



### 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.

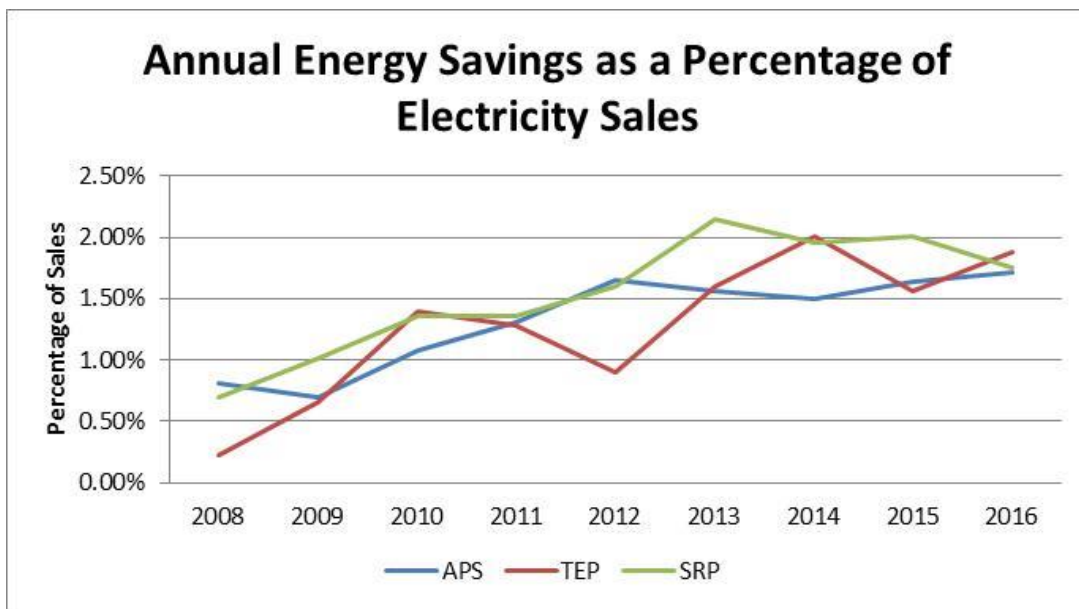
#### Utility Energy Efficiency Plans

- The state's largest electric utility, APS, serves about 1.2 million customers. APS's 2017 energy efficiency plan features a \$62.6 million annual budget and projected energy savings of about 562 million kWh per year. The energy savings put APS on track to meet the EERS requirements. APS's portfolio of programs includes traditional rebates for all types of customers along with programs to improve energy efficiency in the distribution grid and help cities convert to LED streetlights.
- TEP serves more than 420,000 customers in the Tucson area. Its 2017 plan anticipates spending \$23 million to save 132 million kWh per year. This plan includes a comprehensive set of residential and commercial/industrial programs, and also puts TEP on track to meet the EERS requirements.
- SRP serves about one million customers in and around Phoenix. Its current DSM plan anticipates spending about \$40 million and saving 505 million kWh in its 2017 fiscal year, including saving 260 million kWh through its "M-Power" prepaid metering and energy education program. Other programs in SRP's portfolio address residential and commercial buildings, and support 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 8.2 billion kWh in 2016 from programs implemented during 2008-16. The savings are equal to about 12% of total electricity use by customers of these three utilities in 2016.

- The net economic benefits from utility efficiency programs operated by the three utilities during 2008-16 totals \$2.9 billion, according to the utilities' own estimates. This is equivalent to nine months of electricity bills paid by the 2.3 million residential customers of the three utilities.
- The energy efficiency programs implemented during 2008-16 resulted in water savings of around 2.7 billion gallons in 2016 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 2016 by around 4.01 million metric tons, the equivalent of taking approximately 805,000 passenger vehicles off the road.
- Energy savings increased significantly during 2008-16 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	Total
Spending (\$ M)	35	51	83	103	113	119	116	125	123	868
Electricity Savings (GWh/year)	451	520	781	851	976	1,182	1,138	1,163	1,137	8,199
Savings as a % of Retail Sales	0.68%	0.82%	1.24%	1.32%	1.52%	1.81%	1.77%	1.79%	1.75%	NA
Peak Reduction (MW)	54	94	130	188	220	257	278	290	319	NA
Net Economic Benefits (\$ M)	104	130	290	290	428	422	453	401	419	2,937
CO <sub>2</sub> Emissions Reductions (thousand metric tons/yr)	1,126	1,562	2,568	2,675	2,796	4,053	3,293	3,472	4,013	25,557

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 generator level including 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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