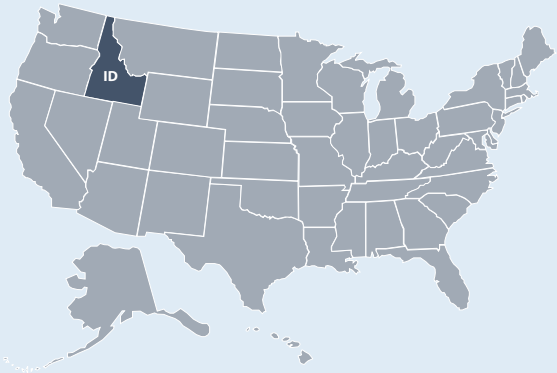
State of Idaho
ENERGY SECTOR RISK PROFILE

U.S. DEPARTMENT OF ENERGY
Cybersecurity, Energy Security, and Emergency Response



Idaho State Facts

POPULATION 1.75 M

HOUSING UNITS 0.74 M

BUSINESS ESTABLISHMENTS 0.05 M

ENERGY EMPLOYMENT: 13,298 jobs
PUBLIC UTILITY COMMISSION: Idaho Public Utilities Commission
STATE ENERGY OFFICE: Idaho Governor's Office of Energy and Mineral Resources
EMERGENCY MANAGEMENT AGENCY: Idaho Homeland Security and Emergency Management Agency
AVERAGE ELECTRICITY TARIFF: 8.17 cents/kWh
ENERGY EXPENDITURES: $3,672/capita
ENERGY CONSUMPTION PER CAPITA: 322 MMBtu
(22nd highest out of 50 states and Washington, D.C.)
GDP: $77.1 billion

Data from 2020 or most recent year available.
For more information, see the Data Sources document.

ANNUAL ENERGY CONSUMPTION

ELECTRIC POWER: 23,750 GWh
COAL: 100 MSTN
NATURAL GAS: 120 Bcf
MOTOR GASOLINE: 18,100 Mbbl
DISTILLATE FUEL: 13,000 Mbbl

ANNUAL ENERGY PRODUCTION

ELECTRIC POWER GENERATION: 138 plants, 18.4 TWh, *5.3 GW total capacity*
- **Coal:** 1 plant, 0.0 TWh, *0.0 GW total capacity*
- **Hydro:** 74 plants, 10.3 TWh, *2.7 GW total capacity*
- **Natural Gas:** 7 plants, 4.3 TWh, *1.2 GW total capacity*
- **Nuclear:** 0 plants
- **Petroleum:** 1 plant, 0.0 TWh, *0.0 GW total capacity*
- **Wind & Solar:** 41 plants, 3.1 TWh, *1.2 GW total capacity*
- **Other sources:** 14 plants, 0.7 TWh, *0.2 GW total capacity*

COAL: 0 MSTN
NATURAL GAS: 0 Bcf
CRUDE OIL: 0 Mbbl
ETHANOL: 1,500 Mbbl

Data from EIA (2018, 2019).

This State Energy Risk Profile examines the relative magnitude of the risks that the state of Idaho's energy infrastructure routinely encounters in comparison with the probable impacts. Natural and man-made hazards with the potential to cause disruption of the energy infrastructure are identified. Certain natural and adversarial threats, such as cybersecurity, electromagnetic pulse, geomagnetic disturbance, pandemics, or impacts caused by infrastructure interdependencies, are ill-suited to location-based probabilistic risk assessment as they may not adhere to geographic boundaries, have limited occurrence, or have limited historic data. Cybersecurity and other threats not included in these profiles are ever present and should be included in state energy security planning. A complete list of data sources and national level comparisons can be found in the Data Sources document.

