SWEEP Comments in Response to Commissioner Questions & Amendments on TEP’s Energy Efficiency Plan

The Southwest Energy Efficiency Project (SWEEP) appreciates the opportunity to provide these comments on Tucson Electric Power’s (TEP) 2018 Energy Efficiency Plan. These comments are in response to Commissioner questions and amendments discussed at the February 5, 2019, Open Meeting. SWEEP is not certain about the procedure for the new two-day process and is filing this information in the docket in the event that there is not an opportunity to discuss these issues, including the amendments, on the second day of the Open Meeting.

SWEEP’s comments address the following issues and positions:

1) Energy efficiency is cost-effective and the least cost option for TEP ratepayers
2) SWEEP’s support of Tobin Amendment #1 with proposed revisions
3) SWEEP opposition to Dunn Amendment #1
4) SWEEP’s position on Olson Amendment #1
5) SWEEP’s support for the Shade Tree Program and opposition to Olson Amendment #2

I. Energy efficiency is cost-effective and the least-cost option for TEP ratepayers. Bills will be higher for TEP customers if other, more expensive resources are pursued.

During the Open Meeting, Commissioners discussed the cost of energy efficiency. Below SWEEP provides additional information on energy efficiency’s costs relative to other resource options.

Energy efficiency is the least expensive energy option for TEP customers.

TEP’s 2017 Integrated Resource Plan (IRP) reveals that energy efficiency is TEP’s least expensive energy resource — costing 4-to-30 times LESS than other options.¹ See TEP’s chart below. Because efficiency is the least expensive option available, all customers benefit from energy efficiency investment as they would otherwise pay for more expensive options to meet energy needs.

On an upfront capacity cost basis alone (i.e. $/kW), energy efficiency is also on par with TEP's cheapest capacity option: a large frame class combustion turbine. Notably, this comparison does not account for either resource's "energy value" (i.e. MWh contribution). If this were considered, energy efficiency would undoubtedly be the cheaper option.

2017 Levelized Cost of All Resources from Tucson Electric Power's 2017 Integrated Resource Plan


TEP's energy efficiency investments are also required to be cost-effective. No other utility investment is held to this same high bar.

TEP's energy efficiency investments are also required to be cost-effective and are monitored to ensure that they are cost-effective in practice. Notably, energy efficiency is the only resource required to demonstrate cost-effectiveness before and during implementation.

Continuous monitoring occurs through the Demand Side Management Plan development, review, and approval process and through the Commission's semi-annual and annual reporting process. Programs and offerings are canceled if cost-effectiveness criteria cannot be met. The cost-effectiveness analysis

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2 TEP’s 2017 IRP reports the overnight construction cost (2017 $/kW) of a large frame class combustion turbine to be $650. In comparison, in 2017, TEP reported that the dollar per kW delivered of energy efficiency was ~$668. These figures do not include any cost of capital (i.e. rate of return) or performance incentives.

3 In general, the energy value of peaker plants like a combustion frame is low, with capacity factors <10%. In contrast, energy efficiency provides robust MWh savings with load factors (the equivalent metric for a demand resource) often greater than 50%. In 2017, TEP's overall energy efficiency portfolio had a load factor of 59%.
directly compares energy efficiency with the next best supply resource, which is typically a gas investment. Because energy efficiency programs are required to be cost-effective, all customers benefit from them even if they do not directly participate in them.

Meanwhile, the budgets for and cost of energy efficiency programs are clear and transparent. The Commission's Demand Side Management Plan development, review, and approval process (which takes place every year) and the Commission's semi-annual and annual reporting process ensure that the costs of energy efficiency investments are well documented and publicly available. Costs are reported for each individual program and for each subcategory of program expense including marketing, training, administration, rebates and, incentives, etc. In this manner, SWEEP believes that energy efficiency is the most closely and rigorously monitored resource of all Arizona utility investments.

Other resource investments will result in higher bills for TEP customers

According to Commission Staff’s calculations, approving TEP’s 2018 energy efficiency portfolio with a budget of $22.9 million would increase the Demand Side Management Surcharge for the average residential customer by about $0.90 per month — $0.76 per month in the winter, and $1.12 per month in the summer. This charge should not be viewed in isolation. Whatever resource TEP procures to meet customer energy needs will ultimately be paid for by ratepayers. If energy efficiency - TEP’s lowest cost option - is not funded, TEP will procure other comparatively more expensive options to meet customer needs. The result will mean higher utility bills for customers.

