



## SOUTHWEST ENERGY EFFICIENCY PROJECT

*Saving Money and Protecting the Environment Through More Efficient Energy Use*

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

July 2018

#### History

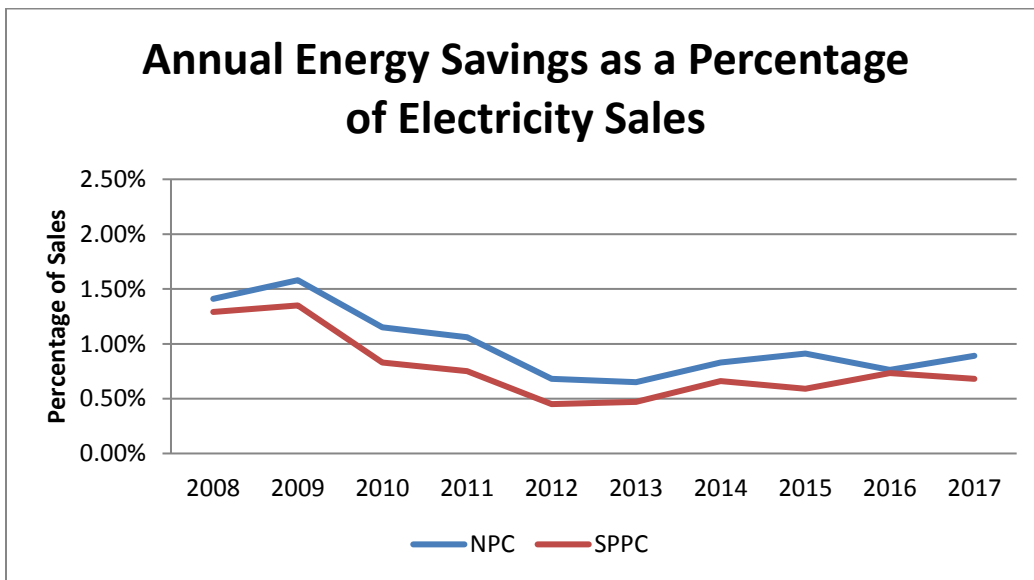
- In 2005, Assembly Bill 3 was enacted amending Nevada's Renewable Portfolio Standard and requiring that by 2015, 20 percent of all electricity sold by the state's regulated utilities comes from renewable energy sources. The bill allowed up to 25 percent of the clean generation requirement to be met with energy savings credits from utility-sponsored energy efficiency programs. In 2009, Senate Bill 358 was passed, which increased the requirement for clean energy sources to 25 percent in 2025.
- NV Energy, the parent company for Nevada Power Co. (NPC) in southern Nevada and Sierra Pacific Power Co. (SPPC) in northern Nevada, greatly expanded its energy efficiency and other demand-side management (DSM) programs during 2006-09 in response to this favorable legislation. By 2009, NV Energy achieved net energy savings of 439 GWh per year, about 1.5 percent of retail electric sales.
- However, a number of factors worked against energy efficiency in Nevada in recent years:
  - Nevada's economy withered during the great recession and electricity consumption fell as a result. The PUCN questioned the need for large investments in energy efficiency programs in the near term, and cut NV Energy's DSM budget including eliminating the residential lighting program.
  - NV Energy accumulated significant excess energy efficiency credits from its successful DSM programs during 2006-2010, meaning the utility had less motivation to continue implementing highly effective programs post-2010.
  - Hostility to DSM programs increased as a result of implementing a lost revenue recovery mechanism.
- In 2013, the Nevada legislature approved SB 252 which gradually phased out the energy efficiency credits that can be counted towards compliance with the Renewable Portfolio standard. The amount that can be provided by energy savings credits is limited to 20 percent during 2015-19, 10 percent during 2020-24, and then is phased out completely starting in 2025.
- In 2017, the Nevada legislature adopted Assembly Bill 223 and Senate Bill 150 which are leading to renewed expansion of utility energy efficiency programs. The bills:
  - Direct the Public Utilities Commission of Nevada (PUCN) to set energy savings goals for NV Energy
  - Allow the PUCN to approve energy efficiency programs as long as they are part of an overall energy efficiency plan that is cost effective
  - Require that at least 5% of energy efficiency expenditures assist low-income households in saving energy
  - Direct utilities and the PUCN to account for non-energy benefits in energy efficiency benefit-cost analysis
  - Allow the PUCN to adopt a rate adjustment mechanism so that utilities are not harmed financially when they help their customers save energy.

#### Impacts of Energy Efficiency Programs

- Over the past ten years (2008-17), NV Energy spent a total of \$474 million on energy efficiency and demand response programs. Funding has rebounded somewhat in recent years (see Table below).
- NV Energy's customers realized energy savings of about 2.7 billion kWh per year and a peak demand reduction of 654 MW in 2017 as a result of DSM programs implemented during 2008-17. The energy

savings are equal to 9.1% of total electricity use by NV Energy’s customers. The savings are also equivalent to the electricity use of 253,000 typical households served by the utility.

- NV Energy’s portfolio of energy efficiency programs has been cost effective every year. The benefit-cost ratio for NPC’s efficiency programs implemented in 2017 was 2.3, and the ratio for SPPC’s programs was 1.7. Households and businesses in the state are expected to realize \$691 million in net savings as a result of NV Energy’s electric DSM programs implemented during the past decade.
- The average home in southern Nevada consumes about 178,000 gallons of water per year. NV Energy’s energy efficiency programs over the past decade saved about 380 million gallons of water by 2017 as a result of less operation of power plants and their cooling systems. This is equivalent to the annual water use of about 2,135 Las Vegas area households.
- Saving electricity reduces the operation and pollutant emissions of fossil fuel-fired power plants. NV Energy’s efficiency programs over the past decade reduced carbon dioxide emissions in 2017 by nearly 1.5 million metric tons. This is equivalent to removing around 300,000 cars from the road.



#### DSM Program Results for NV Energy

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Expenditures (million \$)	53	58	46	45	39	39	49	46	49	50	474
Electricity Savings (GWh/year)	408	439	304	278	182	175	238	246	225	247	2,743
Peak Reduction (MW)	159	122	56	41	46	62	75	249	261	273	654*
CO <sub>2</sub> Emissions Reduction (thousand metric tons/year)**	289	310	171	156	107	108	79	81	71	85	1,457
Net Economic Benefits (million \$)	124	149	49	31	17	16	47	65	78	115	691

\* Does not equal sum of individual year values in order to avoid double counting of demand response potentials.

\*\* CO<sub>2</sub> emissions reduction values for 2008-09 were estimated using U.S. EPA conversion factors; 2010-17 values were reported by NV Energy.

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