

# OPEN MEETING



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AZ CORP COMMISSION  
DOCKET CONTROL

ORIGINAL

## MEMORANDUM

Arizona Corporation Commission

DOCKETED

TO: THE COMMISSION

FROM: Utilities Division

DATE: November 26, 2008

RE: TUCSON ELECTRIC POWER COMPANY. - APPLICATION FOR APPROVAL OF ITS RENEWABLE ENERGY STANDARD AND TARIFF IMPLEMENTATION PLAN (DOCKET NO. E-01933A-07-0594)

### Background

On July 1, 2008, Tucson Electric Power Company ("TEP" or "Company") filed its application for approval of its 2009 Renewable Energy Standard and Tariff ("REST") Plan. TEP's application includes two implementations plans, one entitled the Full Compliance Implementation Plan ("Full Compliance") and the other entitled the Best Value Implementation Plan ("Best Value"). TEP's application also includes Full Compliance and Best Value versions of the Renewable Energy Credit Purchase Program ("RECPP"). TEP is also proposing a new Builder Credit Purchase Program and funding for research and development activities.

Previously, in Decision No. 70314 (April 28, 2008), the Commission approved TEP's REST Plan with 2008 funding levels and other details. TEP had proposed Full Compliance and Sample Tariff plan options for 2008, while the Commission adopted a Staff REST plan that combined certain aspects of the Sample Tariff and Full Compliance plan options. The approved plan included a \$0.004988 per kWh rate, and caps of \$2.00, \$39.00, and \$500.00, respectively, for residential, commercial (non-residential under 3 megawatts ("MW"), including lighting and public authority) and industrial customers (non-residential greater than or equal to 3 MW). The budget for the approved plan was \$15.58 million for 2008.

#### **A. Proposed Implementation Plans**

TEP includes two proposed Implementation Plans for consideration by the Commission. For each, TEP includes the resource technology employed, the cost, and a line item budget.

##### **1. Full Compliance Implementation Plan**

The Full Compliance Plan includes activities and costs that TEP believes are required to meet the renewable and distributed energy goals set forth in the REST. The REST renewable energy requirement is 2.00 percent of retail kWh sales in 2009, with 15 percent of that from distributed energy ("DE"), and half of DE from residential sources. The major difference between the Full Compliance Plan and TEP's Best Value Plan is the amount of residential DE.

TEP estimates the cost of the Full Compliance Plan to be \$38.5 million in 2009. The REST Tariff under Full Compliance Plan is estimated to collect \$38.9 million. The Full

Compliance Plan proposed revenue effects are shown in Table 1. The Full Compliance Plan increases the photovoltaic incentive level from current \$3.00 per watt to \$4.50 per watt. The Full Compliance Plan would also increase the solar hot water up front subsidy from the current \$750 plus \$0.25 per kWh up to \$1,750, to \$1,500 plus \$0.50 per kWh up to \$3,500.

TEP is proposing to split the commercial class into small and large commercial customers. The split between small and large commercial customers would be 200 kW, matching the split in TEP's General Service Rate No. 10 and Large General Service Rate No. 13. Staff believes that this is a reasonable proposal, reflecting the relative size of different commercial customers in an equitable manner. TEP's proposed tariff does not define what a small and large commercial customer is, so Staff recommends that TEP define small and large commercial customers in its REST tariff as part of its compliance filing following Commission approval of a REST tariff. The monthly caps would be \$7.50 for residential customers, \$150.00 for small commercial customers, \$350.00 for large commercial customers, and \$1,900 for industrial customers. The Full Compliance Plan would have a surcharge of \$0.008 per kWh.

**Table 1 – Full Compliance Plan Customer Impact, Year 2009**

| Customer Class   | Total Revenue | Percent of Revenue | Average Bill | Monthly Cap | Percent of Customers at Cap |
|------------------|---------------|--------------------|--------------|-------------|-----------------------------|
| Residential      | \$22,978,166  | 59.0%              | \$7.02       | \$7.50      | 35.8%                       |
| Small Commercial | \$11,570,626  | 29.7%              | \$134.13     | \$150.00    | 5.8%                        |
| Large Commercial | \$2,582,250   | 6.6%               | \$336.86     | \$350.00    | 93.4%                       |
| Industrial       | \$797,829     | 2.0%               | \$1,900.00   | \$1,900.00  | 100.0%                      |
| Public Authority | \$734,980     | 1.9%               | \$127.67     | \$150.00    | 18.7%                       |
| Lighting         | \$281,857     | 0.7%               | \$58.99      | \$150.00    | 0.17%                       |
| Total            | \$38,945,708  |                    |              |             |                             |

2. Best Value Plan

The Best Value Plan proposes a lower overall cost program than the Full Compliance option by adjusting the DE allocation requirements from the REST rules. Specifically, under the Best Value Plan, of the 15 percent requirement for DE, at least one quarter (3.75 percent of total renewable energy requirement) would be for residential customer-sited applications, at least one quarter (3.75 percent of total requirement) would be for customer-sited non-residential applications, and up to 50 percent (7.5 percent of total requirement) would be for non-residential applications, including wholesale distributed generation. Thus, in comparison to the REST rules requirements, half of the residential customer-sited requirement could be met by customer-sited non-residential applications. So the Best Value Plan falls short of meeting the REST residential DE requirements, but the total renewable energy requirement would be met.

