



### 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, 2014: 2,839,099
  - ◆ Population growth rate, 2006-2014: 1.50% per year
  - ◆ Number of households, 2014: 1,005,958
- Source: United States Census Bureau.*

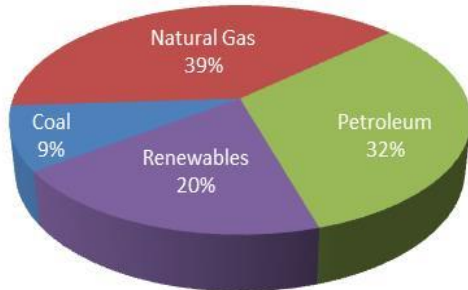
### Primary Energy Consumption (2013)

- ◆ Primary energy consumption: 659.6 trillion Btu
- ◆ Growth rate, 2006-2013: -1.63% per year
- ◆ Primary energy consumption per capita: 236 million Btu
- ◆ Ranking, energy consumption per capita: 40
- ◆ Ranking, total energy consumption: 38
- ◆ Ratio of consumption to production: 9.36

### Energy Expenditures (2013)

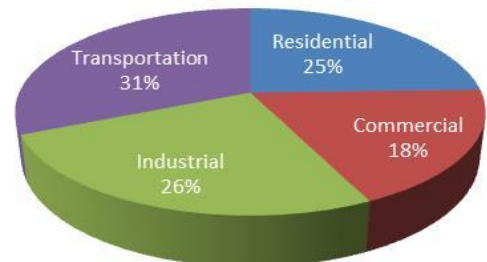
- ◆ Total energy expenditures: \$10.2 billion
  - ◆ Ranking, energy expenditures: 36
  - ◆ Energy expenditures per capita: \$3,646
  - ◆ Ranking, energy expenditures per capita: 44
- Source: U.S. Energy Information Administration, State Energy Data System, March 2016.*

**2013 Primary Energy Consumption (by energy resource)**



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

**2013 Primary Energy Consumption (by end use)**



*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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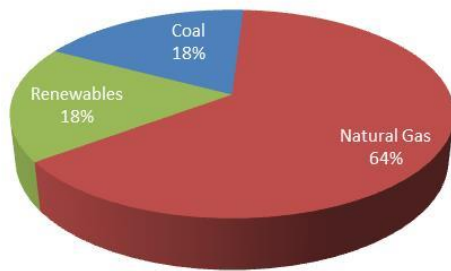
## Electricity Use (2014)

- ◆ Total retail sales: 35.1 billion kWh
- ◆ Ranking, total retail sales: 33
- ◆ Consumption growth rate, 2008-2014: -0.06% per year
- ◆ Electricity use per capita: 12,355 kWh
- ◆ Residential electricity use per household: 11,846 kWh
- ◆ Average retail price, all sectors: 9.73 cents/kWh
- ◆ Ranking, average electricity price: 23

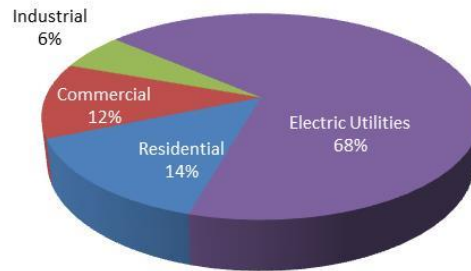
## Natural Gas Use (2014)

- ◆ Natural gas consumption by ultimate customers: 247.2 Bcf
- ◆ Ranking: 28
- ◆ Consumption growth rate, 2008-2014: -0.94% per year
- ◆ Natural gas use per capita: 87,064 cf
- ◆ Residential natural gas use (per residential consumer): 43,432 cf

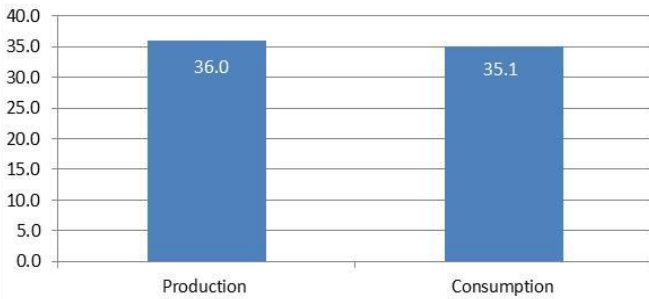
**2014 Electricity Generation Breakdown**



