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2008 APR -3 P 4: 42

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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
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WILLIAM A. MUNDELL
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IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS RENEWABLE ENERGY STANDARD, INCLUDING ITS DISTRIBUTED RENEWABLE ENERGY PLAN AND RENEWABLE ENERGY STANDARD TARIFF.	DOCKET NO. E-01933A-07-0594 **TUCSON ELECTRIC POWER COMPANY'S COMMENTS**

Tucson Electric Power Company ("TEP" or the "Company"), through undersigned counsel, hereby submits its Comments ("Comments") responding to the Arizona Corporation Commission ("Commission") Staff's Proposed Order ("Order").

I. INTRODUCTION.

TEP has been a long-time proponent and developer of alternative, sustainable sources of energy to meet the needs of its customers, a position it proudly continues to support as part of its corporate culture.

The Commission has shown great leadership in adopting the Renewable Energy Standard and Tariff Rules ("REST") to provide a framework to financially support utilities with additional sources of funding in developing new renewable energy sources to serve customers. The Company applauds the Commission's recognition that there is a need for additional financial support in order to attain the Commission's policy goals to expand renewable energy use. The actual funding of the REST programs is provided through Commission approval of the REST Tariff, submitted by a utility in conjunction with a REST Implementation Plan.

TEP has filed two REST Implementation Plans - (i) the Full Compliance Opportunity Plan, and (ii) the Sample Tariff Plan - along with the associated REST Tariffs, to provide a set of two REST solution alternatives for the Commission's consideration. The Full Compliance Opportunity Plan provides the appropriate level of funding to afford a fair opportunity for the Company to meet the annual renewable energy requirements of the REST, including the residential distributed generation portion, but requires a REST Tariff cap level that could be burdensome for many customers. The Sample Tariff Plan, adopts the REST rule sample tariff rate and caps, which represent a moderate increase in monthly customer payments over the Environmental Portfolio Standard ("EPS") surcharge. This Plan is expected to provide sufficient funding to meet the overall REST annual renewable energy requirements, including the overall total distributed generation requirements, but is expected to only provide 34.5% of the distributed renewable energy from residential resources, instead of the 50% required in the REST rules.

Commission Staff has presented the Commission with an Order for its consideration that presents a third REST program option. The Company appreciates the thoughtful work Staff has performed in preparing its Order, and agrees with many of Staff's recommendations. However, TEP does have one significant exception, and a few important issues, that must be addressed for the Commission's consideration during review of the Order. These concerns are addressed in greater detail below.

Finally, in response to Staff's suggestion that TEP implement the REST plan more efficiently, the Company assures the Commission and Staff that it will administer whichever REST Plan is approved as expeditiously and efficiently as possible to provide a high level of funding for residential customer incentives.

II. STAFF'S PROPOSED PLAN – THE SIGNIFICANT EXCEPTION.

Staff has recommended that the Company's Full Compliance Opportunity Plan be rejected as too expensive and burdensome on customers and has instead characterized TEP's Sample Tariff Plan as reasonable. However, Staff also proposed a third REST Plan ("Staff Plan"). Notably, Staff did recommend that if the Staff Plan is not approved by the Commission, the Company's Sample Tariff Plan should be approved.

The Staff Plan provides a level of REST funding that is much less than would be provided by the Company's proposed Full Compliance Opportunity Plan. Although the funding has been greatly reduced, Staff still expects full compliance with all provisions of the REST annual energy requirements, including the residential distributed generation requirements. The proposed funding reduction would be appropriate if the annual residential distributed energy requirements were also reduced accordingly. However, the Staff Plan does not reduce that requirement at all.

TEP agrees with Staff that its proposed reduction of the incentive payments for residential distributed renewable generation would save a significant amount of customer funds from being spent in the Company's REST program. However, the reduction of residential incentive levels to those proposed in the Staff Plan or the Company's Sample Tariff Plan will not provide the proper financial incentive to install renewable energy systems to enough customers to allow the Company to meet its REST residential distributed renewable energy requirements in 2008.

By example, TEP offered that same Staff Plan proposed level of financial incentive, \$3.00/watt DC, for photovoltaic ("PV") systems installed in 2007. In 2007, 117 customers reserved 390 kW DC of PV at that incentive level. TEP and Staff agree that slightly over 2,000 kW of PV (with an estimated number of 630 customers) is needed in 2008 to meet the Company's REST residential distributed renewable generation requirements. Based on recent actual experience, the Company is absolutely certain the \$3.00/watt DC incentive proposed by the Staff Plan will not provide the customer acceptance rates required without some additional incentives offered by another entity, worth at least \$1.50/watt DC.

