

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:

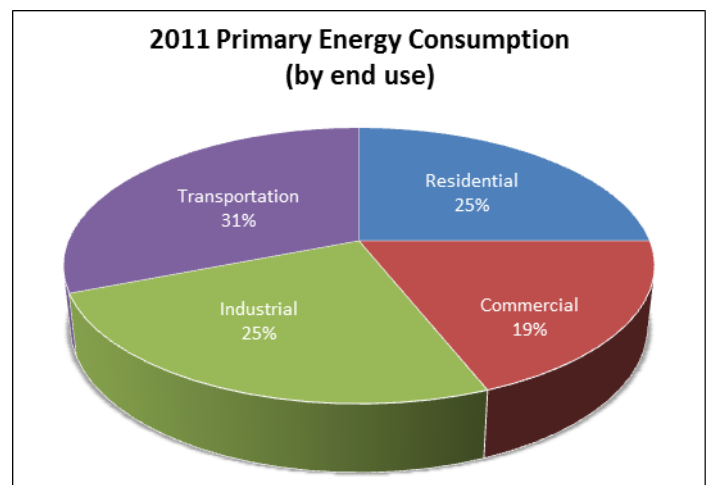
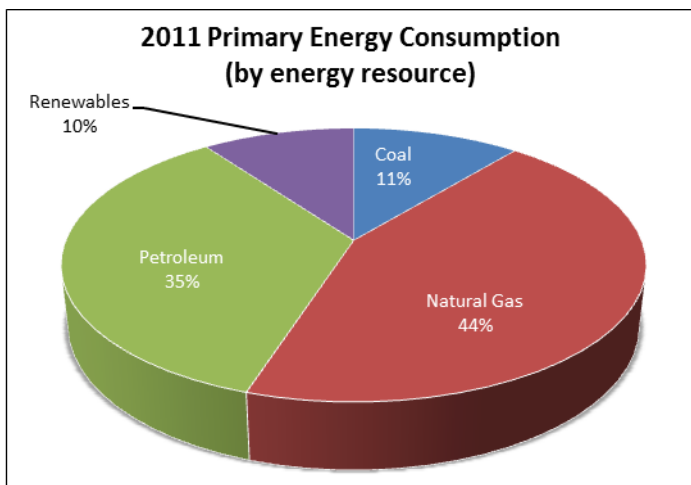
- ◆ Population, 2012: 2,758,931
- ◆ Population growth rate, 2005-2012: 1.8% per year
- ◆ Number of households, 2011: 1,183,873

Primary Energy Consumption (2011)

- ◆ Primary energy consumption: 632.5 trillion Btu
- ◆ Growth rate, 2006-2011: -1.75% per year
- ◆ Primary energy consumption per capita: 233 million Btu
- ◆ Ranking, energy consumption per capita: 42
- ◆ Ranking, total energy consumption: 39

Energy Expenditures (2011)

- ◆ Total energy expenditures: \$9.7 billion
- ◆ Ranking, energy expenditures: 36
- ◆ Energy expenditures per capita: \$3,555
- ◆ Ranking, energy expenditures per capita: 49



Renewables include hydropower, wood, solar, geothermal and waste materials. In 2011, Nevada produced only 9% of the primary energy it consumed in state.

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).