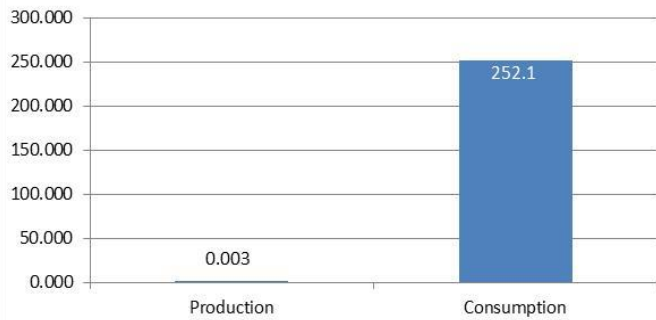
**2014 Natural Gas Use by Sector**



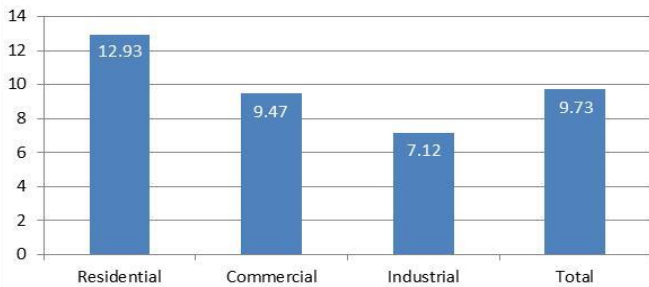
**2014 Electricity Production and Consumption (Billion kWh)**



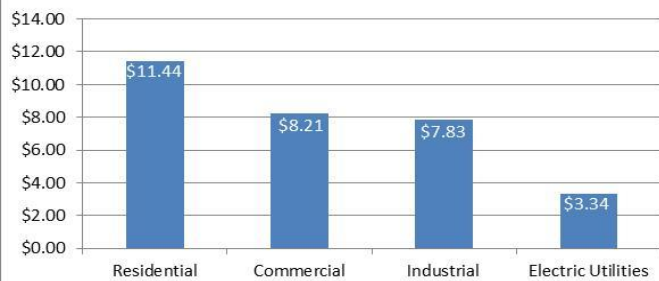
**2014 Natural Gas Production and Consumption (Billion Cubic Feet)**



**2014 Electricity Average Retail Prices (cents/kWh)**



**2014 Natural Gas Average Retail Prices (Dollars per Thousand Cubic Feet)**



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

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## Status of Energy Efficiency 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 223 million kWh per year through programs implemented in 2015 alone. 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 2015 was about \$45 million, or 1.5% of utility revenues.

- ◆ NV Energy programs: <http://www.nvenergy.com/saveenergy/>

### Natural Gas Demand-Side Management

Nevada natural gas utilities were implementing limited energy efficiency programs for their customers with a total budget of about \$5 million per year as of 2013.

- ◆ Southwest Gas programs: <http://www.swgas.com/efficiency/nv/>

### Status of Building Energy Codes

The state has adopted the 2012 IECC as the state energy code, but does not require local jurisdictions in Nevada to adopt this version of the code. The communities of Henderson, Reno, and Clark County—have adopted the 2012 International Energy Conservation Code (IECC) for new residential and commercial buildings. In addition, the state has adopted the 2012 IECC for all new buildings in localities that do not have a local building code. The U.S. Department of Energy estimates that new homes built in Nevada complying with the 2012 IECC rather than the 2009 version 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 certification. The incentives range from 25% to 35% of property taxes paid for 5 to 10 years, depending on the building's LEED certification level. Forty-four buildings representing more than 47 million square feet of floor area have obtained over \$100 million in 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 2015 state scorecard, Nevada was tied for 31<sup>st</sup> among all states with a score of 13 out of a possible 50 points.

### Electricity Conservation Potential and Impacts in Nevada\*

Savings potential in 2020:	22%
Avoided new power capacity:	1,745 MW
Net dollar savings (2010-2030):	\$3.4 billion
Net increases in jobs by 2020:	4,680
Water savings by 2020:	2.4 B gallons/year

\*Based on the High Efficiency Scenario in SWEET's study *The \$20 Billion Bonanza: Best Practice Energy Efficiency Programs and Their Benefits for the Southwest*. This study, completed in 2011, 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 (2009)

### Housing Characteristics:

The Energy Information Administration (EIA) has published housing characteristics data from the 2009 Residential Energy Consumption Survey. The EIA presents only aggregated data for Nevada and New Mexico; therefore the numbers below represent the average for those states.

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

Poor insulation:	24%
Home is too drafty during the winter some or most of the time:	29%
Single pane glass in windows:	47%
Energy-efficient light bulbs:	64%
Two or more refrigerators:	29%
ENERGY STAR refrigerator:	35%
ENERGY STAR dishwasher:	24%
ENERGY STAR clothes washer:	35%
Keep some or all portable tools and appliances chargers always plugged in:	12%
Three or more televisions:	41%
Turn off computers when not in use:	47%
Keep some or all cell phone and other electronic device chargers always plugged in:	41%
Electric resistance heating as a main heating source:	18%
Have and use a programmable thermostat:	24%
Central air conditioning:	65%
Evaporative cooling:	41%
Use ceiling fans quite a bit or all summer:	53%
Electric resistance water heating:	24%
Insulation blanket on main water heater:	12%

*Source: U. S. Energy Information Administration, 2009 Residential Energy Consumption Survey: Housing Characteristics Tables.*

### 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 [www.cee.org](http://www.cee.org)
- ◆ ENERGY STAR® Products [www.energystar.gov](http://www.energystar.gov)
- ◆ Southwest Energy Efficiency Project [www.swenergy.org](http://www.swenergy.org)
- ◆ U.S. DOE's Energy Efficiency & Renewable Energy Programs [www.eere.energy.gov](http://www.eere.energy.gov)