II. SWEEP supports Tobin Amendment #1 with proposed revisions

SWEEP supports Tobin Amendment No. 1 with the proposed revisions shown in the mark-up attached as Appendix A.

SWEEP’s proposed revisions to “Part I” of the Tobin Amendment

SWEEP supports most of “Part I” of Tobin Amendment #1, which would fund TEP’s demand-side management (DSM) programs at $22.9 million while authorizing an additional $2.158 million for TEP’s proposed electric vehicle (EV) programs.

SWEEP suggests clarifying the second “INSERT” in Part 1 of the Amendment to ensure consistency with the fourth “INSERT” of this same section. Doing so would clarify that the $2.158 million in funding for EV programs would be tracked for potential recovery in TEP’s next rate case and would not be added to the DSM budget or increase the DSM surcharge. See SWEEP Appendix A.

SWEEP supports TEP’s proposed Distributed Energy Resource Management System (DERMS) Program which would provide a platform for the communication and management of EV charging. However, SWEEP recommends that the DERMS be procured and implemented only after a stakeholder meeting is convened by TEP with interested organizations and members of the EV industry. See SWEEP Appendix A.

SWEEP recommended revisions to “Part II” of the Tobin Amendment

Consistent with the Commission Staff recommendation, SWEEP opposes the Commercial Community Development Pilot Program. As such, SWEEP does not support “Part II” of Tobin Amendment #1. We support TEP’s exception that would give TEP flexibility to reallocate the program funding to other DSM

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4 Proposed Order, page 36.
programs that need it most including for the Schools Energy Efficiency Program. See SWEEP Appendix A.

III. SWEEP opposes Dunn Amendment #1

SWEEP opposes Dunn Amendment #1, which would not approve some of the TEP’s proposed EV programs and would reallocate the proposed EV funding solely to schools. It is important to approve funding for the proposed DERMS Program (described above), which is crucial for both communication and management of EV charging. The available funding from any non-funded EV programs should be reallocated back to DSM programs where it is needed most, and to reduce peak demand as proposed in Tobin Amendment #1.

IV. SWEEP’s position on Olson Amendment #1

SWEEP supports approving TEP’s proposed EV programs in this proceeding. Therefore, we do not support the first part of Olson Amendment #1. We appreciate the second part of Olson Amendment #1, which would prohibit TEP from shifting DSM funds to EV activities. However, depending on the outcome of the Commission’s consideration of Tobin Amendment #1, Commissioner Olson’s amendment may not be necessary.

V. SWEEP supports TEP’s Shade Tree Program and opposes Olson Amendment #2

TEP’s Shade Tree Program is cost-effective and supported by the Tucson community as evidenced by several letters in the docket from community leaders. While the program has one of the smallest residential program budgets, it has been very effective at delivering savings on-peak. The attached appendix provides information from TEP showing that more than 85% of the program’s 2017 savings occurred on-peak. (See SWEEP Appendix B.) TEP’s annual Demand Side Management reports outline the program’s other benefits including the water and energy it saves. A selection of these benefits is summarized in the table below. For these reasons, SWEEP encourages the Commission to continue funding this valuable program and opposes Olson Amendment #2.

<table>
<thead>
<tr>
<th>Select Benefits of TEP’s Shade Tree Program from 2013-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>2013-2017</td>
</tr>
</tbody>
</table>

Respectfully submitted on February 5, 2019, by the following SWEEP representatives:

Jeff Schlegel  
Arizona Representative

Ellen Zuckerman  
Senior Associate

Caryn Massey  
Program Associate

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ANDY TOBIN'S PROPOSED AMENDMENT NO. 1

COMPANY: Tucson Electric Power Company

AGENDA ITEM NO.: 2.1

DOCKET NO.: E-0193A-17-0250

OPEN MEETING DATE: 12/17/2018

Purpose: The purpose of this amendment is to give consumers an opportunity to benefit from new transportation electrification policies while increasing the funds for programs that focus on reducing peak demand, encouraging energy storage deployment, promoting economic development, and helping low-income customers, public schools, and underserved communities. It also authorizes TEP to track the carrying costs of EV programs for possible future recovery in TEP’s next general rate case.

Part I: No Reduction to Existing DSM Funds: To fund the TEP DSM programs at the level of $22.9 million dollars annually while authorizing an additional $2.2 million dollars for the proposed EV programs, amend as follows:

Page 3, line 24, after “program” INSERT:

"However we do not support TEP’s proposal to reallocate DSM program funding to EV programs because the DSM funding is needed to support the DSM programs and deliver cost-effective DSM program services to TEP customers."