TEP estimates the cost of the Best Value Plan to be \$17.0 million in 2009. TEP estimates that it would recover \$17.5 million in 2009 under the Best Value Plan. The proposed revenue effects are shown in Table 2. The Best Value Plan retains the incentive levels approved by the Commission for the 2008 plan, including the \$3.00 per Watt photovoltaic incentive and retention of the 2008 plan customer bill cap levels. The Best Value Plan also retains the existing solar hot

water up front subsidy of \$750 plus \$0.25 per kWh up to \$1,750. The monthly caps would be \$2.90 for residential customers, \$39.00 for small commercial customers, \$100.00 for large commercial customers, and \$1,150.00 for industrial customers. The Best Value Plan would retain the existing surcharge of \$0.004988 per kWh.

**Table 2 – Best Value Plan Customer Impact, Year 2009**

| Customer Class   | Total Revenue | Percent of Revenue | Average Bill | Monthly Cap | Percent of Customers at Cap |
|------------------|---------------|--------------------|--------------|-------------|-----------------------------|
| Residential      | \$10,655,142  | 61.0%              | \$2.76       | \$2.90      | 61.4%                       |
| Small Commercial | \$5,142,949   | 29.4%              | \$36.85      | \$39.00     | 13.5%                       |
| Large Commercial | \$748,201     | 4.3%               | \$98.08      | \$100.00    | 98.9%                       |
| Industrial       | \$498,940     | 2.9%               | \$1,150.00   | \$1,150.00  | 100.00%                     |
| Public Authority | \$261,227     | 1.5%               | \$24.72      | \$39.00     | 30.2%                       |
| Lighting         | \$160,985     | 0.9%               | \$35.62      | \$39.00     | 21.9%                       |
| Total            | \$17,467,445  |                    |              |             |                             |

3. Staff's Proposed Plan

Fundamentally, Staff believes that there has not been sufficient experience with the REST Tariff provisions recently approved by the Commission in April 2008 to warrant making major changes to the implementation plan at this time. Therefore, Staff is generally recommending a continuation of the provisions approved by the Commission in 2008, with certain adjustments to recognize the increased REST requirements for 2009. Thus, Staff's recommendation is a compromise between the Full Compliance and Best Value plans, as it was in the proceeding that dealt with TEP's 2008 implementation plan proposals and led to the Commission's April 2008 decision. Staff's Proposed Plan maintains the same incentive levels as were approved for the 2008 plan, but adjusts the customer bill caps upward to reflect the increased spending requirements of the REST rules.

Staff's Proposed Plan would cost \$29.7 million in 2009. TEP estimates that it would recover \$29.6 million in 2009 under the Staff Proposed Plan. Staff's Plan continues to use the \$3.00 per Watt photovoltaic incentive with increased monthly customer bill caps. Staff believes that this is a reasonable incentive level, is similar to what is offered in other utilities' REST plans, and should be given further opportunity to attract participants before the higher incentive level contained in TEP's Full Compliance plan is given greater consideration. The Staff Plan also retains the solar water heating up front subsidy of \$750 plus \$0.25 per kWh up to \$1,750. Staff's Proposed Plan would have a surcharge of \$0.008 per kWh. The monthly caps would be \$4.50 for residential customers, \$75.00 for small commercial customers, \$350.00 for large commercial customers, and \$1,600 for industrial customers. Staff sets the residential distributed energy at 7.5 percent of total kWh (50 percent of required DE) and meets REST requirements at a lower cost.

The customer impact of Staff's Plan is shown in Table 3.

**Table 3 – Staff Proposed Plan Customer Impact, Year 2009**

| Customer Class   | Total Revenue | Percent of Revenue | Average Bill | Monthly Cap | Percent of Customers at Cap |
|------------------|---------------|--------------------|--------------|-------------|-----------------------------|
| Residential      | \$16,677,567  | 56.3%              | \$4.29       | \$4.50      | 61.4%                       |
| Small Commercial | \$8,928,238   | 30.1%              | \$70.08      | \$75.00     | 11.8%                       |
| Large Commercial | \$2,582,250   | 8.7%               | \$336.86     | \$350.00    | 93.4%                       |
| Industrial       | \$712,783     | 2.4%               | \$1,600.00   | \$1,600.00  | 100.00%                     |
| Public Authority | \$474,418     | 1.6%               | \$67.82      | \$75.00     | 27.5%                       |
| Lighting         | \$268,312     | 0.9%               | \$44.62      | \$75.00     | 2.8%                        |
| Total            | \$29,643,567  |                    |              |             |                             |

**B. Tariffs**

TEP proposes tariffs corresponding to its two proposed Implementation Plans. TEP points out that the proposed Implementation Plan and the associated tariff should become effective simultaneously. Table 4 gives a summary of the proposed rates and caps for the three proposals discussed above. Table 5 shows the cost per month for various customer types based on typical monthly energy use for the three proposals discussed above. Table 6 shows the proposed budgets for the three proposals discussed above.