Idaho Risks and Hazards Overview

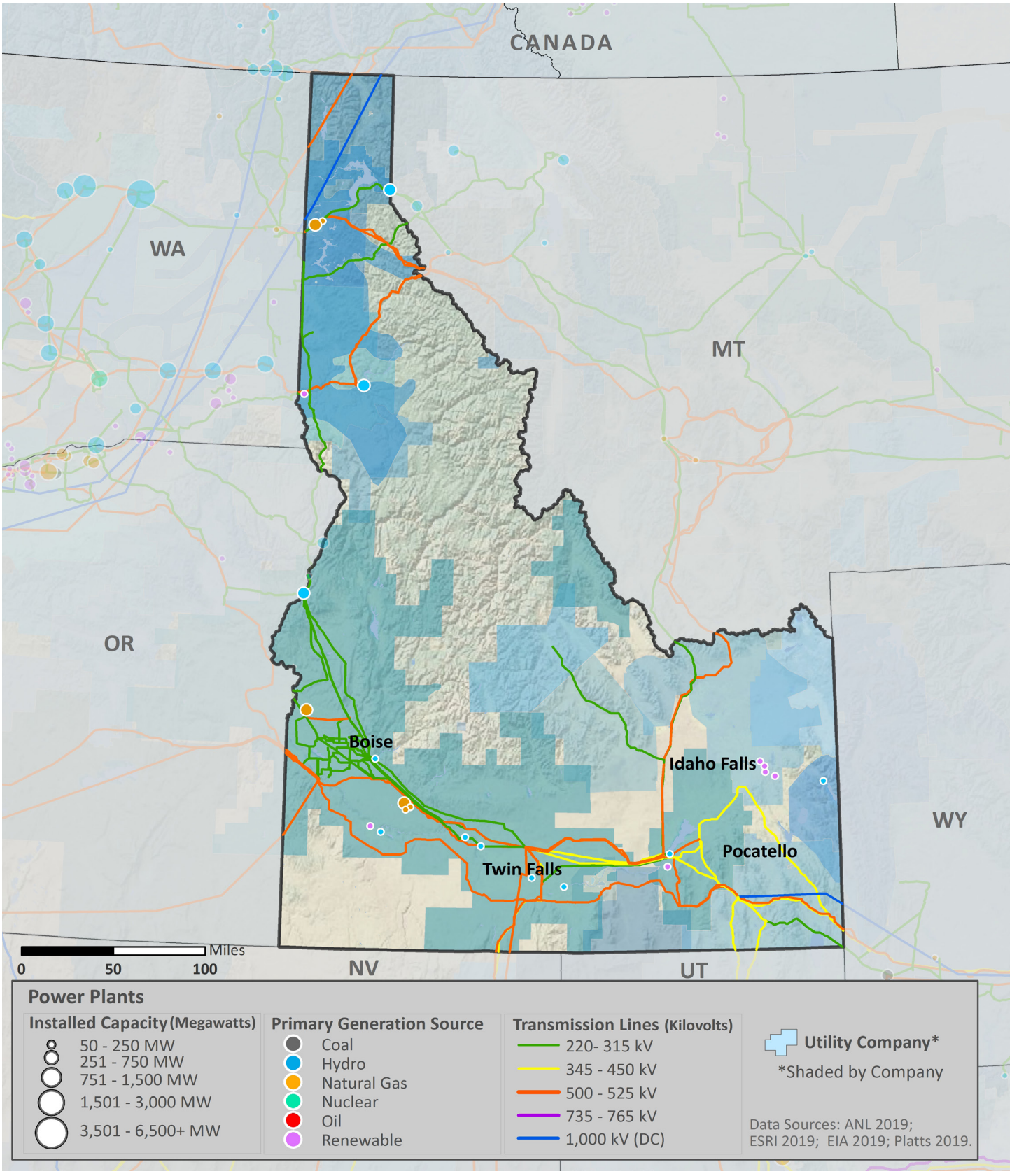
- The natural hazard that caused the greatest overall property loss between 2009 and 2019 was **Wildfires** at $51 million per year *(3rd leading cause nationwide at $2.1 billion per year).*
- Idaho had 41 Major Disaster Declarations, 0 Emergency Declarations, and 11 Fire Management Assistance Declarations for 15 events between 2013 and 2019.
- Idaho registered 2% fewer Heating Degree Days and 13% greater Cooling Degree Days than average in 2019.
- There is 1 Fusion Center located in Meridian.