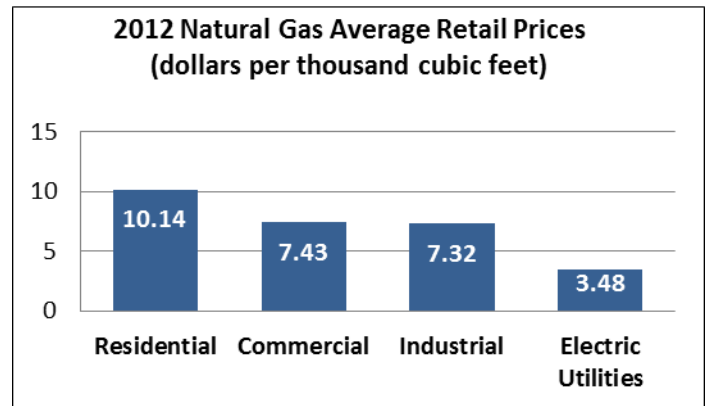
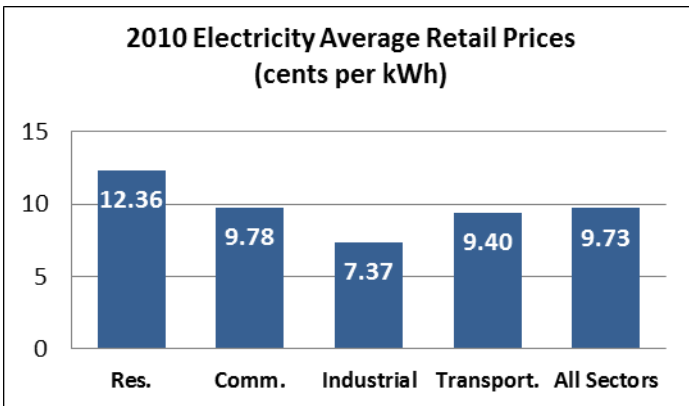
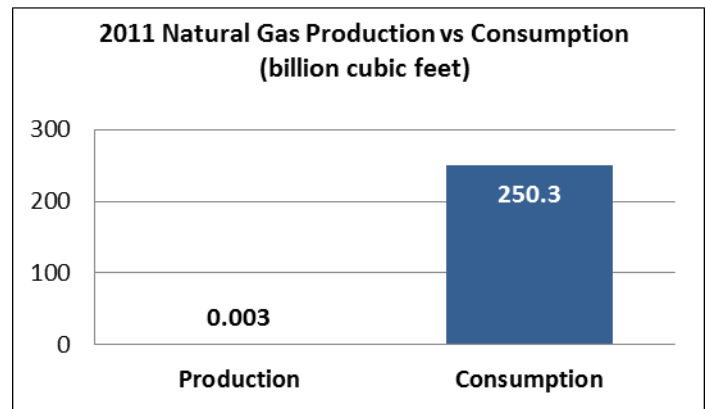
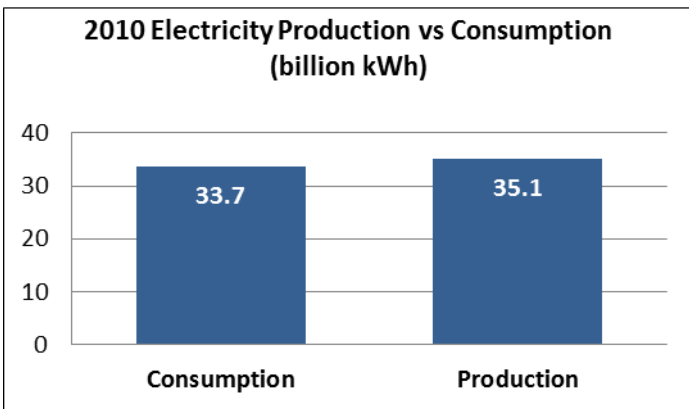
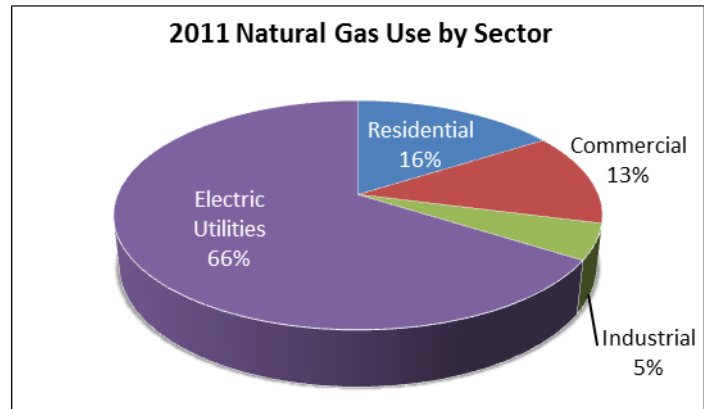
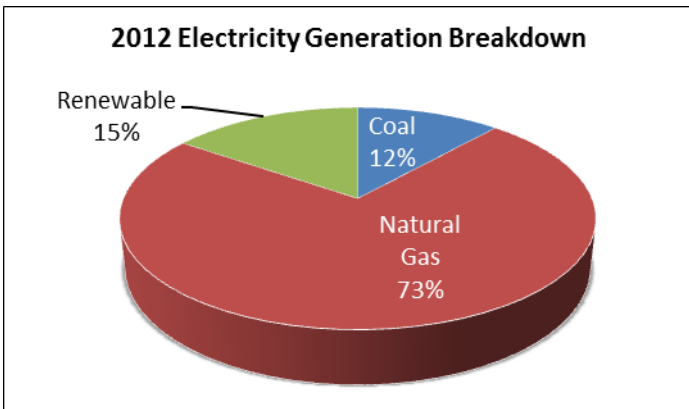
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Electricity Use (2010)