**Table 4**  
**TEP Renewable Energy Programs**  
**REST - Customer Rates and Caps**

| Customer Class   | 2008 Approved Plan | Best Value Plan | Full Compliance Plan | Staff Proposed Plan |
|------------------|--------------------|-----------------|----------------------|---------------------|
| Rate per kWh     | \$0.004988         | \$0.004988      | \$0.008              | \$0.008             |
| Residential      | \$2.00             | \$2.90          | \$7.50               | \$4.50              |
| Small Commercial | \$39.00            | \$39.00         | \$150.00             | \$75.00             |
| Large Commercial | \$39.00            | \$100.00        | \$350.00             | \$350.00            |
| Industrial       | \$500.00           | \$1,150.00      | \$1,900.00           | \$1,600.00          |
| Public Authority | \$39.00            | \$39.00         | \$150.00             | \$75.00             |
| Lighting         | \$39.00            | \$39.00         | \$150.00             | \$75.00             |

**Table 5**  
**TEP Renewable Energy Programs**  
**REST - Customer Type Monthly Surcharge Comparison**

| Customer Types              | kWh / mo.  | 2008<br>Approved Plan | Best Value<br>Plan | Full Compliance<br>Plan | Staff<br>Proposed Plan |
|-----------------------------|------------|-----------------------|--------------------|-------------------------|------------------------|
| Low Consuming Residence     | 400        | \$2.00                | \$2.00             | \$3.20                  | \$3.20                 |
| Avg. Consuming Residence    | 960        | \$2.00                | \$2.00             | \$7.50                  | \$4.50                 |
| High Use Residence          | 2,000      | \$2.00                | \$2.00             | \$7.50                  | \$4.50                 |
| Dentist Office              | 2,000      | \$9.98                | \$9.98             | \$16.00                 | \$16.00                |
| Hairstylist                 | 3,900      | \$19.45               | \$19.45            | \$31.20                 | \$31.20                |
| Department Store            | 170,000    | \$39.00               | \$39.00            | \$150.00                | \$75.00                |
| Mall                        | 1,627,100  | \$39.00               | \$39.00            | \$150.00                | \$75.00                |
| Retail Video Store          | 14,400     | \$39.00               | \$39.00            | \$115.20                | \$75.00                |
| Large Hotel                 | 1,067,100  | \$39.00               | \$100.00           | \$350.00                | \$350.00               |
| Large Building Supply       | 346,500    | \$39.00               | \$100.00           | \$350.00                | \$350.00               |
| Hotel/Motel                 | 27,960     | \$39.00               | \$39.00            | \$150.00                | \$75.00                |
| Fast Food                   | 60,160     | \$39.00               | \$39.00            | \$150.00                | \$75.00                |
| Large High Rise Office Bldg | 1,476,100  | \$39.00               | \$100.00           | \$350.00                | \$350.00               |
| Hospital (< 3 MW)           | 1,509,600  | \$39.00               | \$100.00           | \$350.00                | \$350.00               |
| Supermarket                 | 233,600    | \$39.00               | \$100.00           | \$350.00                | \$350.00               |
| Convenience Store           | 20,160     | \$39.00               | \$39.00            | \$150.00                | \$75.00                |
| Hospital (> 3 MW)           | 2,700,000  | \$500.00              | \$1,150.00         | \$1,900.00              | \$1,600.00             |
| Copper Mine                 | 72,000,000 | \$500.00              | \$1,150.00         | \$1,900.00              | \$1,600.00             |

**Table 6**  
**REST Program Budget Proposals**

| Budget Components                                              | Best Value Plan | Full Compliance Plan | Staff Proposed Plan |
|----------------------------------------------------------------|-----------------|----------------------|---------------------|
| Purchased Energy                                               |                 |                      |                     |
| Above market cost of conventional generation                   | \$6,214,977     | \$6,214,977          | \$6,214,977         |
| Transmission direct use cost                                   | \$480,000       | \$480,000            | \$480,000           |
| Other                                                          | \$95,000        | \$95,000             | \$95,000            |
| Subtotal                                                       | \$6,789,977     | \$6,789,977          | \$6,789,977         |
| Customer Sited Distributed Renewable Energy                    |                 |                      |                     |
| Up front payments to customers                                 | \$3,418,209     | \$23,271,724         | \$15,059,712        |
| Production based payments to customers                         | \$4,097,858     | \$3,247,245          | \$3,728,026         |
| New Builder Credit Purchase Program                            | \$300,000       | \$300,000            | \$300,000           |
| Outreach Efforts                                               | \$1,000,000     | \$1,500,000          | \$1,000,000         |
| Other                                                          | \$570,000       | \$2,292,000          | \$1,792,000         |
| Subtotal                                                       | \$9,386,067     | \$30,610,969         | \$21,879,739        |
| Customer Care and Billing Program                              | \$100,000       | \$100,000            | \$100,000           |
| Energy Management System and Energy Accounting and Settlements | \$275,000       | \$275,000            | \$275,000           |
| Net Metering                                                   | \$38,155        | \$120,340            | \$120,340           |
| Reporting                                                      | \$137,500       | \$137,500            | \$137,500           |

|                                                  |              |              |              |
|--------------------------------------------------|--------------|--------------|--------------|
| Support provided to University research projects | \$100,000    | \$200,000    | \$200,000    |
| Other Outside Coordination and Training          | \$83,500     | \$175,450    | \$83,500     |
| Renewable Energy Hardware Development            | \$100,000    | \$100,000    | \$100,000    |
| Total Program Budget                             | \$17,010,199 | \$38,509,236 | \$29,686,056 |

**C. New Builder Credit Purchase Program**

TEP is proposing a new program that would provide the opportunity to install photovoltaics or solar thermal equipment in conjunction with its Energy Smart Home program. Energy Smart is an existing demand-side management program that encourages the construction of energy-efficient new homes. The Builder Credit Purchase Program would not change any aspect of the Energy Smart Home program, but would provide an additional incentive of \$0.50 per DC watt installed for photovoltaics for projects up to 7 kW. TEP is proposing a budget of \$300,000 for the first year for the new program, with all budget funds going toward the incentive payments.

