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SOUTHWEST ENERGY EFFICIENCY PROJECT

Saving Money and Protecting the Environment Through More Efficient Energy Use

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Arizona Corporation Commission

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March 7, 2016

Arizona Corporation Commission
1200 West Washington
Phoenix, AZ 85007-2996

DOCKETED BY

Re: E-00000J-14-0023, In the matter of the Commission's Investigation of Value and Cost of Distributed Generation

Dear Chairman and Commissioners,

The Southwest Energy Efficiency Project (SWEEP) appreciates the opportunity to submit this letter in response to questions from several Commissioners in this docket about energy efficiency and the unique role that energy efficiency (EE) plays as an electricity system resource.

1. Energy efficiency is Arizona's least expensive energy option.

The 2014 Integrated Resource Plans of Arizona Public Service Company (APS) and Tucson Electric Power (TEP) reveal that EE is the lowest-cost energy resource available to meet current and future customer needs. Figure SWEEP-1 and SWEEP-2 compare TEP's and APS' energy resource costs in each utility's plan. TEP estimates the next most affordable resource to be a combined cycle natural gas plant — a resource that is 1.5-to-2 times more expensive than EE.

Notably, both APS and TEP estimate EE costs that are several times the actual cost of EE in recent years. Even with EE cost assumptions that are far higher than actual experience-to-date, EE remains the lowest cost resource available in Arizona.¹ (See Figure SWEEP-1 and SWEEP-2, at the lower left, which show APS' and TEP's actual cost of EE programs in recent years.)

Because EE is the least expensive energy resource available, all customers benefit from EE investment because they would otherwise pay for more expensive options to meet energy needs.

2. Arizona's energy efficiency investments are required to be cost-effective and are systematically monitored to ensure cost effectiveness.

¹ SWEEP does not agree with APS' and TEP's projected EE program costs. These costs are higher than necessary and higher than what we have observed in mature Demand Side Management portfolios in other states.



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Arizona's energy efficiency investments are required to be cost-effective and are systematically monitored to ensure cost effectiveness. Analysis, review, and monitoring occur through the Demand Side Management Plan development, review, and approval process and through the Commission's semi-annual and annual reporting process. Programs and offerings are cancelled if cost effectiveness criteria cannot be met. The cost effectiveness analysis directly compares EE with the next best resource, which is typically a natural gas investment. Because EE programs are required to be cost effective, all customers benefit from them even if they do not participate in them.

3. The budgets for and cost of Arizona's energy efficiency programs are transparent; regularly reviewed and approved by the Commission; and systematically and rigorously monitored.

The budgets for and cost of energy efficiency programs are clear and transparent. The Commission's Demand Side Management Plan development, review, and approval process (which takes place every one-to-two years) and the Commission's semi-annual and annual reporting process ensure that the costs of energy efficiency investments are well documented and publicly available. Costs are reported for each individual program and for each subcategory of program expense including marketing, training, administration, rebates and incentives, etc. **In this manner, SWEEP believes that energy efficiency is the most closely and rigorously monitored resource of all Arizona utility investments.** This close monitoring also enables the Commission to adjust energy efficiency investment levels and priorities as needed or to achieve greater cost effectiveness.

This regular reporting of EE budgets and costs has revealed that EE is costing Arizona less than anticipated. In addition, Arizona has one of the lowest costs of energy efficiency in the country. A recent Lawrence Berkeley National Laboratory analysis of annual EE program data in 34 states, which examined 5,900 program years worth of data from 2009-2013, found that Arizona has the third lowest total resource cost of saved energy in the country in terms of utility dollars spent per kWh saved. (Only North Carolina and Maine have lower costs.) Arizona's cost is also significantly lower than the national average.²

4. Unlike many utility investments, Arizona's energy efficiency programs serve a significant percentage of ratepayers and are positioned to engage ALL Arizona ratepayers in the coming years. All customers have an opportunity to participate in

² Lawrence Berkeley National Laboratory, "The Total Resource Cost of Saved Energy for Utility Customer-Funded Energy Efficiency Programs," Presented at the November 17, 2014, NARUC Annual Meeting, http://emp.lbl.gov/sites/all/files/TR%20CSE_NARUC_111714_Final%20Release.pdf



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the programs and receive EE services.

