INTRODUCTION

Enclosed are the Commission Staff's memorandum and proposed order for Tucson Electric Power Company's Application for Approval of Its 2018 Energy Efficiency Implementation Plan and Request for Waiver Under A.A.C. R14-2-2419 (Docket No. E-01933A-17-0250). This is only a Staff recommendation to the Commission; it has not yet become an order of the Commission. The Commission can decide to accept, amend or reject Staff's proposed order.

You may file comments to the recommendation(s) of the proposed order by filing an original and thirteen (13) copies of the comments with the Commission's Docket Control Center at 1200 W. Washington St., Phoenix, AZ 85007 by 4:00 p.m. on or before July 17, 2018.

This matter may be scheduled for Commission deliberation at its Open Meeting scheduled July 19, 2018, at 10 a.m.

If you have any questions about this matter, please contact Julie McNeely-Kirwan of our Staff at (602) 542-0833, or Elijah Abinah, Director, at (602) 542-6935.

BACKGROUND

On August 1, 2017, Tucson Electric Power Company ("TEP" or "Company") filed an application requesting approval of (i) its 2018 Energy Efficiency Implementation Plan ("2018 EE Plan"); (ii) a reset of TEP's Demand-side Management ("DSM") Surcharge, from $0.001916 per kWh to $0.003034 per kWh; (iii) the Plan of Administration for TEP's DSM Surcharge; and (iv) a waiver of the 2018 Energy Efficiency Standard. (TEP has updated the Surcharge number based on new information.)

Proposed Portfolio Changes. The Proposed EE Plan for 2018 would (i) add two new programs (the Residential Load Management Pilot and the Commercial Community Development Pilot); (ii) add 25 new program measures, for which Staff has evaluated cost-effectiveness; (iii)
discontinue three existing programs (Appliance Recycling, Bid for Efficiency, and Retro-commissioning); and (iv) reduce incentives in most programs, with a minimum/maximum structure which would allow further reductions, if indicated.

The Company originally requested that the Commission issue an order with respect to its application by December 31, 2017. On December 22, 2017, TEP filed a Supplement to its proposed 2018 EE Plan setting forth its proposed EV infrastructure Plan. The Company also filed a letter on January 19, 2018, with additional information concerning its infrastructure proposal.

**PROPOSED NEW PROGRAMS: RESIDENTIAL AND NON-RESIDENTIAL SECTORS**

*Residential Load Management Pilot Program (New Program)*

Decision No. 75975 ordered that TEP propose a residential or feeder level Demand Response program with energy storage as part of its 2018 EE Plan.

Consistent with Decision No. 75975, TEP proposes the following: The Residential Load Management Pilot Program, which incorporates: (i) Residential Demand Response; (ii) Residential Thermal Storage; and (iii) Feeder Level Energy Storage. It will also feature geotargeting, meaning that marketing will emphasize areas where load management would have the most positive impact.

The main components of the proposed Residential Load Management Pilot are discussed below:

- **Demand Response.** Communicating thermostats will be used to adjust thermostat settings or cycle compressor run times. Temperature adjustments will be kept within a limited range and participants would have the option to manage the temperature setting or opt out. TEP has not yet determined how many opt outs it will allow for participants. The Company needs to do more research to determine what will be tolerated by customers and what will work operationally. TEP will survey other load management programs and base the final program on what is learned during the pilot program. Participants will receive an incentive of $40 annually.

- **Thermal Storage.** Measures may include automatic pre-cooling of homes prior to peak demand. Also, water heaters would be used to store excess renewable energy during mid-day on shoulder months. Renewable energy would be used to preheat water during high production periods; this preheated water would be stored, then used during peak periods. Shoulder months would be used because hot water heating is low during summer months and because the “duck curve” when demand is low and renewable production is higher is most pronounced during this period.
Feeder Level Energy Storage. Feeder level storage, as proposed, will consist of a large-scale battery storage unit deployed at the site of a constrained feeder with a predominantly residential load for the purpose of evaluating the ability to cost effectively reduce the electric demand of the impacted customers during system peak periods.

TEP will determine whether such deployment can cost-effectively reduce electric demand during system peak periods. Geo-targeting will be used to site measure deployment at locations where there are system constraints to reduce customer loads and defer distribution system upgrades.

Eligibility. The program is open to all of TEP’s Residential customers.

Budget. $1.3 million, as per Decision No. 75975.

Delivery and Marketing. Although open to all TEP’s customers, the marketing will target areas which will provide the most system benefits from load management.

Timeline. Due to its complexity, including design details, vendor awards and contracting, the timeline for this program is approximately 36 months from approval through the pilot.

Commission Decision No. 75975 states: “Given the developing nature of this energy storage technology program, the Commission will waive its normal benefit-cost threshold and revisit the program and measures in the Company’ 2019 DSM Plan.” For this reason, Staff did not perform a cost-benefit analysis.

Staff recommends that the Residential Load Management Pilot Program be approved. Staff has also recommended that the Company work with Staff in developing a cost effectiveness calculation which takes into account the value of demand response/load management and storage measures and programs.

Commercial Community Development Pilot Program (New Pilot Program)

Program Description. The proposed Community Development Pilot Program has two main components: (i) Revitalization of vacant facilities; and (ii) Reinvestment of energy savings in economic development.

The Revitalization portion of the Program would promote the rental of difficult-to-rent properties by using an energy assessment to aid with marketing. The implementation contractor (“IC”) would determine how EE could be achieved in the space, what the savings would be, and what rebates would be available; the IC would then provide the savings information to owners and managers. Under the Reinvestment portion of the Program, renters would be incentivized to hire new employees with a $5,000 rebate for up to five new positions. To be eligible for the incentive,
jobs would have to be filled within six months after the project was completed and still filled 12 months after the start date.

Program Objectives and Rationale. For the Revitalization component of the Program, the objectives are to promote community development, greater energy efficiency by future tenants, and peak reduction. For the Reinvestment component of the Program, the goal is to take the money saved through energy efficiency and use it for development activities, such as hiring.

Eligibility. The Revitalization component of the Program is open to all non-residential customers, while the Reinvestment component is limited to Small General Service rate class customers participating in existing programs.

Budget. The proposed budget for the Commercial Community Development Pilot Program would be $500,000.

Delivery and Marketing. The Commercial Community Development Pilot Program would be delivered using an IC.

Staff Recommendations. The Revitalization component of the Commercial Community Development Pilot Program would increase energy usage, rather than decreasing it. Even with cost-effective measures installed, usage would be higher in an occupied commercial property than in a vacant one. In addition, the Revitalization component would primarily build load, due to newly re-occupied properties, thereby increasing demand. (Any demand response or storage measures approved as part of this program are likely to impact only a portion of the new load created by the program.) The Commercial Community Development Pilot Program is not designed to either decrease kWh usage or demand.

Staff recommends that the Commission not approve the Commercial Community Development Pilot Program and that the budget intended for the Commercial Community Development Pilot Program be allocated, instead, to the Schools Program.

EXISTING PROGRAMS: RESIDENTIAL SECTOR

Efficient Products Program

Program Description. The Efficient Products Program is a primarily Residential program and has been in existence since 2008. It was most recently approved in Decision No. 75450 (February 11, 2016). The program is designed to make energy efficient products, such as LED lighting or more efficient pool pumps, more affordable and more readily available. (In accordance with Decision No. 75450, TEP has discontinued CFL lighting measures to focus on equivalent LED lighting measures.)
The program promotes the purchase of energy efficient products, particularly Energy Star® products, through buy-downs, retail partnerships, and the training of retail staff. The Company also works with retailers to increase the stocking and selection of efficient retail products.

**Program Objectives and Rationale.** The objective of the Efficient Products Program is to help customers reduce their peak demand and their energy consumption through the use of energy efficient products.

**Proposed Changes.** TEP proposes to lower incentives from 75% to a maximum of 50% of incremental cost, with a minimum/maximum range that would allow TEP to go lower, when indicated. TEP is also requesting a cap of $3,500 per retailer. Another proposed modification is an educational component to the Pool Pump sub-program. TEP informed Staff that correct installation of EE pool pumps is necessary for optimal energy savings, but that this requires additional training of contractors. Costs associated with this training are a part of the Implementation category of the Efficient Products Program.

TEP has also proposed that the Energy Star Heat Pump Water Heater be added as a new measure to the Efficient Product Program using timers, TEP can set the heaters to run at times that better augment TEP’s resource mix by season.

**Eligibility.** The program targets Residential and Small Commercial customers in TEP’s service territory.

**Budget.** The total budget proposed for the Efficient Products Program is $1,865,824.

**Delivery and Marketing.** Primarily, the program utilizes mass marketing and educational or training partnerships with participating retailers.

**Staff Recommendations.** Staff recommends that the Commission approve the continuation of the Efficient Products Program with the modifications proposed by TEP, including the Energy Star Heat Pump Water Heater. As per Decision No. 75797, the Commission has waived its normal benefit-cost threshold for storage measures. (In addition, the Decision ordered that TEP “shall make its best effort to increase the peak demand reductions (MW) from EE programs in 2017 by 10 percent compared to the reported 2016 peak demand reduction form [sic] EE program.”)

Cost-effectiveness of this measure should be reviewed in the 2019 EE Plan, as per ordering language in Decision No. 75797.

**Existing Homes Program (Existing Program: Decreased Incentives, One New Measure)**

**Program Description.** This Residential program is now marketed as the “Efficient Home Program” and has been in existence since 2008. It was most recently approved for continuance in Decision No. 75450. The program is designed to improve energy efficiency in existing homes.
The current program offers incentives for installing smart thermostats, for duct sealing, and for quality installation and maintenance of high-efficiency HVAC equipment.

**Program Objectives and Rationale.** The primary objective of the Existing Homes Program is to make existing residential homes more energy efficient. The program emphasizes right-sizing and proper installation of HVAC equipment and promotes comprehensive EE retrofits of existing homes.

**Proposed Changes.** TEP proposes to lower incentives from 75% to 50% of the incremental cost and to use the minimum/maximum model to allow the Company to further lower the incentive, if reasonable.

**Proposed New Measure.** TEP is proposing to add Energy Star Heat Pump Water Heaters as a new measure using timers, TEP can set the heaters to run at times that better augment TEP’s resource mix by season.

**Eligibility.** In order to be eligible for the Existing Homes Program, a participant must be a TEP customer owning a single-family detached home, town home, manufactured home or other attached residential building of up to four units, even if the building is rented to another party.

**Budget.** Based on a December 22, 2017 supplementary filing in this Docket, up to $200,000 of the $3,162,972 budget proposed for Existing Homes will be shifted into the proposed EV measures and programs.

**Delivery and Marketing.** TEP manages the program and provides oversight and marketing. With the exception of Smart thermostats, all measures are provided by a third-party Implementation Contractor ("IC") which is responsible for: (i) recruitment, training and mentoring of participating contractors; (ii) data tracking; (iii) rebates processing; and (iv) technical support.

One proposed change to the marketing and delivery of the Existing Homes Program is that TEP proposes that customers who already own a smart thermostat be invited to participate in the Residential Load Management pilot program.

**Staff Recommendations.** Staff recommends that the Commission approve the Existing Homes Program with the modifications proposed by TEP, including the addition of the Energy Star Heat Pump Water Heater. As per Decision No. 75975, the Commission has waived its normal benefit-cost threshold for storage measures. In addition, the Decision ordered that TEP “shall make its best effort to increase the peak demand reductions (MW) from EE programs in 2017 by 10 percent compared to the reported 2016 peak demand reduction from [sic] EE program.”

Cost-effectiveness of this measure should be reviewed in the 2019 EE Plan, as per ordering language in Decision No. 75975.
Residential New Construction (Existing Program)

Program Description. The Residential New Construction Program provides an incentive to homebuilders to build more energy efficient homes. The Program was most recently approved in Decision No. 75450.

Under the Program, homebuilders must achieve a score of ≤ 65 on the Home Energy Rating (“HERS”) System. (The HERS Index measures the energy efficiency of a home. The lower the score, the more energy efficient the home.) The energy efficient homes promoted by the program can be either all-electric or dual fuel.

Program Objectives and Rationale. The objectives of the Program are to promote energy efficient building through builder training, customer awareness and the promotion of energy efficient homes to consumers.

Proposed Changes. TEP is requesting to reduce the incentive for new single-family homes from $400 to $300. TEP is also requesting that the New Construction Program be expanded to include Multi-Family Homes, with a primary focus on low-income areas. Cost-effectiveness for the proposed new Multi-family Homes measures are shown in the table below.

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Staff’s Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Smart Multi-family Homes (All Electric)</td>
<td>1.96</td>
</tr>
<tr>
<td>Energy Smart Multi-family Homes (Dual Fuel)</td>
<td>1.92</td>
</tr>
</tbody>
</table>

Eligibility. Builders of single-family homes in TEP’s service territory are currently eligible to participate. If TEP’s proposed expansion of the Residential New Construction Program is approved, then builders of multi-family homes would also be eligible for participation.

Budget. The proposed budget is $1,028,794.

Delivery and Marketing. The Residential New Construction Program is marketed as “Energy Smart Homes.” The Program is marketed to select builders through direct business-to-business contacts. If the program is expanded to include multi-family homes, marketing will be done through direct contacts to apartment owners and managers.

Staff Recommendations. Staff recommends that the Residential New Construction Program be approved for continuance, with the modifications proposed by TEP.

Low-Income Weatherization (Existing Program: Higher Per-Home Cap and Ability to Work with Additional Agencies)

Program Description. The Low-Income Weatherization (“LIW”) Program is an existing program that weatherizes low-income housing to conserve energy and lower energy bills. It was most recently approved for continuance in Decision No. 75450. The program provides
weatherization to low-income homes to reduce electric bills and improve the level of comfort, quality of life, health, and safety. Typical measures include: (i) duct repair; (ii) pressure management/infiltration control; (iii) attic insulation; and (iv) repair or replacement of non-functional or hazardous appliances.

Program Objectives and Rationale. The main objectives of the Low-Income Weatherization Program are to: (i) increase the number of homes weatherized; (ii) lower energy consumption and reduce utility bills, for low-income customers; and (iii) improve the quality of life for customers.

Proposed Change: Increased Per-Home Cap. The Company is proposing to increase the per-home cap from $3,000 to $6,000. Per-home costs to make homes more energy efficient have exceeded $3,000 in a significant number of cases, and this change would be consistent with the $6,000 cap approved for Arizona Public Service in Decision No. 68647.

Proposed Change: Flexibility in Use of Delivery Agencies. TEP has requested the ability to “utilize additional agencies to those currently approved to assist in the delivery of the LIW Program.”

Proposed Change: Cost-Effectiveness. TEP has proposed that it demonstrate the cost-effectiveness of the program one time, with the cost-effectiveness to be assumed to equal 1.00 for future years. TEP points out that the program offers significant benefits to a vulnerable customer population.

Budget. The proposed budget for the Low-Income Weatherization Program is $1,004,252.

Eligibility. Program participants must be low-income customers of TEP, with incomes at or below 200% of the Federal Poverty Level.

Delivery and Marketing Strategy. The Low-Income Weatherization Program is delivered by community action agencies approved by the Arizona Department of Housing. TEP provides pre- and post-inspection of the units to assure quality control.

Staff Recommendations. Staff recommends that the per-home cap be increased to $6,000 to reflect the increased costs of weatherizing homes. Staff has also recommended that TEP be allowed to work with additional agencies to deliver the Low-Income Weatherization program.

With respect to cost-effectiveness, Staff recommends that the requirement of cost-effectiveness for the Low-Income Weatherization Program be waived, but that the Company work to ensure that homes weatherized under the Low-Income Weatherization Program use less energy, overall, than they used prior to weatherization. Staff has also recommended that no savings from the Low-Income Weatherization Program feed into the Performance Incentive unless and until the Low-Income Weatherization Program is demonstrated to be cost-effective.
Shade Trees

Program Description. The Shade Tree program promotes energy conservation and environmental benefits by motivating customers to plant desert-adapted trees in locations where the trees will provide shade and reduce HVAC load. The program provides desert-adapted trees to customers at a low cost, if the customers agree to plant the trees on the east, west, or south sides of their homes. Residential customers are limited to three trees each, to make it possible for more customers to participate in the program.

Non-residential customers are generally limited to ten trees, although this limit can be lifted in cases where there are sufficient supplies of trees for Residential customers and if the customer has sufficient space. The trees must be planted within 15 feet of an occupied structure. Customers receive education on planting and caring, including how to plant within program guidelines.

TEP staff inspect 200 plantings each year to track mortality and verify planting within program parameters. TEP believes a random sampling of this size is reasonable for determining whether or not trees are being planted in accordance with program guidelines.

Proposed Changes. TEP proposes to suspend the program from June through August due to the low survival of summer-planted trees. TEP is also planning to raise the cost of trees for non-residential customers from $15 to $25 for 15-gallon trees and from $5 to $10 for 5-gallon trees, reducing the level of subsidy. Residential customers currently pay $5 for trees and an increase for this class of customers is not contemplated.

Program Objectives and Rationale. The primary objective of the Shade Tree Program is to promote the strategic planting of trees to provide shade, thereby reducing the cooling load of homes.

Budget. The proposed budget for the Shade Tree Program is $251,652.

Eligibility. All TEP customers are eligible to participate in the Shade Tree Program. This includes both Residential and Non-residential customers. Non-residential participants can include community organizations, commercial customers and schools.

Delivery and Marketing Strategy. The Shade Tree Program is marketed under the name “Trees for You” (TFY’). TEP coordinates with Civano Nursery, in partnership with other nurseries. For Residential customers, Civano delivers the trees to a nursery of the customer’s choice. Civano delivers the trees on-site for the Non-residential customers.

Staff Recommendations. Staff recommends that the Commission approve continuation of the Shade Tree Program. Staff has also recommended that the Commission approve the increase in Non-residential per-tree charges. In addition, Staff recommends that the summer suspension be approved on a pilot basis and that the impact of the suspension on participation be reviewed by TEP and the results of its review reported in its compliance filing(s). If TEP determines that the
summer suspension has a significant negative impact on participation, TEP should have the option of eliminating or reducing the suspension period.

**Multi-Family Housing Efficiency Program (Existing Program, Added Measures, Lowered Incentives)**

**Program Description.** The Multi-Family Housing Efficiency Program ("Multi-Family Program") is an existing program and most recently approved in Decision No. 75450. The purpose of the Multi-Family Program is to promote energy efficiency in the residential multi-family sector for properties with five or more units. Typically, the multi-family market has been difficult to reach due to capital constraints, lack of awareness, and split incentives. By using direct installation and a renovation/rehabilitation implementation framework, the program addresses these issues.

The Multi-Family Housing Efficiency Program offers energy efficiency measures including efficient lighting, low-flow water devices, HVAC tune-up measures, Western Cooling Controls and duct testing and repair. Multi-family facility managers may also participate in the C&I Facilities Program to install energy efficiency measures in their common areas.

**Program Objective and Rationale.** The objectives of the Program are to: (i) reduce peak demand and overall energy consumption in the multi-family housing market; (ii) promote energy efficiency retrofits for individual apartments and common areas; and (iii) promote awareness of EE in the multi-family housing community.

**Proposed Change: Added Measures.** HVAC (Replace On Burnout) and HVAC (Early Retirement or "ER"). Both of these measures were previously approved for the Existing Home Program.

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Staff's Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER HVAC with QI² (All Electric)</td>
<td>1.16</td>
</tr>
<tr>
<td>ER HVAC with QI (Dual Fuel)</td>
<td>1.96</td>
</tr>
<tr>
<td>ER HVAC with QI Tier 1 (All Electric)</td>
<td>1.18</td>
</tr>
<tr>
<td>ER HVAC with QI Tier 1 (Dual Fuel)</td>
<td>2.02</td>
</tr>
<tr>
<td>ER HVAC with QI Tier 2 (All Electric)</td>
<td>1.90</td>
</tr>
<tr>
<td>ER HVAC with QI Tier 2 (Dual Fuel)</td>
<td>3.01</td>
</tr>
<tr>
<td>HVAC QI (All Electric)</td>
<td>1.27</td>
</tr>
<tr>
<td>HVAC QI (Dual Fuel)</td>
<td>1.07</td>
</tr>
<tr>
<td>HVAC QI Tier 1 (All Electric)</td>
<td>1.51</td>
</tr>
</tbody>
</table>

1 "Split incentives" describes a problem that arises in promoting energy efficiency in rental units. Generally, builders and owners do not directly benefit from the lower energy costs arising from investing in efficiency measures, which reduces their incentive to participate in energy efficiency programs. At the same time renters, who would benefit from lower energy bills, but have no direct influence over original construction and may not have the authority, the incentive or the means to invest in energy efficiency for housing they do not own.

