** documents on the **Documents** page.*
>
> *Thank you.*
>
> *https://tepes.accionpower.com*
> *Logged: 6/5/2015 10:08:04 AM*

On June 12, 2015, a second reminder notice was emailed to all Bidders reminding them of the two-day extension and indicating they had one (1) week to submit their Bids.

> *From: tepie@acciongroup.com*
> *To: [Bidder]*
>
> *Subject: TEP ESS Bid Close in 1 Week*
>
> *The TEP ESS Bid period will end in 1 week on Friday June 19, 2015 at 1:00pm PPT. Please use the https://tepes.accionpower.com to submit your Bid(s) before the deadline in order to be accepted.*
>
> *If you have any **non-project specific** questions regarding the form, please ask them on the **Q&A** page and TEP will respond promptly.*
>
> *For any **project specific** questions, please contact TEP through **Messages** on the*

Website.

*For information regarding payment of Bid fees, please refer to the **Independent Evaluator** documents on the **Documents** page.*

Thank you.

https://tepes.accionpower.com
Logged: 6/12/2015 10:53:05 AM

From: tepie@acciongroup.com
To: [Bidder]

An additional reminder was sent two (2) days before Bids were due:

Subject: TEP Energy Storage RFP Upcoming Bid Close Notification
The TEP ESS Bid period will end in 2 business days on Friday June 19, 2015 at 1:00pm PPT. Please use the https://tepes.accionpower.com to submit your Bid(s) before the deadline in order to be accepted.

*Wiring instructions to submit your Bid fees are provided in the attached document and can also be found in the **Independent Evaluator** documents on the **Documents** page of the Website.*

*If you have any **non-project specific** questions regarding the form, please ask them on the **Q&A** page and TEP will respond promptly.*

*For any **project specific** questions, please contact TEP through **Messages** on the Website.*

Thank you.

https://tepes.accionpower.com
Logged: 6/17/2015 1:05:02 PM

A final reminder was emailed to all Bidders informing them the Bid period closure in 24 hours.

From: tepie@acciongroup.com
To: [Bidder]

Subject: TEP Energy Storage RFP Upcoming Bid Close Notification
The TEP ESS Bid period will end in 24 hours on Friday June 19, 2015 at 1:00pm PPT. Please use the https://tepes.accionpower.com to submit your Bid(s) before the deadline in order to be accepted.

*Wiring instructions to submit your Bid fees are provided in the attached document and can also be found in the **Independent Evaluator** documents on the **Documents** page of the Website.*

*If you have any **non-project specific** questions regarding the form, please ask them on the **Q&A** page and TEP will attempt to respond promptly. However,*

please note that TEP is unable to guarantee that answers will be provided at this point in the process.

*For any **project specific** questions, please contact TEP through **Messages** on the Website. Please note that TEP is unable to guarantee that answers will be provided at this point in the process.*

https://tepes.accionpower.com
Logged: 6/18/2015 1:05:01 PM

The IE believes the record of reminders establishes a solid record of TEP's efforts to involve as many Bidders as possible in the RFP process.

V. BID DETAILS

A. BIDDERS' EVALUATION FEES ("Bid Fees")

A Bid Fee was required to help defray costs of the evaluation of Bids. All Bidders were required to submit with each Bid, a non-refundable Bid Fee of Seven thousand five hundred dollars ($7,500). Bid Fees were paid electronically to Accion Group.

Without a Bid Fee, ratepayers would be charged the entire cost of conducting the RFP, including the cost of personnel to review all Bids, regardless of the quality of each Bid. Additionally, without a Bid Fee there would have been no incentive for a Bidder to limit Bids to their best offers, and every incentive to file Bids that were redundant, except for small variations. The IE believes the Bid Fee was both reasonable and equally applied.

B. ONE DISSATISFIED PARTICIPANT

On June 19, 2015, by 1:00 PM Pacific Time, the on-line Bid form closed.

A list of the Bidder and receipt date is provided as CONFIDENTIAL ATTACHMENT, Appendix 1. A total of nineteen (19) companies submitted a total of twenty-one (21) Bids.

