ORIGINAL

0000083060

The Solar Advocates

RECEIVED Arizona Solar Energy Industries Association
Solar Alliance
Vote Solar Initiative

47

2008 MAR 25 P 12: 30

Comments in Response to Tucson Electric Power's Proposed REST Implementation Plan

AZ CORP COMMISSION
DOCKET CONTROL

Docket No. E-01933A-07-0594

The Solar Advocates wish to thank Commission Staff for the opportunity to comment on Tucson Electric Power's (TEP) Proposed Renewable Energy Standard and Tariff Implementation Plan.

The Solar Advocates appreciate the considerable amount of thought and effort that TEP has obviously put into the preparation of this document. Its highly detailed nature provides a wealth of data on the workings of utility renewable energy programs.

The Solar Advocates have several systemic concerns with the TEP Proposal that can be divided into the below four categories, and which will be discussed in more detail.

1. Non-Compliance Option: This option is unacceptable. The principal point of a state-wide program is to hold ACC-regulated utilities to certain minimum standards. Allowing exceptions before the program even begins undermines the efforts of Stakeholders, Staff and Commissioners.

2. Overall cost of Full Compliance Plan is Artificially High, Both Plans Contain Unnecessary Costs: Costs of the Full Compliance Plan seem to be biased against Distributed Generation, and compliance in general. Costs to be collected through the environmental surcharge under Full Compliance are *several times* higher, per customer, than what Arizona Public Service believes it needs to charge to reach full compliance.

3. Administration and Process Details: Many of the specific interconnection and program details outlined in both versions would result in a cumbersome program that may create disincentives to participation.

4. Disputed or Unsupported Data: The Advocates take issue with the factual assumptions used to by TEP to calculate costs and benefits of distributed generation, as well as costs to the program.

Arizona Corporation Commission
DOCKETED
MAR 25 2008
DOCKETED BY nr

Ultimately, the Solar Advocates believe that a Full Compliance plan at a tariff level similar to those outlined in the sample tariff is possible.

Non-Compliance Option

The Renewable Energy Standard and Tariff (REST) has been one of the most heavily workshopped and vetted proceedings in ACC history. Hundreds of stakeholders over the course of several years have strived to implement a workable plan to meet the 15% by 2025 goal. Approving a non-compliance option undermines these efforts. We believe that through careful cost analysis of the Full Compliance Plan, modifications can be made that can allow TEP to reach compliance with an environmental surcharge tariff near that outlined in the sample tariff. The following section identifies several areas of concern related to costs that may be overestimated or unnecessary. This analysis is also a good first step in attempting to identify some of the causes of why TEP's estimated full compliance costs are almost exactly twice the cost, on a $ per MWh basis than those that APS has identified in their REST Implementation plan.

	APS Full Compliance	TEP Full Compliance
Estimated Renewable Target (MWh) 2008	618,187	154,204
Commutative REST Program Expenditures 2008	$48.20 M	$23.50 M
$ per MWh	$77.97 M	$152.40 M

Overall Cost of Full Compliance Plan Artificially High, Both Plans Include Unnecessary Costs

The below exceptions highlight some of the areas of potential spending in the Full Compliance Plan that either may be not strictly necessary to successfully meeting REST mandates, or should be funded through other mechanisms.

Attachment 9 in the Full Compliance Plan, entitled "Cost Recovery Factors Definition," gives a step by step account of the REST budget. Some of these items are of debatable value to meeting REST compliance.

- *The up front payment to customers cost $12,462,490*

  This assumes that the UFI amount for residential PV systems will be $4.50 per watt and that incentives for PV systems will use up around $9 million of these funds. However, it may be the case that an UFI of $ 4.00 or $3.50 may be enough to create a proper incentive for residential solar. TEP plans to spend $1.4 million on public outreach and education, and increased interest as a result of these efforts coupled with an incremental increase in the UFI might very well create enough demand for DG systems to meet 2008 goals.

- *Corporate overhead, Stores loads, Small Tools loads, Common Systems loads, Building allocations and other transaction allocation cost for customers sited renewable distributed generation programs: $444,116*

  It is unclear what these costs entail and why they are charged to the REST program.