² Quality Install
HVAC Tier 1 (Dual Fuel) | 1.34
HVAC Tier 2 (All Electric) | 2.15
HVAC Tier 2 (Dual Fuel) | 2.05

Proposed Change: Lowered Incentives. TEP is requesting to lower incentives so that they are no more than 50% of incremental cost for measures that are not direct install, and to use a minimum/maximum model which will allow the Company to lower incentives further, if indicated. Incentives for direct install measures will remain at 100%. Direct install measures are generally lower cost (less than $100).

Eligibility. The Multi-Family Program is available to multi-family buildings with five dwelling units or more. Qualifying properties may be rentals or individually owned. Program participants must currently receive electric service from TEP. Primary emphasis is on low-income, subsidized housing complexes, and on larger, older and less efficient complexes.

Budget. The proposed budget for the Multi-Family Program is $4,290,458. However, based on TEP’s December 22, 2017, supplementary filing, up to $2,000,000 of this budget will be shifted into the proposed EV measures and programs.

Delivery and Marketing. Program delivery for existing measures is provided by TEP or an IC. Marketing efforts include the website, training seminars, call center on-hold messages, direct mail promotion, outreach to rental housing industry associations, and working with contractors and industry specialists.

Staff Recommendations. Staff recommends that the Multi-family Program be approved as proposed, with the cost-effective new measures and changes proposed by TEP.

Schools Energy Efficiency (Existing)

Program Description. The Schools Energy Efficiency Pilot Program ("Schools Program") was approved by the Commission in Decision No. 75450 (February 11, 2016). The Schools Program provides incentives at 100% of project cost for the installation of EE measures for existing K-12 schools which cannot raise the capital to participate in TEP’s current EE programs.

The Schools Program is not limited to a Program-specific list of measures. Schools may install any measure available in the C&I Comprehensive or Small Business Programs, including custom measures. Typical measures include lighting equipment and controls, HVAC, motors and motor drives, refrigeration and custom measures.

Program Objectives and Rationale. The primary objective of the Schools Program is to install EE measures in existing schools with limited resources.

Proposed Change. TEP proposes to reduce the per-public school district or charter school organization cap of $250,000 to $100,000 so more schools can participate in the Program.
Eligibility. Eligible participants are public or charter schools, grades K-12, with a documented inability to raise capital to fund EE projects. The projects must provide significant EE savings from retrofit projects. Priority is given to schools that have not done EE retrofits recently and which have not received rebates from the Schools Program during the last three years.

Budget. The proposed annual budget for the Schools Program is $500,000. However, Staff recommends that the budget be increased to $1,000,000 by shifting the dollars allocated to the Commercial Community Development Program to the schools program.

Delivery and Marketing. The Schools Program is marketed within TEP’s service territory through contacts with school districts and charter school organizations. Management is through an IC under the direction of TEP’s program manager.

Staff Recommendations. The proposed lower per-public school district or charter school cap would allow participation by more schools. Staff recommends that the cap be lowered to $150,000. Staff recommends that the Schools Energy Efficiency Program be continued with the modifications proposed by TEP.

Existing Programs with Proposed Modifications: Non-residential Sector Small Business Direct Install Program

Program Description. The Small Business Direct Install ("SBDI") Program is an existing TEP Non-residential Program marketed as the "EasySave Program." It was most recently approved for continuation in Decision No. 75450. The Program provides incentives directly to contractors for the installation of high efficiency measures at existing small business facilities and K-12 schools, and provides turn-key installation of EE measures to small businesses and schools. These measures include lighting, HVAC, programmable thermostats, and refrigeration measures for smaller Non-residential customers.

Program Objectives and Rationale. The primary objective of the SBDI Program is to incentivize small businesses and schools to install EE measures in existing facilities.

Proposed Changes. Incentives are currently capped at $0.10 per kWh saved and at 75% of incremental cost. TEP is proposing to reduce the caps to $0.06 per kWh saved and 50% of incremental cost.

TEP is also proposing the following: when a customer is eligible to participate in both the C&I and SBDI Programs, that customer’s project must be submitted and completed under only one of the two Programs for which it is eligible.

Eligibility. The SBDI Program offers incentives directly to contractors for the installations of high efficiency measures at existing small businesses and schools. The small businesses and schools must be within TEP’s service territory. The school can be charter, private or public.
Budget. The proposed annual budget for the SBDI Program is $754,639.

Delivery and Marketing. The SBDI Program has an IC which acts as the primary contact for eligible customers.

Staff Recommendations. Staff recommends that the SBDI Program be approved for continuation with the changes proposed by TEP.

Commercial New Construction

Program Description. The Commercial New Construction Program is an existing program most recently approved in Decision No. 75450. The Commercial New Construction Program provides design, educational and promotional materials to building owners, developers, and design teams with the goal of creating more energy efficient commercial buildings.

Program Objectives and Rationale. The primary objective of the Commercial New Construction Program is to promote the more energy efficient design and construction of new commercial buildings.

Modified Incentives. TEP is proposing that the incentive be lowered from $0.10/kWh to $0.06/kWh for reductions in energy use. The incentives would not exceed 50% of incremental measure costs, and would be capped at $75,000 per project.

Proposed New Measures. TEP is proposing the following new measures for its Commercial New Construction Program:

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Staff’s Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Performance Glaze</td>
<td>1.20</td>
</tr>
<tr>
<td>High Efficiency EER Packaged and Split ACs</td>
<td>1.08</td>
</tr>
<tr>
<td>High Efficiency EER Packaged and Split HPs</td>
<td>1.14</td>
</tr>
<tr>
<td>Reduced Lighting Power Density</td>
<td>0.95</td>
</tr>
</tbody>
</table>

The Company has shown that the Packaged AC units of 11.5-20 tons and 11.24 EER are now cost-effective. Staff recommends that the Packaged AC units of 11.5-20 tons and 11.24 EER be re-introduced as measures so long as they remain cost-effective.

High Performance Glazed Windows reduce cooling loads by limiting heat transmitted from outside a building, while Reduced Lighting Power Density allows building owners to lower the Lighting Power Density (or “LPD”) of a building, thereby achieving energy savings. Reduced Lighting Power Density involves using optimal placement design and converting to LED lighting. Staff found High Performance Glazed Windows to be cost-effective at a benefit-cost ratio of 1.20. Staff believes that, at 0.95, the Reduced Lighting Power Density measure is likely to be cost-effective in practice, taking into account benefits such as lowered emissions, which are not monetized, but which are greater than zero.
Eligibility. The Commercial New Construction Program is open to non-residential customers of all rate classes.

Budget. The proposed budget for the Commercial New Construction Program is $249,738.

Delivery and Marketing. The Commercial New Construction Program is overseen by an in-house manager at TEP. TEP also works with an IC to collect data for program design proposals and program management. The Commercial New Construction Program’s marketing targets building owners and developers. Marketing methods include educational seminars, website promotion, outreach and presentations at professional and community forums, as well as direct outreach.

Staff Recommendations. Staff recommends that the Commercial New Construction Program be approved with the lower caps, the re-introduced AC measures, and the new measures proposed by TEP.

Commercial & Industrial (“C&I”) Comprehensive Program

Program Description. The C&I Program offers incentives to Non-residential customers for installing cost-effective EE measures in existing facilities. The C&I Program is marketed as the “EasySave Plus” Program.

Program Objectives and Rationale. The Program addresses high first costs and limited investment capital for retrofits and ROBs, limited awareness of the potential energy savings and requirements for short-term payback.

Proposed Changes. TEP is proposing to lower incentives from 75% of incremental cost to 50% of incremental cost, with a minimum/maximum model that will allow TEP to further lower incentives, if indicated.

In addition, TEP has requested to discontinue three lighting measures and an occupancy sensor measure that are no longer cost-effective. New measures proposed for the C&I program are listed below. These measures were found cost-effective by TEP:

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Staff’s Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSD Compressors</td>
<td>1.81</td>
</tr>
<tr>
<td>Automated Drain Trap Compressor</td>
<td>1.21</td>
</tr>
<tr>
<td>Commercial Kitchen Exhaust Fan</td>
<td>1.85</td>
</tr>
<tr>
<td>Cogged V-belt</td>
<td>3.79</td>
</tr>
<tr>
<td>Fume Hoods</td>
<td>3.80</td>
</tr>
</tbody>
</table>

Eligibility. The C&I Program is available to all existing non-residential customers within TEP’s service territory who are replacing equipment in existing facilities with more energy
efficient equipment. Eligible non-residential customers include large and small commercial and industrial customers, charter schools, private schools, and public schools.

**Budget.** The proposed budget for the C&I Comprehensive Program is $4,184,738.

**Delivery and Marketing.** The C&I Program is overseen by an in-house TEP manager who also works with an IC on collecting data for program management and evaluation. Marketing includes educational seminars tailored to the business market, website promotion, presentations at professional and community forums and direct outreach to customers.

**Staff Recommendation.** Staff recommends that the C&I Comprehensive Program be approved with the new measures and modifications proposed by TEP.

**C&I Demand Response Program (Existing Program)**

**Program Description.** The C&I Demand Response Program is an existing program designed to manage peak demand and mitigate system emergencies through commercial and industrial load curtailment. Under the program, C&I customers and TEP have load reduction agreements in place to reduce load upon request in exchange for incentives. The C&I Demand Response Program provides up to 40 MW of summer peak demand reduction.

Incentives vary based on the size and other characteristics of the customer. Some customers only participate in emergency load control events, but receive a reduced incentive for doing so.

**Program Objectives and Rationale.** The program is designed to reduce demands for power at peak times or during system constraints. The program may also be used to avoid firm capacity required to meet reserve requirements and create greater grid stability and reduce outages.

**Proposed Change.** TEP proposes to move administration of the program in-house, to reduce costs and improve cost-effectiveness.

**Eligibility.** The C&I Demand Response Program is open to non-residential customers in TEP’s service territory.

**Budget.** The proposed budget for the C&I Demand Response Program is $700,000.

**Delivery and Marketing.** The C&I Demand Response Program is marketed as “TEP DemandSmart.” Marketing is targeted at larger commercial and industrial customers who can provide reliable and significant load reduction.

**Staff Recommendations.** The C&I Demand Response Program reduces usage at peak and during system constraints. TEP’s proposed change is designed to deliver demand benefits at a
reduced cost. Staff recommends that the Commission approve continuation of the C&I Demand Response Program, including TEP’s proposal to move administration in-house.

Combined Heat and Power (“CHP”) (Existing Program)

Program Description. Combined Heat and Power (“CHP”), also defined as “cogeneration”, refers to systems which capture and utilize what would otherwise be waste heat. CHP is a custom solution for large commercial and industrial customers and is discussed directly with each customer through their Key Account Manager and the support of a TEP Technical Services engineer. TEP had two CHP projects in 2014.

Budget. TEP is not requesting a budget for the CHP Program.

Staff Recommendations. TEP has indicated that the market potential for CHP is limited because “only certain commercial customers have a need for thermal energy.” No new CHP projects were reported in the 2016 Annual DSM Progress Report. Staff recommends that TEP explore ways in which to increase participation in the CHP Program.

EXISTING BEHAVIORAL SECTOR PROGRAMS PROPOSED FOR CONTINUANCE (NO MODIFICATIONS)

Home Energy Reports (Existing Program)

Program Description. The Home Energy Reports (“HER”) program is designed to promote behaviors that conserve energy, such as turning off the lights and adjusting the thermostat, or performing equipment maintenance, such as changing furnace filters and cleaning refrigerator coils. The program is also intended to promote participation in other DSM programs.

The program:

- Provides energy consumption reports and tips;
- Engages customers about behavior and their installed products to enhance the accuracy of the reports; and
- Provides a starter kit to first-time participants. The kit includes conservation tips and LED light bulbs.

Program Objectives and Rationale. The major objectives of this program are to: generate savings for DSM portfolio objectives; educate and empower residential customers to take advantage of other DSM programs; promote efficient home operations; and lower energy bills for consumers.

Budget. The proposed budget for the Home Energy Reports Program is $827,330.
Eligibility. The HER Program is open to TEP’s Residential customers.

Delivery and Marketing Strategy. Home Energy Reports may be direct mailed or emailed to customers. TEP conducted a lengthy RFP process in order to select an IC to implement the program. TEP works with the IC on marketing and messaging.

Staff Recommendations. Staff recommends that the Commission approve the HER Program for continuation.

Behavioral Comprehensive (Existing Program; Modifications)

Program Description. The Behavioral Comprehensive Program is an existing educational program most recently approved for continuance in Decision No. 75450. Although primarily educational, it also distributes measures such as LED lights to customers. These distributions produce direct energy savings, along with the savings that arise from conservation being promoted through education.

Components. There are four main components to the Behavioral Comprehensive Program, one of which (Direct Canvassing) TEP proposes to discontinue:

- **Direct Canvassing.** TEP proposes to discontinue this component of the program due to its high cost and lack of impact on peak demand.

- **K-12 Education.** Students are instructed on how to save energy in their homes and provided with an energy saving kit that includes one or more: LED lights, bathroom faucet aerators, kitchen faucet aerators, low flow showerheads, and LED nightlights.

- **Community Education.** Customers are educated on how to save energy in their homes and provided with complimentary items such as LED lights, bathroom faucet aerators, kitchen faucet aerators, low flow showerheads, and LED nightlights.

- **Lighting Outreach Program.** TEP proposes to change the name of this component to “Community Outreach” because the Company wants to expand beyond promoting energy efficient lighting measures. TEP wants to distribute other types of measures as well.

Program Objectives and Rationale. The objective of the program is to produce long-term energy savings through education and by making customers aware of how they can better manage their energy usage.

Eligibility. All TEP customers are eligible, but primary focus is on Residential customers, small and medium commercial customers, various renewable customers, and students.
Budget. The proposed budget for the Behavioral Comprehensive Program is $595,866.

Delivery and Marketing. The section entitled “Components” describes the delivery and marketing of the various components of the Behavioral Comprehensive Program.

Staff Recommendations. The 2016 DSM Progress report indicates comparatively low savings for the Direct Canvassing component of the Behavioral Comprehensive Program. Eliminating the Direct Canvassing component is reasonable given the high cost and comparatively low benefits. Staff recommends that the Behavioral Comprehensive Program be approved with the modifications proposed by TEP.

SUPPORT SECTOR PROGRAMS PROPOSED FOR CONTINUANCE (NO MODIFICATIONS)

Consumer Education and Outreach

Program Description. The Consumer Education and Outreach (“CEO”) Program is an existing program most recently approved for continuance in Decision No. 74550. In the Decision, the Commission ordered TEP “to explore the development of enhanced customer education, information and feedback” for all Residential customers, with respect to managing and reducing their energy bills. In the EE Plan, TEP states that, in 2017, programming and materials were enhanced to include information on how Residential customers can save money through new, optional rates.

The CEO Program promotes (i) participation in TEP’s EE programs and pricing plans designed to reduce on-peak usage and demand; (ii) community events which inform customers about EE, demand response, peak demand reduction and environmental sustainability; and (iii) an overall message regarding the value of EE, demand response, peak demand reduction and environmental sustainability.

Program Objectives and Rationale. The major objectives are to: (i) increase awareness of and participation in, the Company’s other DSM programs; and (ii) to effect a broad market transformation, including changes in customers’ behavior.

Eligibility. All TEP customers are eligible to participate in the CEO Program.

Budget. The proposed budget for the CEO Program is $400,000.

Delivery and Marketing. The program uses the following marketing channels, among others:

- Bill messages;
- TEP’s website;
- TEP mobile applications;
Brochures; Email newsletter articles; Metro, traffic and radio advertising; and Outreach at community events.

Staff Recommendations. Staff recommends that the Consumer Education Outreach Program be approved for continuation with an increased focus on providing TEP customers with information regarding the value of on-peak savings.

Energy Codes and Standards Enhancement (Existing Program)

Program Description. The Energy Codes and Standards Enhancement Program is an existing program most recently approved by the Commission in Decision No. 75450. The Program promotes adherence to local building codes, the adoption of newer national/international building codes where warranted, and enhanced energy efficiency standards for appliances.

The Energy Codes and Standards Enhancement Program: (i) educates local code officials and building professionals on current standards; (ii) provides documentation regarding code enforcement and the promotion of newer energy code adoptions; (iii) ensures utility incentive programs align with local energy codes and appliance standards; and (iv) collaborates with stakeholders to advance adoption and implementation of enhanced building energy codes and appliance standards within TEP’s service territory.

Program Objectives and Rationale. The Energy Codes and Standards Enhancement Program is designed to improve energy savings through adherence to, or enhancement of, building and appliance standards.

Proposed Change. No modifications are proposed for this program.

Eligibility. Not applicable.

Budget. The proposed budget for the Energy Codes and Standards Enhancement Program is $25,000.

Delivery and Marketing. TEP participates in energy code adoption committees and provides technical support to these committees. TEP also provides public testimony in support of code adoption and participation in organizations that promote increased appliance standards, and funding for local agencies to enforce and improve codes and standards.

Staff Recommendations. Staff recommends that the Energy Codes and Standards Program be approved for continuance. Staff has also recommended that TEP provide more specific reporting on its program activities in its annual DSM report.
UTILITY IMPROVEMENT SECTOR PROGRAMS PROPOSED FOR CONTINUANCE
(NO MODIFICATIONS)

Conservation Voltage Reduction Program

Program Description. The Conservation Voltage Reduction Program was approved in Decision No. 75450. The program achieves load reduction through changes in voltage regulator parameters at the substation/feeder level. The program is for improvements to TEP’s own infrastructure and allows TEP to count savings from improvements to the Company’s infrastructure as part of the Company’s EE savings.

The Conservation Voltage Reduction and Generation Improvement and Facilities Upgrade Programs (see below) were approved with the limitation that there be no recovery for these programs through the DSM Surcharge. In addition, energy savings from improvements to TEP’s facilities and generation systems are not to be used to increase the LFCR, to qualify for the performance incentive, or increase the performance incentive amount. Energy savings from the Conservation Voltage Reduction Program will be counted toward the EE Standard.

Program Objectives and Rationale. To create changes in voltage which reduce demand and produce energy savings. The change targeted by the program is 2%, which will ensure that, in most instances, customers will not be impacted by any negative changes in equipment performance.

Proposed Modifications. No program modifications have been proposed.

Eligibility. Not applicable. This program is for improvements to TEP’s own infrastructure.

Budget. The Conservation Voltage Reduction Program was approved without a budget. No expenses may be recovered through the DSM surcharge. Savings achieved by the program can, however, be counted toward the EE Standard.

Delivery and Marketing. Not applicable. The Conservation Voltage Reduction Program is a program directed at counting the savings from improvements to TEP’s own infrastructure.

Staff Recommendations. Staff recommends that the Conservation Voltage Reduction Program be continued. Staff has also recommended that the limitations regarding recovery for this program continue in place, and that no expenses for this the Conservation Voltage Reduction Program be recovered through the DSM Surcharge and that savings from the Program not be used to increase the LFCR or the amount received through the performance incentive.

Generation Improvement and Facilities Upgrade Program

Program Description. Seeks to reduce energy consumption in power plants and utility facilities by installing measures such as high efficiency motors and variable speed drives. The
program is for improvements to TEP's own infrastructure and allows TEP to count savings from these improvements as part of the Company's savings.

The Generation Improvement and Facilities Upgrade Program was approved with the limitation that there be no recovery for it through the DSM Surcharge. In addition, energy savings from improvements to TEP’s facilities and generation systems are not to be used to increase the LFCR, to qualify for the performance incentive, or increase the performance incentive amount. Energy savings from the program will be counted toward the EE Standard. TEP currently has a large lighting project underway at its Sundt generation facility and would like to count the savings from the project toward its 2018 goals.

**Program Objectives and Rationale.** To reduce energy consumption in power plants and utility facilities through improvements to TEP’s infrastructure.

**Eligibility.** This program is for improvements to TEP’s own infrastructure.

**Budget.** Not applicable. As herein discussed, TEP does not have a budget for this program.

**Delivery and Marketing.** Not applicable.

**Staff Recommendations.** Staff recommends that the Generation Improvement and Facilities Upgrade Program be continued. Staff has also recommended that the limitations regarding recovery for this program continue in place, and that no expenses for the Generation Improvement and Facilities Upgrade Program be recovered through the DSM Surcharge and that savings from the Program not be used to increase the LFCR or the amount received through the performance incentive.

**RESIDENTIAL AND NON-RESIDENTIAL SECTOR PROGRAMS PROPOSED FOR DISCONTINUANCE**

**Appliance Recycling**

**Description of program.** The Appliance Recycling program is an existing program most recently approved by the Commission in Decision No. 75450 (February 11, 2016). TEP proposes to discontinue this Program.

