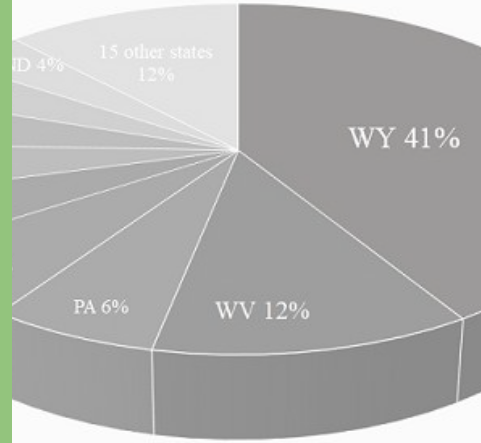


Making Wyoming Renewable

2017 U.S. Coal Production by State



2050

PROJECTED
ENERGY MIX



Lauren Carr, Daelen Gates, Lillian McCormack, Darcie Nelson

An Impossible Challenge

100% WYOMING

A vision for the transition to 100% wind, water & solar energy



Residential rooftop solar
1.1%



Solar plants
20.8%



Concentrating solar
plants
10%



Onshore wind
65%



Offshore wind
0%



Commercial &
government rooftop solar
0.7%



Wave devices
0%



Geothermal
1%



Hydroelectric
1.4%

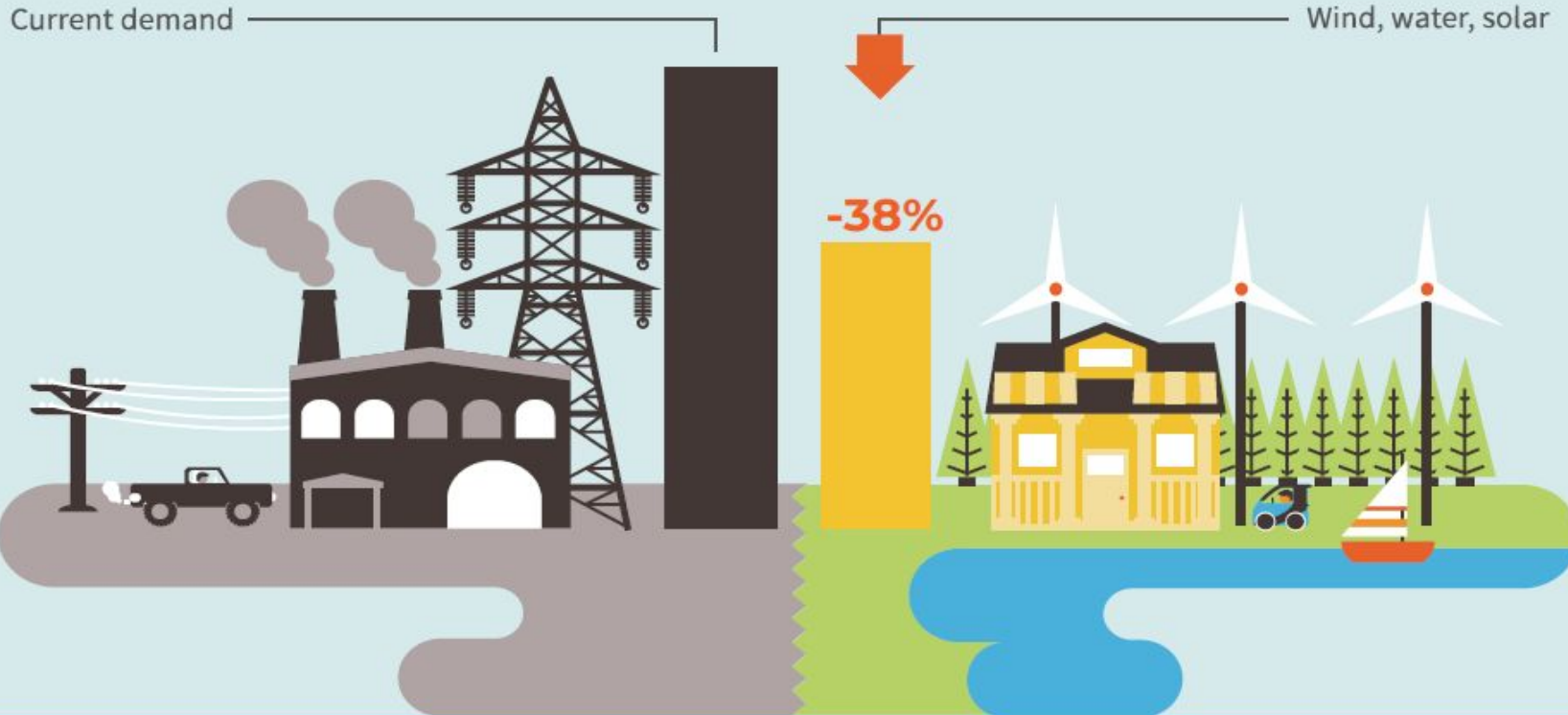


Tidal Turbines
0%



Reducing Energy Demand

Improving energy efficiency and powering the grid with electricity from the wind water and sun positively reduces the overall energy demand.



A map of the United States with Wyoming highlighted in a red box. The map shows state boundaries, major cities, and geographical features like the Gulf of California. Wyoming is centrally located in the western half of the country.

About Wyoming

	Wyoming	Seattle
Population:	577,737	724,745
Land Area:	97,914 mi ²	83.78 mi ²

The main drivers of Wyoming's economy are **mineral extraction** (mostly coal, oil, natural gas, and trona) and **tourism**.

Wyoming being a large grassland state also bares a cattle population of 1.3 million, over twice the human population, 24th largest producer in the U.S.