All but one (1) company submitted Bids in time for the deadline on June 19, 2015. One (1) company contacted the IE and requested a deadline extension moments before the Bid Form automatically closed. After investigation and discussion with TEP personnel, the request was denied. A brief history of the Bidder is appropriate. The individual first contacted the IE and inquired about providing information regarding products the individual would like Bidders to learn about. [7] Subsequently, the individual asked to be switched from "non-Bidder" to Bidder status on the IE Website. The individual registered for the mandatory site visit, but failed to attend. When asked by the IE to confirm they were not going to proceed with the Bid process, the individual claimed to have had a representative

[7] TEP permitted the IE to create a "Vendors" file on the IE Website, and to list a brief statement of wares each vendor offered, along with contact information. Eight (8) vendors provided information that was posted to the Vendor Folder.

at the site visit. After another three days the individual identified someone who had attended the site visit as his representative. Based on that representation TEP permitted the individual to remain as a Bidder on the IE Website. As of the day Bids were due this individual had failed to start a Bid. He failed to provide any of the required documents, complete any of the Bid form, or submit the Bid fee. However, minutes before the Bid form automatically closed, the individual contacted the IE and requested that the Bid process remain open to him. When this was denied, ignoring the RFP strict prohibition against un-monitored discussions with TEP personnel, he proceeded to attempt conversations with multiple persons at TEP, including the CEO and in-house counsel.

The IE believes TEP was correct in not permitting this individual to fashion a Bid after the Bid period had closed. Had the Bid been substantially completed, e.g., missing only one document, the IE believes TEP personnel would likely have been more flexible, but that was not the case.

To permit this individual to begin a Bid after the Bid period closed would have been preferential treatment of one Bidder that was not permitted pursuant to the RFP protocols.

As depicted in Figure 7, other Bidders were able to submit timely Bids.

Figure 7

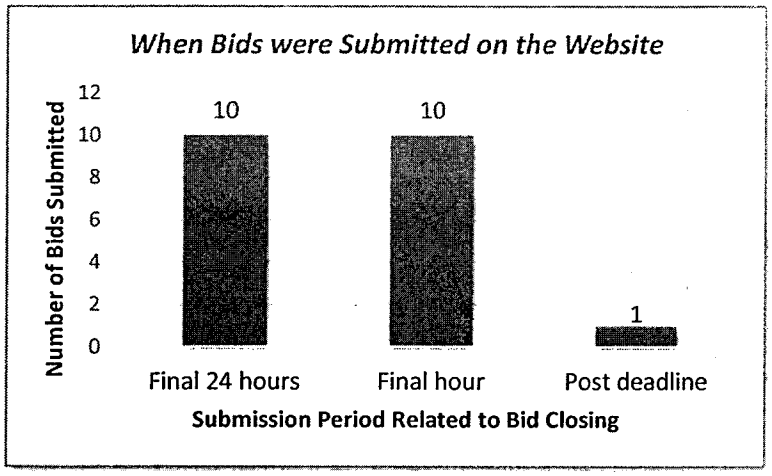


Figure 8

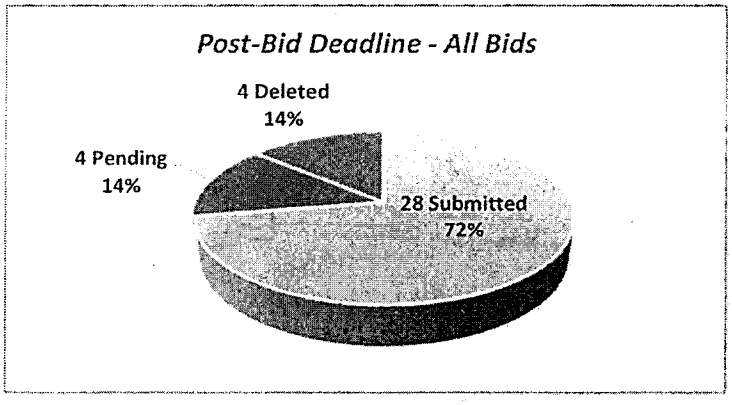


Figure 8 presents Bid activity through the date of submission.

C. TECHNOLOGY

As noted TEP did not restrict Bids to a particular technology or manufacturer, opting instead to rely on the market to provide the best options currently available. The IE believes this approach was appropriate since TEP was not attempting to expand an existing technology within the company's portfolio. As seen on the following table, battery technology continues to be preferred by developers, while there is no heavy favorite for which battery type is recommended for this application.