Staff believes that TEP's proposal may assist in furthering solar installations in new construction and recommends that the New Builder Credit Purchase Program be approved for two years on a pilot basis. However, Staff believes that the 7 kW level for reducing incentives proposed by TEP is by nature arbitrary and could artificially reduce the size of solar installations on new home construction. Staff therefore recommends against adoption of the 7 kW level for reducing incentives under this pilot program.

**D. Research and Development Funding**

TEP is proposing funding at the \$200,000 per year level for research and development efforts. The research and development funds would be directed to the Arizona Research Institute for Solar Energy ("AzRISE") at the University of Arizona. AzRISE is an institute involving academic and industry partners involved in research and development, economic and public policy analysis, and education. The funding from TEP, in coordination with funding from UNS Electric, Inc., would fund three research projects at AzRISE, listed below:

1. Testing of solar module and inverter performance in the hot Southwestern climate at the TEP Solar Test Yard
2. Solon single-axis tracking system
3. Test and conduct research on a fully integrated solar demonstration site for generation of distributed solar power that includes solar electric generation, energy storage and grid connection, integrated and agriculture and biofuels production, and economic analysis

Staff believes that some level of research and development efforts is a reasonable part of TEP's REST activities, but that such efforts should be directed toward specific activities which will help TEP's efforts to successfully deploy renewable energy technologies through its REST tariff. Staff believes that the funding and projects proposed by TEP meet these objectives, but that such R&D funding should only be approved for specific projects and specific amounts on a

yearly basis, and that TEP should justify future funding of R&D through the REST program. Staff recommends approval of funding in the amount of \$45,455 for the solar module and inverter performance testing project, \$27,273 for the Solon single-axis project, and \$127,273 for the solar demonstration site project for 2009. Staff further recommends that in future annual filings for approval of TEP’s REST Implementation Plan that TEP document its research and development spending and report how its research and development activities have helped further its REST efforts.

**E. Renewable Energy Credit Purchase Program**

Staff notes that the work of the Uniform Credit Purchase Program (“UCPP”) Working Group, which commenced in 2006, needs to be completed prior to development of reasonable uniform incentives for each renewable generation technology. Staff anticipates that the work of the UCPP Working Group should be completed in 2009. Staff has recommended that if the Commission approves a UCPP, TEP should be required to develop a mechanism to incorporate UCPP procedures and incentive levels for all eligible technologies in its proposed REST Plan for 2010 and later years. To the extent that TEP feels that different incentive levels than those of the UCPP program are justified, TEP could develop such proposals. The credit levels for the Renewable Energy Credit Purchase Program for each of the three proposed plans are identified in the discussion of each plan above. TEP has indicated that it expects approximately 180 installations averaging approximately 4 kW each in 2009 as a result of this program.

**F. TEP REST Experience Under 2008 REST Plan**

The Commission-approved implementation plan for 2008 contemplated a budget of \$15.6 million. For the June – December period after Commission approval of the 2008 plan, this would be approximately \$8.8 million. TEP projects actual spending of \$1.7 million. Of the remaining \$7.1 million, approximately \$1.7 million is reflected in reservations for future installations. The remaining funds collected in 2008 will be carried over into the next year.

Regarding installations and reservations, the table below summarizes installations through October 2008 and reservations for future installations.

| Residential        | Photovoltaics     |     | Solar Hot Water   |
|--------------------|-------------------|-----|-------------------|
|                    | Number of Systems | kW  | Number of Systems |
| 2008 installations | 16                | 55  | 50                |
| Reservations       | 76                | 324 | 123               |

| Commercial         | Photovoltaics     |       | Other             |
|--------------------|-------------------|-------|-------------------|
|                    | Number of Systems | kW    | Number of Systems |
| 2008 installations | 0                 | 0     | 0                 |
| Reservations       | 13                | 4,827 | 0                 |

Meeting TEP's REST Requirements for 2008

|                | Required (MWH) | Produced/Banked (MWH) |
|----------------|----------------|-----------------------|
| Residential DG | 4,972          | 4,972                 |
| Commercial DG  | 4,972          | 422.4                 |
| Non-DG         | 89,491         | 89,491                |

TEP did not report any wind installations or reservations. Regarding reservations, TEP has indicated that residential reservations are firm commitments. Commercial reservations represent projects over a longer timeframe, with projects in the early stages being less firm and projects in the latter stages representing firm commitments.

TEP has used a variety of methods to reach out to its customers regarding its renewable energy efforts. These methods include participation in a number of fairs, tradeshows, and festivals, advertising via bill inserts, various brochures, and television and radio ads. Further outreach efforts included advertisements in newspapers and trade publications, web content on the TEP website, internet website sponsorships, and newsletters. TEP has indicated that it is considering additional opportunities to further reach out and educate its customers regarding renewable energy.

**G. REST Adjustor Mechanism**

The Commission established a REST adjustor mechanism for TEP in its Decision in TEP's rate case on November 25, 2008<sup>1</sup>. The REST adjustor rate is reset as part of the approval of each year's new REST implementation plan.