Page 41, line 10, INSERT:

"IT IS FURTHER ORDERED that the Tucson Electric Power Company DSM budget amount of $22,916,762 is approved for DSM programs. Tucson Electric Power Company shall not shift DSM program funding to the EV programs proposed in the Supplement. Instead, the EV programs proposed in the supplement shall be allotted a separate budget of $2,158,000 for prudent investment to execute the EV programs proposed and to be tracked for potential recovery in the company’s next rate case.""

"IT IS FURTHER ORDERED that the $2,158,000 reallocated to the DSM programs (from the utilities initial EV proposal) be prioritized to fund the DSM programs the utility has identified as the most effective in decreasing peak demand. Accordingly, the utility shall equally distribute this additional $2,158,000 between the three DSM programs calculated to provide the maximum peak demand reductions."

"IT IS FURTHER ORDERED that the utility shall convene a meeting with stakeholders and EV companies to discuss the design and development of the Distributed Energy Resource Management System (DERMS), with proposed funding of $300,000, prior to procuring and implementing the DERMS system."
Page 41, DELETE lines 22-28 and INSERT:

"IT IS FURTHER ORDERED that Tucson Electric Power Company shall not be allowed to shift DSM program funding from existing EE programs to the EV programs proposed in the Supplement. Instead, those proposed EV programs shall be funded through an additional $2,158,000 in prudent investment as outlined in this order. Recovery of those funds shall not occur through the DSM surcharge, but shall instead be tracked for potential recovery in the company's next rate case.

Part II: Approval of the Community Development Pilot Program: To approve the requested Community Development Pilot Program and assist with economic development in Tucson, amend as follows: SWEEP recommends Staff's proposed order not approving the Community Development Pilot Program and supports TEP's exception to allocate the budget amount to other approved programs (and not solely to schools).

Page 5, line 6, after "School Programs." INSERT:

"In addition to Staff's recommendation, we believe that TEP should have the flexibility to allocate some or all of the proposed Community Development Pilot Program budget to other approved DSM programs."

At Page 38, line 21, DELETE "Schools Program" and INSERT "either the Schools Program, other approved DSM programs, or both.

Part III: Accounting Order for EVs: To authorize TEP to track its EV carrying costs for possible recovery in a future rate case, amend as follows.

Page 31, lines 10-15, DELETE Finding of Fact 197 and INSERT:

"197. Due to the unique nature of emerging EV technology and related infrastructure investments, it is appropriate to authorize TEP to track the carrying costs for TEP's proposed investment in EV infrastructure (the annual revenue requirement associated with EV infrastructure investments including return on investment, property tax (if applicable), depreciation expense and operations and maintenance expenses) for potential recovery in TEP's next rate case."
Page 42, DELETE lines 14-15 and INSERT:

"IT IS FURTHER ORDERED authorizing TEP to track the carrying costs for TEP's proposed investment in EV infrastructure (i.e. the annual revenue requirement associated with EV infrastructure investments including return on investment, property tax (if applicable), depreciation expense and operations and maintenance expenses) for potential recovery in TEP's next rate case."

**Part IV: Approval of the Smart School EV Bus Program:** To approve the requested Smart School EV Bus Program and capture potential off-peak charging opportunities and increase public awareness of transportation electrification through public fleet vehicles, amend as follows:

Page 29, line 14, after "about EE." INSERT:

"However, we believe that the Smart School EV Bus Pilot Program should be approved. The Program provides both school and community benefits including reduced fuel and vehicle maintenance expense for schools, lower pollution from current fuel exhaust, and off-peak charging to help provide benefits to the grid. The Program can also provide a highly visible and important demonstration of EV technology along with related education opportunities."

Page 42, lines 1-4, DELETE the ordering paragraph and INSERT:

"IT IS FURTHER ORDERED that the Smart School EV Bus Program and related budget is approved."
SWEEP Appendix B: On-Peak Savings from TEP's Shade Tree Program

2. Please provide a ranking and an efficiency rating of the programs that compares dollar spent on the program with energy saved during peak hours.