**Reason(s) for Discontinuance.** The IC, JACO Environmental, Inc., ceased operations on November 20, 2015, leading to suspension of the Appliance Recycling Program. The Company attempted to restart the program, but was unable to find a cost-effective means of delivering the program either through another IC or through using in-house resources.

**Bid for Efficiency**
Description of Program. Bid for Efficiency is an existing program involving a pool of funds bid on through proposals including costs, savings and incentives. TEP selects the winning bids based on specified criteria.

Reason(s) for Discontinuance. TEP determined that it was more cost-effective to deliver the same EE measures to the same customer segment by allocating the funding for this program into the C&I Comprehensive Program and/or the Small Business Direct Install and School Facilities Program.

Staff Recommendation. It is reasonable to re-allocate funding from less cost-effective programs to more cost-effective programs, particularly when the re-allocation takes place within the same customer segment. TEP’s compliance reports indicate that savings for this program were low compared to other budgeted programs. Staff recommends in favor of TEP’s proposal to discontinue the Bid for Efficiency Program.

Retro-commissioning

Description of Program. Retro-commissioning is an existing program designed to generate energy savings by improving building performance and improving the operation and maintenance of Commercial and Industrial facilities.

Reason(s) for Discontinuance. The Retro-Commissioning Program had low participation compared to other Non-residential programs. TEP would prefer to allocate the funding for this program, instead, to Non-residential programs offering higher cost-effectiveness and participation rates.

Staff Recommendation. EE funds should be allocated to programs which produce the most results. Re-allocating funds from low-participation to higher-participation programs is likely to produce more energy and/or demand savings and is reasonable. TEP’s compliance reports indicate that savings for this program were low compared to other budgeted programs. Staff recommends in favor of TEP’s recommendation to discontinue the Retro-Commissioning Program.

SUPPLEMENT TO 2018 ENERGY EFFICIENCY IMPLEMENTATION PLAN: ELECTRIC VEHICLE INFRASTRUCTURE PROGRAM

Filings. On December 22, 2017, TEP filed a Supplement to its proposed 2018 EE Plan setting forth an Electric Vehicle (“EV”) infrastructure program, in response to letters from Commissioner Tobin and Chairman Forese. The Supplement was filed in the same Docket as the original Plan (E-01933A-17-0250).

On January 19, 2018, TEP filed a letter with additional information relating to the Supplement. In the January 19th letter TEP discussed its Distributed Energy Resource Management System (“DERMS”), which is also intended to support TEP’s EV infrastructure programs.
Proposed Programs and Budgets. To fund the EV program, TEP proposes to shift up to $2.2 million out of the Multi-family and Existing Homes programs in its EE portfolio (currently budgeted at $22,916,762). The current total projected budget for TEP’s proposed EV programs is $2,158,000, as shown below, but can be increased to $2.2 million, if needed.

<table>
<thead>
<tr>
<th>EV Program Budget</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart City EV Buildout Plan</td>
<td>$450,000</td>
</tr>
<tr>
<td>Smart Home EV Pilot Program</td>
<td>$650,000</td>
</tr>
<tr>
<td>Smart School EV Bus Pilot Program</td>
<td>$663,000</td>
</tr>
<tr>
<td>Regional EV Plan</td>
<td>$95,000</td>
</tr>
<tr>
<td>DERMS</td>
<td>$300,000</td>
</tr>
<tr>
<td>Total</td>
<td>$2,158,000</td>
</tr>
</tbody>
</table>

TEP is proposing the following programs:

- the Smart City EV Buildout Plan, to promote EV and to support the electrification of fleet vehicles;
- the Smart Home EV Pilot Program, to install charging equipment in new and existing homes;
- the Smart School EV Bus Pilot Program, which would provide up to 125% of the incremental cost of EV buses, along with charging facilities at qualifying schools and/or school districts; and
- the Regional Electric Vehicle Plan ("REV"), to support the development of EV interstate and highway infrastructure; and (v) the DERMS program, which is a platform enabling TEP to control and manage EV charging stations. The DERMS platform will be needed to support the other EV program offerings. The DERMS system is required to accommodate EV charging technology equipment and to help evaluate and balance loads and resources.

**EV Program Descriptions**

Below are additional details regarding the five EV and EV-related program proposed by TEP:

**Smart City EV Buildout Plan.** This program design proposes that TEP invest in charging stations at workplaces, at multi-family dwellings, in neighborhoods, and on university campuses. The EV Buildout Plan would support electrification of commercial fleets and the proposed Smart Schools EV Bus Pilot Program.
A comparison of the costs associated with charging stations against the savings associated with operating standard electric vehicles indicates that this program is likely to be cost-effective with sufficient participation. For both Level 1 and Level 2\(^3\) Home charging stations, savings appear likely to exceed costs during the useful life of the measures, if predicted costs and savings are close to, or superior to, projected values. The Level 2 Parking Garage and Curb charging stations have a higher initial cost, but are likely to be cost-effective if used in a multi-EV setting. Since fleet vehicle savings are comparable to the residential vehicle savings, economies of scale should enhance the cost-effectiveness of charging stations.

The data on the potential cost-effectiveness of Direct Current Fast Charging ("DCFC") stations is less clear. The DCFC stations are significantly more expensive than other options and the level of available savings is difficult to project with certainty. Staff recommends that individual projects be reviewed to ensure that the projected lifetime savings are likely to exceed projected lifetime costs.

TEP states that the Smart City EV Buildout Plan would also involve an up to $8 million investment by TEP in EV infrastructure projects. TEP also states that, under the Buildout Plan, "[n]one of TEP's EV investments made under the buildout plan would be paid for by DSMS funds." (The $450,000 in proposed DSM/EE budgeting would cover administration, implementation, marketing and training costs.)

Smart Home EV Pilot Program. This pilot program would provide incentives for new and existing residential homes to have EV charging equipment. For new homes, participating homebuilders will receive a $100 incentive to pre-wire homes to accommodate future EV charging equipment. For existing homes, an incentive equal to 75% of installed cost, up to $500, will be provided to residential customers to retrofit their existing home to accommodate EV charging equipment.

A comparison of the costs and benefits indicates that the Smart Home EV Pilot Program is likely to be cost-effective in a new or existing home with at least one electric vehicle.

Although customers are unlikely to retrofit their home for EV charging unless they own, or intend to purchase, an electric vehicle, a newly constructed home wired to accommodate EV may or may not attract buyers with electric vehicles. Staff recommends that that TEP work with participating homebuilders to design the Smart Home EV Pilot Program so that pre-wired EV homes are marketed to individuals or communities with the highest likelihood of EV ownership.

Smart School EV Bus Pilot Program. Currently, the very high initial cost of electric buses as compared to standard diesel buses makes them non-cost-effective. Savings over the projected lifespan of electric buses do not compensate for this high initial cost. Staff recommends that the Commission not approve the bus measure at this time, but that the proposed budget of up to

---

\(^3\) Level 1 charging refers to charging 120 volts (the voltage associated with standard household outlets). Level 2 charging refers to charging, usually at 240 volts, using a charging station.
$663,000 be used, instead, to provide energy efficient measures at existing schools, to provide charging stations for staff, students, and their families, and/or for grants that would allow instructors to teach about EE.

Staff has also recommended against any incentive exceeding the cost of a measure. Incentives should help to provide as many participants as possible with access to measures, as part of the effort to encourage general adoption of a measure. When incentives are too high, fewer incentives can be provided, thereby limiting participation and, potentially, the general adoption of a measure.

Regional Electric Vehicle Program. On October 12, 2017, Arizona signed a Memorandum of Understanding to establish (with other states) a Regional Electric Vehicle Plan for the West ("Rev West Plan"). TEP is proposing a research and development budget of up to $95,000 to support Arizona’s participation in the Rev West Plan. TEP also stated that the budget for the Rev West Plan will support Arizona’s participation by providing EV infrastructure in cooperation with other participants in the Rev West Plan.

DERMS Program. The DERMS program will allow TEP to control and manage charging stations. TEP estimates the cost at $300,000 and states that “[t]he DERMS system is required to accommodate the rapidly evolving EV charging technology equipment and to help evaluate and balance loads and resources.” There will be costs going forward related to the DERMS system, but TEP has not yet sent out an RFI or RFP and does not know what the costs will be.

Cost-effectiveness of EV

The EE Rules direct that the Societal Test be used to establish the benefit-cost ratio of the program/measure. Most EE measures and programs are evaluated for cost-effectiveness based on the costs associated with implementation and the savings arising from greater energy efficiency (energy and demand). The Societal Test is based on the Total Resource Cost Test, but takes into account non-market (generally non-monetized) benefits, such as savings from reduced emissions. A benefit-cost ratio greater than 1.0 indicates cost-effectiveness.

Because EV measures use electricity and replace vehicles which do not, a standard EE evaluation based on the Societal Test would not be informative as to cost-effectiveness. As an alternative, it is possible to compare the projected lifetime costs of EV measures and programs with their projected lifetime savings to determine their cost-effectiveness from a societal perspective. Such a comparison should include, at a minimum, the costs and savings association with: (i) charging station hardware; (ii) charging station installation; (iii) fuel costs (gasoline versus kWh); and (iv) operation and maintenance (“O&M”), for charging stations and vehicles, and for replacement of vehicle batteries. Ongoing costs, such as fuel and O&M should be calculated over the useful life of the measures, and the initial costs of the vehicles themselves should be included in cases where there is a significant difference between EVs and standard vehicles (such as with school buses).
The cost-effectiveness of EV measures in practice is currently difficult to predict. As an example, because EV technologies are relatively new, the long-term costs of maintenance have not yet been widely tracked, making projections regarding these costs uncertain. Also, as more consumers adopt EV technology, first costs relative to standard technologies may decrease, thereby improving cost-effectiveness. Ongoing improvements in technology, which reduce production or maintenance costs, or which increase energy savings, may also improve cost-effectiveness. In addition, cost-effectiveness is heavily reliant on the level of participation, which is hard to forecast for any new program or measure.

Once the EV programs have ramped up, the Company should report on EV participation and the actual savings/costs associated with EV measures in their EE compliance filings.

**General Issues: EV**

**Cost Recovery.** The Company has requested that “the annual revenue requirement associated with EV infrastructure investments under the buildout plan, including return on investment, property tax (if applicable), depreciation expense, and operations and maintenance expenses, be recovered through the DSMS [DSM Surcharge] until such investments can be included in rate base during TEP’s next rate case (subject to Commission approval).”

The DSM Surcharge is not the appropriate vehicle for recovering investments in electric infrastructure. Given the size and complexity of these investments, and the need to review for prudence, such investments should be reviewed in a rate case setting. Staff recommends that investment in infrastructure be recovered not through the DSM Surcharge. However, the Company may request for an accounting order to be utilized and track those expenses for possible recovery in a rate case.

**Rate Design.** TEP has requested the approval of a new Residential EV Tariff that incentivizes EV charging during off-peak hours. TEP plans to file the tariff as a compliance matter within 30 days of Commission approval of the requested EV programs.

**TEP’s PROPOSED 2018 EE BUDGET**

**Budget Impact of Proposed Electric Vehicle Infrastructure Programs.** As stated, TEP has proposed to move up to $2.2 million from existing EE programs to new EV programs, while remaining within the proposed $22,916,762 EE budget. The funds would come out of the Existing Homes and Multi-family EE programs. No funding would be moved out of schools or limited income weatherization program.

Staff recommends that any budget shifts be shown in the budget tables included in TEP’s Annual Demand-Side Management Progress Report, to be filed in March 2019, and in the next EE Plan filing.
<table>
<thead>
<tr>
<th>Program</th>
<th>Incentives</th>
<th>Delivery</th>
<th>Marketing</th>
<th>Administration</th>
<th>MER</th>
<th>TEP Proposed Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficient Products</td>
<td>$1,027,100</td>
<td>$634,710</td>
<td>$136,009</td>
<td>$0</td>
<td>$68,005</td>
<td>$1,865,824</td>
</tr>
<tr>
<td>Existing Homes4</td>
<td>$1,795,702</td>
<td>$1,295,228</td>
<td>$49,474</td>
<td>$0</td>
<td>$22,568</td>
<td>$3,162,972</td>
</tr>
<tr>
<td>Low Income Weatherization</td>
<td>$998,979</td>
<td>$1,471</td>
<td>$3,386</td>
<td>$95</td>
<td>$321</td>
<td>$1,004,252</td>
</tr>
<tr>
<td>Multi-Family 5</td>
<td>$2,223,766</td>
<td>$1,880,689</td>
<td>$82,668</td>
<td>$41,334</td>
<td>$62,001</td>
<td>$4,290,458</td>
</tr>
<tr>
<td>Residential Load Management - Pilot Program</td>
<td>$282,900</td>
<td>$987,360</td>
<td>$76,640</td>
<td>$118,600</td>
<td>$110,000</td>
<td>$1,575,500</td>
</tr>
<tr>
<td>Residential New Construction</td>
<td>$690,000</td>
<td>$220,952</td>
<td>$103,111</td>
<td>$0</td>
<td>$14,730</td>
<td>$1,028,794</td>
</tr>
<tr>
<td>Shade Tree</td>
<td>$239,822</td>
<td>$7,715</td>
<td>$3,600</td>
<td>$0</td>
<td>$514</td>
<td>$251,652</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$7,258,269</td>
<td>$5,028,126</td>
<td>$444,990</td>
<td>$152,029</td>
<td>$278,138</td>
<td>$13,179,450</td>
</tr>
<tr>
<td>Non-Residential Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;I Comprehensive Program</td>
<td>$3,336,235</td>
<td>$712,742</td>
<td>$42,425</td>
<td>$42,425</td>
<td>$50,910</td>
<td>$4,184,738</td>
</tr>
<tr>
<td>CHP</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>C&amp;I Demand Response</td>
<td>$0</td>
<td>$700,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$700,000</td>
</tr>
<tr>
<td>Commercial New Construction</td>
<td>$217,513</td>
<td>$29,003</td>
<td>$1,934</td>
<td>$0</td>
<td>$1,289</td>
<td>$249,738</td>
</tr>
<tr>
<td>Community Development - Pilot Schools</td>
<td>$0</td>
<td>$200,000</td>
<td>$250,000</td>
<td>$50,000</td>
<td>$0</td>
<td>$500,000</td>
</tr>
</tbody>
</table>

4 Up to $200,000 will be moved from the proposed budget for the Existing Homes program, to fund EV programs.
5 Up to $2,000,000 will be moved from the proposed budget for the Multi-Family program, to fund EV programs.
Incentives Program Delivery Marketing Administration MER TEP Proposed Budget

<table>
<thead>
<tr>
<th>Program</th>
<th>Incentives</th>
<th>Delivery</th>
<th>Marketing</th>
<th>Administration</th>
<th>MER</th>
<th>TEP Proposed Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Business Direct Install</td>
<td>$272,516</td>
<td>$414,626</td>
<td>$28,927</td>
<td>$4,821</td>
<td>$33,749</td>
<td>$754,639</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$3,826,263</td>
<td>$2,056,371</td>
<td>$323,286</td>
<td>$97,246</td>
<td>$85,948</td>
<td>$6,889,115</td>
</tr>
<tr>
<td>Behavioral Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral Comprehensive Program</td>
<td>$343,761</td>
<td>$224,374</td>
<td>$20,168</td>
<td>$0</td>
<td>$7,563</td>
<td>$595,866</td>
</tr>
<tr>
<td>Home Energy Reports</td>
<td>$319,260</td>
<td>$141,734</td>
<td>$326,310</td>
<td>$9,141</td>
<td>$30,886</td>
<td>$827,330</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$663,021</td>
<td>$366,107</td>
<td>$346,478</td>
<td>$9,141</td>
<td>$38,449</td>
<td>$1,423,196</td>
</tr>
<tr>
<td>Support Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Codes and Standards</td>
<td>$0</td>
<td>$25,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$25,000</td>
</tr>
<tr>
<td>Consumer Education and Outreach</td>
<td>$0</td>
<td>$252,000</td>
<td>$140,000</td>
<td>$0</td>
<td>$8,000</td>
<td>$400,000</td>
</tr>
<tr>
<td>Prog. Dev., Analysis and Reporting Software</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$0</td>
<td>$277,000</td>
<td>$140,000</td>
<td>$0</td>
<td>$1,008,000</td>
<td>$1,425,000</td>
</tr>
<tr>
<td>Conservation Voltage Reduction</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total</td>
<td>$11,747,554</td>
<td>$7,727,604</td>
<td>$1,254,653</td>
<td>$258,416</td>
<td>$1,410,535</td>
<td>$22,916,762</td>
</tr>
</tbody>
</table>

PERFORMANCE INCENTIVE

Performance Incentive Calculation. In Decision No. 73912, the Commission set the Performance Incentive at 8% of Net Benefits, capped at $0.0125 per kWh. Eight percent of Net Benefits for 2017 was calculated at $3,196,991 while the cap (total kWh savings multiplied by $0.0125) was calculated at $1,585,224. Based on Decision No. 73912, the cap applies, meaning that the Performance Incentive equals $1,585,224.
**Performance Incentive Calculation**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total kWh Savings</td>
<td>126,817,926</td>
</tr>
<tr>
<td>Total Net Benefits</td>
<td>$39,962,383</td>
</tr>
<tr>
<td>8% of Net Benefits</td>
<td>$3,196,991</td>
</tr>
<tr>
<td>Cap = total kWh savings x $0.0125</td>
<td>$1,585,224</td>
</tr>
<tr>
<td>Performance Incentive for 2017, to be collected in 2018</td>
<td>$1,585,224</td>
</tr>
</tbody>
</table>

**Recommendations.** Going forward, if cost-effectiveness is assumed or waived, Staff recommends that no savings from the Low-Income Program should be included in calculating the Performance Incentive.

**DSM Cost Recovery Methodology**

Per-kWh and Percentage-of-Bill. TEP recovers its DSM costs using two methodologies. Non-residential customers are assessed based on a percentage of their bills, while residential customers are assessed on a per-kWh basis. In its most recent rate case, TEP requested that all its customers be assessed on a percentage of bill basis, while Staff requested that all customers be assessed on a per-kWh basis. In Decision No. 75975, the Commission stated that “the methodology should be consistent across rate payers in order to assure fairness.” Decision No. 75975 also states that “[t]he record is this proceeding is not sufficiently complete to support changing the method for assessing the DSM surcharge, and...it is reasonable to require TEP and Staff to address a uniform methodology for assessing the DSM surcharge in TEP’s next application for a DSM Surcharge reset.” The ordering paragraph indicated that TEP and Staff “shall address a uniform methodology for assessing the DSM surcharge...”

Per-kWh Assessment. The per-kWh method of assessment is more transparent and more directly incentivizes energy efficiency. Under this method of assessment each customer pays the same amount per kWh, regardless of the customer’s sector or size. Staff is concerned, however, about the bill impact of the per-kWh EE/DSM methodology on larger non-residential customers, who use a high volume of kWh, but who often have load factors that contribute to the overall efficiency of the system. A per-kWh recovery method may result in significantly higher percentage bill impacts for these customers.

TEP is also concerned about the impact on larger customers of transitioning from a percentage of the bill to a per-kWh charge. In addition, Arizonans for Electric Choice and Competition (“AECC”) and ASARCO LLC (“ASARCO”) filed comments supporting percentage-of-bill assessment for Non-residential customers and suggesting a cap on the annual recovery through the DSMS equal to 3% of TEP’s retail revenues. AECC also recommended that the current DSMS billing method be retained, or that a separate percentage-based rate be developed for residential and non-residential customers.

Percentage-of-Bill Assessment. Percentage-of-bill calculation can be less transparent, since such charges are usually based not on the total bill, but on a portion of the bill. As an
example, the current percentage-of-bill calculation for non-residential customers is based on the total bill before the Renewable Energy Surcharge ("RES"), Lost Fixed Cost Recovery ("LFCR"), assessments and taxes. In addition, just as per-kWh assessment may negatively impact larger customers, the percentage-of-bill assessment may mean smaller customers ultimately pay more per kWh for DSM/EE recovery than larger Non-residential customers. Due to tariffs or special contracts, large non-residential customers often pay less per kWh, for power, than smaller customers. Since the bills for these large Non-residential customers are based on lower-cost kWh, percentage-of-bill assessment may result in these Non-residential customers also paying lower costs, per kWh, for DSM/EE recovery. The impact of this method of assessment, however, is limited by being spread over a large pool of customers.

**Recommendation.** Staff believes it is reasonable to retain the current method of assessment (Residential = per-kWh; Non-Residential = percentage-of-bill). Continuing the existing approach to recovery would be less disruptive and would permit customers to be assessed using a methodology more tailored to their customer class. Although a consistent methodology for all customers was raised as the fairest approach to EE/DSM recovery, the ordering language of Decision No. 75975 requires only that the issue of a uniform methodology be addressed. Based on its review Staff recommends that the current method of assessment be retained.