Annualized Frequency of and Property Damage Due to Natural Hazards, 2009–2019

	HAZARD FREQUENCY – Annualized	PROPERTY DAMAGE – Annualized ($Million per year)
Drought	0	$0
Earthquake (≥ 3.5 M)	11	$0
Extreme Heat	<1	$0
Flood	18	$9
Hurricane	0	$0
Landslide	5	$1
Thunderstorm & Lightning	44	$4
Tornado	6	$0
Wildfire	17	$51
Winter Storm & Extreme Cold	47	$10

Data Sources: NOAA and USGS

ELECTRIC


CANADA
WA
MT
OR
WY
NV
UT
Boise
Idaho Falls
Pocatello
Twin Falls
0
50
100
Miles
Power Plants
Installed Capacity (Megawatts)
50 - 250 MW
251 - 750 MW
751 - 1,500 MW
1,501 - 3,000 MW
3,501 - 6,500+ MW
Primary Generation Source
Coal
Hydro
Natural Gas
Nuclear
Oil
Renewable
Transmission Lines (Kilovolts)
220- 315 kV
345 - 450 kV
500 - 525 kV
735 - 765 kV
1,000 kV (DC)
Utility Company*
*Shaded by Company
Data Sources: ANL 2019; ESRI 2019; EIA 2019; Platts 2019.

Electric Infrastructure

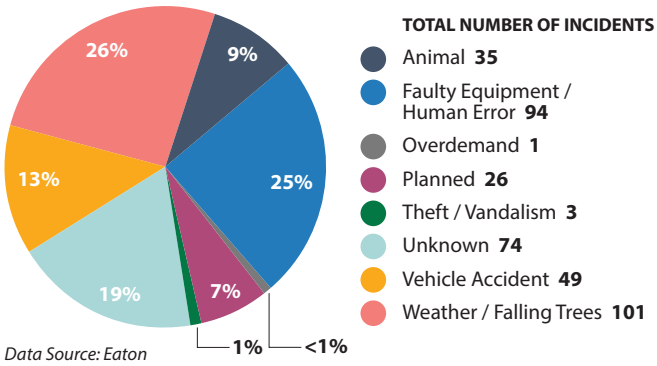
- Idaho has 24 electric utilities:
  - *1 Investor owned*
  - *13 Cooperative*
  - *10 Municipal*
  - *0 Other utilities*
- Plant retirements scheduled by 2025: 3 electric generating units totaling 5 MW of installed capacity.
- In 2018, the average Idaho electric customer experienced 1.2 service interruptions that lasted an average of less than 1 hour.
- In Idaho, between 2008 and 2017:
  - *The greatest number of electric outages occurred in **July** (leading month for outages nationwide)*
  - *The leading cause of electric outages was **Weather or Falling Trees** (leading cause nationwide)*
  - *Electric outages affected 117,219 customers on average*

Electric Customers and Consumption by Sector, 2018

	CUSTOMERS	CONSUMPTION
Residential	84%	35%
Commercial	13%	27%
Industrial	3%	37%
Transportation	<1%	<1%