- *CC&B incremental Transaction Allocation cost for CC&B support $50,000*

  Again, It is unclear what these costs entail and why they are charged to the REST program.

- *Outside Coordination and Support: $175,450*

Nothing in this section should come from REST funding.

Included in the main text section of the Full Compliance plan are several elements that while not specifically addressed in the Appendix 9 budget, do have a budgetary impact.

- Page 5—Last Paragraph
    - *After 2011, TEP expects to include a factor for recovery of integration costs in its REST Tariff through the REST Adjustor Mechanism, and thus request approval of that factor, not the amount of the charge, at this time.*

      TEP claims that without 'some integrated energy storage', integrating solar with current resources will be more difficult and more expensive than with wind, and while the costs are de minimis now, the costs will be 'more than insignificant' by 2011, and TEP requests approval of a cost of integration factor at this time. However, TEP provided no actual data to back up theses claims. And even if their claims are correct, since TEP is part of a consortium of utilities that recently issued an RFP for solar resources with a special emphasis on storage, it is premature to make conclusions about the lack of storage and its impacts. We recommend that the Commission not allow this factor unless and until its relevance is better established.

- Page 7 – Second to Last Paragraph
    - *There are also costs to the utility from, among others: (1) the increased need for rapid response automatic voltage control an d load management devices in the distribution systems, (2)increased hardware to provide proper protection to distribution circuits with high percentages of DG installed, (3) additional repair time after a storm to clear DG sources prior to start of work, (4) increased outage recovery time from uncontrollable (to the utility) DG resources that start generating automatically in an unpredictable manner, and (5) lost revenue from the reduced sales of electricity with consumption only based rater structures.*

      In this section TEP lists a number of issues related to distributed generation which will cause TEP to incur costs. However, to our knowledge no other utility in the country has reported similar issues with the deployment of distributed generation technologies.

- Page 8 – Second to Last Paragraph
    - *However, in many cases, the largest cost to a utility from installation of DG systems is lost revenues from energy-only based utility rates, as a DG system reduces the energy consumption of the owner.*

      This issue is easily addressed in the normal course of a rate case, a point addressed and confirmed by the Commission in the course of the settlement of APS's recent rate case.

- Page 8 – Last Paragraph

- *TEP requests approval of a REST Performance Incentive to provide some timely recovery of this lost revenue as a component of the REST Tariff Surcharge as determined in the REST Adjustor Mechanism calculation.*

    The 'lost revenues' can easily be addressed in the normal course of a rate case.

- Page 17—Marketing Program
    - We believe ratepayers would be better served if the TEP marketing program had oversight mechanisms built into it.

- Page 22—First Paragraph.
    - *Study of Distribution system impacts.*

    We request that this study focus on DG system impacts at percentages consistent with REST compliance, and that Solar Advocates have the opportunity to participate in the study design.

Finally, it is tempting to look at the costs associated with the full compliance plan and conclude that the logical alternative is to reduce the annual DG carve-out. However, there are several factors to consider before jumping to conclusions, not the least of which is that much of the cost of Non DG Renewable energy is charged to the rate base instead of the REST. For a full comparison of DG vs. Non DG see Appendix A.

<u>Administration and Process Details</u>

The Solar Advocates represent many distributed generation system integrators with experience installing hundreds of systems. Based on this experience we believe that some of the proposed program elements would have a counterproductive impact on the goal of promoting renewable generation.

- REST Imp. Plan, Page 3
    - *TEP may , as a last resort if purchased renewable energy supplies are insufficient to met REST requirements, purchase Renewable Energy Credits from its bank created during the EPS program to meet REST requirements*

    As a successor program, this is an improper utilization of ratepayer funds.

- RECPP, Page 17—Off Grid Systems
    - *The minimum PV Array size shall be no less than 600 Wdc and the maximum PV array size shall not exceed 2,000 Wdc.*

    Many if not most off grid systems are greater than 2,000 Wdc. This would have a far-reaching and negative effect on the growth of the off-grid market.