**H. Staff Recommendations**

1. Staff recommends that the Staff Proposed Plan be approved. This plan includes a funding level of \$29.7 million, a photovoltaic credit of \$3.00 per Watt. This plan also includes a solar water heating up front credit of \$750 plus \$0.25 per Watt up to \$1,750.
2. Staff recommends that a REST Tariff be approved that includes the rate of \$0.008 per kWh and monthly caps of \$4.50 for residential customers, \$75.00 for small commercial customers, \$350.00 for large commercial customers, and \$1,600.00 for industrial customers.
3. Staff recommends approval of TEP's proposed Builder Credit Purchase Program for a two-year pilot period. Staff also recommends that the 7 kW level proposed by TEP for reducing incentive levels be rejected.
4. Staff recommends approval of funding in the amount of \$45,455 for the solar module and inverter performance testing project, \$27,273 for the Solon single-axis project, and \$127,273 for the solar demonstration site project for 2009. Staff also recommends that TEP

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<sup>1</sup> Staff would note that this memo has been prepared prior to approval of the TEP REST adjustor at the November 25, 2008 Open Meeting on the TEP rate proceeding.

report in future annual REST filings regarding how past research and development funding has helped further TEP's REST efforts.

5. Staff recommends that TEP make a compliance filing within 15 days of the effective date of the Commission Decision in this case. This filing should include a revised TEP 2009 Renewable Energy Standard Implementation Plan and REST Tariff, consistent with the Decision.

6. Staff recommends that the revised REST Tariff include a definition of small and large commercial customers.

7. Staff recommends that TEP revise its Renewable Energy Credit Purchase Program literature and enrollment form to be consistent with this decision and in a form acceptable to Staff.

8. Staff recommends that the proposed 2009 Renewable Energy Standard Implementation Plan and REST Tariff remain in effect until further order of the Commission.



Ernest G. Johnson  
Director  
Utilities Division

EGJ:RGG:lh\RM

ORIGINATOR: Bob Gray

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**BEFORE THE ARIZONA CORPORATION COMMISSION**

- MIKE GLEASON  
Chairman
- WILLIAM A. MUNDELL  
Commissioner
- JEFF HATCH-MILLER  
Commissioner
- KRISTIN K. MAYES  
Commissioner
- GARY PIERCE  
Commissioner

IN THE MATTER OF THE APPLICATION )  
 OF TUCSON ELECTRIC POWER )  
 COMPANY FOR APPROVAL OF ITS )  
 RENEWABLE ENERGY STANDARD AND )  
 TARIFF IMPLEMENTATION PLAN )

DOCKET NO. E-01933A-07-0594  
 DECISION NO. \_\_\_\_\_  
ORDER

Open Meeting  
 December 16 and 17, 2008  
 Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Tucson Electric Power Company (“TEP” or “Company”) is engaged in providing electric service within portions of Arizona, pursuant to authority granted by the Arizona Corporation Commission.

**Background**

2. On July 1, 2008, TEP filed its application for approval of its 2009 Renewable Energy Standard and Tariff (“REST”) Plan.

3. TEP’s application includes two implementations plans, one entitled the Full Compliance Implementation Plan (“Full Compliance”) and the other entitled the Best Value Implementation Plan (“Best Value”). TEP’s application also includes Full Compliance and Best Value versions of the Renewable Energy Credit Purchase Program (“RECPP”). TEP is also proposing a new Builder Credit Purchase Program and funding for research and development activities.

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5           5.       The approved plan included a \$0.004988 per kWh rate, and caps of \$2.00, \$39.00,  
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13 Full Compliance Implementation Plan

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7  
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| 14 Public Authority | \$734,980     | 1.9%               | \$127.67     | \$150.00    | 18.7%                       |
| 15 Lighting         | \$281,857     | 0.7%               | \$58.99      | \$150.00    | 0.17%                       |
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17  
 18 Best Value Plan

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 22 (3.75 percent of total renewable energy requirement) would be for residential customer-sited  
 23 applications, at least one quarter (3.75 percent of total requirement) would be for customer-sited  
 24 non-residential applications, and up to 50 percent (7.5 percent of total requirement) would be for  
 25 non-residential applications, including wholesale distributed generation. Thus, in comparison to  
 26 the REST rules requirements, half of the residential customer-sited requirement could be met by  
 27 customer-sited non-residential applications. So the Best Value Plan falls short of meeting the  
 28 REST residential DE requirements, but the total renewable energy requirement would be met.

11. TEP estimates the cost of the Best Value Plan to be \$17.0 million in 2009. TEP estimates that it would recover \$17.5 million in 2009 under the Best Value Plan. The proposed revenue effects are shown in Table 2. The Best Value Plan retains the incentive levels approved by the Commission for the 2008 plan, including the \$3.00 per Watt photovoltaic incentive and retention of the 2008 plan customer bill cap levels. The Best Value Plan also retains the existing solar hot water up front subsidy of \$750 plus \$0.25 per kWh up to \$1,750. The monthly caps would be \$2.90 for residential customers, \$39.00 for small commercial customers, \$100.00 for large commercial customers, and \$1,150.00 for industrial customers. The Best Value Plan would retain the existing surcharge of \$0.004988 per kWh.

