



### Arizona Electric Utility Energy Efficiency Programs: A Success Story

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#### History

- Electric utility energy efficiency programs in Arizona ramped up starting in 2005 as a result of energy efficiency provisions in utility rate case settlement agreements.
- The Arizona Corporation Commission (ACC) unanimously approved an Electric Energy Efficiency Resource Standard (EERS) in 2010. The standard requires the state's regulated utilities, including Arizona Public Service Company (APS) and Tucson Electric Power (TEP), to save 22% of electricity sales in 2020 as a result of energy efficiency programs implemented during 2011-2020. Up to 2% of the total savings can be attained through credits from demand response programs.
- The ACC has adopted a policy statement to address utility financial disincentives to promoting energy savings. The policy allows regulated utilities to propose full revenue decoupling, which has been approved for the state's largest natural gas utility (Southwest Gas Co.), or other mechanisms. APS and TEP have proposed and received approval of lost revenue recovery and performance-based shareholder incentive mechanisms.
- The state's second largest electric utility, Salt River Project (SRP), is a public power provider not regulated by the ACC. SRP established its own policy to meet 20% of its customers' energy requirements through energy efficiency and renewable energy by 2020. The policy also includes annual energy savings goals for the utility's energy efficiency programs.

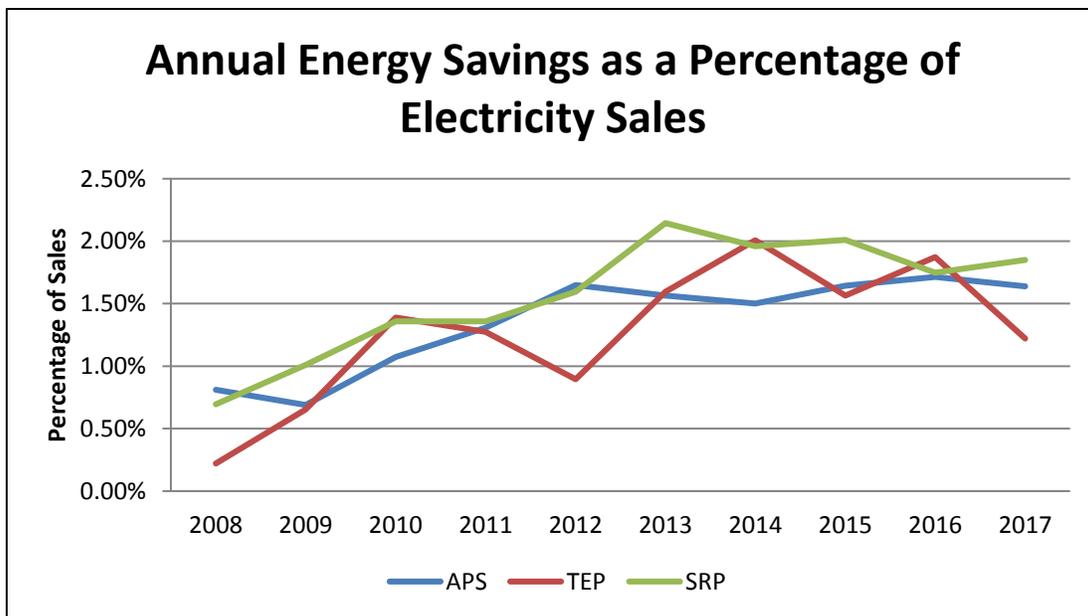
#### Utility Energy Efficiency Programs

- The state's largest electric utility, APS, serves about 1.2 million customers. Through 2017, APS implemented a comprehensive portfolio of energy efficiency programs including traditional rebates for all types of efficiency measures, encouraging behavior change, dedicated funding for energy efficiency improvements in schools, and support for implementation of codes and standards. As of the end of 2017, APS was on track to meet the state's EERS requirements.
- TEP serves more than 420,000 customers in the Tucson area. It also has been implementing a comprehensive set of residential and commercial/industrial programs including behavior change programs. As of the end of 2017, TEP was slightly below the interim goal included in the state's EERS requirements.
- SRP serves about one million customers in and around Phoenix. It implements a wide range of energy efficiency incentive programs for its residential and business customers as well as a large-scale prepaid metering and energy education program. SRP also supports building energy code adoption and compliance.

#### Impacts of Energy Efficiency Programs

- As shown in the figure and table below, APS, TEP and SRP significantly expanded their energy efficiency programs and increased energy savings since 2008. Combined, these three utilities helped their customers realize electricity savings of approximately 7.8 billion kWh in 2017 from programs implemented during 2008-17. The savings are equal to about 12% of total electricity use by customers of these three utilities in 2017.

- The projected net economic benefits from utility efficiency programs operated by the three utilities during 2008-17 totals \$3.3 billion, according to the utilities' own estimates. This is equivalent to eleven months of electricity bills paid by the 2.4 million residential customers of the three utilities.
- The energy efficiency programs implemented during 2008-17 resulted in water savings of around 2.6 billion gallons in 2017 from the reduced operation of thermal power plants, enough to supply about 19,000 typical Arizona households.
- As a result of energy efficiency programs we estimate that the utilities cut their CO<sub>2</sub> emissions in 2017 by around 5.5 million metric tons, the equivalent of taking approximately 1.1 passenger vehicles off the road.
- Energy savings increased significantly during 2008-17 as the chart below shows. According to the American Council for an Energy-Efficient Economy, **Arizona is now one of the top states in the country with respect to utility energy savings achievement.**



### DSM Program Results of Arizona's Largest Electric Utilities

|  | 2008 | 2009 | 2010 | 2011 | 2012 | 2013  | 2014  | 2015  | 2016  | 2017  | Total |
|--|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| Spending (\$ M)  | 35   | 51   | 83   | 103  | 113  | 119   | 116   | 125   | 123   | 114   | 982   |
| Electricity Savings (GWh/year)                                 | 451  | 520  | 781  | 851  | 976  | 1,182 | 1,138 | 1,163 | 1,137 | 1,099 | 7,800 |
| Savings as a % of Retail Sales                                 | 0.68 | 0.82 | 1.24 | 1.32 | 1.52 | 1.81  | 1.77  | 1.79  | 1.75  | 1.69  | NA    |
| Peak Reduction (MW)  | 54   | 94   | 130  | 188  | 220  | 257   | 278   | 290   | 319   | 289   | NA    |
| Net Economic Benefits (\$ M)                                   | 104  | 130  | 290  | 290  | 428  | 422   | 453   | 401   | 419   | 409   | 3,346 |
| CO <sub>2</sub> Emissions Reductions (thousand metric tons/yr) | 316  | 364  | 547  | 596  | 683  | 827   | 797   | 814   | 796   | 769   | 5,460 |

Notes: Total energy savings is not equal to the sum of the savings achieved each year in order to avoid double counting the savings provided by SRP's pre-paid metering program. Also, savings are at the customer level and do not include avoided T&D losses. CO<sub>2</sub> emissions reductions assume avoiding generation from coal-fired and gas-fired power plants in equal amounts.

Source: Utility data are taken from annual Demand-Side Management reports submitted by APS and TEP to the ACC along with annual reports issued by the Salt River Project.

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