- Renewable Energy Credit Purchase Program (RECPP), Page 16—Fifth Paragraph

- *Qualifying (PV) using Building Integrated Photovoltaic (BIPV) Modules of total array capacity of 5 kWDC or less shall receive 90% of the UFI incentive value for PV systems listed in Attachment A. Systems using BIPV module of total array capacity of greater than 5 kWDC shall only receive a PBI.*

  We wonder why BIPV is valued less. It looks like an 8 kW BIPV system, which is a very popular size, would only be eligible for a PBI.

- RECPP, Page 25—Conforming Projects
  - *However, applications received during a given week that request incentive funding levels below the maximum incentive values will receive priority for the allocation of funds available that week based on the lowest expected life cycle credit purchase cost as provided in the application and verified by TEP.*

  This sets up a de facto bidding structure as residential funds run low in each weekly funding cycle. This is not in the UCPP (see UCPP, page 28). It could create a situation where there are still funds left in the quarter, but an application is denied because it was asking for the full incentive. From the standpoint of a system integrator this could be frustrating. The system integrator often submits for the incentive on behalf of the client; in the event of the above scenario, the system integrator would have to go back and explain to the client that even though funding exists, it will be necessary to re-submit and the system will cost more than was originally quoted. This could create significant ill will. We understand that TEP is trying to use economic forces to maximize the watts-per-incentive-dollar ratio, however, it may be that the associated hassle and confusion are not worth it, and that this system is inappropriate for the residential program. The UCPP work groups would have been the appropriate place to bring something like this up.

- RECPP, Page 26—Second to Last Paragraph (concerns non-residential conforming projects).

  - *Lowest lifecycle cost projects will be funded first. Indexing of the non-residential projects will be performed based on the verified incentive values and terms in the application for that project. Projects with higher incentive payments result in a higher expected life cycle credit purchase cost and projects that produce more kWh result in a lower expected life cycle credit purchase cost.*

  It seems that TEP is doing away with the UCPP index and bidding process. Again, the UCPP workshops would have been the appropriate place to handle this. Also it gives TEP de facto power to rank projects anyway it sees fit by the unilateral development of the index.

- RECPP, Page 31—Only Paragraph.

- *In no case will PV Modules be mounted less than 4 inches above any surface and an additional inch of clearance for each foot of continuous array surface beyond four feet in the direction parallel to the mounting support surface.*

  This is unnecessarily restrictive. This provision would completely eliminate the use of:
  - Building integrated PV
  - Thin film on standing seam metal roofs.
  - Traditional flat plate modules on standing seam metal roofs. These systems clamp onto the seam without roof penetrations but are often less than 4 inches from where they connect to the seam.
  - The provision calling for "an additional inch of clearance for each foot of continuous array surface beyond for feet...." is very troubling. A 10 kW system arranged in a square or rectangular shape might have to be 2 to 3 feet off the roof surface even if it is a sloped roof. I can't imagine that many homeowners would purchase such a system. **This could prove to be a huge obstacle.**

- RECPP, Page 22--Second Paragraph

  - *In return for TEP's payment of a UFI, TEP will be given complete and irrevocable ownership of the RECs until December 31st of the 20th full calendar year after completion of installation of the system.*

    Referring to the Renewable Energy Credit Purchase Agreement, item #4 reads "Customer hereby assigns to Company all of its rights to all electrical output of the Customer System." We are concerned about TEP's proposal to require solar system owners receiving ratepayer incentives to sign an agreement assigning rights to the electrical output of the system to TEP. We believe that this requirement is unnecessary for compliance purposes, unjustified, and would add transaction costs. The rule clearly states that compliance for distributed generation can be met by RECs. Utility ownership of the actual electrons is unnecessary. We also note that the solar system owner will have contributed significant funds towards the purchase of the system, and an effort to unilaterally assign all ownership rights to the electricity to the utility may not be legally justified. In any event, we believe that concern over this element may significantly increase transaction time and costs. For these reasons among others, similar programs in other states do not have this requirement. The matter is also not endorsed by the Uniform Credit Purchase Program Working Group, and does not comport with APS's Implementation Plan. TEP's proposal is unprecedented. We question the perceived need to deliver the energy produced from distributed energy systems to the utility and then back to the customer. In physical reality, the energy produced by the distributed energy systems will be consumed first behind the meter in a means "invisible" to the utility and having no discernible difference from efficiency measures.