Few utility investments are designed to serve all ratepayers. For example, a new power plant is primarily built to serve new customers versus existing ones. Similarly, a substation investment does not benefit all utility system customers even though all utility customers pay for that investment. In comparison, Arizona's energy efficiency programs have already served a significant percentage of Arizona ratepayers. For example:

- In 2014 APS reported that 40% of its customers have already participated in its EE programs.³
- In 2012 alone ~400,000 of APS' 1.1 million customers participated in programs.⁴

Arizona's EE programs are also positioned to serve all ratepayers in the coming years. Indeed EE strategies like Conservation Voltage Reduction (CVR) and Residential and Business Home Energy Reports can be made available to all Arizona ratepayers. Other utilities are deploying these strategies to maximize engagement. For instance, Public Service of Colorado recently reported that a system-wide rollout of CVR would deliver 2% energy savings for all customers.⁵ Notably, the Arizona Commission recently took steps to support increased deployment of these and other EE strategies.

5. Energy efficiency is one of Arizona's most diverse resources because it serves the full range of residential and commercial segments.

Arizona's EE programs are unique in that they serve a very diverse set of ratepayers. Programs are designed to touch all customer segments in the residential, commercial, and industrial sectors. In the residential sector, programs are specially tailored for limited-income customers, renters, homeowners, and consumers who are renovating and building new homes — to name a few. In the commercial and industrial sector, programs are specially designed for businesses and industrial customers of all sizes - mom and pop, small, large, and mid-sized. Programs are also designed to serve the public sector including schools and municipalities.

6. Energy efficiency is one of Arizona's most diverse resources because it is made of up a diverse set of strategies, products, programs, and technologies.

³ Ryan Randazzo, Arizona Republic, "Energy efficiency programs that could be cut have helped thousands of consumers," November 14, 2014.

⁴ Wayne Dobberpuhl, Arizona Public Service Company, "APS DSM Program Overview," September 24, 2013.

⁵ See Docket E-00000J-13-0375



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The energy efficiency resource is composed of a very diverse set of strategies, products, technologies, and programs aimed to reduce energy waste caused by equipment, operations, and behavior. Programs support more efficient lighting, air conditioning, water heating, building insulation, behavior change, more efficient processing and manufacturing improvements, building energy codes, appliance standards, and demand response — to name a few.

This diversity of the energy efficiency resource in terms of the products and services it provides and the ratepayers it serves enables energy efficiency to have several important impacts on the utility system. As a result energy efficiency reduces the system peak and load during all hours of the day. In fact, in general energy efficiency is “load-following” and therefore has the same shape as system load and contributes twice as much during peak times versus off-peak hours.⁶

7. Energy efficiency is an extremely flexible resource that can be temporally and geographically targeted to address the greatest needs of the utility system.

Energy efficiency is an extremely flexible resource in a number of ways. It can be temporally targeted to provide savings in key hours of system stress. In this way it can reduce the need for additional resources by reshaping the net load curve and flattening ramps. Indeed many energy efficiency measures have a higher-level of peak-orientation. Examples include more efficient commercial lighting and controls, and residential and commercial air conditioning.⁷

EE programs can also be geographically targeted to certain customers and localities to provide savings in key locations of system stress. These characteristics provide more flexibility in system planning and operations.

8. Energy efficiency programs take advantage of natural market opportunities to infuse energy efficiency into ratepayer decision-making.

By design, EE programs often piggyback on market opportunities, such as when customers buy a new home, replace an air conditioner or appliance, or change old or buy new equipment. EE programs are designed to build on and take advantage of these natural market opportunities for two reasons. First, it is easier and more effective to encourage a customer to purchase an EE option or upgrade when they are already thinking of making a purchase. Second, and very importantly, the cost to ratepayers for financial incentives during a natural market opportunity are lower than if the programs tried to encourage customers to retrofit their buildings. This practice results in lower program costs and lower

⁶ Regulatory Assistance Project, “Teaching the Duck to Fly: Second Edition,” February 2016.

