



An Overview of Energy Efficiency

Energy efficiency means reducing the amount of energy that you need to perform a particular task. When you practice energy efficiency, you increase or maintain your level of service, but you decrease the energy used to provide that service through efficient technologies. Examples include ENERGY STAR appliances, compact fluorescent and LED light bulbs, better insulation for buildings, more efficient windows, high efficiency air conditioning equipment, and vehicles with higher miles per gallon (mpg). Another distinct strategy is energy conservation, which means that you change your behavior or lifestyle to reduce energy use. Examples include carpooling, using mass transit, turning thermostats down in the winter and up in summer, and other behavioral changes.

Improving energy efficiency is a “win-win” strategy — it saves money for consumers and businesses, reduces the need for costly and controversial new power plants, increases the reliability of energy supply, cuts pollution and greenhouse gas emissions, and lowers energy imports. There is vast potential for improving the energy efficiency of homes, appliances, businesses, and vehicles throughout Nevada.

Quick Facts:

- ◆ Population, 2016: 2,939,254
- ◆ Population growth rate, 2008-2016: 1.29% per year
- ◆ Number of households, 2016: 1,200,517

Source: United States Census Bureau.

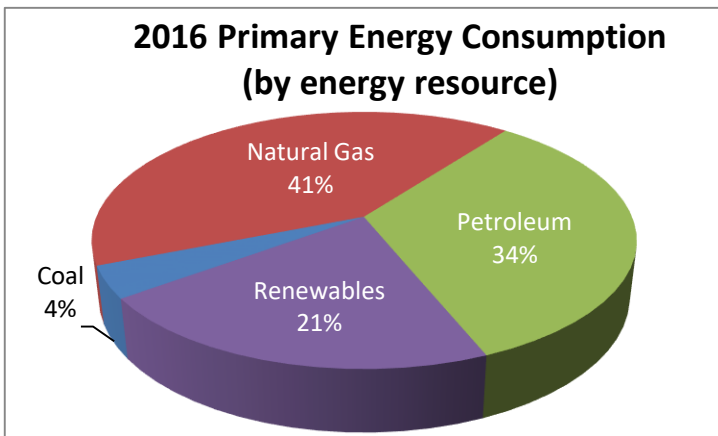
Primary Energy Consumption (2016)

- ◆ Primary energy consumption: 679.1 trillion Btu
- ◆ Growth rate, 2008-2016: -0.34% per year
- ◆ Primary energy consumption per capita: 231.0 million Btu
- ◆ Ranking, energy consumption per capita: 40
- ◆ Ranking, total energy consumption: 37
- ◆ Ratio of consumption to production: 7.58

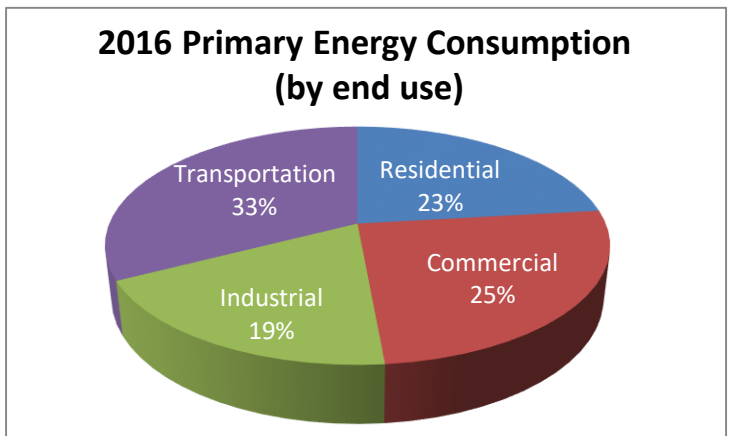
Energy Expenditures (2016)

- ◆ Total energy expenditures: \$8.3 billion
- ◆ Ranking, energy expenditures: 35
- ◆ Energy expenditures per capita: 2,820
- ◆ Ranking, energy expenditures per capita: 46

Source: U.S. Energy Information Administration, State Energy Data System, June 2018.



Renewables include hydropower, wood, solar, geothermal and waste materials.



Primary energy use includes the losses in electricity generation and distribution. Rankings are position among US states plus DC (1 is highest, 51 is lowest).