Figure 9

Technology Type	Number of Submitted Bids
Battery	20
Flywheel	1
Battery Type	**Number of Short Listed Bids**
NMC - Lithium-ion	3
LTO - Lithium Titanate	2
LFP - Lithium-ion	1
LIP - Lithium-ion	1
Total	**7**
Battery Manufacturer	**Number of Short Listed Bids**
LG Chem	3
BYD	1
Samsung SDI	1
Toshiba	2
Total	**7**

VI. POST BID ACTIVITIES

A. EVALUATION PROCESS - METHODOLOGY

TEP personnel commenced evaluations immediately after the Bid process closed. During this period, clarifying requests were made of Bidders through the RFP Website and extensive evaluation was conducted of each Bid. TEP personnel discussed the evaluation status with the IE throughout this phase of the process. TEP engineers were responsible for reviewing the technical components of each proposal and providing a judgement as to the suitability of components proposed by each Bidder. Significant weight was given to the judgement of the engineers based on their responsibility for system reliability, after the introduction of what would be a novel component to the company's portfolio. Because the TEP RFP establish rigid credit-worthiness standards, review of financial capability was greatly simplified. The quantitative portion of the analysis was based on calculating the levelized net benefit of each project, based on a cumulative 10 year contract price.

The evaluation produced rankings that reviewed the experience of each Bidder, and the technology ranking performed by TEP engineers. The ranking also considered the response time commitment of the Bidder, and the assessed ability to provide a firm delivery of 10 MWac for the full term of the contract. Because the Bidder is to be contractually bound to perform, with penalties for underperformance, the risk of failure is on the supplier, and TEP held firm to this requirement throughout the process.

This initial review produced a Short-list of 6 Bidders and 7 Bids. [8] The range of cumulative prices reflects the options available to TEP, and, in the opinion of the IE, the state of the energy storage industry.

Figure 10

(Redacted data provided in the Confidential Appendix)

Bid Number	10-Year Cumulative Price
277-1	Redacted
184-1	Redacted
271-1	Redacted
311-1	Redacted
262-1	Redacted
230-1	Redacted

Once the Short-list was established other Bids were released. [9] Through the IE Website TEP personnel sought additional details from some Bidders in advance of the face to face, individual meetings conducted in Tucson on August 9 -10, 2015. The IE attended each of these meetings and actively participated in each discussion. Each Short-listed Bidder was invited to summarize their proposal and the provide detail on the components they intended to employ. This process was appropriate as it was an opportunity to confirm information provided as part of each Bid, and a forum for confirming the knowledge and experience of each remaining Bidder.

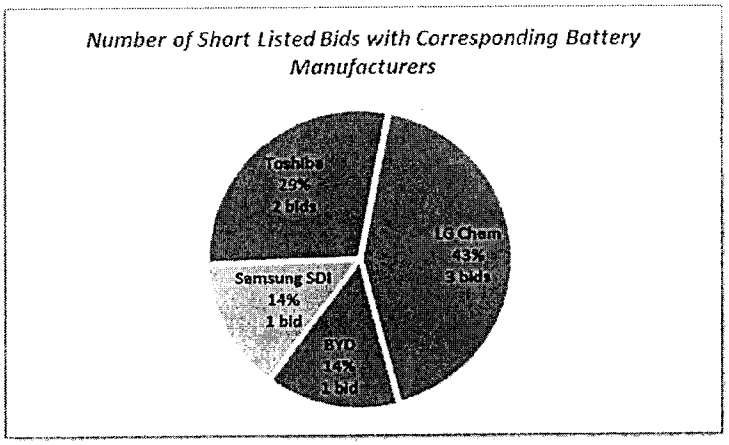
The discussions clarified the battery technology each Bidder proposed to deploy, and the manufacturer of major components. As with other emerging technologies, the energy storage industry continues to experience a consolidation of manufacturers, with the less successful and less reliable suppliers being eliminated from the market place.

---

[8] During the early discussion with Short-listed Bidders it was determined that one of the Bids on the preliminary Short list was misunderstood, and when clarified it was eliminated.

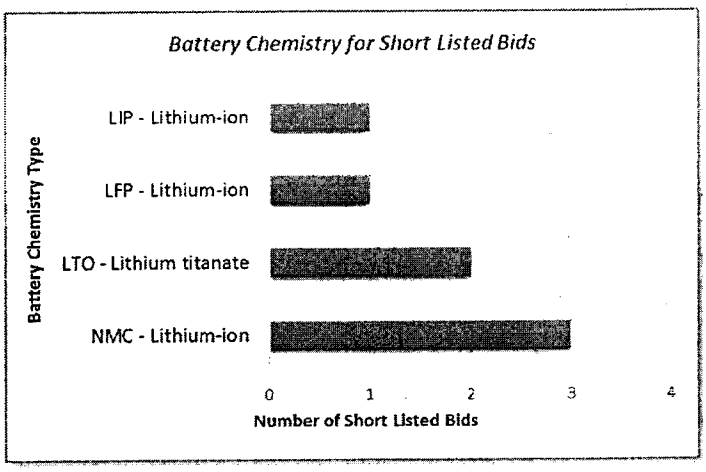
[9] Bidders were informed by the IE that TEP personnel would review unsuccessful Bids with the respective Bidders, after final determinations were made.