⁷ Ibid.



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costs for ratepayers, as well as higher adoption of efficient measures in the marketplace. Therefore it is important for EE programs to “be in the market” and to capture these opportunities in the natural market, in all years, which also contributes to building up the EE resource over time. Each missed opportunity in the market will result in higher utility bills for that customer, and ultimately higher total costs for all ratepayers.

Thank you for the opportunity to submit these comments.

Respectfully submitted this 7th day of March 2016 by:

Jeff Schlegel & Ellen Zuckerman
Southwest Energy Efficiency Project

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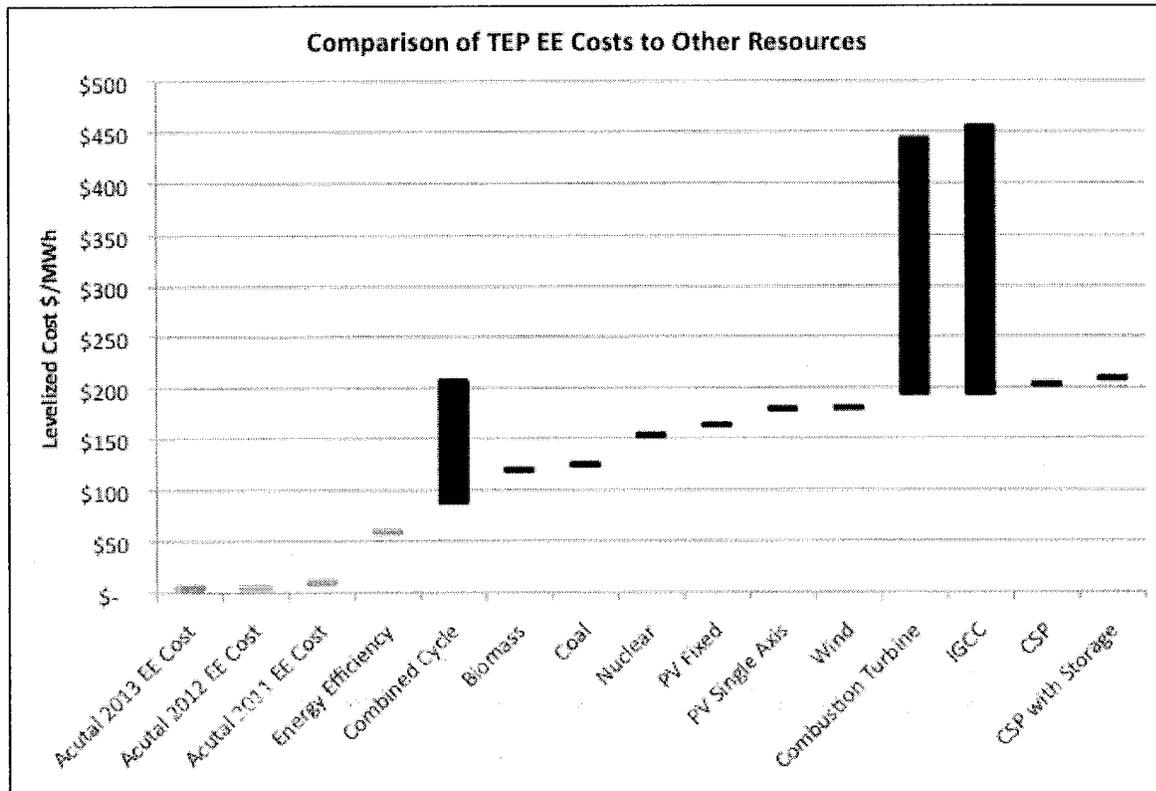
Docket Control
ARIZONA CORPORATION COMMISSION
1200 West Washington Street
Phoenix, Arizona 85007



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Figure SWEEP-1: Energy Efficiency is the Least Expensive Energy Resource Available to Meet TEP's Customer Needs