**Plan of Administration**

In addition to the TEP EE Plan itself, TEP has submitted a proposed Plan of Administration ("POA") governing administration of the DSM Surcharge. Staff also sought to limit and clarify the types of programs which feed into the Surcharge, to ensure that recovery is for appropriate, cost-effective activities. Staff recommends that the POA revised by Staff be approved.

**Recommendation.** Staff recommends that the POA be approved, as revised by Commission Staff.

**DSM Reset**

**Residential and Non-residential Surcharges.** TEP has proposed to reset the DSM Surcharge from $0.001916 to $0.0028898 per kWh for Residential ratepayers and from 1.9700% to 2.8292% for Non-residential ratepayers. Please see the table below to view all the components of the reset. (The application originally proposed a per-kWh DSM Surcharge of $0.003034, but new data resulted in updated, and lower, numbers.)

Below are the calculations for: (i) TEP's Proposed Residential per-kWh DSM Surcharge; and (ii) TEP's Proposed Non-residential Surcharge.
TEP’s Proposed DSM Residential Surcharge

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Proposed DSM Budget</td>
<td>$22,916,762</td>
</tr>
<tr>
<td>True-up</td>
<td>($184,182)</td>
</tr>
<tr>
<td>Performance Incentive based on 2017</td>
<td>$1,585,224</td>
</tr>
<tr>
<td>Total to be recovered</td>
<td>$24,317,804</td>
</tr>
<tr>
<td>Previous Year's Total kWh Sales</td>
<td>929,062,846</td>
</tr>
<tr>
<td>Total to be recovered/Total Sales=DSM Surcharge</td>
<td>$0.00288984</td>
</tr>
</tbody>
</table>

TEP’s Proposed Non-Residential Percentage-of-Bill Surcharge

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Non-residential Revenues</td>
<td>$472,847,526</td>
</tr>
<tr>
<td>Per-kWh Charge</td>
<td>$0.002889815</td>
</tr>
<tr>
<td>Total Number of Non-residential kWh sold in previous year</td>
<td>4,629,368,727</td>
</tr>
<tr>
<td>Per-kWh charge x Total Non-residential kWh sales = total amount to be recovered from Non-residential customer sector (or $0.002889815 x 4,629,368,727 = $13,378,019)</td>
<td>$13,378,019</td>
</tr>
<tr>
<td>Total amount to be recovered from Non-residential sector/Total Non-residential revenue = % of bill assessment for Non-residential customers (or $13,378,019/$472,847,526 = 2.8292%)</td>
<td>2.8292%</td>
</tr>
</tbody>
</table>

Staff recommends that TEP’s proposed reset amounts be approved, at $0.0028898 per kWh for Residential ratepayers and at 2.8292% for Non-residential ratepayers.

Bill Impacts

The bill impacts of the current and Company-proposed DSM Surcharge based on average Residential used are shown below.

<table>
<thead>
<tr>
<th>Residential Bill Impact; TEP's Proposed per-kWh Surcharge</th>
<th>Summer</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Residential Usage - kWh</td>
<td>1,150</td>
<td>785</td>
</tr>
<tr>
<td>Current DSM Surcharge</td>
<td>0.001916</td>
<td>0.001916</td>
</tr>
<tr>
<td>Current bill impacts</td>
<td>$2.20</td>
<td>$1.50</td>
</tr>
<tr>
<td>Proposed DSM Surcharge</td>
<td>0.0028898</td>
<td>0.0028898</td>
</tr>
<tr>
<td>Bill impact, proposed surcharge</td>
<td>$3.32</td>
<td>$2.27</td>
</tr>
</tbody>
</table>
Compliance with Decision No. 75975

As herein discussed, TEP has proposed the Residential Load Management Pilot Program to comply with the language in Decision No. 75797 requiring programs to address (i) peak demand reduction; (ii) peak demand reduction capability; (iii) residential or feeder level demand reduction or load management; and (iv) energy storage technology.

In addition, Decision No. 75797 requires that TEP make its best efforts to achieve a 10% reduction in peak demand and a 15% increase in peak demand reduction capability. Although TEP is making efforts to meet the peak demand goals set in Decision No. 75797, the Company has indicated there are budget constraints with respect to achieving these goals. Staff recommends that TEP continue to make its best efforts to meet the goals set in Decision No. 75797, based on TEP’s approved portfolio budget.

Waiver of EE Standard

TEP has requested a waiver pursuant to R14-2-2419 from the Cumulative Annual EE Standard set forth in R14-2-2404(B). TEP anticipates being only slightly below the Standard and states that it will continue to work toward the maximum cost-effective savings possible based on the dollars spent. Staff recommends in favor of the waiver.

DSM and Performance Incentive Calculations; Comments

Comments in the Docket include those from Arizonans for Electric Choice and Competition ("AECC"). Among the concerns expressed by AECC is the lack of information in the TEP’s Application regarding how the DSM Surcharge and Performance Incentive are calculated. Staff concurs that this information should be more readily available. Staff recommends that Tucson Electric Power Company provide complete calculations of its Performance Incentive and DSM Surcharge within the body of each DSM/EE Implementation Plan filed with the Commission. The Applications must indicate which programs feed into the Performance Incentive. In years where Tucson Electric Power Company elects not to file an Implementation Plan, the calculations for its Performance Incentive must be reported in its annual compliance filing.

STAFF ANALYSIS AND RECOMMENDATION

Staff recommends the following:

- that the Tucson Electric Power Energy Efficiency Plan for 2018 is approved, as modified and discussed herein.

- that the Residential Load Management Pilot Program be approved, as herein discussed.
that the Company work with Staff in developing a cost-effectiveness calculation which takes into account the value of demand response/load management and storage measures and programs.

- that all decreases in incentives proposed by Tucson Electric Power Company be approved, as herein discussed.

- that the Commercial Community Development Pilot Program is not approved and that the budget intended for the Commercial Community Development Pilot Program be allocated, instead, to the Schools Program.

- that the Efficient Products Program be continued with the modifications proposed by Tucson Electric Power Company, including the Energy Star Heat Pump Water Heater, as herein discussed.

- that the Existing Homes Program be continued with the modifications proposed by Tucson Electric Power Company, including the addition of the Energy Star Heat Pump Water Heater, as herein discussed.

- that the Residential New Construction Program be continued with the modifications proposed by Tucson Electric Power Company, as herein discussed.

- that the Low-Income Weatherization Program per-home cap be increased to $6,000.

- that Tucson Electric Power Company be allowed to work with additional agencies in order to deliver the Low-Income Weatherization Program.

- that the requirement that cost-effectiveness for the Low-Income Weatherization Program be waived, but that the Company work to ensure that homes weatherized under the Low-Income Weatherization Program use less energy, overall, than they used prior to weatherization.

- that no savings from the Low-Income Weatherization Program feed into the Performance Incentive unless and until the Low-Income Weatherization Program is demonstrated to be cost-effective.

- that the Shade Tree Program be continued as herein discussed, with the proposed increase in Non-residential per-tree charges.

- that the Shade Tree Program's summer suspension be approved on a pilot basis and that if Tucson Electric Power Company determines that the summer suspension has
a significant negative impact on participation, then the Company should consider eliminating or reducing the suspension period.

- that the Multi-Family Program is approved for continuation, with the cost-effective new measures and modifications proposed by Tucson Electric Power Company, as herein discussed.

- that the Small Business Direct Install Program is approved for continuation with the lower caps and other modifications proposed by Tucson Electric Power Company, as herein discussed.

- that the Schools Energy Efficiency Program be approved to continue, with a $150,000 cap.

- that the Commercial New Construction Program be approved with the lower caps, re-introduced AC measure, and new measures proposed by Tucson Electric Power, as herein discussed.

- the C&I Comprehensive Program be approved with the new measures and modifications proposed by Tucson Electric Power Company, as herein discussed.

- that the C&I Demand Response Program be continued with the modifications Tucson Electric Power Company has proposed, as herein discussed.

- that the Combined Heat and Power Program be continued, and that Tucson Electric Power Company work to increase participation.

- that the Home Energy Reports Program be continued, as herein discussed.

- that the Behavioral Comprehensive Program be approved with the modifications proposed by Tucson Electric Power Company, as herein discussed.

- that the Consumer Education and Outreach Program be approved for continuation with an increased focus on providing Tucson Electric Power Company customers with information regarding the value of on-peak savings, as herein discussed.

- that the Energy Codes and Standards Program be continued, as herein discussed.

- that Tucson Electric Power Company provide specific reporting on its program activities related to the Energy Codes and Standards Program in its annual DSM report.

- that the Conservation Voltage Program be continued, as herein discussed.
that limitations regarding recovery for costs associated with the Conservation Voltage Program continue in place, and that there be no recovery associated with the Conservation Voltage Program through the DSM Surcharge, the LFCR or the Performance Incentive.

that the Generation Improvement and Facilities Upgrade Program be continued, as herein discussed.

that limitations regarding recovery for costs associated with the Generation Improvement and Facilities Upgrade Program continue in place, and that there be no recovery associated with the Generation Improvement and Facilities Upgrade Program through the DSM Surcharge, the LFCR or the Performance Incentive.

that the Appliance Recycling, Bid for Efficiency, and Retro-Commissioning Programs be approved for discontinuance as proposed by Tucson Electric Power Company.

that the DSM Surcharge be set at $0.0028898 per kwh for Residential customers.

that the DSM Surcharge be set at 2.8292% of Non-residential customer bills, before RES, LFCR, assessments and taxes.

that Tucson Electric Power Company continue to work toward meeting the goals stated in Decision No. 75797, based on its approved portfolio budget.

that Tucson Electric Power Company will provide complete calculations of its Performance Incentive and DSM Surcharge within the body of each DSM/EE Implementation Plan which it files with the Commission. The Applications must also indicate which programs feed into the Performance Incentive. In years where Tucson Electric Power Company elects not to file an Implementation Plan, the calculations for its Performance Incentive must be reported in its annual compliance filing.

that TEP be allowed the flexibility to shift funding from existing EE programs into the EV programs proposed in the Supplement, as discussed herein.

that any budget shifts used to fund EV programs be shown in the budget tables included in TEP’s Annual Demand-Side Management Progress Report, to be filed in March 2019, and in the next EE Plan filing.

that the Smart School EV Bus measure is not approved at this time, but that the proposed budget shall be used, instead, to provide EE measures at existing schools,
to provide charging stations for staff, students, and their families, and/or for grants that would allow instructors to teach about EE.

- that the other EV programs and measures be approved, as discussed herein.

- that, once the EV programs have ramped up, the Company should report on participation and actual savings/costs associated with EV measures in its EE compliance filings.

- that TEP work with participating homebuilders to design the Smart Home EV Pilot Program so that pre-wired EV homes are marketed to individuals or communities with the highest likelihood of EV ownership.

- that no incentive exceed the cost of a measure.

- that investment in infrastructure be recovered not through the DSM Surcharge, but, instead, be reviewed and recovered for (as appropriate) in the next rate case.

- that, pursuant to R14-2-2419, the Standard set forth in R14-2-2404(B) be waived for 2018.

- that the Plan of Administration submitted by TEP and revised by Staff is approved.

Elijah O. Abinah
Director
Utilities Division

EOA:JMK:red\WVC

ORIGINATOR: Julie McNeely-Kirwan
On this 5th day of July, 2018, the foregoing document was filed with Docket Control as a **Utilities Division Memorandum & Proposed Order**, and copies of the foregoing were mailed on behalf of the Utilities Division to the following who have not consented to email service. On this date or as soon as possible thereafter, the Commission’s eDocket program will automatically email a link to the foregoing to the following who have consented to email service.

Mr. Michael Patten  
Snell & Wilmer, LLC  
One Arizona Center  
400 East Van Buren Street  
Suite 1900  
Phoenix, Arizona 85004  
docket@swlaw.com  
bcarroll@tep.com  
jthomes@swlaw.com  
mpatten@swlaw.com  
mdecorse@tep.com  
Consented to Service by Email

Mr. Andy Kvesic  
Director/Chief Counsel, Legal Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007  
legaldiv@azcc.gov  
utildivservicebyemail@azcc.gov  
ndavis@azcc.gov  
Consented to Service by Email

By:  
Renee de la Fuente  
Administrative Support Specialist
BEFORE THE ARIZONA CORPORATION COMMISSION

TOM FORESE
Chairman
BOB BURNS
Commissioner
ANDY TOBIN
Commissioner
BOYD DUNN
Commissioner
JUSTIN OLSON
Commissioner


DOCKET NO. E-01933A-17-0250
DECISION NO. __________
ORDER

Open Meeting
July 19, 2018
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

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

2. TEP serves approximately 420,000 electric customers. Of these, approximately 379,000 are Residential customers and 38,000 are Commercial customers. TEP also serves a smaller number of Industrial, Public Street and Highway Lighting, and Irrigation customers.

Background

3. On August 1, 2017, TEP filed an application requesting approval of (i) its 2018 Energy Efficiency Implementation Plan ("2018 EE Plan"); (ii) a reset of TEP's Demand-side Management ("DSM") Surcharge, from $0.001916 per kWh to $0.003034 per kWh; (iii) the Plan of Administration for TEP's DSM Surcharge; and (iv) a waiver of the 2018 Energy Efficiency Standard. (TEP has updated the Surcharge number based on new information.)
4. **Proposed Portfolio Changes.** The Proposed EE Plan for 2018 would (i) add two new programs (the Residential Load Management Pilot and the Commercial Community Development Pilot); (ii) add 25 new program measures, for which Staff has evaluated cost-effectiveness; (iii) discontinue three existing programs (Appliance Recycling, Bid for Efficiency, and Retro-commissioning); and (iv) reduce incentives in most programs, with a minimum/maximum structure which would allow further reductions, if indicated.

5. The Company originally requested that the Commission issue an order with respect to its application by December 31, 2017. On December 22, 2017, TEP filed a Supplement to its proposed 2018 EE Plan setting forth its proposed EV infrastructure Plan. The Company also filed a letter on January 19, 2018, with additional information concerning its infrastructure proposal.

**Proposed New Programs: Residential and Non-Residential Sectors**

**Residential Load Management Pilot Program (New Program)**

6. **Program Description.** Decision No. 75975 ordered that TEP propose a residential or feeder level Demand Response program with energy storage as part of its 2018 EE Plan. The ordering language states:

7. The Residential Load Management Pilot Program incorporates: (i) Residential Demand Response; (ii) Residential Thermal Storage; and (iii) Feeder Level Energy Storage. It will also feature geo-targeting, meaning that marketing will emphasize areas where load management would have the most positive impact.

8. The main components of the proposed Residential Load Management Pilot are discussed below:

- **Demand Response.** Communicating thermostats will be used to adjust thermostat settings or cycle compressor run times. Temperature adjustments will be kept within a limited range and participants would have the option to manage the temperature setting or opt out. TEP has not yet determined how many opt outs it will allow for participants. The Company needs to do more research to determine what will be tolerated by customers and what will work operationally. TEP will survey other load management programs and base the final program on what is learned during the pilot program. Participants will receive an incentive of $40 annually.
- **Thermal Storage.** Measures may include automatic pre-cooling of homes prior to peak demand. Also, water heaters would be used to store excess renewable energy during mid-day on shoulder months. Renewable energy would be used to preheat water during high production periods; this preheated water would be stored, then used during peak periods. Shoulder months would be used because hot water heating is low during summer months and because the "duck curve" when demand is low and renewable production is higher is most pronounced during this period.

- **Feeder Level Energy Storage.** Feeder level storage, as proposed, will consist of a large-scale battery storage unit deployed at the site of a constrained feeder with a predominantly residential load for the purpose of evaluating the ability to cost-effectively reduce the electric demand of the impacted customers during system peak periods.

TEP will determine whether such deployment can cost-effectively reduce electric demand during system peak periods. Geo-targeting will be used to site measure deployment at locations where there are system constraints to reduce customer loads and defer distribution system upgrades.

9. **Eligibility.** The program is open to all of TEP's Residential customers.

10. **Budget.** $1.3 million, as per Decision No. 75975.

11. **Delivery and Marketing.** Although open to all TEP's customers, the marketing will target areas which will provide the most system benefits from load management.

12. **Timeline.** Due to its complexity, including design details, vendor awards and contracting, the timeline for this program is approximately 36 months from approval through the pilot.

13. Commission Decision No. 75975 states: "Given the developing nature of this energy storage technology program, the Commission will waive its normal benefit-cost threshold and revisit the program and measures in the Company's 2019 DSM Plan." For this reason, Staff did not perform a cost-benefit analysis.

14. Staff has recommended that the Residential Load Management Pilot Program be approved. Staff has also recommended that the Company work with Staff in developing a cost effectiveness calculation which takes into account the value of demand response/load management and storage measures and programs.

...
Commercial Community Development Pilot Program (New Pilot Program)

15. **Program Description.** The proposed Community Development Pilot Program has two main components: (i) Revitalization of vacant facilities; and (ii) Reinvestment of energy savings in economic development.

16. The Revitalization portion of the Program would promote the rental of difficult-to-rent properties by using an energy assessment to aid with marketing. The implementation contractor ("IC") would determine how EE could be achieved in the space, what the savings would be, and what rebates would be available; the IC would then provide the savings information to owners and managers. Under the Reinvestment portion of the Program, renters would be incentivized to hire new employees with a $5,000 rebate for up to five new positions. To be eligible for the incentive, jobs would have to be filled within six months after the project was completed and still filled 12 months after the start date.

17. **Program Objectives and Rationale.** For the Revitalization component of the Program, the objectives are to promote community development, greater energy efficiency by future tenants, and peak reduction. For the Reinvestment component of the Program, the goal is to take the money saved through energy efficiency and use it for development activities, such as hiring.

18. **Eligibility.** The Revitalization component of the Program is open to all non-residential customers, while the Reinvestment component is limited to Small General Service rate class customers participating in existing programs.

19. **Budget.** The proposed budget for the Commercial Community Development Pilot Program would be $500,000.

20. **Delivery and Marketing.** The Commercial Community Development Pilot Program would be delivered using an IC.

21. **Staff Recommendations.** The Revitalization component of the Commercial Community Development Pilot Program would increase energy usage, rather than decreasing it. Even with cost-effective measures installed, usage would be higher in an occupied commercial property than in a vacant one. In addition, the Revitalization component would primarily build load, due to newly re-occupied properties, thereby increasing demand. (Any demand response or storage
measures approved as part of this program are likely to impact only a portion of the new load created by the program.) The Commercial Community Development Pilot Program is not designed to either decrease kWh usage or demand.

22. Staff has recommended that the Commission not approve the Commercial Community Development Pilot Program and that the budget intended for the Commercial Community Development Pilot Program be allocated, instead, to the Schools Program.

**Existing Programs: Residential Sector**

**Efficient Products Program**

23. **Program Description.** The Efficient Products Program is a primarily Residential program and has been in existence since 2008. It was most recently approved in Decision No. 75450 (February 11, 2016). The program is designed to make energy efficient products, such as LED lighting or more efficient pool pumps, more affordable and more readily available. (In accordance with Decision No. 75450, TEP has discontinued CFL lighting measures to focus on equivalent LED lighting measures.)

24. The program promotes the purchase of energy efficient products, particularly Energy Star® products, through buy-downs, retail partnerships, and the training of retail staff. The Company also works with retailers to increase the stocking and selection of efficient retail products.

25. **Program Objectives and Rationale.** The objective of the Efficient Products Program is to help customers reduce their peak demand and their energy consumption through the use of energy efficient products.

26. **Proposed Changes.** TEP proposes to lower incentives from 75% to a maximum of 50% of incremental cost, with a minimum/maximum range that would allow TEP to go lower, when indicated. TEP is also requesting a cap of $3,500 per retailer. Another proposed modification is an educational component to the Pool Pump sub-program. TEP informed Staff that correct installation of EE pool pumps is necessary for optimal energy savings, but that this requires additional training of contractors. Costs associated with this training are a part of the Implementation category of the Efficient Products Program.

...
27. TEP has also proposed that the Energy Star Heat Pump Water Heater be added as a new measure to the Efficient Product Program using timers, TEP can set the heaters to run at times that better augment TEP’s resource mix by season.

28. Eligibility. The program targets Residential and Small Commercial customers in TEP’s service territory.

29. Budget. The total budget proposed for the Efficient Products Program is $1,865,824.

30. Delivery and Marketing. Primarily, the program utilizes mass marketing and educational or training partnerships with participating retailers.

31. Staff Recommendations. Staff has recommended that the Commission approve the continuation of the Efficient Products Program with the modifications proposed by TEP, including the Energy Star Heat Pump Water Heater. As per Decision No. 75797, the Commission has waived its normal benefit-cost threshold for storage measures. (In addition, the Decision ordered that TEP “shall make its best effort to increase the peak demand reductions (MW) from EE programs in 2017 by 10 percent compared to the reported 2016 peak demand reduction form [sic] EE program.”)

