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


2016 Primary Energy Consumption (by energy resource)

- Natural Gas 41%
- Petroleum 34%
- Renewables 21%
- Coal 4%
- Renewables include hydropower, wood, solar, geothermal and waste materials.

2016 Primary Energy Consumption (by end use)

- Transportation 33%
- Residential 23%
- Commercial 25%
- Industrial 19%

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).
NEVADA ENERGY FACT SHEET

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 consumer: 46,581 cf

2016 Electricity Generation Breakdown

- Coal: 7%
- Renewables: 22%
- Natural Gas: 73%

2016 Electricity Production and Consumption (Billion kWh)

- Production: 39.8
- Consumption: 36.1

2016 Electricity Average Retail Prices (cents/kWh)

- Residential: 11.41
- Commercial: 7.93
- Industrial: 5.88
- Total: 8.39

2016 Natural Gas Use by Sector

- Industrial: 6%
- Commercial: 11%
- Residential: 13%
- Electric Utilities: 70%

2016 Natural Gas Production and Consumption (Billion Cubic Feet)

- Production: 0.003
- Consumption: 304.2

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

- Residential: $10.23
- Commercial: $6.84
- Industrial: $5.90
- Electric Utilities: $3.02

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


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.


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](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/](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.


<table>
<thead>
<tr>
<th>Electricity Conservation Potential and Impacts in Nevada*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy savings potential: 22%</td>
</tr>
<tr>
<td>Avoided power capacity: 1,745 MW</td>
</tr>
<tr>
<td>Net dollar savings: $3.4 billion</td>
</tr>
<tr>
<td>Potential increases in jobs: 4,680</td>
</tr>
<tr>
<td>Potential water savings: 2.4 billion gallons per year</td>
</tr>
</tbody>
</table>

*Based on SWEEP’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.
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:

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


More Information on Energy Efficiency

- American Council for an Energy-Efficient Economy (ACEEE) [www.aceee.org](http://www.aceee.org)
- Alliance to Save Energy [www.ase.org](http://www.ase.org)
- Consortium for Energy Efficiency [https://www.cee1.org/](https://www.cee1.org/) ENERGY
- STAR® Products [www.energystar.gov](http://www.energystar.gov)
- Southwest Energy Efficiency Project [www.swenergy.org](http://www.swenergy.org)