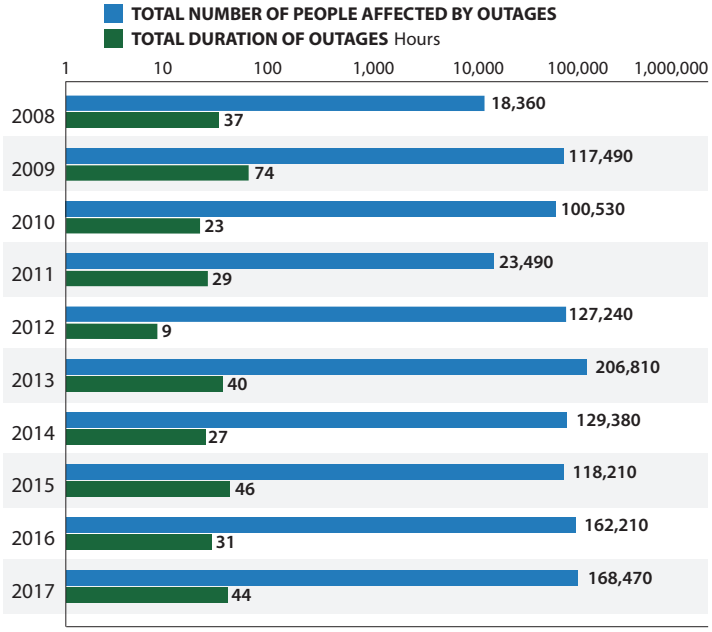
Data Source: EIA

Electric Utility-Reported Outages by Cause, 2008 – 2017



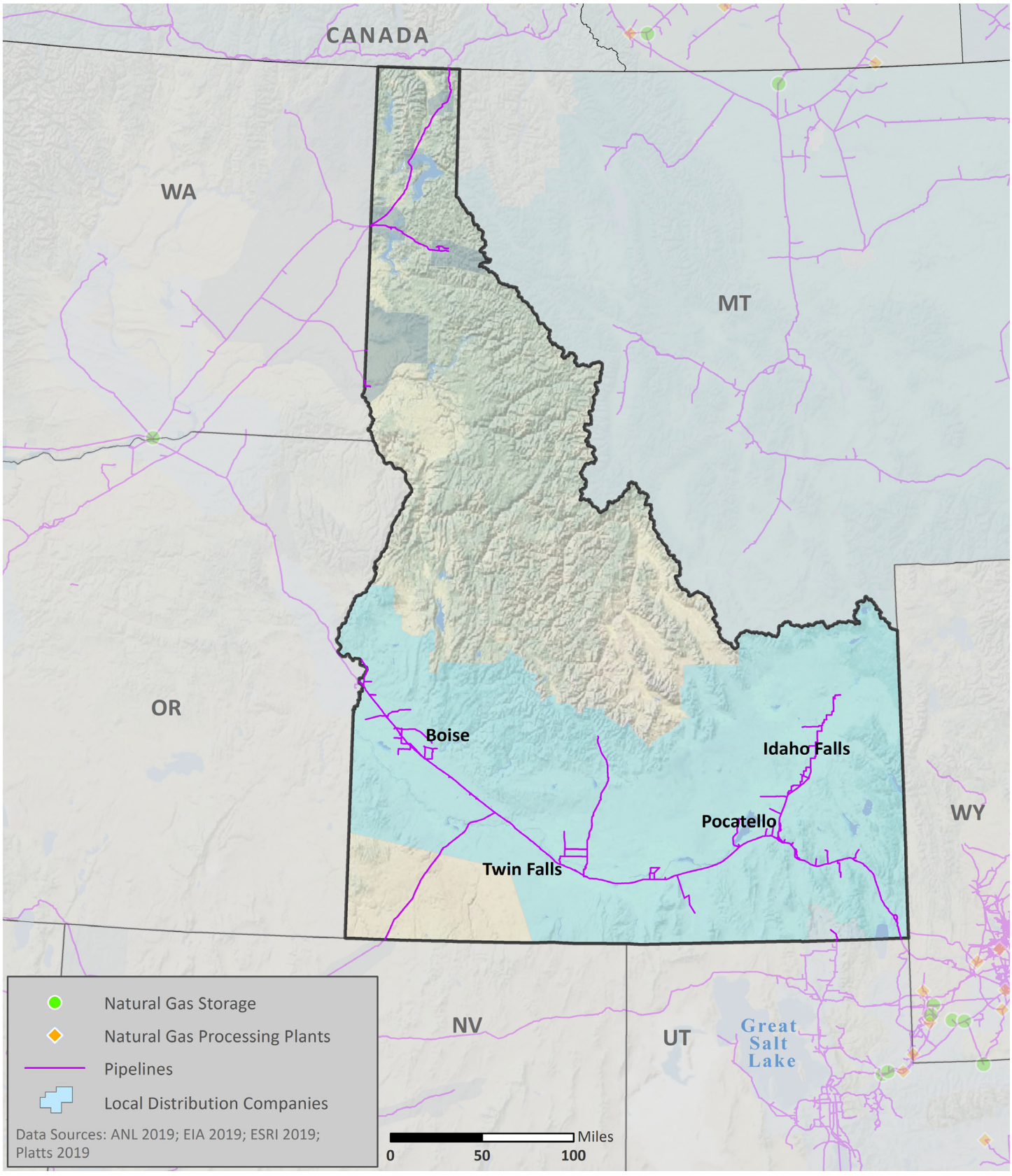
Data Source: Eaton

Electric Utility Outage Data, 2008 – 2017



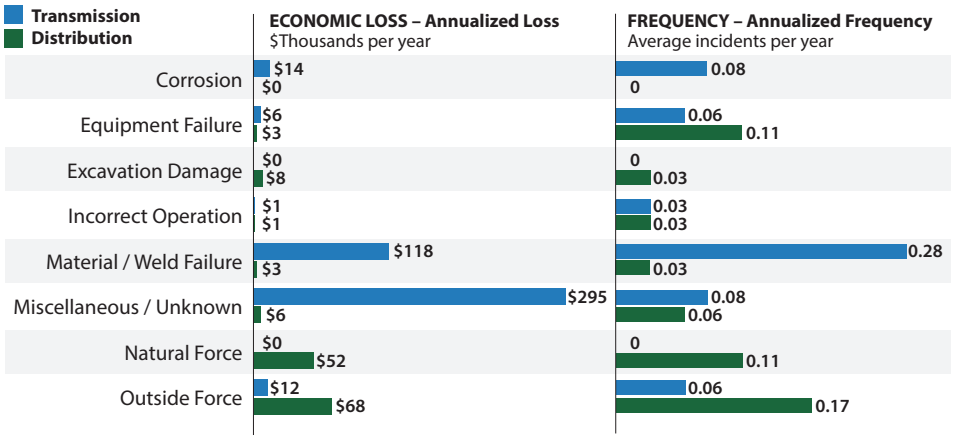
Note: This chart uses a logarithmic scale to display a very wide range of values.
Data Source: Eaton

NATURAL GAS


CANADA
WA
MT
OR
NV
UT
WY
Boise
Idaho Falls
Pocatello
Twin Falls
Great Salt Lake
Natural Gas Storage
Natural Gas Processing Plants
Pipelines
Local Distribution Companies
Data Sources: ANL 2019; EIA 2019; ESRI 2019; Platts 2019
0
50
100
Miles

Natural Gas Transport

Top Events Affecting Natural Gas Transmission and Distribution, 1984–2019



Data Source: DOT PHMSA

- As of 2018, Idaho had:
  - *1,480 miles of natural gas transmission pipelines*
  - *8,692 miles of natural gas distribution pipelines*
- 50% of Idaho's natural gas transmission system and 12% of the distribution system were constructed prior to 1970 or in an unknown year.
- Between 1984 and 2019, Idaho's natural gas supply was most impacted by:
  - ***Miscellaneous or Unknown*** *events when transported by transmission pipelines (5th leading cause nationwide at $16.77M per year)*
  - ***Outside Forces*** *when transported by distribution pipelines (leading cause nationwide at $76.59M per year)*