32. Cost-effectiveness of this measure should be reviewed in the 2019 EE Plan, as per ordering language in Decision No. 75797.

Existing Homes Program (Existing Program: Decreased Incentives, One New Measure)

33. Program Description. This Residential program is now marketed as the “Efficient Home Program” and has been in existence since 2008. It was most recently approved for continuance in Decision No. 75450. The program is designed to improve energy efficiency in existing homes. The current program offers incentives for installing smart thermostats, for duct sealing, and for quality installation and maintenance of high-efficiency HVAC equipment.

34. Program Objectives and Rationale. The primary objective of the Existing Homes Program is to make existing residential homes more energy efficient. The program emphasizes right-sizing and proper installation of HVAC equipment and promotes comprehensive EE retrofits of existing homes.

...
35. **Proposed Changes.** TEP proposes to lower incentives from 75% to 50% of the incremental cost and to use the minimum/maximum model to allow the Company to further lower the incentive, if reasonable.

36. **Proposed New Measure.** TEP is proposing to add Energy Star Heat Pump Water Heaters as a new measure using timers, TEP can set the heaters to run at times that better augment TEP’s resource mix by season.

37. **Eligibility.** In order to be eligible for the Existing Homes Program, a participant must be a TEP customer owning a single-family detached home, town home, manufactured home or other attached residential building of up to four units, even if the building is rented to another party.

38. **Budget.** Based on a December 22, 2017 supplementary filing in this Docket, up to $200,000 of the $3,162,972 budget proposed for Existing Homes will be shifted into the proposed EV measures and programs.

39. **Delivery and Marketing.** TEP manages the program and provides oversight and marketing. With the exception of Smart thermostats, all measures are provided by a third-party Implementation Contractor (“IC”) which is responsible for: (i) recruitment, training and mentoring of participating contractors; (ii) data tracking; (iii) rebates processing; and (iv) technical support.

40. One proposed change to the marketing and delivery of the Existing Homes Program is that TEP proposes that customers who already own a smart thermostat be invited to participate in the Residential Load Management pilot program.

41. **Staff Recommendations.** Staff has recommended that the Commission approve the Existing Homes Program with the modifications proposed by TEP, including the addition of the Energy Star Heat Pump Water Heater. As per Decision No. 75975, the Commission has waived its normal benefit-cost threshold for storage measures. In addition, the Decision ordered that TEP “shall make its best effort to increase the peak demand reductions (MW) from EE programs in 2017 by 10 percent compared to the reported 2016 peak demand reduction form [sic] EE program.”

42. Cost-effectiveness of this measure should be reviewed in the 2019 EE Plan, as per ordering language in Decision No. 75975.
Residential New Construction (Existing Program)

43. **Program Description.** The Residential New Construction Program provides an incentive to homebuilders to build more energy efficient homes. The Program was most recently approved in Decision No. 75450.

44. Under the Program, homebuilders must achieve a score of ≤ 65 on the Home Energy Rating ("HERS") System. (The HERS Index measures the energy efficiency of a home. The lower the score, the more energy efficient the home.) The energy efficient homes promoted by the program can be either all-electric or dual fuel.

45. **Program Objectives and Rationale.** The objectives of the Program are to promote energy efficient building through builder training, customer awareness and the promotion of energy efficient homes to consumers.

46. **Proposed Changes.** TEP is requesting to reduce the incentive for new single-family homes from $400 to $300. TEP is also requesting that the New Construction Program be expanded to include Multi-Family Homes, with a primary focus on low-income areas. Cost-effectiveness for the proposed new Multi-family Homes measures are shown in the table below.

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Staff’s Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Smart Multi-family Homes (All Electric)</td>
<td>1.96</td>
</tr>
<tr>
<td>Energy Smart Multi-family Homes (Dual Fuel)</td>
<td>1.92</td>
</tr>
</tbody>
</table>

47. **Eligibility.** Builders of single-family homes in TEP’s service territory are currently eligible to participate. If TEP’s proposed expansion of the Residential New Construction Program is approved, then builders of multi-family homes would also be eligible for participation.

48. **Budget.** The proposed budget is $1,028,794.

49. **Delivery and Marketing.** The Residential New Construction Program is marketed as “Energy Smart Homes.” The Program is marketed to select builders through direct business-to-business contacts. If the program is expanded to include multi-family homes, marketing will be done through direct contacts to apartment owners and managers.

...
50. **Staff Recommendations.** Staff has recommended that the Residential New Construction Program be approved for continuance, with the modifications proposed by TEP.

Low-Income Weatherization (Existing Program; Higher Per-Home Cap and Ability to Work with Additional Agencies)

51. **Program Description.** The Low-Income Weatherization ("LIW") Program is an existing program that weatherizes low-income housing to conserve energy and lower energy bills. It was most recently approved for continuance in Decision No. 75450. The program provides weatherization to low-income homes to reduce electric bills and improve the level of comfort, quality of life, health, and safety. Typical measures include: (i) duct repair; (ii) pressure management/infiltration control; (iii) attic insulation; and (iv) repair or replacement of non-functional or hazardous appliances.

52. **Program Objectives and Rationale.** The main objectives of the Low-Income Weatherization Program are to: (i) increase the number of homes weatherized; (ii) lower energy consumption and reduce utility bills, for low-income customers; and (iii) improve the quality of life for customers.

53. **Proposed Change: Increased Per-Home Cap.** The Company is proposing to increase the per-home cap from $3,000 to $6,000. Per-home costs to make homes more energy efficient have exceeded $3,000 in a significant number of cases, and this change would be consistent with the $6,000 cap approved for Arizona Public Service in Decision No. 68647.

54. **Proposed Change: Flexibility in Use of Delivery Agencies.** TEP has requested the ability to "utilize additional agencies to those currently approved to assist in the delivery of the LIW Program."

55. **Proposed Change: Cost-Effectiveness.** TEP has proposed that it demonstrate the cost-effectiveness of the program one time, with the cost-effectiveness to be assumed to equal 1.00 for future years. TEP points out that the program offers significant benefits to a vulnerable customer population.

...
56. **Budget.** The proposed budget for the Low-Income Weatherization Program is $1,004,252.

57. **Eligibility.** Program participants must be low-income customers of TEP, with incomes at or below 200% of the Federal Poverty Level.

58. **Delivery and Marketing Strategy.** The Low-Income Weatherization Program is delivered by community action agencies approved by the Arizona Department of Housing. TEP provides pre- and post-inspection of the units to assure quality control.

59. **Staff Recommendations.** Staff has recommended that the per-home cap be increased to $6,000 to reflect the increased costs of weatherizing homes. Staff has also recommended that TEP be allowed to work with additional agencies to deliver the Low-Income Weatherization program.

60. With respect to cost-effectiveness, Staff has recommended that the requirement of cost-effectiveness for the Low-Income Weatherization Program be waived, but that the Company work to ensure that homes weatherized under the Low-Income Weatherization Program use less energy, overall, than they used prior to weatherization. Staff has also recommended that no savings from the Low-Income Weatherization Program feed into the Performance Incentive unless and until the Low-Income Weatherization Program is demonstrated to be cost-effective.

**Shade Trees**

61. **Program Description.** The Shade Tree program promotes energy conservation and environmental benefits by motivating customers to plant desert-adapted trees in locations where the trees will provide shade and reduce HVAC load. The program provides desert-adapted trees to customers at a low cost, if the customers agree to plant the trees on the east, west, or south sides of their homes. Residential customers are limited to three trees each, to make it possible for more customers to participate in the program.

62. Non-residential customers are generally limited to ten trees, although this limit can be lifted in cases where there are sufficient supplies of trees for Residential customers and if the customer has sufficient space. The trees must be planted within 15 feet of an occupied structure.
Customers receive education on planting and caring, including how to plant within program guidelines.

63. TEP staff inspect 200 plantings each year to track mortality and verify planting within program parameters. TEP believes a random sampling of this size is reasonable for determining whether or not trees are being planted in accordance with program guidelines.

64. **Proposed Changes.** TEP proposes to suspend the program from June through August due to the low survival of summer-planted trees. TEP is also planning to raise the cost of trees for non-residential customers from $15 to $25 for 15-gallon trees and from $5 to $10 for 5-gallon trees, reducing the level of subsidy. Residential customers currently pay $5 for trees and an increase for this class of customers is not contemplated.

65. **Program Objectives and Rationale.** The primary objective of the Shade Tree Program is to promote the strategic planting of trees to provide shade, thereby reducing the cooling load of homes.

66. **Budget.** The proposed budget for the Shade Tree Program is $251,652.

67. **Eligibility.** All TEP customers are eligible to participate in the Shade Tree Program. This includes both Residential and Non-residential customers. Non-residential participants can include community organizations, commercial customers and schools.

68. **Delivery and Marketing Strategy.** The Shade Tree Program is marketed under the name “Trees for You” (TFY”). TEP coordinates with Civano Nursery, in partnership with other nurseries. For Residential customers, Civano delivers the trees to a nursery of the customer’s choice. Civano delivers the trees on-site for the Non-residential customers.

69. **Staff Recommendations.** Staff has recommended that the Commission approve continuation of the Shade Tree Program. Staff has also recommended that the Commission approve the increase in Non-residential per-tree charges. In addition, Staff has recommended that the summer suspension be approved on a pilot basis and that the impact of the suspension on participation be reviewed by TEP and the results of its review reported in its compliance filing(s). If TEP determines that the summer suspension has a significant negative impact on participation, TEP should have the option of eliminating or reducing the suspension period.
Multi-Family Housing Efficiency Program (Existing Program, Added Measures, Lowered Incentives)

70. **Program Description.** The Multi-Family Housing Efficiency Program ("Multi-Family Program") is an existing program and most recently approved in Decision No. 75450. The purpose of the Multi-Family Program is to promote energy efficiency in the residential multi-family sector for properties with five or more units. Typically, the multi-family market has been difficult to reach due to capital constraints, lack of awareness, and split incentives.\(^1\) By using direct installation and a renovation/rehabilitation implementation framework, the program addresses these issues.

71. The Multi-Family Housing Efficiency Program offers energy efficiency measures including efficient lighting, low-flow water devices, HVAC tune-up measures, Western Cooling Controls and duct testing and repair. Multi-family facility managers may also participate in the C&I Facilities Program to install energy efficiency measures in their common areas.

72. **Program Objective and Rationale.** The objectives of the Program are to: (i) reduce peak demand and overall energy consumption in the multi-family housing market; (ii) promote energy efficiency retrofits for individual apartments and common areas; and (iii) promote awareness of EE in the multi-family housing community.

73. **Proposed Change: Added Measures.** HVAC (Replace On Burnout) and HVAC (Early Retirement or "ER"). Both of these measures were previously approved for the Existing Home Program.

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Staff's Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER HVAC with QI(^1) (All Electric)</td>
<td>1.16</td>
</tr>
<tr>
<td>ER HVAC with QI (Dual Fuel)</td>
<td>1.96</td>
</tr>
<tr>
<td>ER HVAC with QI Tier 1 (All Electric)</td>
<td>1.18</td>
</tr>
<tr>
<td>ER HVAC with QI Tier 1 (Dual Fuel)</td>
<td>2.02</td>
</tr>
<tr>
<td>ER HVAC with QI Tier 2 (All Electric)</td>
<td>1.90</td>
</tr>
<tr>
<td>ER HVAC with QI Tier 2 (Dual Fuel)</td>
<td>3.01</td>
</tr>
<tr>
<td>HVAC QI (All Electric)</td>
<td>1.27</td>
</tr>
</tbody>
</table>

\(^1\)"Split incentives" describes a problem that arises in promoting energy efficiency in rental units. Generally, builders and owners do not directly benefit from the lower energy costs arising from investing in efficiency measures, which reduces their incentive to participate in energy efficiency programs. At the same time renters, who would benefit from lower energy bills, but have no direct influence over original construction and may not have the authority, the incentive or the means to invest in energy efficiency for housing they do not own.

\(^2\)Quality Install
74. **Proposed Change: Lowered Incentives.** TEP is requesting to lower incentives so that they are no more than 50% of incremental cost for measures that are not direct install, and to use a minimum/maximum model which will allow the Company to lower incentives further, if indicated. Incentives for direct install measures will remain at 100%. Direct install measures are generally lower cost (less than $100).  

75. **Eligibility.** The Multi-Family Program is available to multi-family buildings with five dwelling units or more. Qualifying properties may be rentals or individually owned. Program participants must currently receive electric service from TEP. Primary emphasis is on low-income, subsidized housing complexes, and on larger, older and less efficient complexes.

76. **Budget.** The proposed budget for the Multi-Family Program is $4,290,458. However, based on TEP’s December 22, 2017, supplementary filing, up to $2,000,000 of this budget will be shifted into the proposed EV measures and programs.

77. **Delivery and Marketing.** Program delivery for existing measures is provided by TEP or an IC. Marketing efforts include the website, training seminars, call center on-hold messages, direct mail promotion, outreach to rental housing industry associations, and working with contractors and industry specialists.

78. **Staff Recommendations.** Staff has recommended that the Multi-family Program be approved as proposed, with the cost-effective new measures and changes proposed by TEP.

**Schools Energy Efficiency (Existing)**

79. **Program Description.** The Schools Energy Efficiency Pilot Program (“Schools Program”) was approved by the Commission in Decision No. 75450 (February 11, 2016). The Schools Program provides incentives at 100% of project cost for the installation of EE measures for existing K-12 schools which cannot raise the capital to participate in TEP’s current EE programs.

80. The Schools Program is not limited to a Program-specific list of measures. Schools may install any measure available in the C&I Comprehensive or Small Business Programs, including [Table]

<table>
<thead>
<tr>
<th>HVAC QI (Dual Fuel)</th>
<th>1.07</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC QI Tier 1 (All Electric)</td>
<td>1.51</td>
</tr>
<tr>
<td>HVAC QI Tier 1 (Dual Fuel)</td>
<td>1.34</td>
</tr>
<tr>
<td>HVAC QI Tier 2 (All Electric)</td>
<td>2.15</td>
</tr>
<tr>
<td>HVAC QI Tier 2 (Dual Fuel)</td>
<td>2.05</td>
</tr>
</tbody>
</table>
custom measures. Typical measures include lighting equipment and controls, HVAC, motors and motor drives, refrigeration and custom measures.

81. **Program Objectives and Rationale.** The primary objective of the Schools Program is to install EE measures in existing schools with limited resources.

82. **Proposed Change.** TEP proposes to reduce the per-public school district or charter school organization cap of $250,000 to $100,000 so more schools can participate in the Program.

83. **Eligibility.** Eligible participants are public or charter schools, grades K-12, with a documented inability to raise capital to fund EE projects. The projects must provide significant EE savings from retrofit projects. Priority is given to schools that have not done EE retrofits recently and which have not received rebates from the Schools Program during the last three years.

84. **Budget.** The proposed annual budget for the Schools Program is $500,000. However, Staff recommends that the budget be increased to $1,000,000 by shifting the dollars allocated to the Commercial Community Development Program to the schools program.

85. **Delivery and Marketing.** The Schools Program is marketed within TEP’s service territory through contacts with school districts and charter school organizations. Management is through an IC under the direction of TEP’s program manager.

86. **Staff Recommendations.** The proposed lower per-public school district or charter school cap would allow participation by more schools. Staff has recommended that the cap be lowered to $150,000. Staff has recommended that the Schools Energy Efficiency Program be continued with the modifications proposed by TEP.

**Existing Programs with Proposed Modifications: Non-residential Sector – Small Business Direct Install Program**

87. **Program Description.** The Small Business Direct Install ("SBDI") Program is an existing TEP Non-residential Program marketed as the "EasySave Program." It was most recently approved for continuation in Decision No. 75450. The Program provides incentives directly to contractors for the installation of high efficiency measures at existing small business facilities and K-12 schools, and provides turn-key installation of EE measures to small businesses and schools.
These measures include lighting, HVAC, programmable thermostats, and refrigeration measures for smaller Non-residential customers.

88. **Program Objectives and Rationale.** The primary objective of the SBDI Program is to incentivize small businesses and schools to install EE measures in existing facilities.

89. **Proposed Changes.** Incentives are currently capped at $0.10 per kWh saved and at 75% of incremental cost. TEP is proposing to reduce the caps to $0.06 per kWh saved and 50% of incremental cost.

90. TEP is also proposing the following: when a customer is eligible to participate in both the C&I and SBDI Programs, that customer’s project must be submitted and completed under only one of the two Programs for which it is eligible.

91. **Eligibility.** The SBDI Program offers incentives directly to contractors for the installations of high efficiency measures at existing small businesses and schools. The small businesses and schools must be within TEP’s service territory. The school can be charter, private or public.

92. **Budget.** The proposed annual budget for the SBDI Program is $754,639.

93. **Delivery and Marketing.** The SBDI Program has an IC which acts as the primary contact for eligible customers.

94. **Staff Recommendations.** Staff has recommended that the SBDI Program be approved for continuation with the changes proposed by TEP.

**Commercial New Construction**

95. **Program Description.** The Commercial New Construction Program is an existing program most recently approved in Decision No. 75450. The Commercial New Construction Program provides design, educational and promotional materials to building owners, developers, and design teams with the goal of creating more energy efficient commercial buildings.

96. **Program Objectives and Rationale.** The primary objection of the Commercial New Construction Program is to promote the more energy efficient design and construction of new commercial buildings.

...
97. **Modified Incentives.** TEP is proposing that the incentive be lowered from $0.10/kWh to $0.06/kWh for reductions in energy use. The incentives would not exceed 50% of incremental measure costs, and would be capped at $75,000 per project.

98. **Proposed New Measures.** TEP is proposing the following new measures for its Commercial New Construction Program:

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Staff's Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Performance Glaze</td>
<td>1.20</td>
</tr>
<tr>
<td>High Efficiency EER Packaged and Split ACs</td>
<td>1.08</td>
</tr>
<tr>
<td>High Efficiency EER Packaged and Split HPs</td>
<td>1.14</td>
</tr>
<tr>
<td>Reduced Lighting Power Density</td>
<td>0.95</td>
</tr>
</tbody>
</table>

99. The Company has shown that the Packaged AC units of 11.5-20 tons and 11.24 EER are now cost-effective. Staff has recommended that the Packaged AC units of 11.5-20 tons and 11.24 EER be re-introduced as measures so long as they remain cost-effective.

100. High Performance Glazed Windows reduce cooling loads by limiting heat transmitted from outside a building, while Reduced Lighting Power Density allows building owners to lower the Lighting Power Density ("LPD") of a building, thereby achieving energy savings. Reduced Lighting Power Density involves using optimal placement design and converting to LED lighting. Staff found High Performance Glazed Windows to be cost-effective at a benefit-cost ratio of 1.20. Staff believes that, at 0.95, the Reduced Lighting Power Density measure is likely to be cost-effective in practice, taking into account benefits such as lowered emissions, which are not monetized, but which are greater than zero.

101. **Eligibility.** The Commercial New Construction Program is open to non-residential customers of all rate classes.

102. **Budget.** The proposed budget for the Commercial New Construction Program is $249,738.

103. **Delivery and Marketing.** The Commercial New Construction Program is overseen by an in-house manager at TEP. TEP also works with an IC to collect data for program design proposals and program management. The Commercial New Construction Program’s marketing
targets building owners and developers. Marketing methods include educational seminars, website promotion, outreach and presentations at professional and community forums, as well as direct outreach.

104. **Staff Recommendations.** Staff has recommended that the Commercial New Construction Program be approved with the lower caps, the re-introduced AC measures, and the new measures proposed by TEP.

**Commercial & Industrial ("C&I") Comprehensive Program**

105. **Program Description.** The C&I Program offers incentives to Non-residential customers for installing cost-effective EE measures in existing facilities. The C&I Program is marketed as the “EasySave Plus” Program.

106. **Program Objectives and Rationale.** The Program addresses high first costs and limited investment capital for retrofits and ROBs, limited awareness of the potential energy savings and requirements for short-term payback.

107. **Proposed Changes.** TEP is proposing to lower incentives from 75% of incremental cost to 50% of incremental cost, with a minimum/maximum model that will allow TEP to further lower incentives, if indicated.