- ◆ Total retail sales: 33.8 billion kWh
- ◆ Ranking, total retail sales: 33
- ◆ Consumption growth rate, 2007-2010: -1.17% per year
- ◆ Electricity use per capita: 12,251 kWh
- ◆ Residential electricity use per household: 9811 kWh
- ◆ Average retail price, all sectors: 9.73 cents/kWh
- ◆ Ranking, average electricity price: 26

Natural Gas Use (2011)

- ◆ Total consumption: 250.3 Bcf
- ◆ Ranking, total consumption: 30
- ◆ Consumption growth rate, 2007-2011: -0.47% per year
- ◆ Natural gas use per capita: 91,910 cf
- ◆ Residential natural gas use (per residential consumer): 34,402 cf



2010 Net electricity imports: 0.6%

Sources: U. S. Energy Information Administration (www.eia.doe.gov) and U. S. Census Bureau (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, offer a broad set of energy efficiency programs for their residential and business customers. The utilities, subsidiaries of NV Energy, helped their customers save about 182 million kWh per year through programs implemented in 2012 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 programs in 2012 was \$39 million, or 1.4% 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 as of 2012, with a total budget of about \$4 million per year.

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

Status of Building Energy Codes

The State of Nevada and many local jurisdictions—including the cities of Las Vegas, North Las Vegas, Henderson, Mesquite and Boulder City, as well as Clark County—have adopted the 2009 International Energy Conservation Code (IECC) for new residential and commercial buildings. In addition, the state is in the process of adopting the 2012 IECC for all new buildings in localities that without a building code. The Building Codes Assistance Project (BCAP) estimates that new homes built in Nevada complying with the 2009 IECC rather than the 2006 version will save \$228 per year on energy costs.

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

EnergyFit Nevada

The Nevada Energy Office is sponsoring the EnergyFit Nevada program, which is aimed at reducing energy consumption and increasing comfort in Nevadan's homes. The program provides low-cost home energy assessments and offers low-interest loans through the Nevada State Bank to fund recommended upgrades. If a home shows a 20 percent or greater increase in energy efficiency, the homeowner receives a \$1,000 rebate. The program is conducting neighborhood outreach, working with community organizations, and working with a network of approved contractors to encourage participation.

◆ For more information, see <http://www.energyfitnevada.org>.

State Energy Efficiency Scorecard

The American Council for an Energy-Efficient Economy (ACEEE) has ranked states based upon scores in six categories of energy efficiency commitment and policy support as of 2013. The categories include: 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 this national ranking, Nevada tied for 33rd 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*.

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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
- ◆ Alliance to Save Energy www.ase.org
- ◆ Consortium for Energy Efficiency www.cee.org
- ◆ ENERGY STAR® Products www.energystar.gov
- ◆ Southwest Energy Efficiency Project www.swenergy.org
- ◆ U.S. DOE's Energy Efficiency & Renewable Energy Programs www.eere.energy.gov