**Table 2 – Best Value Plan Customer Impact, Year 2009**

| Customer Class   | Total Revenue | Percent of Revenue | Average Bill | Monthly Cap | Percent of Customers at Cap |
|------------------|---------------|--------------------|--------------|-------------|-----------------------------|
| Residential      | \$10,655,142  | 61.0%              | \$2.76       | \$2.90      | 61.4%                       |
| Small Commercial | \$5,142,949   | 29.4%              | \$36.85      | \$39.00     | 13.5%                       |
| Large Commercial | \$748,201     | 4.3%               | \$98.08      | \$100.00    | 98.9%                       |
| Industrial       | \$498,940     | 2.9%               | \$1,150.00   | \$1,150.00  | 100.00%                     |
| Public Authority | \$261,227     | 1.5%               | \$24.72      | \$39.00     | 30.2%                       |
| Lighting         | \$160,985     | 0.9%               | \$35.62      | \$39.00     | 21.9%                       |
| Total            | \$17,467,445  |                    |              |             |                             |

Staff's Proposed Plan

12. Fundamentally, Staff believes that there has not been sufficient experience with the REST Tariff provisions recently approved by the Commission in April 2008 to warrant making major changes to the implementation plan at this time. Therefore, Staff is generally recommending a continuation of the provisions approved by the Commission in 2008, with certain adjustments to recognize the increased REST requirements for 2009. Thus, Staff's recommendation is a compromise between the Full Compliance and Best Value plans, as it was in the proceeding that dealt with TEP's 2008 implementation plan proposals and led to the

1 Commission's April 2008 decision. Staff's Proposed Plan maintains the same incentive levels as  
 2 were approved for the 2008 plan, but adjusts the customer bill caps upward to reflect the increased  
 3 spending requirements of the REST rules.

4 13. Staff's Proposed Plan would cost \$29.7 million in 2009. TEP estimates that it  
 5 would recover \$29.6 million in 2009 under the Staff Proposed Plan. Staff's Plan continues to use  
 6 the \$3.00 per Watt photovoltaic incentive with increased monthly customer bill caps. Staff  
 7 believes that this is a reasonable incentive level, is similar to what is offered in other utilities'  
 8 REST plans, and should be given further opportunity to attract participants before the higher  
 9 incentive level contained in TEP's Full Compliance plan is given greater consideration. The Staff  
 10 Plan also retains the solar water heating up front subsidy of \$750 plus \$0.25 per kWh up to \$1,750.  
 11 Staff's Proposed Plan would have a surcharge of \$0.008 per kWh. The monthly caps would be  
 12 \$4.50 for residential customers, \$75.00 for small commercial customers, \$350.00 for large  
 13 commercial customers, and \$1,600 for industrial customers. Staff sets the residential distributed  
 14 energy at 7.5 percent of total kWh (50 percent of required DE) and meets REST requirements at a  
 15 lower cost.

16 The customer impact of Staff's Plan is shown in Table 3.

17  
 18 **Table 3 – Staff Proposed Plan Customer Impact, Year 2009**

| Customer Class   | Total Revenue | Percent of Revenue | Average Bill | Monthly Cap | Percent of Customers at Cap |
|------------------|---------------|--------------------|--------------|-------------|-----------------------------|
| Residential      | \$16,677,567  | 56.3%              | \$4.29       | \$4.50      | 61.4%                       |
| Small Commercial | \$8,928,238   | 30.1%              | \$70.08      | \$75.00     | 11.8%                       |
| Large Commercial | \$2,582,250   | 8.7%               | \$336.86     | \$350.00    | 93.4%                       |
| Industrial       | \$712,783     | 2.4%               | \$1,600.00   | \$1,600.00  | 100.00%                     |
| Public Authority | \$474,418     | 1.6%               | \$67.82      | \$75.00     | 27.5%                       |
| Lighting         | \$268,312     | 0.9%               | \$44.62      | \$75.00     | 2.8%                        |
| Total            | \$29,643,567  |                    |              |             |                             |

26 ...

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1 **B. Tariffs**

2 14. TEP proposes tariffs corresponding to its two proposed Implementation Plans. TEP  
3 points out that the proposed Implementation Plan and the associated tariff should become effective  
4 simultaneously. Table 4 gives a summary of the proposed rates and caps for the three proposals  
5 discussed above. Table 5 shows the cost per month for various customer types based on typical  
6 monthly energy use for the three proposals discussed above. Table 6 shows the proposed budgets  
7 for the three proposals discussed above.

8  
9 **Table 4**  
**TEP Renewable Energy Programs**  
**REST - Customer Rates and Caps**

| Customer Class   | 2008 Approved Plan | Best Value Plan | Full Compliance Plan | Staff Proposed Plan |
|------------------|--------------------|-----------------|----------------------|---------------------|
| Rate per kWh     | \$0.004988         | \$0.004988      | \$0.008              | \$0.008             |
| Residential      | \$2.00             | \$2.90          | \$7.50               | \$4.50              |
| Small Commercial | \$39.00            | \$39.00         | \$150.00             | \$75.00             |
| Large Commercial | \$39.00            | \$100.00        | \$350.00             | \$350.00            |
| Industrial       | \$500.00           | \$1,150.00      | \$1,900.00           | \$1,600.00          |
| Public Authority | \$39.00            | \$39.00         | \$150.00             | \$75.00             |
| Lighting         | \$39.00            | \$39.00         | \$150.00             | \$75.00             |