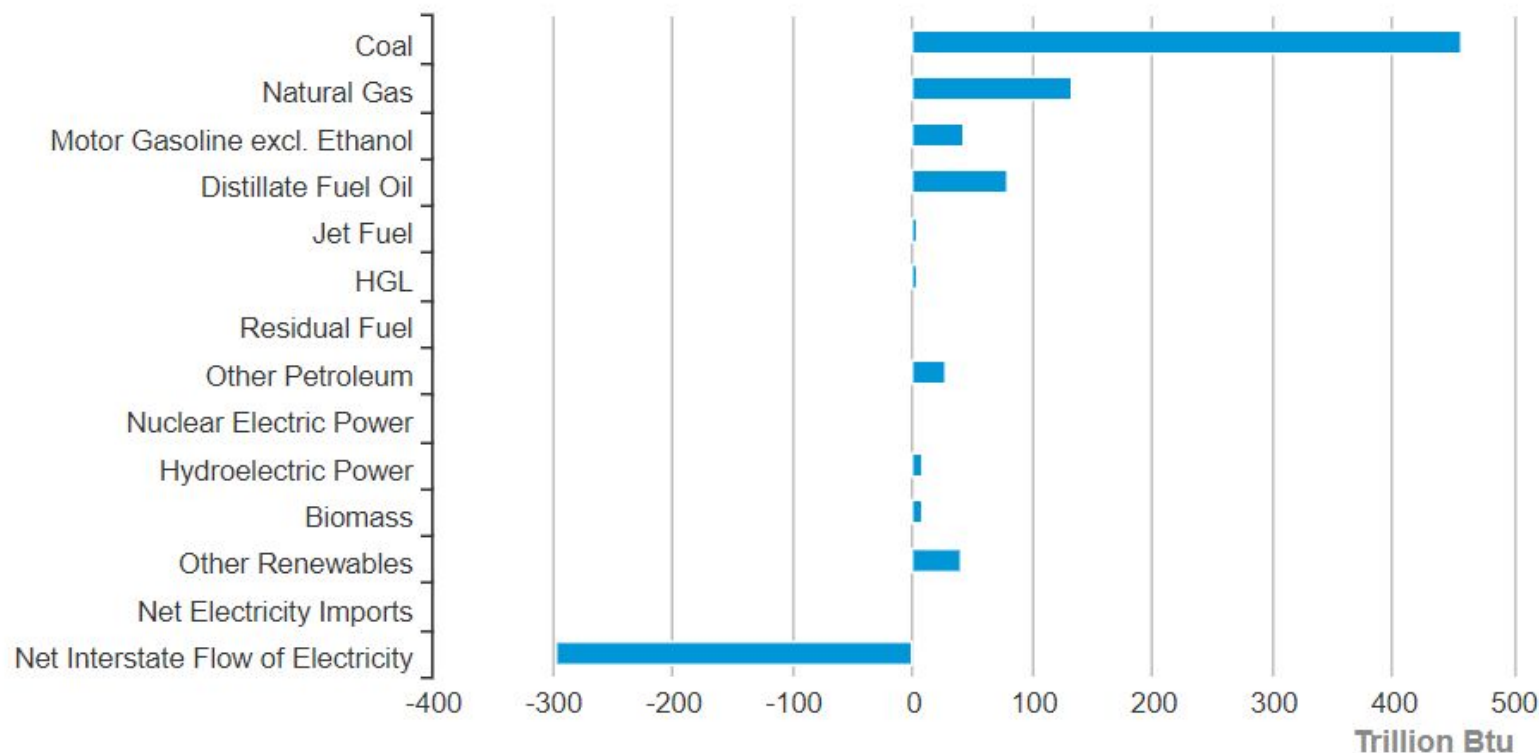
About Wyoming

- fourth-largest producer of natural gas
- 40% of all coal mined in the United States in 2017
- sixth largest crude oil producer in the nation
- almost 90% of the state's power generation came from coal in 2015
- wind production in Wyoming is taxed at \$1 per megawatt hour



Wyoming Energy Consumption Estimates, 2016

 [DOWNLOAD](#)



Source: Energy Information Administration, State Energy Data System

Agriculture

Main:

Reduced Food Waste

Plant-Rich Diet

Silvopasture

Regenerative Agriculture

Conservation Agriculture

Managed Grazing

Not mains:

Refrigerant Management

Farmland Restoration

Household Recycling

Industrial Recycling

Landfill Methane

Composting

Water Distribution





Cattle Industry Replacement through Plant-Rich Farming



- Produce 100k-172k tons of Methane per year
- 14tn gallons of water used for cattle every year
- 1840 gallons/1 pound beef vs 250 gallons/1 pound wheat
- Re focus farm production to agriculture
- Healthier crop rotations rather than focusing on hay

Reducing farming and agriculture waste



- Heavy plant and manure composting in large methane digesters
- Regenerative and conservation farming, reducing in farm waste and increasing soil flexibility.
- Managed grazing in fields and silvo pastures by the mountains in conjunction with crop rotation and livestock reduction



Silvopasture



- What is it?
- Livestock benefits / Wildlife
- Silvicultural benefits
- Return on investment
- By 2050

Managed Grazing

- Extraordinary environments
- Three techniques
 - Improved continuous grazing
 - Rotational grazing
 - Adaptive multi-paddock grazing
- By 2050



Electricity Generation (Wind, Solar, Storage)

- Highest wind power potential in the US
 - High altitude prairies
 - >15,000 jobs created, 10,000 more than currently in coal
 - Chokecherry, Sierra Madre wind projects -- 3,000 megawatts
- Solar
 - Residential
 - Industrial
 - Commercial
- Energy storage
 - Small population = less energy necessary
 - Sell or save



Questions

How do we retrain coal miners, or should we?

How do we decrease dietary dependency on beef?

Should resources other than coal be mined from Wyoming?

Is it better to change our lifestyle or better to change the agricultural industry?

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