



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.

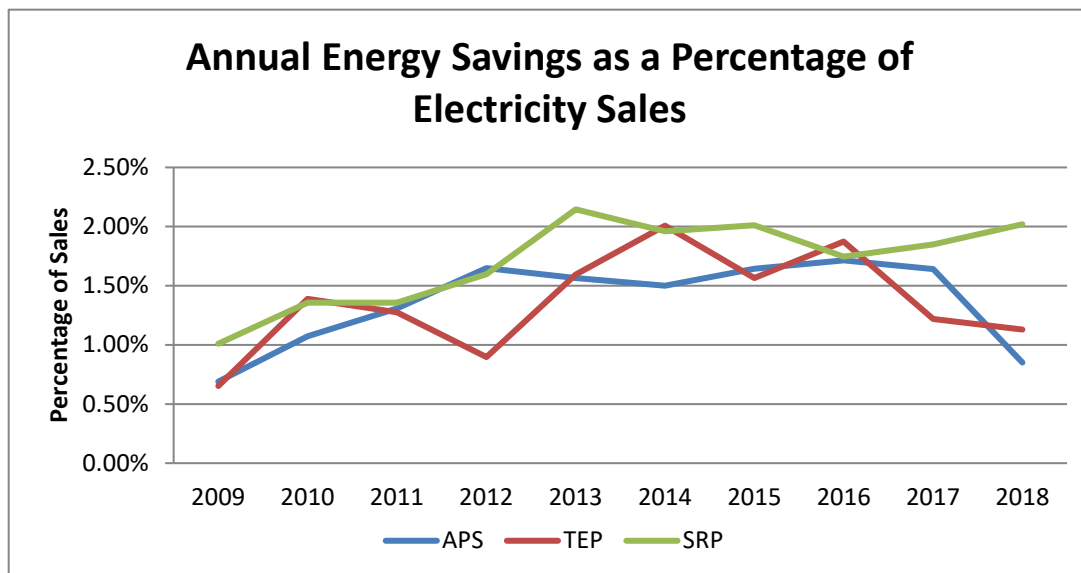
Utility Energy Efficiency Programs

- The state's largest electric utility, APS, serves about 1.25 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, funding for energy efficiency upgrades in schools, and support for codes and standards. However, APS scaled back its energy efficiency programs and shifted funding towards demand response programs in 2018.
- TEP serves about 425,000 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 2018, 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 during 2009-16. However, annual energy savings declined for APS and TEP in 2017-18. Combined, these three utilities helped their customers realize electricity savings of approximately 8.0 billion kWh in 2018 from programs implemented during 2009-18. The savings are equal to more than 12% of total electricity use by customers of these three utilities in 2018.

- According to the utilities' own estimates, the projected net economic benefits from efficiency programs operated by the three utilities during 2009-18 totals \$3.7 billion. This is equivalent to the electricity bills paid by the 2.4 million residential customers of the three utilities for nearly one year.
- The energy efficiency programs implemented during 2009-18 resulted in water savings of around 2.6 billion gallons in 2018 from the reduced operation of thermal power plants, enough water to supply about 19,000 typical Arizona households.
- As a result of a decade of energy efficiency programs, the three utilities cut their CO₂ emissions in 2018 by around 5.6 million metric tons. This is equivalent to taking approximately 1.15 million passenger vehicles off the road.
- Even with the drop in energy savings for APS and TEP in 2018, **Arizona was still the second-best state in the Western region (after California) with respect to utility energy savings achievement** according to the American Council for an Energy-Efficient Economy.



DSM Program Results of Arizona's Largest Electric Utilities, 2009-18

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Spending (\$ M)	51	83	103	113	119	116	125	123	114	86	1,033
Electricity Savings (GWh/year)	520	781	851	976	1,182	1,138	1,163	1,137	1,099	913	8,010
Savings as a % of Retail Sales	0.82	1.24	1.32	1.52	1.81	1.77	1.79	1.75	1.69	1.40	NA
Peak Reduction (MW)	94	130	188	220	257	278	290	319	289	316	NA
Net Economic Benefits (\$ M)	130	290	290	428	422	453	401	419	409	485	3,727
CO ₂ Emissions Reductions (thousand metric tons/yr)	364	547	596	683	827	797	814	796	769	639	5,607

Notes: Total energy savings is not equal to the sum of the savings achieved each year 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. CO₂ 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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