III. <u>NEED FOR ADDITIONAL PV INCENTIVE.</u>

The Company's experience and analysis shows that in order to meet REST policy goals for distributed generation, an additional incentive is needed. At the present time, no other state or federal residential incentives are available or expected to be implemented in the near future. TEP has direct relevant experience in this area as well, having provided a PV incentive program for six years, referred to as SunShare Option 2, which provided an effective incentive level of about \$4.50/watt DC. In its best year, 2006, SunShare Option 2 incentivized 290 customers to install almost 800 kW DC of facilities.[1] Thus, the Company is very skeptical that even a \$4.50/watt DC incentive level would induce the necessary 630 customers to install enough PV energy systems that would allow the Company to attain its REST residential distributed renewable generation requirements in 2008. While offering higher incentive levels above \$4.50/watt DC would increase customer participation, it would also increase the cost of the REST program to a level the Company did not feel was economically feasible to the customers paying the monthly REST tariff.

TEP spent considerable time analyzing the incentive levels needed to increase the local solar energy systems market prior to developing its REST Implementation Plans. Solar advocates have long stated that the average residential customer payback for a PV system needs to be 10 years or less for market acceptance of solar energy systems. When TEP used that payback time as baseline criteria for its analysis, with existing federal and state tax incentives, the incentive required to meet this time frame is within the range of \$4.60/watt DC to \$5.50/watt DC. Because the state and federal tax incentives have payment caps, very small systems need less incentive about - \$4.60/watt DC - while midrange size systems of about 3 kW to 5 kW need a higher incentive - around the \$5.50/watt DC level.

A \$3.00/watt DC incentive extends the payback time period to 25 years for the smallest systems and at least a 30-year payback for the midrange systems. This again demonstrates the reason current SunShare \$3.00/watt DC incentive only supported 400 kW DC of PV system installations in TEP's service territory in 2007. TEP shared this payback analysis in mid-2007 with a member of the solar advocate community in Tucson, who was in general agreement that the paybacks for the given incentive levels looked realistic, on average.

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[1] 2006 holds significance as the year in which the current federal tax incentives first became available.

IV. NEED FOR ADDITIONAL SOLAR WATER HEATING INCENTIVE.

In addition to the PV installations, an additional 3,398 kW equivalent representing an estimated 1,130 customers of residential solar water heating systems is needed to meet the Company's REST residential distributed renewable generation requirements in 2008. Discussions with local solar installers during several renewable energy fairs held in September 2007 dictated the need for a relatively high incentive offering to achieve this level of installation demand. TEP's Full Compliance Opportunity Plan included an incentive (maximum of $3,500) at a level that is double the incentive level in the Staff Plan (maximum of $1,750). While a full market impact analysis was not performed on the solar water heating incentives, experience gained by Arizona Public Service Company ("APS") and Salt River Project ("SRP"), with their solar water heating incentive programs, indicates the Staff Plan incentive will not provide for commitment by customers for, and installation of, 3,398 kW equivalent of solar water heating in TEP's service territory in 2008. Local solar installers estimated demand for solar water heaters in TEP's service territory in 2007 to be about 150 to 200 systems, far short of 1,130.

Based on the Company's market payback analysis and historic market performance for PV systems, it will be impossible for the $3.00/watt DC PV and maximum $1,750 solar water heating incentives in the Staff Plan to drive sufficient demand to meet the Staff Plan REST residential distributed renewable generation requirements in 2008. Offering the same incentive levels and essentially the same marketing funding level that achieved 130 SunShare PV customers in 2007 will not result in 630 SunShare PV customers in 2008 or beyond. Therefore, TEP strongly recommends that the Commission reject the Staff Plan.

TEP agrees with Staff that if the Staff Plan is not adopted, the Commission should approve the Company's Sample Tariff Plan, and proposed Sample Tariff funding rate and caps. Inherent in approval of the Sample Tariff Plan is recognition that TEP will shift its 2008 REST residential distributed renewable generation requirements to commercial distributed renewable generation, thus a waiver of the residential requirement in 2008 should be included in the final Order as allowed in R14-2-1816. TEP has included a working copy of the residential payback analysis spreadsheet as

Exhibit 1, attached hereto and incorporated herein. This spreadsheet was provided to Staff in March 2008 in response to a data request.