<table>
<thead>
<tr>
<th>Program</th>
<th>Total Savings (MWh)</th>
<th>On Peak Savings (MWh)</th>
<th>Off Peak Savings (MWh)</th>
<th>% On Peak</th>
<th>% Off Peak</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficient Products</td>
<td>35,347</td>
<td>22,959</td>
<td>12,387</td>
<td>64.95%</td>
<td>35.05%</td>
<td>3.7</td>
</tr>
<tr>
<td>Existing Homes Retrofit and Audit Direct Install</td>
<td>3,941</td>
<td>2,868</td>
<td>1,073</td>
<td>72.77%</td>
<td>27.23%</td>
<td>3.1</td>
</tr>
<tr>
<td>Low-Income Weatherization</td>
<td>2,134</td>
<td>1,459</td>
<td>675</td>
<td>68.37%</td>
<td>31.63%</td>
<td>0.6</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>3,393</td>
<td>2,492</td>
<td>900</td>
<td>73.46%</td>
<td>26.54%</td>
<td>1.4</td>
</tr>
<tr>
<td>Residential New Construction</td>
<td>1,966</td>
<td>1,556</td>
<td>410</td>
<td>79.14%</td>
<td>20.86%</td>
<td>1.6</td>
</tr>
<tr>
<td>Shade Tree Program</td>
<td>477</td>
<td>408</td>
<td>69</td>
<td>85.97%</td>
<td>14.03%</td>
<td>0.2</td>
</tr>
<tr>
<td>Residential Total</td>
<td>37,257</td>
<td>27,733</td>
<td>15,514</td>
<td>71.17%</td>
<td>28.83%</td>
<td>10.6</td>
</tr>
<tr>
<td>Bid For Efficiency*</td>
<td>113</td>
<td>84</td>
<td>29</td>
<td>74.08%</td>
<td>25.92%</td>
<td>0.0</td>
</tr>
<tr>
<td>C&amp;I Comprehensive Program</td>
<td>40,906</td>
<td>23,078</td>
<td>17,829</td>
<td>56.42%</td>
<td>43.58%</td>
<td>6.7</td>
</tr>
<tr>
<td>Commercial New Construction Program</td>
<td>1,182</td>
<td>868</td>
<td>315</td>
<td>73.39%</td>
<td>26.61%</td>
<td>0.1</td>
</tr>
<tr>
<td>Retro-Commissioning*</td>
<td>794</td>
<td>609</td>
<td>185</td>
<td>76.68%</td>
<td>23.32%</td>
<td>0.4</td>
</tr>
<tr>
<td>Schools Energy Efficiency Program</td>
<td>1,655</td>
<td>904</td>
<td>750</td>
<td>54.66%</td>
<td>45.34%</td>
<td>0.1</td>
</tr>
<tr>
<td>Small Business Direct Install</td>
<td>4,188</td>
<td>2,245</td>
<td>1,943</td>
<td>53.60%</td>
<td>46.40%</td>
<td>0.4</td>
</tr>
<tr>
<td>Non-Residential Total</td>
<td>38,818</td>
<td>27,737</td>
<td>21,051</td>
<td>56.90%</td>
<td>44.10%</td>
<td>7.9</td>
</tr>
<tr>
<td>Behavioral Comprehensive</td>
<td>4,566</td>
<td>2,767</td>
<td>1,799</td>
<td>60.60%</td>
<td>39.40%</td>
<td>0.4</td>
</tr>
<tr>
<td>Home Energy Reports</td>
<td>5,711</td>
<td>3,678</td>
<td>2,033</td>
<td>64.40%</td>
<td>35.60%</td>
<td>0.8</td>
</tr>
<tr>
<td>Behavioral Total</td>
<td>10,277</td>
<td>6,445</td>
<td>3,832</td>
<td>62.72%</td>
<td>37.28%</td>
<td>1.2</td>
</tr>
<tr>
<td>C&amp;I Direct Load Control Program</td>
<td>20,445</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Pre-Rule Credits for 2017</td>
<td>35,294</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Energy Codes and Standards</td>
<td>10,086</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Support Program Total</td>
<td>10,925</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Portfolio Total (Excluding Support Programs)</td>
<td>106,174</td>
<td>65,738</td>
<td>40,438</td>
<td>62.02%</td>
<td>37.98%</td>
<td>19.5</td>
</tr>
</tbody>
</table>

* Denotes Programs requested for discontinuation in the 2018 Implementation Plan

Please do not hesitate to contact me should you have any additional questions.

Sincerely,

Dallas Dukes
Senior Director, Rates & Revenue Requirements

cc: Commissioners
    Elijah Abinah, Utilities Division Director
    Docket Control