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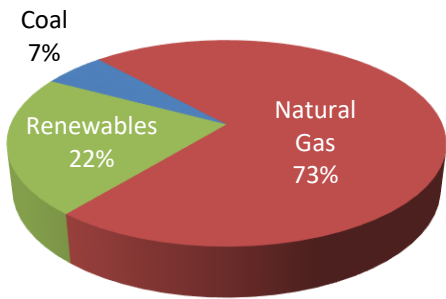
Electricity Use (2016)

◆ Total retail sales:	36.1 billion kWh
◆ Ranking, total retail sales:	33
◆ Consumption growth rate, 2008-2016:	0.33% per year
◆ Electricity use per capita:	12,297 kWh
◆ Residential electricity use per household:	10,572 kWh
◆ Average retail price, all sectors:	8.38 cents/kWh
◆ Ranking, average electricity price:	45

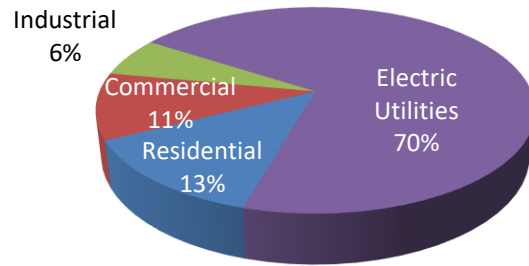
Natural Gas Use (2016)

◆ Natural gas consumption:	303.5 Bcf
◆ Ranking:	27
◆ Consumption growth rate, 2008-2016:	1.73% per year
◆ Natural gas use per capita:	102,067 cf
◆ Residential natural gas use (per residential consumer):	46,581 cf

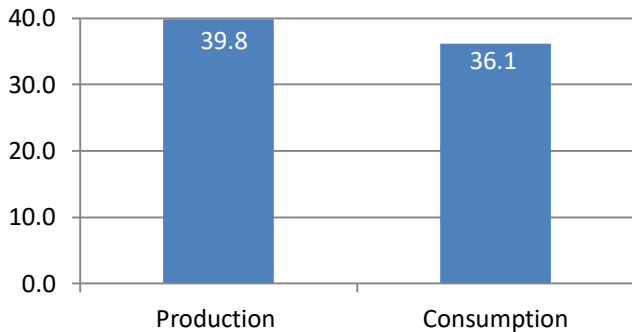
2016 Electricity Generation Breakdown



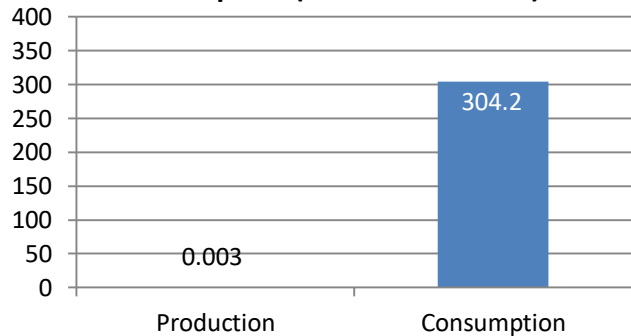
2016 Natural Gas Use by Sector



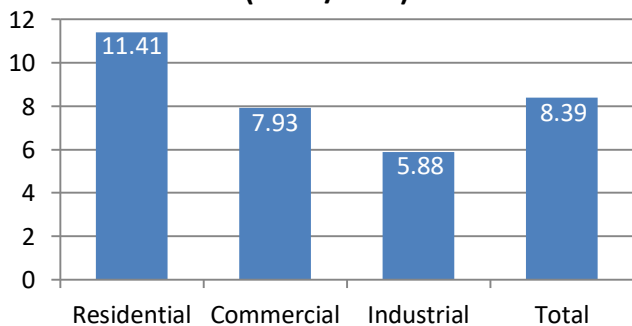
2016 Electricity Production and Consumption (Billion kWh)



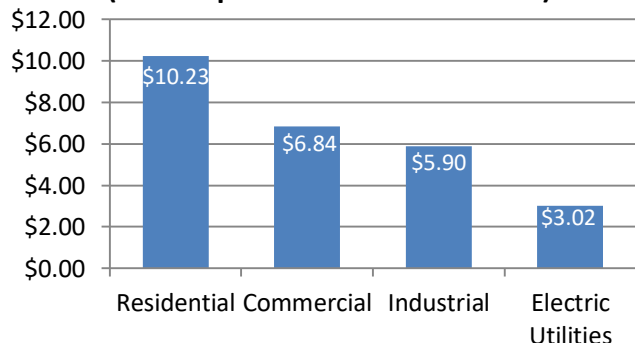
2016 Natural Gas Production and Consumption (Billion Cubic Feet)



2016 Electricity Average Retail Prices (cents/kWh)



2016 Natural Gas Average Retail Prices (Dollars per Thousand Cubic Feet)



Sources: U. S. Energy Information Administration (www.eia.doe.gov) and U. S. Census Bureau (www.census.gov)

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Energy Efficiency Policy and Programs in Nevada

Electricity Demand-Side Management

Nevada Power Company and Sierra Pacific Power Company, the two main electric utilities in Nevada that now operate as NV Energy, offer a broad set of energy efficiency programs for their residential and business customers. The utilities helped their customers save about 265 million kWh per year through programs implemented in 2017. In addition, the utilities are able to count energy savings from certain energy efficiency measures toward the state's clean energy portfolio standards. Total spending on electric utility energy efficiency and load management programs in 2017 was about \$50 million, or 1.8% of utility revenues.