Figure 11



TEP personnel, rightly in the view of the IE, insisted on a high degree of certainty of successful deployment, and declined to employ unproven technology. Accordingly, the acceptable technology and vendors were identified, and are summarized in the Figures 11 and 12.

Figure 12



The discussions with the Short-listed Bidders confirmed pricing opportunities, as presented above. After confirmation of refinements of equipment being offered the ranking of Bids confirmed that the least cost options were also the best when evaluated for experience and business ranking. This process also confirmed that TEP could acquire twice the expected storage capacity for less than the cost of the most expensive Short-listed Bid, which was presented from an established and credible company. Based on the result of the competitive process, TEP decided to take advantage of the robust response and proceed with contracts with the two best ranked, and least expensive offers.

B. INTERACTION WITH TEP PERSONNEL

The IE was actively involved in all stages of RFP process and kept advised of the evaluation of each Bid. Frequent discussions were held concerning details of each Bid and TEP personnel were forthright in responding to all questions posed by the IE. The IE experienced an open working relationship with the TEP personnel during the development of RFP documents, conduct of each phase of the process, and through the evaluation process. At no time did the IE believe TEP personnel were less than forthcoming, or that critical personnel were held beyond the ability of the IE to contact.

VII. CONCLUSION

In summary, the IE believes a fair solicitation was conducted, that all Bidders had access to the same information at the same time, and that all Bids were evaluated using the same criteria and standards. The documented exchanges between Bidders and TEP, as retained in the Q&A feature and the Website message board, confirms that TEP was responsive at every phase of the process, and that only Bid-specific exchanges were conducted on a confidential basis, and appropriately withheld from competing Bidders.

The IE is unaware of any instance where TEP personnel held private discussions with prospective Bidders. Indeed, the IE was immediately advised when a disgruntled registered Bidder attempted to reach TEP employees seeking special treatment, and the IE was advised the attempted contact was rebuffed.

Exhibit C

TUCSON ELECTRIC POWER COMPANY'S RESPONSE TO STAFF'S FIRST SET OF DATA REQUESTS REGARDING ITS RENEWABLE ENERGY STANDARD AND TARIFF APPLICATION
DOCKET NO. E-01933A-15-0239
August 24, 2015

STF 1.21

Please discuss how TEP is complying with the following ordering paragraphs from Decision No. 74884:

a. Page 21, lines 12-20;

b. Page 21, line 21 – Page 22, line 2;

c. Page 22, lines 3-8; and

d. Page 22, lines 15-18.

RESPONSE:

a. TEP is complying with the $10 million limit by incrementally procuring panels and inverters to ensure available product matches demand and warehousing availability; limiting customer signup period to approximately 200 qualified customers; and cost-projecting vendor installation costs. To date, as the program and systems are new, no O&M has been spent and the 3.5 cents/per kWh limit is not an issue.

b. In order to achieve compliance while minimizing a duplication of efforts, TEP chose to participate in the advisory committee established by Arizona Public Service Company ("APS"). This committee has representatives from multiple utilities (TEP, APS, Hawaii Electric Company), universities (ASU & UA), Solar Electric Power Association, Electric Power Research Institute, the Commission and its Staff, Residential Utilities Consumer Organization, National Renewable Energy Laboratory, and others who were invited to participate. The committee will be meeting regularly to address a range of issues facing utilities and program design, but it is too early to provide definitive public feedback on any findings.

c. TEP has committed to cost parity under current net metering rates and continues to provide a consumer option that results in a lower cost-shift to non-solar adopters through the collection of full tariff rates of participating customers. If, and when, rate design has been changed to alter this cost parity structure to existing net metered customers, TEP will re-analyze the existing program in an effort to minimize any cost-parity issues that may exist between the Company's program and third-party programs.

d. The Company included a discussion on the status its utility-owned program as it existed in its 2016 REST filing. Certain aspects of the program, such as a detailed cost-benefit analysis, cannot be performed until there is sufficient data available for analysis. Program updates or specific information can be provided at any time, if requested.

RESPONDENT:

Carmine Tilghman

Defined Terms:
Arizona Corporation Commission ("Commission")
Tucson Electric Power Company ("TEP" or the "Company")