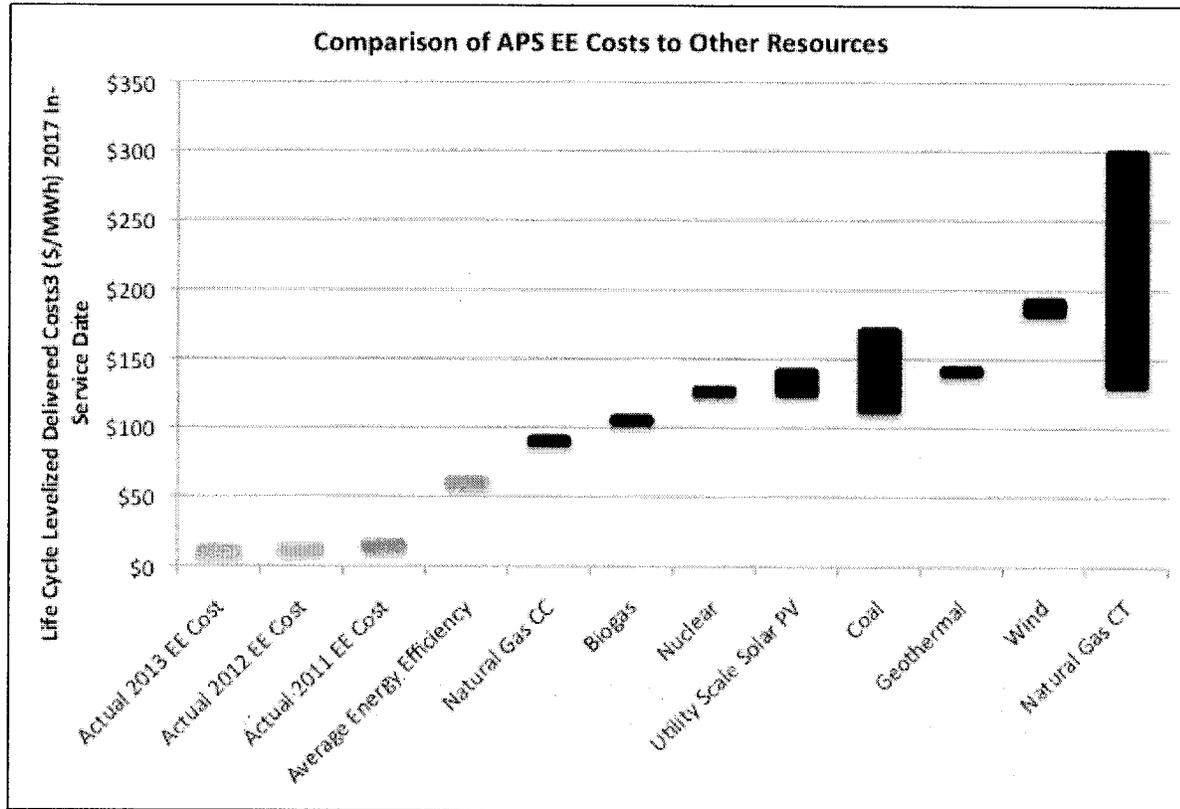
EE (shown in orange) is the least expensive energy resource available according to TEP's 2014 IRP. TEP's estimated cost of EE in its 2014 IRP is several times the actual cost of EE in recent years (2011-2013, see three leftmost orange bars). Even with EE cost assumptions that are far higher than actual experience-to-date, EE remains TEP's lowest cost resource. Data Sources: TEP 2014 IRP, TEP 2011-2013 Demand Side Management Reports



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Figure SWEEP-2: Energy Efficiency is the Least Expensive Energy Resource Available to Meet APS' Customer Needs



EE (shown in orange) is the least expensive energy resource available according to APS' 2014 IRP. APS' estimated cost of EE in its 2014 IRP is several times the actual cost of EE in recent years (2011-2013, see three leftmost orange bars). Even with EE cost assumptions that are far higher than actual experience-to-date, EE remains APS' lowest cost resource. Data Sources: APS 2014 IRP; APS 2011, 2012, and 2013 Annual Demand Side Management Reports