V. ZERO TILT ANGLE FOR PV SYSTEM INSTALLATIONS.

Staff opines that the Company's proposed Renewable Energy Credit Purchase Program ("RECPP") does not provide support for PV systems installed with less than a 10 degree tilt from horizontal and recommends that TEP revise its SunShare PV Off-Angle Shading Annual Energy Derating Chart ("Derate Chart") to reflect support for zero angle installations. Staff is correct that for an Up-Front Incentive ("UFI") project proposal, the Derate Chart does apply and does not allow for an incentive for zero angle installations. However, TEP provides an opportunity for zero angle installations to apply for a Performance Based Incentive ("PBI") through the Conforming Project Incentive provisions. A PBI pays an incentive only for actual energy production metered from a renewable energy system. Installations of PV system modules with a zero angle from horizontal historically have annual energy production rates much lower than those installed with a 10 degree or higher tilt. The higher tilt PV system modules collect more annual sunlight in higher latitude locations and allow for drainage of rain water, and the cleansing effect of the rainwater on accumulated dirt as it runs off the modules. Some PV manufacturers have historically recommended that their modules be installed with a minimum 10 degree tilt to prevent pooling of water which can lead to module delamination over time. Also, zero tilt installations typically are installed directly upon the roof, reducing backside module cooling and further reducing annual energy output. While TEP feels comfortable providing performance based financial incentives for support of the installation of zero tilt systems, the Company does not feel it should incur performance risk for these systems. TEP thus proposes to offer only a PBI program for zero angle modules, which provides the incentive for actual energy produced and metered. Performance risk is then properly borne by the installing party. TEP recommends no changes be made to its proposed RECPP in this regard. TEP will ensure that solar developers in its service territory are aware that the Derate Chart only applies to UFI-supported projects, and not to PBI-supported projects, and that a zero tilt installation can qualify for the PBI program.

VI. REWARDING EFFICIENT SOLAR COOLING SYSTEMS.

Staff recommended that the Commission not grant to TEP a waiver of the provisions of R14-2-1803.B. TEP continues to express concern that the provisions of R14-2-1803.B reward inefficient thermal heat driven cooling systems by paying incentives based on the heat input to the cooling device rather than paying incentives based on the useful cooling output actually produced by the cooling device. It seems perverse in an era of increasing concern for energy efficiency to reward extra heat production and rejection of heat to the atmosphere with financial incentives when cooling in the conditioned space is the customers' energy need (ie: the cooling energy delivered to the conditioned space is what should be given the incentive). TEP has thus requested a waiver of the language in R14-2-1803.B. That section currently reads:

> *For Distributed Renewable Resources, one Renewable Energy Credit shall be created for each 3,415 British Thermal Units of heat produced by a Solar Water Heating System, a Solar Industrial Process Heating and Cooling System, Solar Space Cooling System, Biomass Thermal System, Biogas Thermal System, or a Solar Space Heating System.*

TEP does not request that the language of the rule be changed, but does ask that a waiver of that language be granted, as allowed for in R14-2-1816, to support its proposed RECPP language for Biomass/Biogas Space Cooling and Solar Space Cooling as follows:

> *System must include a dedicated performance meter to allow for monitoring of the amount of useful cooling produced. As an exception to the REST Rule R14-2-1803.B, energy production will be calculated at one kW-hr per ton of metered cooling for systems with capacity of 100 tons or less and one kW-hr per 1.33 tons of metered cooling for systems with capacity of greater than 100 tons.*

It is the Company's belief, expressed numerous times before, that during and after proposed and final REST rule adoption that the language of R14-2-1803.B rewards inefficient thermal cooling systems and sends the wrong economic signal to developers. Arizona utility customers should not pay for the installation of inefficient or ineffective renewable energy systems. TEP requests a waiver of that provision to support its RECPP language which it believes will send the proper incentive signals for deployment of efficient thermal cooling systems.

VII. UNIFORM CREDIT PURCHASE PROGAM ADOPTION/IMPLEMENTATION.

Staff recommends that upon adoption by the Commission of a Uniform Credit Purchase Program ("UCPP"), the Company should develop a mechanism to incorporate UCPP procedures and incentive levels for all eligible technologies in its proposed REST Plan for 2009 and later years. The RECPP is the Company's version of a UCPP. The Company fully accepts that it will incorporate changes into its RECPP as needed to comply with the Commission-approved UCPP provisions. However, given that the 2009 REST Implementation Plan is due for submission in less than three months, by July 1st of 2008, and that continuity of customer incentive programs is very important for long term success, TEP requests that any changes needed to bring its 2009 RECPP into compliance with a Commission-adopted UCPP be included in its annual 2010 Implementation Plan filing, with program implementation at the beginning of a new program year. A mid-year incentive program change could be confusing to installers and customers and expensive to revise marketing and collateral material. The Company believes a mid-year change could be detrimental to long-term development of the distributed renewable energy market.