19  
20 **Table 5**  
**TEP Renewable Energy Programs**  
**REST - Customer Type Monthly Surcharge Comparison**

| Customer Types           | kWh / mo. | 2008 Approved Plan | Best Value Plan | Full Compliance Plan | Staff Proposed Plan |
|--------------------------|-----------|--------------------|-----------------|----------------------|---------------------|
| Low Consuming Residence  | 400       | \$2.00             | \$2.00          | \$3.20               | \$3.20              |
| Avg. Consuming Residence | 960       | \$2.00             | \$2.00          | \$7.50               | \$4.50              |
| High Use Residence       | 2,000     | \$2.00             | \$2.00          | \$7.50               | \$4.50              |
| Dentist Office           | 2,000     | \$9.98             | \$9.98          | \$16.00              | \$16.00             |
| Hairstylist              | 3,900     | \$19.45            | \$19.45         | \$31.20              | \$31.20             |
| Department Store         | 170,000   | \$39.00            | \$39.00         | \$150.00             | \$75.00             |
| Mall                     | 1,627,100 | \$39.00            | \$39.00         | \$150.00             | \$75.00             |
| Retail Video Store       | 14,400    | \$39.00            | \$39.00         | \$115.20             | \$75.00             |

|   |                             |            |          |            |            |            |
|---|-----------------------------|------------|----------|------------|------------|------------|
| 1 | Large Hotel                 | 1,067,100  | \$39.00  | \$100.00   | \$350.00   | \$350.00   |
|   | Large Building Supply       | 346,500    | \$39.00  | \$100.00   | \$350.00   | \$350.00   |
| 2 | Hotel/Motel                 | 27,960     | \$39.00  | \$39.00    | \$150.00   | \$75.00    |
|   | Fast Food                   | 60,160     | \$39.00  | \$39.00    | \$150.00   | \$75.00    |
| 3 | Large High Rise Office Bldg | 1,476,100  | \$39.00  | \$100.00   | \$350.00   | \$350.00   |
| 4 | Hospital (< 3 MW)           | 1,509,600  | \$39.00  | \$100.00   | \$350.00   | \$350.00   |
|   | Supermarket                 | 233,600    | \$39.00  | \$100.00   | \$350.00   | \$350.00   |
| 5 | Convenience Store           | 20,160     | \$39.00  | \$39.00    | \$150.00   | \$75.00    |
|   | Hospital (> 3 MW)           | 2,700,000  | \$500.00 | \$1,150.00 | \$1,900.00 | \$1,600.00 |
| 6 | Copper Mine                 | 72,000,000 | \$500.00 | \$1,150.00 | \$1,900.00 | \$1,600.00 |

**Table 6**  
**REST Program Budget Proposals**

| Budget Components                                              | Best Value Plan     | Full Compliance Plan | Staff Proposed Plan |
|----------------------------------------------------------------|---------------------|----------------------|---------------------|
| Purchased Energy                                               |                     |                      |                     |
| Above market cost of conventional generation                   | \$6,214,977         | \$6,214,977          | \$6,214,977         |
| Transmission direct use cost                                   | \$480,000           | \$480,000            | \$480,000           |
| Other                                                          | \$95,000            | \$95,000             | \$95,000            |
| Subtotal                                                       | \$6,789,977         | \$6,789,977          | \$6,789,977         |
| Customer Sited Distributed Renewable Energy                    |                     |                      |                     |
| Up front payments to customers                                 | \$3,418,209         | \$23,271,724         | \$15,059,712        |
| Production based payments to customers                         | \$4,097,858         | \$3,247,245          | \$3,728,026         |
| New Builder Credit Purchase Program                            | \$300,000           | \$300,000            | \$300,000           |
| Outreach Efforts                                               | \$1,000,000         | \$1,500,000          | \$1,000,000         |
| Other                                                          | \$570,000           | \$2,292,000          | \$1,792,000         |
| Subtotal                                                       | \$9,386,067         | \$30,610,969         | \$21,879,739        |
| Customer Care and Billing Program                              | \$100,000           | \$100,000            | \$100,000           |
| Energy Management System and Energy Accounting and Settlements | \$275,000           | \$275,000            | \$275,000           |
| Net Metering                                                   | \$38,155            | \$120,340            | \$120,340           |
| Reporting                                                      | \$137,500           | \$137,500            | \$137,500           |
| Support provided to University research projects               | \$100,000           | \$200,000            | \$200,000           |
| Other Outside Coordination and Training                        | \$83,500            | \$175,450            | \$83,500            |
| Renewable Energy Hardware Development                          | \$100,000           | \$100,000            | \$100,000           |
| <b>Total Program Budget</b>                                    | <b>\$17,010,199</b> | <b>\$38,509,236</b>  | <b>\$29,686,056</b> |

### C. New Builder Credit Purchase Program

15. TEP is proposing a new program that would provide the opportunity to install photovoltaics or solar thermal equipment in conjunction with its Energy Smart Home program. Energy Smart is an existing demand-side management program that encourages the construction of energy-efficient new homes. The Builder Credit Purchase Program would not change any aspect of the Energy Smart Home program, but would provide an additional incentive of \$0.50 per DC

1 watt installed for photovoltaics for projects up to 7 kW. TEP is proposing a budget of \$300,000  
2 for the first year for the new program, with all budget funds going toward the incentive payments.

3 16. Staff believes that TEP's proposal may assist in furthering solar installations in new  
4 construction and recommends that the New Builder Credit Purchase Program be approved for two  
5 years on a pilot basis. However, Staff believes that the 7 kW level for reducing incentives  
6 proposed by TEP is by nature arbitrary and could artificially reduce the size of solar installations  
7 on new home construction. Staff therefore recommends against adoption of the 7 kW level for  
8 reducing incentives under this pilot program.

