



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 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 the summer, and other 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 the 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 Wyoming.

Quick Facts:

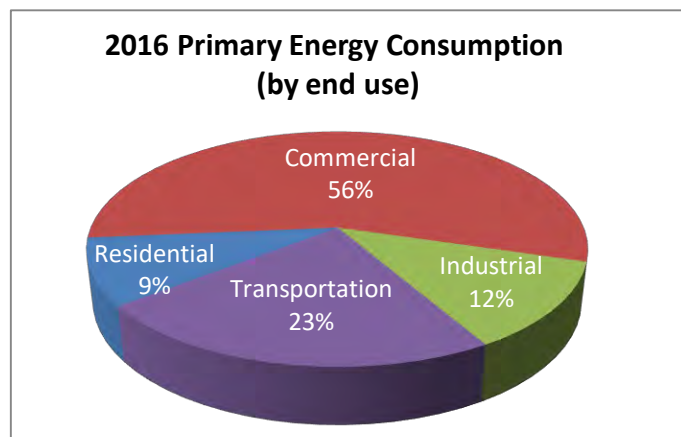
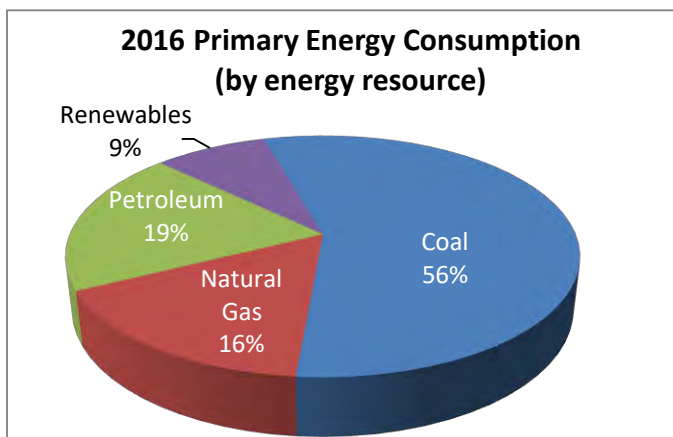
- ◆ Population, 2016: 584,910
 - ◆ Population growth rate, 2008-2016: 0.86% per year
 - ◆ Number of households, 2016: 267,987
- Source: United States Census Bureau.*

Primary Energy Consumption (2016)

- ◆ Primary energy consumption: 502.9 trillion Btu
- ◆ Growth rate, 2008-2016: -0.85% per year
- ◆ Primary energy consumption per capita: 860.0 million Btu
- ◆ Ranking, energy consumption per capita: 2
- ◆ Ranking, total energy consumption: 42
- ◆ Ratio of consumption to production: 0.07

Energy Expenditures (2016)

- ◆ Total energy expenditures: \$4.0 billion
 - ◆ Ranking, energy expenditures: 45
 - ◆ Energy expenditures per capita: \$6,813
 - ◆ Ranking, energy expenditures per capita: 1
- 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).