108. In addition, TEP has requested to discontinue three lighting measures and an occupancy sensor measure that are no longer cost-effective. New measures proposed for the C&I program are listed below. These measures were found cost-effective by TEP:

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Staff’s Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSD Compressors</td>
<td>1.81</td>
</tr>
<tr>
<td>Automated Drain Trap Compressor</td>
<td>1.21</td>
</tr>
<tr>
<td>Commercial Kitchen Exhaust Fan</td>
<td>1.85</td>
</tr>
<tr>
<td>Cogged V-belt</td>
<td>3.79</td>
</tr>
<tr>
<td>Fume Hoods</td>
<td>3.80</td>
</tr>
</tbody>
</table>

109. **Eligibility.** The C&I Program is available to all existing non-residential customers within TEP’s service territory who are replacing equipment in existing facilities with more energy efficient equipment. Eligible non-residential customers include large and small commercial and industrial customers, charter schools, private schools, and public schools.
110. **Budget.** The proposed budget for the C&I Comprehensive Program is $4,184,738.

111. **Delivery and Marketing.** The C&I Program is overseen by an in-house TEP manager who also works with an IC on collecting data for program management and evaluation. Marketing includes educational seminars tailored to the business market, website promotion, presentations at professional and community forums and direct outreach to customers.

112. **Staff Recommendation.** Staff has recommended that the C&I Comprehensive Program be approved with the new measures and modifications proposed by TEP.

113. **Program Description.** The C&I Demand Response Program is an existing program designed to manage peak demand and mitigate system emergencies through commercial and industrial load curtailment. Under the program, C&I customers and TEP have load reduction agreements in place to reduce load upon request in exchange for incentives. The C&I Demand Response Program provides up to 40 MW of summer peak demand reduction.

114. Incentives vary based on the size and other characteristics of the customer. Some customers only participate in emergency load control events, but receive a reduced incentive for doing so.

115. **Program Objectives and Rationale.** The program is designed to reduce demands for power at peak times or during system constraints. The program may also be used to avoid firm capacity required to meet reserve requirements and create greater grid stability and reduce outages.

116. **Proposed Change.** TEP proposes to move administration of the program in-house, to reduce costs and improve cost-effectiveness.

117. **Eligibility.** The C&I Demand Response Program is open to non-residential customers in TEP's service territory.

118. **Budget.** The proposed budget for the C&I Demand Response Program is $700,000.

119. **Delivery and Marketing.** The C&I Demand Response Program is marketed as "TEP DemandSmart." Marketing is targeted at larger commercial and industrial customers who can provide reliable and significant load reduction.

...
120. **Staff Recommendations.** The C&I Demand Response Program reduces usage at peak and during system constraints. TEP’s proposed change is designed to deliver demand benefits at a reduced cost. Staff has recommended that the Commission approve continuation of the C&I Demand Response Program, including TEP’s proposal to move administration in-house.

**Combined Heat and Power ("CHP") (Existing Program)**

121. **Program Description.** Combined Heat and Power ("CHP"), also defined as "cogeneration", refers to systems which capture and utilize what would otherwise be waste heat. CHP is a custom solution for large commercial and industrial customers and is discussed directly with each customer through their Key Account Manager and the support of a TEP Technical Services engineer. TEP had two CHP projects in 2014.

122. **Budget.** TEP is not requesting a budget for the CHP Program.

123. **Staff Recommendations.** TEP has indicated that the market potential for CHP is limited because “only certain commercial customers have a need for thermal energy.” No new CHP projects were reported in the 2016 Annual DSM Progress Report. Staff has recommended that TEP explore ways in which to increase participation in the CHP Program.

**Existing Behavioral Sector Programs Proposed For Continuance (No Modifications)**

**Home Energy Reports (Existing Program)**

124. **Program Description.** The Home Energy Reports ("HER") program is designed to promote behaviors that conserve energy, such as turning off the lights and adjusting the thermostat, or performing equipment maintenance, such as changing furnace filters and cleaning refrigerator coils. The program is also intended to promote participation in other DSM programs.

125. **The program:**

- Provides energy consumption reports and tips;
- Engages customers about behavior and their installed products to enhance the accuracy of the reports; and
- Provides a starter kit to first-time participants. The kit includes conservation tips and LED light bulbs.

126. **Program Objectives and Rationale.** The major objectives of this program are to:

- generate savings for DSM portfolio objectives; educate and empower residential customers to take
advantage of other DSM programs; promote efficient home operations; and lower energy bills for consumers.

127. **Budget.** The proposed budget for the Home Energy Reports Program is $827,330.

128. **Eligibility.** The HER Program is open to TEP's Residential customers.

129. **Delivery and Marketing Strategy.** Home Energy Reports may be direct mailed or emailed to customers. TEP conducted a lengthy RFP process in order to select an IC to implement the program. TEP works with the IC on marketing and messaging.

130. **Staff Recommendations.** Staff has recommended that the Commission approve the HER Program for continuation.

**Behavioral Comprehensive (Existing Program; Modifications)**

131. **Program Description.** The Behavioral Comprehensive Program is an existing educational program most recently approved for continuance in Decision No. 75450. Although primarily educational, it also distributes measures such as LED lights to customers. These distributions produce direct energy savings, along with the savings that arise from conservation being promoted through education.

132. **Components.** There are four main components to the Behavioral Comprehensive Program, one of which (Direct Canvassing) TEP proposes to discontinue:

- **Direct Canvassing.** TEP proposes to discontinue this component of the program due to its high cost and lack of impact on peak demand.
- **K-12 Education.** Students are instructed on how to save energy in their homes and provided with an energy saving kit that includes one or more: LED lights, bathroom faucet aerators, kitchen faucet aerators, low flow showerheads, and LED nightlights.
- **Community Education.** Customers are educated on how to save energy in their homes and provided with complimentary items such as LED lights, bathroom faucet aerators, kitchen faucet aerators, low flow showerheads, and LED nightlights.
- **Lighting Outreach Program.** TEP proposes to change the name of this component to “Community Outreach” because the Company wants to expand beyond promoting energy efficient lighting measures. TEP wants to distribute other types of measures as well.
Program Objectives and Rationale. The objective of the program is to produce long-term energy savings through education and by making customers aware of how they can better manage their energy usage.

Eligibility. All TEP customers are eligible, but primary focus is on Residential customers, small and medium commercial customers, various renewable customers, and students.

Budget. The proposed budget for the Behavioral Comprehensive Program is $595,866.

Delivery and Marketing. The section entitled “Components” describes the delivery and marketing of the various components of the Behavioral Comprehensive Program.

Staff Recommendations. The 2016 DSM Progress report indicates comparatively low savings for the Direct Canvassing component of the Behavioral Comprehensive Program. Eliminating the Direct Canvassing component is reasonable given the high cost and comparatively low benefits. Staff has recommended that the Behavioral Comprehensive Program be approved with the modifications proposed by TEP.

Support Sector Programs Proposed For Continuance (No Modifications)

Consumer Education and Outreach

Program Description. The Consumer Education and Outreach (“CEO”) Program is an existing program most recently approved for continuance in Decision No. 74550. In the Decision, the Commission ordered TEP “to explore the development of enhanced customer education, information and feedback” for all Residential customers, with respect to managing and reducing their energy bills. In the EE Plan, TEP states that, in 2017, programming and materials were enhanced to include information on how Residential customers can save money through new, optional rates.

The CEO Program promotes (i) participation in TEP’s EE programs and pricing plans designed to reduce on-peak usage and demand; (ii) community events which inform customers about EE, demand response, peak demand reduction and environmental sustainability; and (iii) an overall message regarding the value of EE, demand response, peak demand reduction and environmental sustainability.
140. **Program Objectives and Rationale.** The major objectives are to: (i) increase awareness of and participation in, the Company’s other DSM programs; and (ii) to effect a broad market transformation, including changes in customers’ behavior.

141. **Eligibility.** All TEP customers are eligible to participate in the CEO Program.

142. **Budget.** The proposed budget for the CEO Program is $400,000.

143. **Delivery and Marketing.** The program uses the following marketing channels, among others:

- Bill messages;
- TEP’s website;
- TEP mobile applications;
- Brochures;
- Email newsletter articles;
- Metro, traffic and radio advertising; and
- Outreach at community events.

144. **Staff Recommendations.** Staff has recommended that the Consumer Education Outreach Program be approved for continuation with an increased focus on providing TEP customers with information regarding the value of on-peak savings.

**Energy Codes and Standards Enhancement (Existing Program)**

145. **Program Description.** The Energy Codes and Standards Enhancement Program is an existing program most recently approved by the Commission in Decision No. 75450. The Program promotes adherence to local building codes, the adoption of newer national/international building codes where warranted, and enhanced energy efficiency standards for appliances.

146. The Energy Codes and Standards Enhancement Program: (i) educates local code officials and building professionals on current standards; (ii) provides documentation regarding code enforcement and the promotion of newer energy code adoptions; (iii) ensures utility incentive programs align with local energy codes and appliance standards; and (iv) collaborates with stakeholders to advance adoption and implementation of enhanced building energy codes and appliance standards within TEP’s service territory.
Program Objectives and Rationale. The Energy Codes and Standards Enhancement Program is designed to improve energy savings through adherence to, or enhancement of, building and appliance standards.

Proposed Change. No modifications are proposed for this program.

Eligibility. Not applicable.

Budget. The proposed budget for the Energy Codes and Standards Enhancement Program is $25,000.

Delivery and Marketing. TEP participates in energy code adoption committees and provides technical support to these committees. TEP also provides public testimony in support of code adoption and participation in organizations that promote increased appliance standards, and funding for local agencies to enforce and improve codes and standards.

Staff Recommendations. Staff has recommended that the Energy Codes and Standards Program be approved for continuance. Staff has also recommended that TEP provide more specific reporting on its program activities in its annual DSM report.

Utility Improvement Sector Programs Proposed For Continuance (No Modifications)

Conservation Voltage Reduction Program

Program Description. The Conservation Voltage Reduction Program was approved in Decision No. 75450. The program achieves load reduction through changes in voltage regulator parameters at the substation/feeder level. The program is for improvements to TEP’s own infrastructure and allows TEP to count savings from improvements to the Company’s infrastructure as part of the Company’s EE savings.

The Conservation Voltage Reduction and Generation Improvement and Facilities Upgrade Programs (see below) were approved with the limitation that there be no recovery for these programs through the DSM Surcharge. In addition, energy savings from improvements to TEP’s facilities and generation systems are not to be used to increase the LFCR, to qualify for the performance incentive, or increase the performance incentive amount. Energy savings from the Conservation Voltage Reduction Program will be counted toward the EE Standard.

Decision No.
155. Program Objectives and Rationale. To create changes in voltage which reduce demand and produce energy savings. The change targeted by the program is 2%, which will ensure that, in most instances, customers will not be impacted by any negative changes in equipment performance.

156. Proposed Modifications. No program modifications have been proposed.

157. Eligibility. Not applicable. This program is for improvements to TEP's own infrastructure.

158. Budget. The Conservation Voltage Reduction Program was approved without a budget. No expenses may be recovered through the DSM Surcharge. Savings achieved by the program can, however, be counted toward the EE Standard.

159. Delivery and Marketing. Not applicable. The Conservation Voltage Reduction Program is a program directed at counting the savings from improvements to TEP's own infrastructure.

160. Staff Recommendations. Staff has recommended that the Conservation Voltage Reduction Program be continued. Staff has also recommended that the limitations regarding recovery for this program continue in place, and that no expenses for this the Conservation Voltage Reduction Program be recovered through the DSM Surcharge and that savings from the Program not be used to increase the LFCR or the amount received through the performance incentive.

Generation Improvement and Facilities Upgrade Program

161. Program Description. Seeks to reduce energy consumption in power plants and utility facilities by installing measures such as high efficiency motors and variable speed drives. The program is for improvements to TEP's own infrastructure and allows TEP to count savings from these improvements as part of the Company's savings.

162. The Generation Improvement and Facilities Upgrade Program was approved with the limitation that there be no recovery for it through the DSM Surcharge. In addition, energy savings from improvements to TEP's facilities and generation systems are not to be used to increase the LFCR, to qualify for the performance incentive, or increase the performance incentive amount. Energy savings from the program will be counted toward the EE Standard. TEP currently has a Decision No.
large lighting project underway at its Sundt generation facility and would like to count the savings from the project toward its 2018 goals.

163. **Program Objectives and Rationale.** To reduce energy consumption in power plants and utility facilities through improvements to TEP’s infrastructure.

164. **Eligibility.** This program is for improvements to TEP’s own infrastructure.

165. **Budget.** Not applicable. As herein discussed, TEP does not have a budget for this program.

166. **Delivery and Marketing.** Not applicable.

167. **Staff Recommendations.** Staff has recommended that the Generation Improvement and Facilities Upgrade Program be continued. Staff has also recommended that the limitations regarding recovery for this program continue in place, and that no expenses for the Generation Improvement and Facilities Upgrade Program be recovered through the DSM Surcharge and that savings from the Program not be used to increase the LFCR or the amount received through the performance incentive.

**Residential and Non-Residential Sector Programs Proposed For Discontinuance**

**Appliance Recycling**

168. **Description of Program.** The Appliance Recycling program is an existing program most recently approved by the Commission in Decision No. 75450 (February 11, 2016). TEP proposes to discontinue this Program.

169. **Reason(s) for Discontinuance.** The IC, JACO Environmental, Inc., ceased operations on November 20, 2015, leading to suspension of the Appliance Recycling Program. The Company attempted to restart the program, but was unable to find a cost-effective means of delivering the program either through another IC or through using in-house resources.

**Bid for Efficiency**

170. **Description of Program.** Bid for Efficiency is an existing program involving a pool of funds bid on through proposals including costs, savings and incentives. TEP selects the winning bids based on specified criteria.

...
171. **Reason(s) for Discontinuance.** TEP determined that it was more cost-effective to deliver the same EE measures to the same customer segment by allocating the funding for this program into the C&I Comprehensive Program and/or the Small Business Direct Install and School Facilities Program.

172. **Staff Recommendation.** It is reasonable to re-allocate funding from less cost-effective programs to more cost-effective programs, particularly when the re-allocation takes place within the same customer segment. TEP’s compliance reports indicate that savings for this program were low compared to other budgeted programs. Staff has recommended in favor of TEP’s proposal to discontinue the Bid for Efficiency Program.

**Retro-commissioning**

173. **Description of Program.** Retro-commissioning is an existing program designed to generate energy savings by improving building performance and improving the operation and maintenance of Commercial and Industrial facilities.

174. **Reason(s) for Discontinuance.** The Retro-Commissioning Program had low participation compared to other Non-residential programs. TEP would prefer to allocate the funding for this program, instead, to Non-residential programs offering higher cost-effectiveness and participation rates.

175. **Staff Recommendation.** EE funds should be allocated to programs which produce the most results. Re-allocating funds from low-participation to higher-participation programs is likely to produce more energy and/or demand savings and is reasonable. TEP’s compliance reports indicate that savings for this program were low compared to other budgeted programs. Staff has recommended in favor of TEP’s recommendation to discontinue the Retro-Commissioning Program.

**Supplement To 2018 Energy Efficiency Implementation Plan: Electric Vehicle Infrastructure Program**

176. **Filings.** On December 22, 2017, TEP filed a Supplement to its proposed 2018 EE Plan setting forth an Electric Vehicle (“EV”) infrastructure program, in response to letters from Commissioner Tobin and Chairman Forese. The Supplement was filed in the same Docket as the original Plan (E-01933A-17-0250).
177. On January 19, 2018, TEP filed a letter with additional information relating to the
Supplement. In the January 19th letter TEP discussed its Distributed Energy Resource Management
System ("DERMS"), which is also intended to support TEP’s EV infrastructure programs.

178. Proposed Programs and Budgets. To fund the EV program, TEP proposes to shift up
to $2.2 million out of the Multi-family and Existing Homes programs in its EE portfolio (currently
budgeted at $22,916,762). The current total projected budget for TEP’s proposed EV programs is
$2,158,000, as shown below, but can be increased to $2.2 million, if needed.

<table>
<thead>
<tr>
<th>EV Program Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart City EV Buildout Plan</td>
</tr>
<tr>
<td>Smart Home EV Pilot Program</td>
</tr>
<tr>
<td>Smart School EV Bus Pilot Program</td>
</tr>
<tr>
<td>Regional EV Plan</td>
</tr>
<tr>
<td>DERMS</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

179. TEP is proposing the following programs:
- the Smart City EV Buildout Plan, to promote EV and to support the
electrification of fleet vehicles;
- the Smart Home EV Pilot Program, to install charging equipment in new and
existing homes;
- the Smart School EV Bus Pilot Program, which would provide up to 125% of
the incremental cost of EV buses, along with charging facilities at qualifying
schools and/or school districts;
- the Regional Electric Vehicle Plan ("REV"), to support the development of
EV interstate and highway infrastructure; and
- the DERMS program, which is a platform enabling TEP to control and
manage EV charging stations. The DERMS platform will be needed to
support the other EV program offerings. The DERMS system is required to
accommodate EV charging technology equipment and to help evaluate and
balance loads and resources.

EV Program Descriptions

180. Below are additional details regarding the five EV and EV-related program proposed
by TEP:

181. Smart City EV Buildout Plan. This program design proposes that TEP invest in
charging stations at workplaces, at multi-family dwellings, in neighborhoods, and on university
campuses. The EV Buildout Plan would support electrification of commercial fleets and the proposed Smart Schools EV Bus Pilot Program.

182. A comparison of the costs associated with charging stations against the savings associated with operating standard electric vehicles indicates that this program is likely to be cost-effective with sufficient participation. For both Level 1 and Level 2\(^3\) Home charging stations, savings appear likely to exceed costs during the useful life of the measures, if predicted costs and savings are close to, or superior to, projected values. The Level 2 Parking Garage and Curb charging stations have a higher initial cost, but are likely to be cost-effective if used in a multi-EV setting. Since fleet vehicle savings are comparable to the residential vehicle savings, economies of scale should enhance the cost-effectiveness of charging stations.

183. The data on the potential cost-effectiveness of DC Fast Charging ("DCFC") stations is less clear. The DCFC stations are significantly more expensive than other options and the level of available savings is difficult to project with certainty. Staff has recommended that individual projects be reviewed to ensure that the projected lifetime savings are likely to exceed projected lifetime costs.

184. TEP states that the Smart City EV Buildout Plan would also involve an up to $8 million investment by TEP in EV infrastructure projects. TEP also states that, under the Buildout Plan, "[n]one of TEP's EV investments made under the buildout plan would be paid for by DSMS funds." (The $450,000 in proposed DSM/EE budgeting would cover administration, implementation, marketing and training costs.)

185. Smart Home EV Pilot Program. This pilot program would provide incentives for new and existing residential homes to have EV charging equipment. For new homes, participating homebuilders will receive a $100 incentive to pre-wire homes to accommodate future EV charging equipment. For existing homes, an incentive equal to 75% of installed cost, up to $500, will be provided to residential customers to retrofit their existing home to accommodate EV charging equipment.

\(^3\) Level 1 charging refers to charging 120 volts (the voltage associated with standard household outlets). Level 2 charging refers to charging, usually at 240 volts, using a charging station.
186. A comparison of the costs and benefits indicates that the Smart Home EV Pilot Program is likely to be cost-effective in a new or existing home with at least one electric vehicle.

187. Although customers are unlikely to retrofit their home for EV charging unless they own, or intend to purchase, an electric vehicle, a newly constructed home wired to accommodate EV may or may not attract buyers with electric vehicles. Staff has recommended that TEP work with participating homebuilders to design the Smart Home EV Pilot Program so that pre-wired EV homes are marketed to individuals or communities with the highest likelihood of EV ownership.

188. Smart School EV Bus Pilot Program. Currently, the very high initial cost of electric buses as compared to standard diesel buses makes them non-cost-effective. Savings over the projected lifespan of electric buses do not compensate for this high initial cost. Staff has recommended that the Commission not approve the bus measure at this time, but that the proposed budget of up to $663,000 be used, instead, to provide energy efficient measures at existing schools, to provide charging stations for staff, students, and their families, and/or for grants that would allow instructors to teach about EE.

189. Staff has also recommended against any incentive exceeding the cost of a measure. Incentives should help to provide as many participants as possible with access to measures, as part of the effort to encourage general adoption of a measure. When incentives are too high, fewer incentives can be provided, thereby limiting participation and, potentially, the general adoption of a measure.

190. Regional Electric Vehicle Program. On October 12, 2017, Arizona signed a Memorandum of Understanding to establish (with other states) a Regional Electric Vehicle Plan for the West ("Rev West Plan"). TEP is proposing a research and development budget of up to $95,000 to support Arizona’s participation in the Rev West Plan. TEP also stated that the budget for the Rev West Plan will support Arizona’s participation by providing EV infrastructure in cooperation with other participants in the Rev West Plan.

191. Distributed Energy Resource Management System ("DERMS") Program. The DERMS program will allow TEP to control and manage charging stations. TEP estimates the cost at $300,000 and states that “[t]he DERMS system is required to accommodate the rapidly evolving..."
EV charging technology equipment and to help evaluate and balance loads and resources.” There will be costs going forward related to the DERMS system, but TEP has not yet sent out an RFI or RFP and does not know what the costs will be.