Natural Gas Processing and Liquefied Natural Gas

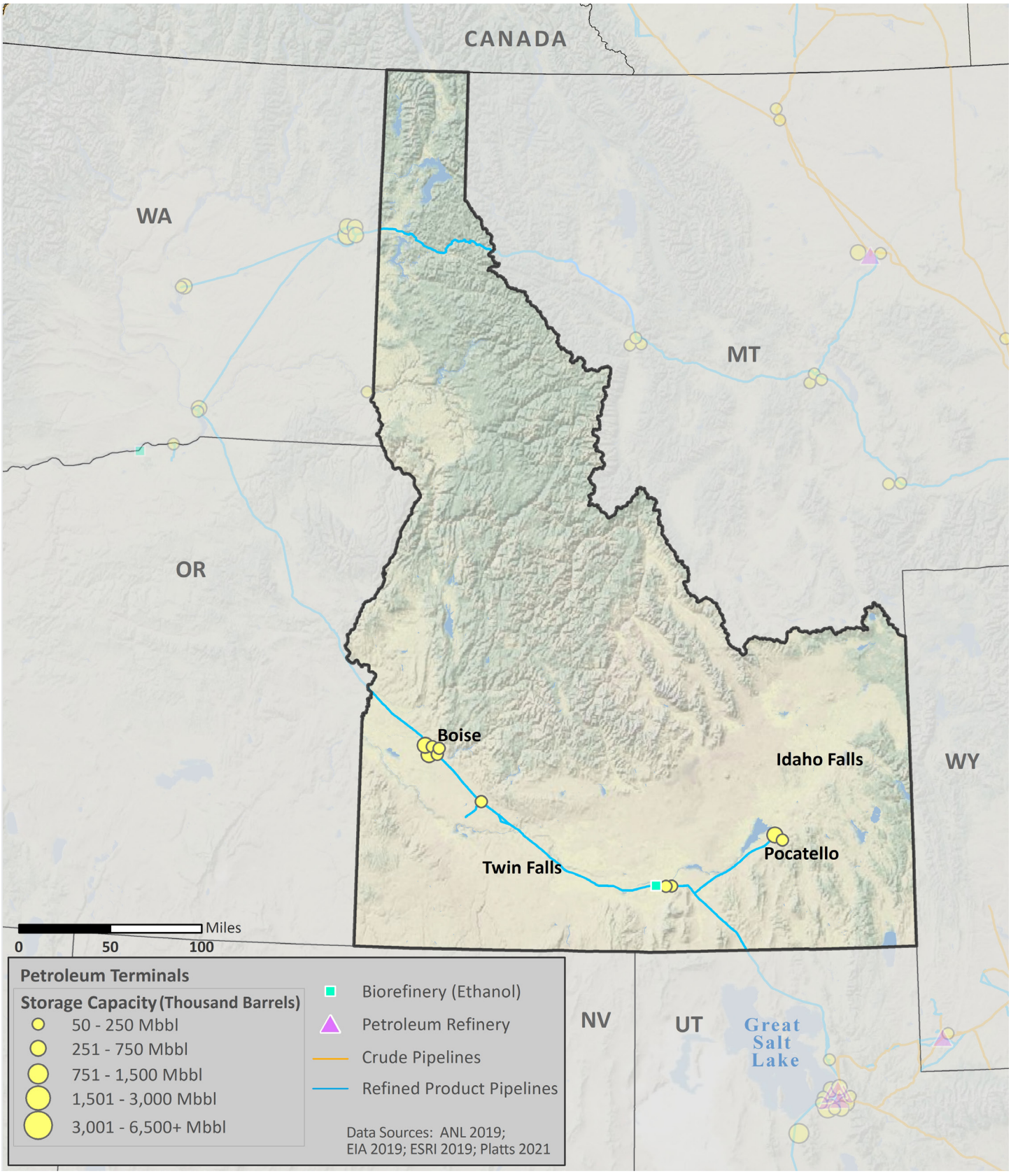
Natural Gas Customers and Consumption by Sector, 2018

	CUSTOMERS	CONSUMPTION
Residential	90%	26%
Commercial	9%	18%
Industrial	<1%	33%
Transportation	<1%	<1%
Electric Power	<1%	22%
Other	<1%	<1%