9 **D. Research and Development Funding**

10 17. TEP is proposing funding at the \$200,000 per year level for research and  
11 development efforts. The research and development funds would be directed to the Arizona  
12 Research Institute for Solar Energy ("AzRISE") at the University of Arizona. AzRISE is an  
13 institute involving academic and industry partners involved in research and development,  
14 economic and public policy analysis, and education. The funding from TEP, in coordination with  
15 funding from UNS Electric, Inc., would fund four research projects at AzRISE, listed below:

- 16 • Testing of solar module and inverter performance in the hot Southwestern climate at the  
17 TEP Solar Test Yard
- 18 • Solon single-axis tracking system
- 19 • Test and conduct research on a fully integrated solar demonstration site for generation of  
20 distributed solar power that includes solar electric generation, energy storage and grid  
connection, integrated with agriculture and biofuels production, and economic analysis

21 18. Staff believes that some level of research and development efforts is a reasonable  
22 part of TEP's REST activities, but that such efforts should be directed toward specific activities  
23 which will help TEP's efforts to successfully deploy renewable energy technologies through its  
24 REST tariff. Staff believes that the funding and projects proposed by TEP meet these objectives,  
25 but that such R&D funding should only be approved for specific projects and specific amounts on  
26 a year basis, and that TEP should justify future funding of R&D through the REST program. Staff  
27 recommends approval of funding in the amount of \$45,455 for the solar module and inverter  
28 performance testing project, \$27,273 for the Solon single-axis project, and \$127,273 for the solar

1 demonstration site project for 2009. Staff further recommends that in future annual filings for  
2 approval of TEP's REST Implementation Plan that TEP document its research and development  
3 spending and report how its research and development activities have helped further its REST  
4 efforts.

5 **E. Renewable Energy Credit Purchase Program**

6 19. Staff notes that the work of the Uniform Credit Purchase Program ("UCPP")  
7 Working Group, which commenced in 2006, needs to be completed prior to development of  
8 reasonable uniform incentives for each renewable generation technology. Staff anticipates that the  
9 work of the UCPP Working Group should be completed in 2009. Staff has recommended that if  
10 the Commission approves a UCPP, TEP should be required to develop a mechanism to incorporate  
11 UCPP procedures and incentive levels for all eligible technologies in its proposed REST Plan for  
12 2010 and later years. To the extent that TEP feels that different incentive levels than those of the  
13 UCPP program are justified, TEP could develop such proposals. The credit levels for the  
14 Renewable Energy Credit Purchase Program for each of the three proposed plans are identified in  
15 the discussion of each plan above. TEP has indicated that it expects approximately 180  
16 installations averaging approximately 4 kW each in 2009 as a result of this program.

17 **F. TEP REST Experience Under 2008 REST Plan**

18 20. The Commission-approved implementation plan for 2008 contemplated a budget of  
19 \$15.6 million. For the June – December period after Commission approval of the 2008 plan, this  
20 would be approximately \$8.8 million. TEP projects actual spending of \$1.7 million. Of the  
21 remaining \$7.1 million, approximately \$1.7 million is reflected in reservations for future  
22 installations. The remaining funds collected in 2008 will be carried over into the next year.  
23 Regarding installations and reservations, the table below summarizes installations through October  
24 2008 and reservations for future installations.

25 ...  
26 ...  
27 ...  
28 ...

## 1 Meeting TEP's REST Requirements for 2008

| 2 Residential        | 3 Photovoltaics   |     | Solar Hot Water   |
|----------------------|-------------------|-----|-------------------|
|                      | Number of Systems | kW  | Number of Systems |
| 4 2008 installations | 16                | 55  | 50                |
| Reservations         | 76                | 324 | 123               |

5  
6 TEP did not report any wind installations or reservations. Regarding reservations, TEP has  
7 indicated that residential reservations are firm commitments. Commercial reservations represent  
8 projects over a longer timeframe, with projects in the early stages being less firm and projects in  
9 the later states representing firm commitments.

10  
11 TEP has used a variety of methods to reach out to its customers regarding its renewable energy  
12 efforts. These methods include participation in a number of fairs, tradeshow, and festivals,  
13 advertising via bill inserts, various brochures, and television and radio ads. Further outreach  
14 efforts included advertisements in newspapers and trade publications, web content on the TEP  
15 website, internet website sponsorships, and newsletters. TEP has indicated that it is considering  
16 additional opportunities to further reach out and educate its customers regarding renewable energy.

17 **G. REST Adjustor Mechanism**

18 21. The Commission established a REST adjustor mechanism for TEP in its Decision in  
19 TEP's rate case on November 25, 2008<sup>1</sup>. The REST adjustor rate is reset as part of the approval of  
20 each year's new REST implementation plan.

21 **H. Staff Recommendations**

22 22. Staff has recommended that the Staff Proposed Plan be approved. This plan  
23 includes a funding level of \$29.7 million, a photovoltaic credit of \$3.00 per Watt. This plan also  
24 includes a solar water heating up front credit of \$750 plus \$0.25 per Watt up to \$1,750.

25 ...

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28 <sup>1</sup> Staff would note that this memo has been prepared prior to approval of the TEP REST adjustor at the November 25, 2008, Open Meeting on the TEP rate proceeding.





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