192. **Cost-effectiveness of EV.** The EE Rules direct that the Societal Test be used to establish the benefit-cost ratio of the program/measure. Most EE measures and programs are evaluated for cost-effectiveness based on the costs associated with implementation and the savings arising from greater energy efficiency (energy and demand). The Societal Test is based on the Total Resource Cost Test, but takes into account non-market (generally non-monetized) benefits, such as savings from reduced emissions. A benefit-cost ratio greater than 1.0 indicates cost-effectiveness.

193. Because EV measures use electricity and replace vehicles which do not, a standard EE evaluation based on the Societal Test would not be informative as to cost-effectiveness. As an alternative, it is possible to compare the projected lifetime costs of EV measures and programs with their projected lifetime savings to determine their cost-effectiveness from a societal perspective. Such a comparison should include, at a minimum, the costs and savings association with: (i) charging station hardware; (ii) charging station installation; (iii) fuel costs (gasoline versus kWh); and (iv) operation and maintenance (“O&M”), for charging stations and vehicles, and for replacement of vehicle batteries. Ongoing costs, such as fuel and O&M should be calculated over the useful life of the measures, and the initial costs of the vehicles themselves should be included in cases where there is a significant difference between EVs and standard vehicles (such as with school buses).

194. The cost-effectiveness of EV measures in practice is currently difficult to predict. As an example, because EV technologies are relatively new, the long-term costs of maintenance have not yet been widely tracked, making projections regarding these costs uncertain. Also, as more consumers adopt EV technology, first costs relative to standard technologies may decrease, thereby improving cost-effectiveness. Ongoing improvements in technology, which reduce production or maintenance costs, or which increase energy savings, may also improve cost-effectiveness. In addition, cost-effectiveness is heavily reliant on the level of participation, which is hard to forecast for any new program or measure.

...
195. Once the EV programs have ramped up, the Company should report on EV participation and the actual savings/costs associated with EV measures in their EE compliance filings.

General Issues: EV

196. **Cost Recovery.** The Company has requested that “the annual revenue requirement associated with EV infrastructure investments under the buildout plan, including return on investment, property tax (if applicable), depreciation expense, and operations and maintenance expenses, be recovered through the DSMS [DSM Surcharge] until such investments can be included in rate base during TEP’s next rate case (subject to Commission approval).”

197. The DSM Surcharge is not the appropriate vehicle for recovering investments in electric infrastructure. Given the size and complexity of these investments, and the need to review for prudence, such investments should be reviewed in a rate case setting. Staff has recommended that investment in infrastructure be recovered not through the DSM Surcharge. However, the Company may request for an accounting order to be utilized and track those expenses for possible recovery in a rate case.

198. **Rate Design.** TEP has requested the approval of a new Residential EV Tariff that incentivizes EV charging during off-peak hours. TEP plans to file the tariff as a compliance matter within 30 days of Commission approval of the requested EV programs.

**TEP’s Proposed 2018 EE Budget**

199. **Budget Impact of Proposed Electric Vehicle Infrastructure Programs.** As stated, TEP has proposed to move up to $2.2 million from existing EE programs to new EV programs, while remaining within the proposed $22,916,762 EE budget. The funds would come out of the Existing Homes and Multi-family EE programs. No funding would be moved out of schools or limited income weatherization program.

200. **Staff has recommended that any budget shifts be shown in the budget tables included in TEP’s Annual Demand-Side Management Progress Report, to be filed in March 2019, and in the next EE Plan filing.**
<table>
<thead>
<tr>
<th>Program</th>
<th>Incentives</th>
<th>Delivery</th>
<th>Marketing</th>
<th>Administration</th>
<th>MER</th>
<th>TEP Proposed Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficient Products</td>
<td>$1,027,100</td>
<td>$634,710</td>
<td>$136,009</td>
<td>$0</td>
<td>$68,005</td>
<td>$1,865,824</td>
</tr>
<tr>
<td>Existing Homes4</td>
<td>$1,795,702</td>
<td>$1,295,228</td>
<td>$49,474</td>
<td>$0</td>
<td>$22,568</td>
<td>$3,162,972</td>
</tr>
<tr>
<td>Low Income Weatherization</td>
<td>$998,979</td>
<td>$1,471</td>
<td>$3,386</td>
<td>$95</td>
<td>$321</td>
<td>$1,004,252</td>
</tr>
<tr>
<td>Multi-Family 5</td>
<td>$2,223,766</td>
<td>$1,880,689</td>
<td>$82,668</td>
<td>$41,334</td>
<td>$62,001</td>
<td>$4,290,458</td>
</tr>
<tr>
<td>Residential Load Management - Pilot Program</td>
<td>$282,900</td>
<td>$987,360</td>
<td>$76,640</td>
<td>$118,600</td>
<td>$110,000</td>
<td>$1,575,500</td>
</tr>
<tr>
<td>Residential New Construction</td>
<td>$690,000</td>
<td>$220,952</td>
<td>$103,111</td>
<td>$0</td>
<td>$14,730</td>
<td>$1,028,794</td>
</tr>
<tr>
<td>Shade Tree</td>
<td>$239,822</td>
<td>$7,715</td>
<td>$3,600</td>
<td>$0</td>
<td>$514</td>
<td>$251,652</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$7,258,269</td>
<td>$5,028,126</td>
<td>$444,990</td>
<td>$152,029</td>
<td>$278,138</td>
<td>$13,179,450</td>
</tr>
<tr>
<td>Non-Residential Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;I Comprehensive Program</td>
<td>$3,336,235</td>
<td>$712,742</td>
<td>$42,425</td>
<td>$42,425</td>
<td>$50,910</td>
<td>$4,184,738</td>
</tr>
<tr>
<td>CHP</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>C&amp;I Demand Response</td>
<td>$0</td>
<td>$700,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$700,000</td>
</tr>
<tr>
<td>Commercial New Construction</td>
<td>$217,513</td>
<td>$29,003</td>
<td>$1,934</td>
<td>$0</td>
<td>$1,289</td>
<td>$249,738</td>
</tr>
<tr>
<td>Community Development - Pilot</td>
<td>$0</td>
<td>$200,000</td>
<td>$250,000</td>
<td>$50,000</td>
<td>$0</td>
<td>$500,000</td>
</tr>
<tr>
<td>Schools</td>
<td>$414,000</td>
<td>$73,000</td>
<td>$5,000</td>
<td>$0</td>
<td>$8,000</td>
<td>$500,000</td>
</tr>
<tr>
<td>Small Business Direct Install</td>
<td>$272,516</td>
<td>$414,626</td>
<td>$28,927</td>
<td>$4,821</td>
<td>$33,749</td>
<td>$754,639</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$3,826,263</td>
<td>$2,056,371</td>
<td>$323,286</td>
<td>$97,246</td>
<td>$85,948</td>
<td>$6,889,115</td>
</tr>
<tr>
<td>Behavioral Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral Comprehensive Program</td>
<td>$343,761</td>
<td>$224,374</td>
<td>$20,168</td>
<td>$0</td>
<td>$7,563</td>
<td>$595,866</td>
</tr>
<tr>
<td>Home Energy Reports</td>
<td>$319,260</td>
<td>$141,734</td>
<td>$326,310</td>
<td>$9,141</td>
<td>$30,886</td>
<td>$827,230</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$663,021</td>
<td>$366,107</td>
<td>$346,478</td>
<td>$9,141</td>
<td>$38,449</td>
<td>$1,423,196</td>
</tr>
<tr>
<td>Support Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Codes and Standards</td>
<td>$0</td>
<td>$25,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$25,000</td>
</tr>
<tr>
<td>Consumer Education and Outreach</td>
<td>$0</td>
<td>$252,000</td>
<td>$140,000</td>
<td>$0</td>
<td>$8,000</td>
<td>$400,000</td>
</tr>
</tbody>
</table>

4 Up to $200,000 will be moved from the proposed budget for the Existing Homes program, to fund EV programs.

5 Up to $2,000,000 will be moved from the proposed budget for the Multi-Family program, to fund EV programs.
Performance Incentive

201. Performance Incentive Calculation. In Decision No. 73912, the Commission set the Performance Incentive at 8% of Net Benefits, capped at $0.0125 per kwh. Eight percent of Net Benefits for 2017 was calculated at $3,196,991 while the cap (total kwh savings multiplied by $0.0125) was calculated at $1,585,224. Based on Decision No. 73912, the cap applies, meaning that the Performance Incentive equals $1,585,224.

<table>
<thead>
<tr>
<th>Performance Incentive Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total kWh Savings</td>
</tr>
<tr>
<td>Total Net Benefits</td>
</tr>
<tr>
<td>8% of Net Benefits</td>
</tr>
<tr>
<td>Cap=total kWh savings x $0.0125</td>
</tr>
<tr>
<td>Performance Incentive for 2017, to be collected in 2018</td>
</tr>
</tbody>
</table>

202. Recommendations. Going forward, if cost-effectiveness is assumed or waived, Staff has recommended that no savings from the Low-Income Program should be taken into account in calculating the Performance Incentive.

DSM Cost Recovery Methodology

203. Per-kWh and Percentage-of-Bill. TEP recovers its DSM costs using two methodologies. Non-residential customers are assessed based on a percentage of their bills, while residential customers are assessed on a per-kWh basis. In its most recent rate case, TEP requested that all its customers be assessed on a percentage of bill basis, while Staff requested that all customers be assessed on a per-kWh basis. In Decision No. 75975, the Commission stated that “the methodology should be consistent across rate payers in order to assure fairness.” Decision No. 75975.
75975 also states that “[t]he record is this proceeding is not sufficiently complete to support changing the method for assessing the DSM surcharge, and . . . it is reasonable to require TEP and Staff to address a uniform methodology for assessing the DSM surcharge in TEP’s next application for a DSM Surcharge reset.” The ordering paragraph indicated that TEP and Staff “shall address a uniform methodology for assessing the DSM surcharge. . . .”

204. Per-kWh Assessment. The per-kWh method of assessment is more transparent and more directly incentivizes energy efficiency. Under this method of assessment each customer pays the same amount per kWh, regardless of the customer’s sector or size. Staff is concerned, however, about the bill impact of the per-kWh EE/DSM methodology on larger non-residential customers, who use a high volume of kWh, but who often have load factors that contribute to the overall efficiency of the system. A per-kWh recovery method may result in significantly higher percentage bill impacts for these customers.

205. TEP is also concerned about the impact on larger customers of transitioning from a percentage of the bill to a per-kWh charge. In addition, Arizonans for Electric Choice and Competition ("AECC") and ASARCO LLC ("ASARCO") filed comments supporting percentage-of-bill assessment for Non-residential customers and suggesting a cap on the annual recovery through the DSMS equal to 3% of TEP’s retail revenues. AECC also recommended that the current DSMS billing method be retained, or that a separate percentage-based rate be developed for residential and non-residential customers.

206. Percentage-of-Bill Assessment. Percentage-of-bill calculation can be less transparent, since such charges are usually based not on the total bill, but on a portion of the bill. As an example, the current percentage-of-bill calculation for non-residential customers is based on the total bill before the Renewable Energy Surcharge ("RES"), Lost Fixed Cost Recovery ("LFCR"), assessments and taxes. In addition, just as per-kWh assessment may negatively impact larger customers, the percentage-of-bill assessment may mean smaller customers ultimately pay more per kWh for DSM/EE recovery than larger Non-residential customers. Due to tariffs or special contracts, large non-residential customers often pay less per kWh, for power, than smaller customers. Since the bills for these large Non-residential customers are based on lower-cost kWh, percentage-
of-bill assessment may result in these Non-residential customers also paying lower costs, per kWh, for DSM/EE recovery. The impact of this method of assessment, however, is limited by being spread over a large pool of customers.

207. **Recommendation.** Staff believes it is reasonable to retain the current method of assessment (Residential = per-kWh; Non-Residential = percentage-of-bill). Continuing the existing approach to recovery would be less disruptive and would permit customers to be assessed using a methodology more tailored to their customer class. Although a consistent methodology for all customers was raised as the fairest approach to EE/DSM recovery, the ordering language of Decision No. 75975 requires only that the issue of a uniform methodology be addressed. Based on its review Staff has recommended that the current method of assessment be retained.

**Plan of Administration**

208. In addition to the TEP EE Plan itself, TEP has submitted a proposed Plan of Administration ("POA") governing administration of the DSM Surcharge. Staff also sought to limit and clarify the types of programs which feed into the Surcharge, to ensure that recovery is for appropriate, cost-effective activities. Staff has recommended that the POA revised by Staff be approved.

209. **Recommendation.** Staff has recommended that the POA be approved, as revised by Commission Staff.

**DSM Reset**

210. **Residential and Non-residential Surcharges.** TEP has proposed to reset the DSM Surcharge from $0.001916 to $0.0028898 per kWh for Residential ratepayers and from 1.9700% to 2.8292% for Non-residential ratepayers. Please see the table below to view all the components of the reset. (The application originally proposed a per-kWh DSM Surcharge of $0.003034, but new data resulted in updated, and lower, numbers.)

211. Below are the calculations for: (i) TEP’s Proposed Residential per-kWh DSM Surcharge; and (ii) TEP’s Proposed Non-residential Surcharge.

...
**TEP's Proposed DSM Residential Surcharge**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Proposed DSM Budget</td>
<td>$22,916,762</td>
</tr>
<tr>
<td>True-up</td>
<td>($184,182)</td>
</tr>
<tr>
<td>Performance Incentive based on 2017</td>
<td>$1,585,224</td>
</tr>
<tr>
<td>Total to be recovered</td>
<td>$24,317,804</td>
</tr>
<tr>
<td>Previous Year's Total kWh Sales</td>
<td>929,062,846</td>
</tr>
<tr>
<td>Total to be recovered/Total Sales=DSM Surcharge</td>
<td>$0.0028898</td>
</tr>
</tbody>
</table>

**TEP's Proposed Non-Residential Percentage-of-Bill Surcharge**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Non-residential Revenues</td>
<td>$472,847,526</td>
</tr>
<tr>
<td>Per-kWh Charge</td>
<td>$0.002889815</td>
</tr>
<tr>
<td>Total Number of Non-residential kWh sold in previous year</td>
<td>4,629,368,727</td>
</tr>
<tr>
<td>Per-kWh charge x Total Non-residential kWh sold in previous year</td>
<td>$13,378,019</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total amount to be recovered from Non-residential customer sector</td>
<td>$13,378,019</td>
</tr>
<tr>
<td>Total amount to be recovered from Non-residential sector/Total Non-residential revenue = % of bill assessment for Non-residential customers (or $13,378,019/$472,847,526 = 2.8292%)</td>
<td>2.8292%</td>
</tr>
</tbody>
</table>

212. Staff has recommended that TEP's proposed reset amounts be approved, at $0.0028898 per kWh for Residential ratepayers and at 2.8292% for Non-residential ratepayers.

**Bill Impacts**

213. The bill impacts of the current and Company-proposed DSM Surcharge based pm average Residential used are shown below.

<table>
<thead>
<tr>
<th>Residential Bill Impact; TEP's Proposed per-kWh Surcharge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Average Residential Usage - kWh</td>
</tr>
<tr>
<td>Current DSM Surcharge</td>
</tr>
<tr>
<td>Current bill impacts</td>
</tr>
<tr>
<td>Proposed DSM Surcharge</td>
</tr>
<tr>
<td>bill impact, proposed surcharge</td>
</tr>
</tbody>
</table>
Compliance with Decision No. 75797

214. As herein discussed, TEP has proposed the Residential Load Management Pilot Program to comply with the language in Decision No. 75797 requiring programs to address (i) peak demand reduction; (ii) peak demand reduction capability; (iii) residential or feeder level demand reduction or load management; and (iv) energy storage technology.

215. In addition, Decision No. 75797 requires that TEP make its best efforts to achieve a 10% reduction in peak demand and a 15% increase in peak demand reduction capability. Although TEP is making efforts to meet the peak demand goals set in Decision No. 75797, the Company has indicated there are budget constraints with respect to achieving these goals. Staff has recommended that TEP continue to make its best efforts to meet the goals set in Decision No. 75797, based on TEP’s approved portfolio budget.

Waiver of EE Standard

216. TEP has requested a waiver pursuant to R14-2-2419 from the Cumulative Annual EE Standard set forth in R14-2-2404(B). TEP anticipates being only slightly below the Standard and states that it will continue to work toward the maximum cost-effective savings possible based on the dollars spent. Staff recommends in favor of the waiver.

DSM and Performance Incentive Calculations; Comments

217. Comments in the Docket include those from Arizonans for Electric Choice and Competition (“AECC”). Among the concerns expressed by AECC is the lack of information in the TEP’s Application regarding how the DSM Surcharge and Performance Incentive are calculated. Staff concurs that this information should be more readily available. Staff recommends that Tucson Electric Power Company provide complete calculations of its Performance Incentive and DSM Surcharge within the body of each DSM/EE Implementation Plan filed with the Commission. The Applications must indicate which programs feed into the Performance Incentive. In years where Tucson Electric Power Company elects not to file an Implementation Plan, the calculations for its Performance Incentive must be reported in its annual compliance filing.

...
CONCLUSIONS OF LAW

1. Tucson Electric Power Company is an Arizona public service corporation within the meaning of Article XV, Section 2, of the Arizona Constitution.

2. The Commission has jurisdiction over Tucson Electric Power Company and over the subject matter of the application.

3. The Commission, having reviewed the application and Staff’s Memorandum dated July 2, 2018, concludes that it is in the public interest to approve Tucson Electric Power Company’s, 2018 EE Plan, as herein discussed.

ORDER

IT IS THEREFORE ORDERED that the Tucson Electric Power Energy Efficiency Plan for 2018 is approved, as modified and discussed herein.

IT IS FURTHER ORDERED that the Residential Load Management Pilot Program is approved, as herein discussed.

IT IS FURTHER ORDERED that the Company work with Staff in developing a cost-effectiveness calculation which takes into account the value of demand response/load management and storage measures and programs.

IT IS FURTHER ORDERED that all decreases in incentives proposed by Tucson Electric Power Company be approved, as herein discussed.

IT IS FURTHER ORDERED that the Commercial Community Development Pilot Program is not approved and that the budget intended for the Commercial Community Development Pilot Program be allocated, instead, to the Schools Program.

IT IS FURTHER ORDERED that the Efficient Products Program be continued with the modifications proposed by Tucson Electric Power Company, including the Energy Star Heat Pump Water Heater, as herein discussed.

IT IS FURTHER ORDERED the Existing Homes Program be continued with the modifications proposed by Tucson Electric Power Company, including the addition of the Energy Star Heat Pump Water Heater, as herein discussed.

...
IT IS FURTHER ORDERED that the Residential New Construction Program be continued with the modifications proposed by Tucson Electric Power Company, as herein discussed.

IT IS FURTHER ORDERED that the Low-Income Weatherization Program per-home cap be increased to $6,000.

IT IS FURTHER ORDERED that Tucson Electric Power Company be allowed to work with additional agencies in order to deliver the Low-Income Weatherization Program.

IT IS FURTHER ORDERED that the requirement that cost-effectiveness for the Low-Income Weatherization Program be waived, but that the Company work to ensure that homes weatherized under the Low-Income Weatherization Program use less energy, overall, than they used prior to weatherization.

IT IS FURTHER ORDERED that no savings from the Low-Income Weatherization Program feed into the Performance Incentive unless and until the Low-Income Weatherization Program is demonstrated to be cost-effective.

IT IS FURTHER ORDERED that the Shade Tree Program be continued as herein discussed, with the proposed increase in Non-residential per-tree charges.

IT IS FURTHER ORDERED that the Shade Tree Program’s summer suspension be approved on a pilot basis and that if Tucson Electric Power Company determines that the summer suspension has a significant negative impact on participation, then the Company should consider eliminating or reducing the suspension period.

IT IS FURTHER ORDERED that the Multi-Family Program is approved for continuation, with the cost-effective new measures and modifications proposed by Tucson Electric Power Company, as herein discussed.

IT IS FURTHER ORDERED that the Small Business Direct Install Program is approved for continuation with the lower caps and other modifications proposed by Tucson Electric Power Company, as herein discussed.

IT IS FURTHER ORDERED that the Schools Energy Efficiency Program be approved to continue with a $150,000 cap.

...
IT IS FURTHER ORDERED that the Commercial New Construction Program be approved with the lower caps, re-introduced AC measure, and new measures proposed by Tucson Electric Power, as herein discussed.

IT IS FURTHER ORDERED the C&I Comprehensive Program be approved with the new measures and modifications proposed by Tucson Electric Power Company, as herein discussed.