Data Source: EIA

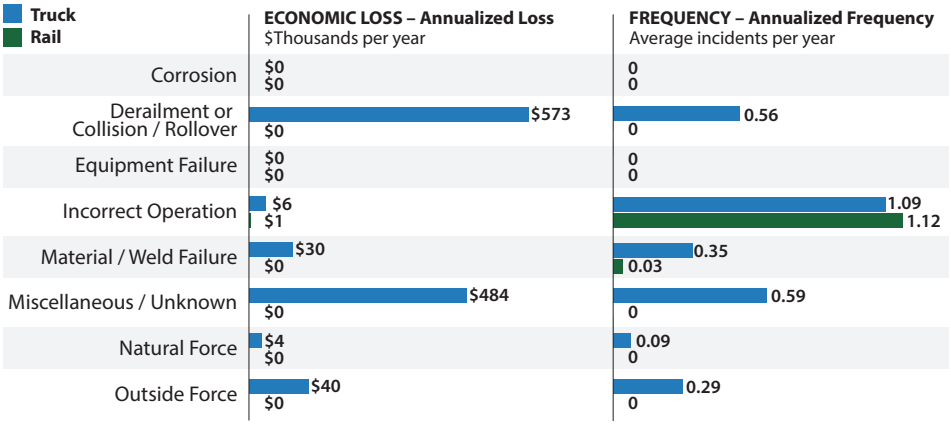
- Idaho has 0 natural gas processing facilities.
- Idaho has 2 liquefied natural gas (LNG) facilities with a total storage capacity of 176,666 barrels.

PETROLEUM


CANADA
WA
MT
OR
WY
NV
UT
Great Salt Lake
Boise
Idaho Falls
Pocatello
Twin Falls
Miles
0
50
100
Petroleum Terminals
Storage Capacity (Thousand Barrels)
50 - 250 Mbbl
251 - 750 Mbbl
751 - 1,500 Mbbl
1,501 - 3,000 Mbbl
3,001 - 6,500+ Mbbl
Biorefinery (Ethanol)
Petroleum Refinery
Crude Pipelines
Refined Product Pipelines
Data Sources: ANL 2019; EIA 2019; ESRI 2019; Platts 2021

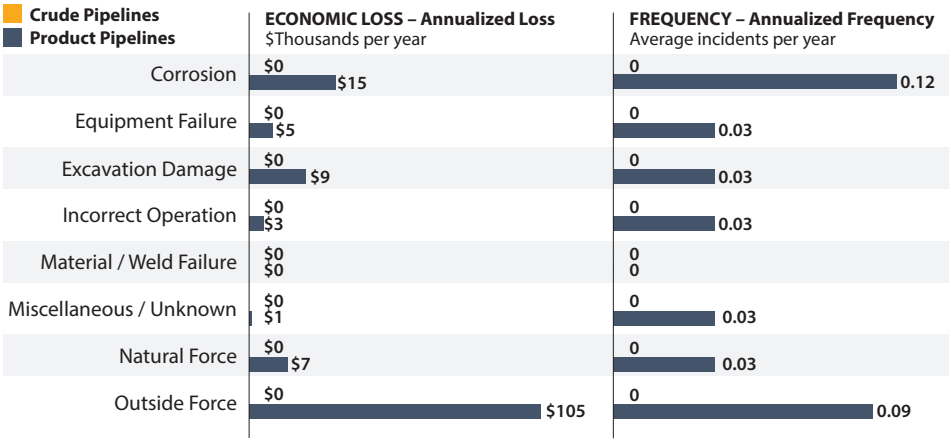
Petroleum Transport

Top Events Affecting Petroleum Transport by Truck and Rail, 1986 – 2019



Data Source: DOT PHMSA

Top Events Affecting Crude Oil and Refined Product Pipelines, 1986 – 2019



Data Source: DOT PHMSA

- As of 2018, Idaho had:
  - *11 miles of crude oil pipelines*
  - *648 miles of refined product pipelines*
  - *0 miles of biofuels pipelines*
- 94% of Idaho's petroleum pipeline systems were constructed prior to 1970 or in an unknown year.
- Between 1986 and 2019, Idaho's petroleum supply was most impacted by:
  - ***Derailments, Collisions, or Rollovers*** *when transported by truck (8th leading cause nationwide at $0.07M per year)*
  - ***Incorrect Operations*** *when transported by rail (4th leading cause nationwide at $2.02M per year)*
  - ***Outside Forces*** *when transported by product pipelines (leading cause nationwide at $19.06M per year)*
- Disruptions in other states may impact supply.

Petroleum Refineries

- There are no operating petroleum refineries in Idaho.