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

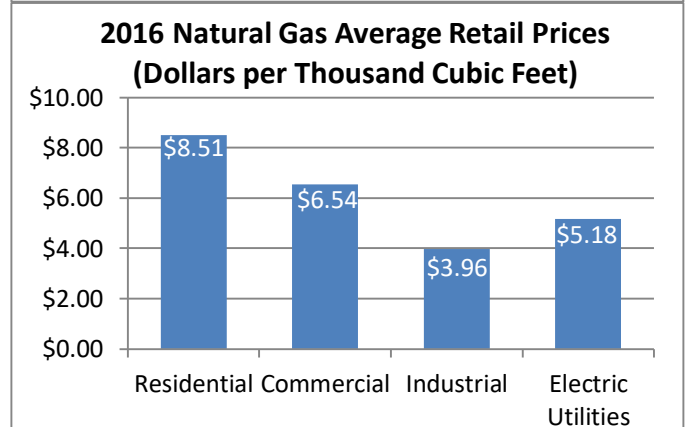
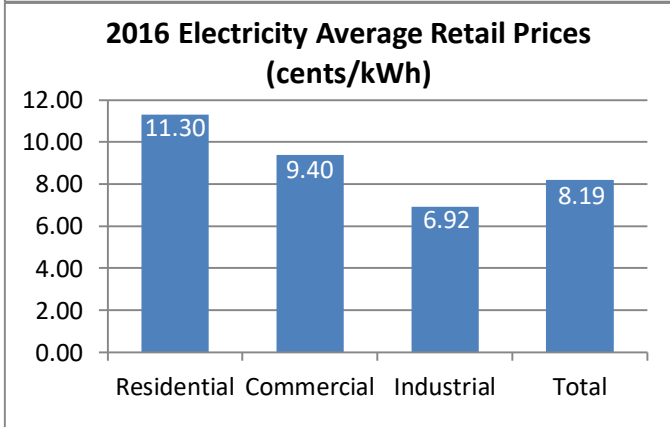
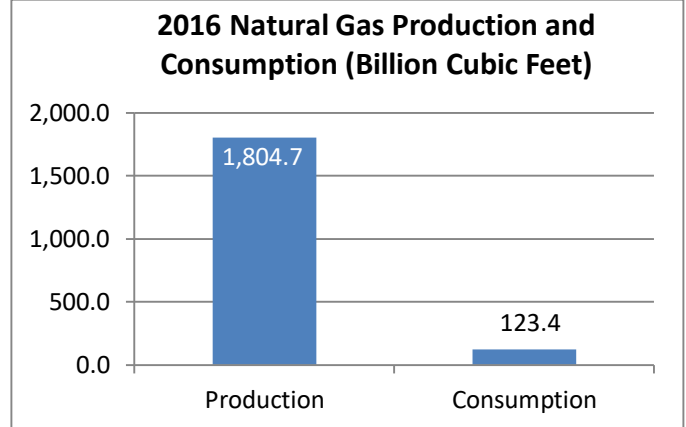
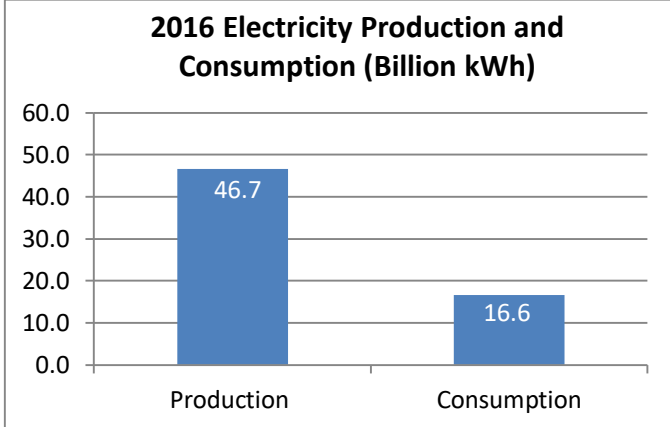
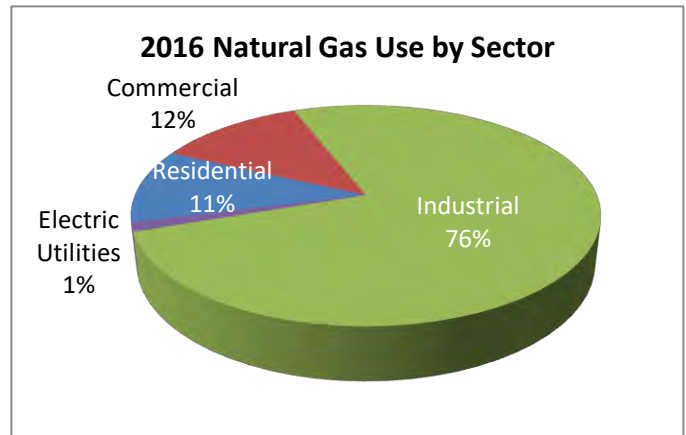
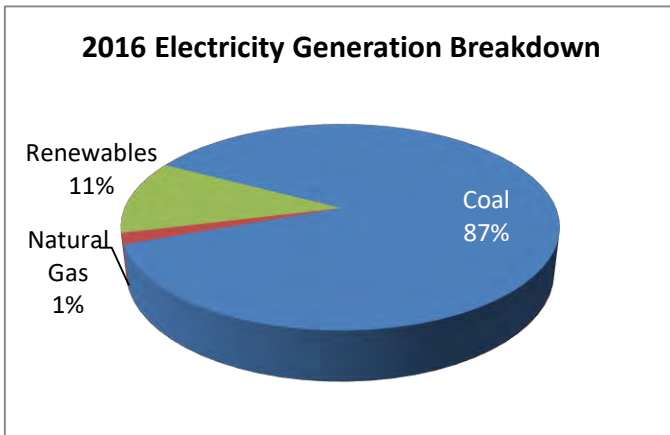
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Electricity Use (2016)