- RECPP, Page 34 – Second Paragraph (Item 7)
    - *The customer shall verify and demonstrate to Company the proper calibration and operation, through a temporary data monitor and acquisition system, of the solar insolation sensor, the ambient temperature sensor, the wind speed sensor and the AC power meter within +/- 2% of Company independent sensor data.*

      TEP outlines a process wherein a customer would use a temporary data monitor and acquisition system to calibrate "the solar isolation sensor, the ambient temperature sensor, the wind speed sensor, and the AC power meter." This exercise and this equipment is unnecessary, costly, and unduly burdensome. The only relevant metric is the output of the system—and that's being measured separately, and that's what provides the basis for the REC payment. We recommend that items 6 through 9 of attachment C be deleted.

Disputed or Unsupported Data

In this section we feel it is important to address some of statements and data presented in the Full Compliance Plan that we feel may be misleading or not represent the whole story.

- Page 7- First Paragraph
    - *While Development of distributed renewable generation will...not (be) able alone to meet the firm capacity or voltage control requirements essential in providing safe, reliable electric service to all of our customers.*

      This implies that DG is not safe.

    - *Data indicates there is nearly zero firm-capacity benefit from the installation by Tucson-based customers of distributed solar and wind generation.*

      There are several inaccuracies associated with this statement:

        - Systems don't completely shut down when it is cloudy out.
        - Clouds cool things off and AC usage slows down.
        - This is a claim that is unique to TEP. SRP claims at least a 10 to 15 percent capacity value.
        - Storage can be added in the future after systems are installed.
        - No data has been supplied to support this.

- Page 9 – Second Paragraph
    - *The cost of installation and operation of natural gas fired high ramp rate capability firming generation, or electrical energy storage is an additional cost to a utility for support of time variant DG sources in its service territory.*

To our knowledge, no utility in the US has ever had to install a natural gas fired generation plant in response to the increased deployment of DG. It seems that for at least until 2025 the numbers we are talking about in terms of kW are just too small, and are diversified across a territory for DG to be a contributing factor to the installation of a new gas fired generation facility. We need to put this in perspective: in 2025, with full compliance DG will be no more than 4.5% of total generation.

- Attachment 7, Page 32—First Paragraph
    - *The higher initial cost of PV also raises those operating costs associated with value, such as property taxes and insurance.*

    There is a state law that insures that a PV system will not increase your property taxes.

Appendix A

Analysis of Distributed Generation Vs. Centralized Generation

	Distributed Generation (DG)	Centralized Generation
Transmission	None Required	Transmission Required - and a percentage of energy generated by the centralized generation is lost in transmission
Finance Source	Less than half the financing comes from rate payers, while the other half comes from individuals willing to use their own money	100% of the financing for the generation comes from rate payer
Job Creation	Each MW creates around 30 new jobs	Each MW creates less than 10 new jobs
Water Use	The great majority of DG technologies require no more water than would be required by a site if there were no distributed generation installed	Concentrating Solar Thermal requires large amounts of water to run steam turbines
Maintenance Costs	Little, if any, maintenance required	Concentrating Solar Thermal requires full time team of maintenance personnel to run
Immediacy	DG Systems are being constructed at an increasing rate every day	It will be at least 3 to 4 years before construction begins on any concentrating solar thermal plant in Arizona.* If Renewable Energy Industry is to grow in the near term it will have to be through DG
Land Use	Uses mainly rooftops	Uses about 5-10 acres per MW of generation.
Public Involvement	DG makes the public stakeholders in renewable energy. And brings RE technologies into the community and raises visibility.	Remote generation sites offer little opportunity for public involvement
Total Cost to Rate Payers Per kWh or REC	0.08**	$0.14***
Why does distributed generation look so much more expensive, than centralized generation in the REST	1. The whole cost of DG is paid for by the REST while only the above market costs of centralized generation are attributed to REST. 2. Because distributed generation is paid for largely by Up fron incentives costs are front-loaded.	

*APS 2007 Black and Veatch study
** This price will go down as technology advances and module prices decrease -- this does not take into account declining UFI incentives --

*** Price APS plans to pay per kWh for electricity from SOLANA --does not include transmission costs.