IT IS FURTHER ORDERED that the C&I Demand Response Program be continued with the modifications Tucson Electric Power Company has proposed, as herein discussed.

IT IS FURTHER ORDERED that the Combined Heat and Power Program be continued, and that Tucson Electric Power Company work to increase participation.

IT IS FURTHER ORDERED that the Home Energy Reports Program be continued, as herein discussed.

IT IS FURTHER ORDERED that the Behavioral Comprehensive Program be approved with the modifications proposed by Tucson Electric Power Company, as herein discussed.

IT IS FURTHER ORDERED that the Consumer Education and Outreach Program be approved for continuation with an increased focus on providing Tucson Electric Power Company customers with information regarding the value of on-peak savings, as herein discussed.

IT IS FURTHER ORDERED that the Energy Codes and Standards Program be continued, as herein discussed.

IT IS FURTHER ORDERED that Tucson Electric Power Company provide specific reporting on its program activities related to the Energy Codes and Standards Program in its annual DSM report.

IT IS FURTHER ORDERED that the Conservation Voltage Program be continued, as herein discussed.

IT IS FURTHER ORDERED that limitations regarding recovery for costs associated with the Conservation Voltage Program continue in place, and that there be no recovery associated with the Conservation Voltage Program through the DSM Surcharge, the LFCR or the Performance Incentive.

...
IT IS FURTHER ORDERED that the Generation Improvement and Facilities Upgrade Program be continued, as herein discussed.

IT IS FURTHER ORDERED that limitations regarding recovery for costs associated with the Generation Improvement and Facilities Upgrade Program continue in place, and that there be no recovery associated with the Generation Improvement and Facilities Upgrade Program through the DSM Surcharge, the LFCR or the Performance Incentive.

IT IS FURTHER ORDERED that the Appliance Recycling, Bid for Efficiency, and Retro-Commissioning Programs be approved for discontinuance as proposed by Tucson Electric Power Company.

IT IS FURTHER ORDERED that the DSM Surcharge be set at $0.0028898 per kWh for Residential customers.

IT IS FURTHER ORDERED that the DSM Surcharge be set at 2.8292% of Non-residential customer bills, before RES, LFCR, assessments and taxes.

IT IS FURTHER ORDERED that Tucson Electric Power Company continue to work toward meeting the goals stated in Decision No. 75797, based on its approved portfolio budget.

IT IS FURTHER ORDERED that Tucson Electric Power Company will provide complete calculations of its Performance Incentive and DSM Surcharge within the body of each DSM/EE Implementation Plan which it files with the Commission. The Applications must also indicate which programs feed into the Performance Incentive. In years where Tucson Electric Power Company elects not to file an Implementation Plan, the calculations for its Performance Incentive must be reported in its annual compliance filing.

IT IS FURTHER ORDERED that Tucson Electric Power Company be allowed the flexibility to shift funding from existing EE programs into the EV programs proposed in the Supplement, as discussed herein.

IT IS FURTHER ORDERED that any budget shifts used to fund EV programs be shown in the budget tables included in Tucson Electric Power Company's Annual Demand-Side Management Progress Report, to be filed in March 2019, and in the next EE Plan filing.

...
IT IS FURTHER ORDERED that the Smart School EV Bus measure is not approved at this
time, but that the proposed budget shall be used, instead, to provide EE measures at existing schools,
to provide charging stations for staff, students, and their families, and/or for grants that would allow
instructors to teach about EE.

IT IS FURTHER ORDERED that the other EV programs and measures be approved, as
discussed herein.

IT IS FURTHER ORDERED that, once the EV programs have ramped up, the Company
should report on participation and actual savings/costs associated with EV measures in its EE
compliance filings.

IT IS FURTHER ORDERED that TEP work with participating homebuilders to design the
Smart Home EV Pilot Program so that pre-wired EV homes are marketed to individuals or
communities with the highest likelihood of EV ownership.

IT IS FURTHER ORDERED that no incentive exceed the cost of a measure.

IT IS FURTHER ORDERED that investment in infrastructure be recovered not through the
DSM Surcharge, but, instead, be reviewed and recovered for (as appropriate) in the next rate case.
IT IS FURTHER ORDERED that, pursuant to R14-2-2419, the Standard set forth in R14-2-2404(B) be waived for 2018.

IT IS FURTHER ORDERED that the Plan of Administration submitted by Tucson Electric Power Company and revised by Staff is approved.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION

CHAIRMAN FORESE

COMMISSIONER DUNN

COMMISSIONER TOBIN

COMMISSIONER LITTLE

COMMISSIONER BURNS

IN WITNESS WHEREOF, I, TED VOGT, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this ______ day of ______________________, 2018.

TED VOGT
EXECUTIVE DIRECTOR

DISSENT:

DISSENT:

EOA:JMK:red/WVC

Decision No. ______
Tucson Electric Power Company  
Docket No. E-01933A-17-0250

Mr. Michael Patten  
Snell & Wilmer, LLP  
One Arizona Center  
400 East Van Buren Street  
Suite 1900  
Phoenix, Arizona 85004  
docket@swlaw.com  
bcarrill@tep.com  
jthomes@swlaw.com  
mpatten@swlaw.com  
mdecorse@tep.com

Consent to Service by Email

Mr. Andy Kvesic  
Director/General Counsel, Legal Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007  
legaldiv@azcc.gov  
utildivservicebymail@azcc.gov  
ndavis@azcc.gov

Consent to Service by Email

Decision No. _________
Tucson Electric Power Company
Demand Side Management Surcharge
Plan of Administration

Table of Contents

1. GENERAL DESCRIPTION ................................................................. 1
2. DEFINITIONS .................................................................................. 1
3. FILING AND PROCEDURAL DEADLINES ........................................ 1
4. RATE SCHEDULE APPLICABILITY .................................................. 2
5. ALLOWABLE COSTS ........................................................................ 2
6. PERFORMANCE INCENTIVE ............................................................ 3
7. TRUE-UP COMPONENT .................................................................... 3
8. CALCULATION OF THE DSM SURCHARGE ................................. 3
9. REVIEW PROCESS ........................................................................... 4
10. SCHEDULES .................................................................................. 4
1. GENERAL DESCRIPTION

This document describes the plan for administering the Demand Side Management Surcharge ("DSMS") approved for Tucson Electric Power Company ("TEP" or "Company") by the Arizona Corporation Commission ("Commission") pursuant to the Electric Energy Efficiency Standards, A.A.C. R14-2-2401 et seq.

The DSMS described in this Plan of Administration ("POA") provides for the recovery of Demand Side Management ("DSM") program costs, including energy efficiency and demand response programs, and energy efficiency performance incentives. The DSMS is applied to all residential customers' bills as a monthly per-kilowatt-hour ("kWh") charge. The DSMS is applied to all non-residential customers' bills as a percentage of their total monthly bill amount.

2. DEFINITIONS

DSM - Demand-Side Management, the implementation and maintenance of one or more energy efficiency and/or demand-related programs.

DSM Program - One or more DSM measures provided as part of a single offering to customers.

DSMS Tariff - The Commission-approved schedule of rates designed to recover TEP's reasonable and prudent costs of complying with the Energy Efficiency Standards.

EEIP - Energy Efficiency Implementation Plan.

Energy Efficiency - The production or delivery of an equivalent level and quality of end-use electric service using less energy, or the conservation of energy by end-use customers.

Energy Efficiency Standard or Standard - The reduction in retail energy sales, as a percentage of total kWh sales, required to be achieved through TEP's approved DSM programs as prescribed in A.A.C R14-2-2404.

Energy Savings - The reduction in a customer's energy consumption directly resulting from a DSM program, expressed in kWh.

Measurement, Evaluation and Research (or "MER") - The third party measurement, evaluation, and research process.

Net Benefits - The incremental benefits resulting from DSM minus the incremental costs of DSM.

Program Costs - The costs associated with the design, implementation, management and compliance, contained in TEP's EEIP and incurred by the Company, which otherwise would not be incurred without the Commission's energy efficiency mandate and which are not recovered through base rates.

All other terms and definitions associated with the DSMS are contained in A.A.C. R14-2-2401.

3. FILING AND PROCEDURAL DEADLINES

Changes to the EE Implementation Plan ("EEIP") will be filed with the Commission in accordance with the Standard, A.A.C. R14-2-2405(A):

Decision No.
“Except as provided in R14-2-2418, on June 1 of each odd year, or annually at the election of each affected utility, each affected utility shall file with Docket Control, for Commission review and approval, an implementation plan describing how the affected utility intends to meet the energy efficiency standard for the next one or two calendar years, as applicable, except that the initial implementation plan shall be filed within 30 days of the effective date of this Article.”

Requested changes to the DSMS will be filed with the Commission in accordance with the following sections of the EE Standards:

a. Implementation Plans, A.A.C. R14-2-2405(B)(2):
   “Except for the initial implementation plan, which shall describe only the next calendar year, a description of how the affected utility intends to comply with this Article for the next two calendar years, including an explanation of any modification to the rates of an existing DSM adjustment mechanism or tariff that the affected utility believes is necessary.”

b. Implementation Plans, A.A.C. R14-2-2405(B)(5):
   “A DSM Tariff filing complying with R14-2-2406(A) or a request to modify and reset an adjustment mechanism complying with R14-2-2406(C), as applicable;”

c. DSM Tariffs, A.A.C. R14-2-2406(C)
   “If an affected utility has an existing adjustment mechanism to recover the reasonable and prudent costs associated with implementing DSM programs, the affected utility may, in lieu of making a tariff filing under subsection (A), file a request to modify and reset its adjustment mechanism by submitting the information required under subsections (A)(1) and(3).”

If TEP does not file an EEIP in the even-numbered year, the Company may file proposed modifications to the EEIP if TEP or the Commission determines a change or addition is necessary.

4. RATE SCHEDULE APPLICABILITY
The DSMS shall be applied monthly to every customer unless exempted by order of the Commission.

5. ALLOWABLE COSTS
Program Costs ("PC") recovered through the DSMS include, but are not limited to, the following: DSM Program development, implementation, marketing and promotion, administrative and general, legal, reporting, training and technical assistance, marketing and communications, monitoring and metering, advertising, educational expenditures, customer incentives, research and development, data collection, tracking and information technology systems, self-direction costs, MER, demonstration facilities and all other activities required to design and implement cost-effective DSM Programs included in the EEIP and approved by the Commission.

TEP includes wages and salaries for employees working to plan, implement, or manage DSM Programs in TEP base rates. If, due to the lag between rate cases, actual labor costs for employees working to plan, implement, or manage DSM Programs, exceed the amount approved in base

Decision No.__________________
rates, the incremental labor cost will be allocated among programs and included into the calculation of the DSMS.

Unless otherwise ordered by the Commission, TEP includes allowable program costs for all approved programs in the DSMS calculation.

If any DSM Programs generate revenue, any such revenue will be included as a credit in the calculation of the DSMS.

6. PERFORMANCE INCENTIVE

The Performance Incentive ("PI"), as approved by the Commission in Decision No. 73912 (June 27, 2013), is calculated using the lesser of: (i) 8% of the calculated Net Benefits; or (ii) the annual kWh savings from certain approved DSM Programs included in the third party MER report, multiplied by $0.0125 per kWh, with the exception of Utility Sector programs, Support Sector programs, or any specifically excluded program. Savings from the Low-Income Weatherization Program should also be excluded unless and until the program is shown to have a benefit-cost ratio of over 1.0.

7. TRUE-UP COMPONENT

The True-Up Component is intended to refund or recover the balance of Program Costs and Performance Incentives that have been under- or over- recovered during the previous EE Plan year. The True-Up Component will be included in the calculation of the subsequent year’s DSMS.

The True-Up Component will be calculated by subtracting actual Program Costs and Program Incentives from the DSMS collections and accruals for the EE Plan year ending December 31.

8. CALCULATION OF THE DSM SURCHARGE

TEP is filing this revised DSMS as part of its EE Implementation Plan.

The DSMS is included in Schedule 1, and summarized as follows:

\[
\text{Residential DSMS} = \frac{(PC - TU + PI)}{E_{Tot}}
\]

\[
\text{Non-residential DSMS} = \frac{(PC - TU + PI) \times (1 - \frac{E_{Res}}{E_{Tot}})}{R_{Tot} - R_{Res}}
\]

Where:

\( PC = \) Program Costs as defined in Section 5 forecast for the upcoming year.
\( PI = \) Performance Incentives as defined in Section 6 forecast for the upcoming year.
\( TU = \) "True-Up" component balance as defined in Section 7.
\( E_{Tot} = \) Total retail electric sales (kWh) for the previous calendar year.
The DSMS, and the effective date, is subject to review and approval by the Commission pursuant to A.A.C. R14-2-2406(B).

10. SCHEDULES

The following schedules are attached to this Plan of Administration:

- Schedule 1: DSMS Calculations
- Schedule 2: TEP Operating Revenue
- Schedule 3: DSMS Balance
<table>
<thead>
<tr>
<th>Line</th>
<th>Proposed DSM Budget and Adjustments</th>
<th>Proposed DSM Budget and Adjustments</th>
<th>Previous Year's Retail Sales (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Proposed DSM Budget</td>
<td>Schedule 3, Column A, Line 11</td>
<td>Schedule 2, Column C, Line 6</td>
</tr>
<tr>
<td>2</td>
<td>True-up</td>
<td>Schedule 3, Column E, Line 10</td>
<td>Schedule 2, Column C, Line 12</td>
</tr>
<tr>
<td>3</td>
<td>Previous Year's Performance Incentive</td>
<td>Schedule 3, Column B, Line 11</td>
<td>Schedule 2, Column C, Line 18</td>
</tr>
<tr>
<td>4</td>
<td>Total Annual DSM Recovery for Proposed Implementation Plan Year</td>
<td>Column A: Line 1 - Line 2 + Line 3</td>
<td>Schedule 2, Column C, Line 24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Schedule 2, Column C, Line 30</td>
</tr>
<tr>
<td>5</td>
<td>Residential</td>
<td>Schedule 2, Column E, Line 6</td>
<td>Schedule 2, Column C, Line 5</td>
</tr>
<tr>
<td>6</td>
<td>Commercial</td>
<td>Schedule 2, Column E, Line 12</td>
<td>Schedule 2, Column C, Line 10</td>
</tr>
<tr>
<td>7</td>
<td>Industrial</td>
<td>Schedule 2, Column E, Line 18</td>
<td>Schedule 2, Column C, Line 24</td>
</tr>
<tr>
<td>8</td>
<td>Mining</td>
<td>Schedule 2, Column E, Line 24</td>
<td>Schedule 2, Column C, Line 30</td>
</tr>
<tr>
<td>9</td>
<td>Other</td>
<td>Schedule 2, Column E, Line 30</td>
<td></td>
</tr>
</tbody>
</table>

**Residential DSMs for Proposed Budget**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>DSMS for All Rate Classes if Collected as $/kWh of Retail Sales ($/kWh)</td>
<td>Column A, Line 4 / Column B, Line 10</td>
</tr>
<tr>
<td>12</td>
<td>DSMS for All Rate Classes if Collected as a Percentage of Retail Revenue (%)</td>
<td>Column A, Line 4 / Column A, Line 10</td>
</tr>
</tbody>
</table>

**Residential DSMs for Proposed Budget**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>DSMS for Residential Customers (% of Residential Retail Revenue)</td>
<td>Column A, Line 12</td>
</tr>
<tr>
<td>14</td>
<td>DSM Recovery Collected from Residential Customers (% of Residential Retail Revenue)</td>
<td>Column A, Line 13 * Column A, Line 5</td>
</tr>
<tr>
<td>15</td>
<td>DSMS for Residential Customers ($/kWh)</td>
<td>Column A, Line 11</td>
</tr>
<tr>
<td>16</td>
<td>DSM Recovery Collected from Residential Customers ($/kWh)</td>
<td>Column A, Line 15 * Column B, Line 5</td>
</tr>
</tbody>
</table>

**Non-residential DSMs for Proposed Budget**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Previous Year's Non-residential Retail Revenue ($)</td>
<td>Column A, Line 10 - Column A, Line 5</td>
</tr>
<tr>
<td>18</td>
<td>Previous Year's Non-residential Retail Sales (kWh)</td>
<td>Column B, Line 10 - Column B, Line 5</td>
</tr>
<tr>
<td>19</td>
<td>DSMS for Non-residential Customers ($/kWh)</td>
<td>Column A, Line 11</td>
</tr>
<tr>
<td>20</td>
<td>DSM Recovery Collected from Non-residential Customers ($/kWh)</td>
<td>Column A, Line 19 * Column A, Line 18</td>
</tr>
<tr>
<td>21</td>
<td>DSMS for Non-residential Customers (% of Non-residential Retail Revenue)</td>
<td>Column A, Line 20 / Column A, Line 17</td>
</tr>
<tr>
<td>Line</td>
<td>Retail Sales</td>
<td>Column A</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average Customers 20XX</td>
</tr>
<tr>
<td>1</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Residential Total</td>
<td>Column A: Sum of Lines 1 through 5</td>
</tr>
<tr>
<td>7</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>Commercial Total</td>
<td>Column A: Sum of Lines 7 through 11</td>
</tr>
<tr>
<td>13</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>15</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>16</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>17</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>18</td>
<td>Industrial Total</td>
<td>Column A: Sum of Lines 13 through 17</td>
</tr>
<tr>
<td>19</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>20</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>21</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>22</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>23</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>24</td>
<td>Mining Total</td>
<td>Column A: Sum of Lines 19 through 23</td>
</tr>
<tr>
<td>25</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>26</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>27</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>28</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>29</td>
<td>###</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>Other Total</td>
<td>Column A: Sum of Lines 25 through 29</td>
</tr>
</tbody>
</table>
## SCHEDULE 3

### Tucson Electric Power Company - Historical DSM Expenses vs Surcharge Balance

<table>
<thead>
<tr>
<th>Line</th>
<th>Column A</th>
<th>Column B</th>
<th>Column C</th>
<th>Column D</th>
<th>Column E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year</td>
<td>DSM Expenses ($)</td>
<td>Performance Incentive ($) (Collected Following Year)</td>
<td>DSMS Collection ($)</td>
<td>Annual Over(+) / Under(-) Collected ($)</td>
</tr>
<tr>
<td>1</td>
<td>2008</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 1: Column C - Column B - Column A</td>
</tr>
<tr>
<td>2</td>
<td>2009</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 2: Column C - Column B - Column A</td>
</tr>
<tr>
<td>3</td>
<td>2010</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 3: Column C - Column B - Column A</td>
</tr>
<tr>
<td>4</td>
<td>2011</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 4: Column C - Column B - Column A</td>
</tr>
<tr>
<td>5</td>
<td>2012</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 5: Column C - Column B - Column A</td>
</tr>
<tr>
<td>6</td>
<td>2013</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 6: Column C - Column B - Column A</td>
</tr>
<tr>
<td>7</td>
<td>2014</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 7: Column C - Column B - Column A</td>
</tr>
<tr>
<td>8</td>
<td>2015</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 8: Column C - Column B - Column A</td>
</tr>
<tr>
<td>9</td>
<td>2016</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Line 9: Column C - Column B - Column A</td>
</tr>
</tbody>
</table>

### Tucson Electric Power Company - Forecasted DSM Expenses vs. Surcharge Balance

<table>
<thead>
<tr>
<th>Year</th>
<th>DSM Expenses (Forecasted)</th>
<th>Performance Incentive (Collected Following Year)</th>
<th>DSMS Collection (Forecasted)</th>
<th>Annual Over(+) / Under(-) Collected</th>
<th>True-Up Component Cumulative Over(+) / Under(-) Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>2017</td>
<td>-</td>
<td>-</td>
<td>Line 10: Column C - Column B - Column A</td>
<td>Column E, Line 9 + Column D, Line 10</td>
</tr>
<tr>
<td>11</td>
<td>2018</td>
<td>-</td>
<td>-</td>
<td>Line 11: Column C - Column B - Column A</td>
<td>Column E, Line 10 + Column D, Line 11</td>
</tr>
<tr>
<td>12</td>
<td>2019</td>
<td>-</td>
<td>-</td>
<td>Line 12: Column C - Column B - Column A</td>
<td>Column E, Line 11 + Column D, Line 12</td>
</tr>
<tr>
<td>13</td>
<td>2020</td>
<td>-</td>
<td>-</td>
<td>Line 13: Column C - Column B - Column A</td>
<td>Column E, Line 12 + Column D, Line 13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Totals</th>
<th>Column A: Sum of Lines 1 through 13</th>
<th>Column B: Sum of Lines 1 through 13</th>
<th>Column C: Sum of Lines 1 through 13</th>
<th>Column D: Sum of Lines 1 through 13</th>
</tr>
</thead>
</table>

Decision No.