- ◆ NV Energy programs: <https://www.nvenergy.com/save-with-powershift.html>

Natural Gas Demand-Side Management

Nevada natural gas utilities were implementing limited energy efficiency programs for their customers with total expenditures of only about \$390,000 in 2017.

- ◆ NV Energy programs: <https://www.nvenergy.com/save-with-powershift.html>

Status of Building Energy Codes

The state has adopted the 2018 International Energy Conservation Code (IECC) as the state energy code, but does not require local jurisdictions in Nevada to adopt this version of the code. The City of Las Vegas was the first municipality in Nevada to adopt the 2018 IECC. Other major jurisdictions in northern and southern Nevada are preparing to adopt the 2018 IECC for new residential and commercial buildings. The U.S. Department of Energy estimates that new homes built in Nevada complying with an up-to-date energy code rather than the 2009 version of the IECC will save \$360 per year on energy costs.

- ◆ For more info: <http://www.energycodes.gov/adoption/states>

Green Building Tax Incentives

Since 2009, Nevada has provided partial property tax abatements for energy-efficient commercial buildings that achieve LEED Silver certification or higher, or a 2 Green Globes rating or higher. The incentives range from 25% to 35% of property taxes paid for 5 to 10 years, depending on the building's certification level. 150 buildings representing more than 170 million square feet of floor area have obtained tax incentives since the program began.

- ◆ For more info: http://energy.nv.gov/Programs/Green_Building_Tax_Abatements/

State Energy Efficiency Scorecard

The American Council for an Energy-Efficient Economy (ACEEE) has ranked states based upon scores in six categories including: 1) utility and public benefits of energy efficiency programs; 2) combined heat and power (CHP); 3) building energy codes; 4) transportation policies; 5) appliance and equipment efficiency standards; and 6) state government initiatives. In the 2018 state scorecard, Nevada was tied for 29th among all states with a score of 15.5 out of a possible 50 points.

- <http://aceee.org/research-report/u1808>

Electricity Conservation Potential and Impacts in Nevada*

Energy savings potential:	22%
Avoided power capacity:	1,745 MW
Net dollar savings:	\$3.4 billion
Potential increases in jobs:	4,680
Potential water savings:	2.4 billion gallons per year

*Based on SWEET's study *The \$20 Billion Bonanza: Best Practice Energy Efficiency Programs and Their Benefits for the Southwest*. This study, completed in 2012, presents the energy savings potential and impacts from a strong commitment to utility energy efficiency programs over a 10-year period.

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Residential Energy Consumption Survey (2015)

Housing Characteristics:

The Energy Information Administration (EIA) has published housing characteristics data from the 2015 Residential Energy Consumption Survey. The EIA presents regional aggregates of household characteristics in the Mountain South region, which includes Arizona, Nevada and New Mexico.

The table below indicates the percentage of households that report having, using or practicing the following equipment and/or behaviors in their homes:

Find household too drafty at least some of the time	38%
Single Pane Windows	31%
Homes with Efficient Lighting	
At least one CFL Bulb	84%
At least one LED Bulb	28%
Two or more Refrigerators	26%
Energy Star Refrigerator	43%
Energy Star Dishwasher	29%
Energy Star Clothes Washer	40%
Three or more Televisions	33%
Electric Heat (all types)	44%
Programmable Thermostat	51%
Central Air Conditioning	79%
Use an Evaporative or Swamp Cooler	19%
Use a Ceiling Fan	84%
Electric Water Heating	37%

Source: U. S. Energy Information Administration, 2015 Residential Energy Consumption Survey: Housing Characteristics Tables.

More Information on Energy Efficiency

- ◆ American Council for an Energy-Efficient Economy (ACEEE) www.aceee.org
- ◆ Alliance to Save Energy www.ase.org
- ◆ Consortium for Energy Efficiency
STAR[®] Products <https://www.cee1.org/> ENERGY
www.energystar.gov
- ◆ Southwest Energy Efficiency Project www.swenergy.org
- ◆ U.S. DOE's Energy Efficiency & Renewable Energy Programs <https://energy.gov/eere/office-energy-efficiency-renewable-energy>