- ◆ Total retail sales: 16.5 billion kWh
- ◆ Ranking, total retail sales: 41
- ◆ Consumption growth rate, 2008-2016: -0.10% per year
- ◆ Electricity use per capita: 28,303 kWh
- ◆ Residential electricity use per household: 10,265 kWh
- ◆ Average retail price, all sectors: 8.10 cents/kWh
- ◆ Ranking, average electricity price: 46

Natural Gas Use (2016)

- ◆ Natural gas consumption: 123.8 Bcf
- ◆ Ranking: 40
- ◆ Consumption growth rate, 2008-2016: -1.76% per year
- ◆ Natural gas use per capita: 203,903 cf
- ◆ Residential natural gas use (per residential consumer): 100,653



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 Wyoming

Electricity Demand-Side Management

Rocky Mountain Power (RMP), the main electric utility in Wyoming, began implementing energy efficiency programs in Wyoming in 2008. These programs include financial incentives for a wide range of efficiency measures that households and businesses can adopt. Total spending on electric utility energy efficiency programs in 2017 was about \$9 million, or 1.3% of utility revenues.

- ◆ Info about RMP's residential programs: <https://www.rockymountainpower.net/res/sem/wyoming.html>.
- ◆ Info about RMP's business programs: <https://www.rockymountainpower.net/bus/se/wyoming.html>.

Cheyenne Light Fuel and Power Company, a combined electricity and natural gas utility, is implementing a variety of energy efficiency programs for its customers in Wyoming.

- ◆ Info about Cheyenne Light Fuel and Power's DSM programs: <https://www.blackhillsenergy.com/save-money-energy/energy-efficiency-programs>

Natural Gas Demand-Side Management

Dominion Energy (formerly Questar Gas Company) implements rebates on a variety of energy efficiency measures for its customers in Wyoming.

- ◆ Info about Dominion's DSM programs: <http://www.thermwise.com/indexWY.php>

Status of Building Energy Codes

Wyoming has no mandatory statewide energy codes. Some local jurisdictions including Cheyenne, Teton County, Jackson, Rock Springs and Sheridan have adopted either the 2015 version of the International Energy Conservation Code (IECC), while Gillette has adopted the 2018 IECC. The U.S. Department of Energy estimates that new homes in Wyoming meeting the 2015 IECC rather than the 2006 IECC would save \$466 per year in energy costs.

- ◆ For more information, see: <http://swenergy.org/buildings/energy-codes/wyoming>

State Efficiency Programs

The Wyoming Business Council houses the state energy office and implements a few programs to support energy efficiency improvements for Wyoming small businesses and local governments. These programs include underwriting the cost of small business energy audits, benchmarking the performance of local government office buildings, and providing energy code education for Wyoming builders.

- ◆ For more information, visit <http://www.wyomingbusiness.org/content/business-energy-audits-retrofits>

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, Wyoming ranked 51st among all states and the District of Columbia with a score of 4.5 out of a possible 50 points.

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

Electricity Conservation Potential and Impacts in Wyoming*

Energy savings potential:	15%
Avoided power capacity:	367 MW
Net dollar savings:	\$0.9 billion
Potential increases in jobs:	610
Potential water savings:	1.8 B gallons/year

*Based on SWEPP's study, *The \$20 Billion Bonanza: Best Practice Utility 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 2009 Residential Energy Consumption Survey. The EIA presents regional aggregates of household characteristics in the Mountain North region, which includes Colorado, Idaho, Montana, Utah, and Wyoming.

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	53%
Single Pane Windows	29%
Homes with Efficient Lighting	
At least one CFL Bulb	90%
At least one LED Bulb	40%
Two or more Refrigerators	36%
Energy Star Refrigerator	45%
Energy Star Dishwasher	30%
Energy Star Clothes Washer	50%
Three or more Televisions	40%
Electric Heat (all types)	21%
Programmable Thermostat	62%
Central Air Conditioning	57%
Use an Evaporative or Swamp Cooler	17%
Use a Ceiling Fan	71%
Electric Water Heating	29%

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 <https://www.cee1.org/>
- ◆ ENERGY STAR® Products 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>