VIII. CONCLUSION.

TEP generally agrees with and supports the recommendations of Staff in its Order. TEP appreciates the spirit of cooperation and dedication to timely review displayed by Staff during its review of the Company's REST Implementation Plan. However, TEP requests that the Commission reject Staff's Plan and approve TEP's Sample Tariff Plan including the associated Tariff, the RECPP, and the Customer Self-Directed Renewable Energy Option Tariff. If the REST Implementation Plan is approved at the April 2008 Open Meeting, TEP expects to expeditiously provide notice to customers of the change in the renewable energy tariffs and start billing the new tariff rate in conjunction with the June 2008 billing period. Thus, for 2008 REST annual renewable energy compliance purposes, June 1st will be the date the REST program commences. TEP looks forward to the opportunity to expand its development of renewable energy resources with approval of the Sample Tariff Plan.

RESPECTFULLY SUBMITTED this 3rd day of April, 2008.

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EXHIBIT

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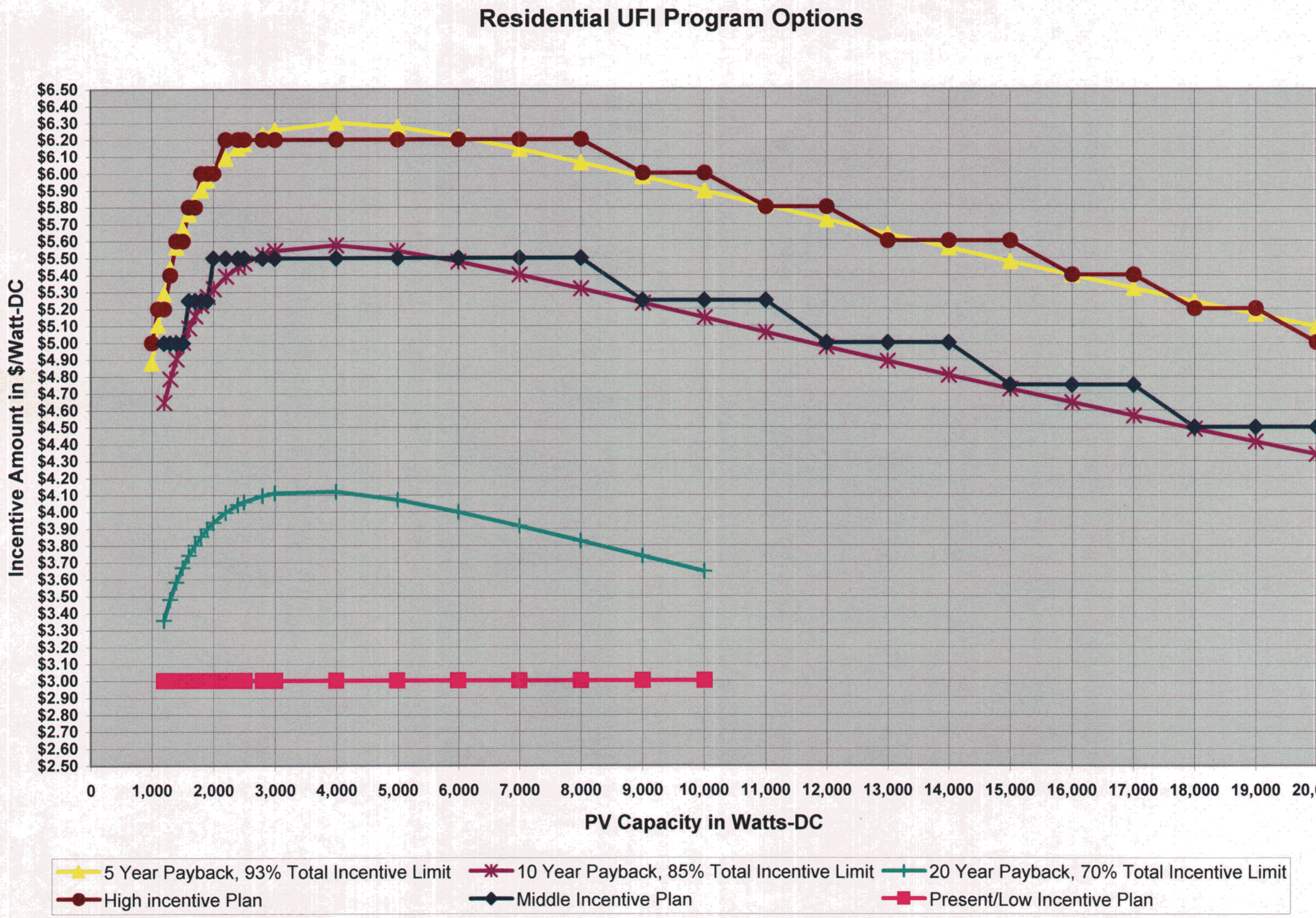
Residential UFI Program Options
Incentive Amount in $/Watt-DC
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5 Year Payback, 93% Total Incentive Limit
10 Year Payback, 85% Total Incentive Limit
20 Year Payback, 70% Total Incentive Limit
High incentive Plan
Middle Incentive Plan
Present/Low Incentive Plan