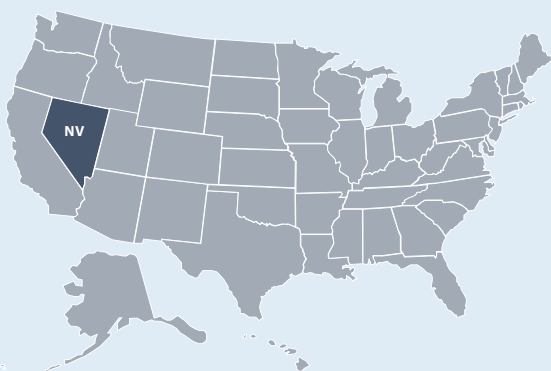




State of Nevada ENERGY SECTOR RISK PROFILE



Nevada State Facts



POPULATION

3.03 M



HOUSING UNITS

1.27 M



BUSINESS ESTABLISHMENTS

0.06 M

ENERGY EMPLOYMENT: 35,879 jobs
PUBLIC UTILITY COMMISSION: Public Utilities Commission of Nevada

STATE ENERGY OFFICE: Nevada Governor's Office of Energy

EMERGENCY MANAGEMENT AGENCY: Nevada Division of Emergency Management

AVERAGE ELECTRICITY TARIFF: 8.67 cents/kWh

ENERGY EXPENDITURES: \$3,100/capita

ENERGY CONSUMPTION PER CAPITA: 238 MMBtu (40th highest out of 50 states and Washington, D.C.)

GDP: \$169.3 billion

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

ANNUAL ENERGY CONSUMPTION

ELECTRIC POWER: 42,600 GWh

COAL: 1,700 MSTN

NATURAL GAS: 298 Bcf

MOTOR GASOLINE: 28,100 Mbbl

DISTILLATE FUEL: 13,500 Mbbl

ANNUAL ENERGY PRODUCTION

ELECTRIC POWER GENERATION: 93 plants, 39.9 TWh, 13.6 GW total capacity

Coal: 2 plants, 2.7 TWh, 0.8 GW total capacity

Hydro: 6 plants, 2.2 TWh, 1.1 GW total capacity

Natural Gas: 16 plants, 25.8 TWh, 8.4 GW total capacity

Nuclear: 0 plants

Petroleum: 1 plant, 0.0 TWh, 0.0 GW total capacity

Wind & Solar: 40 plants, 5.1 TWh, 2.5 GW total capacity

Other sources: 28 plants, 4.0 TWh, 0.9 GW total capacity

COAL: 0 MSTN

NATURAL GAS: 0 Bcf

CRUDE OIL: 400 Mbbl

ETHANOL: 0 Mbbl

Data from EIA (2018, 2019).

This State Energy Risk Profile examines the relative magnitude of the risks that the state of Nevada'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.

Nevada Risks and Hazards Overview

- The natural hazard that caused the greatest overall property loss between 2009 and 2019 was **Thunderstorms & Lightning** at \$13 million per year (2nd leading cause nationwide at \$2.8 billion per year).
- Nevada had 16 Major Disaster Declarations, 0 Emergency Declarations, and 13 Fire Management Assistance Declarations for 15 events between 2013 and 2019.
- Nevada registered 1% fewer Heating Degree Days and 7% greater Cooling Degree Days than average in 2019.
- There are 2 Fusion Centers in Nevada. The Primary Fusion Center is located in Las Vegas.

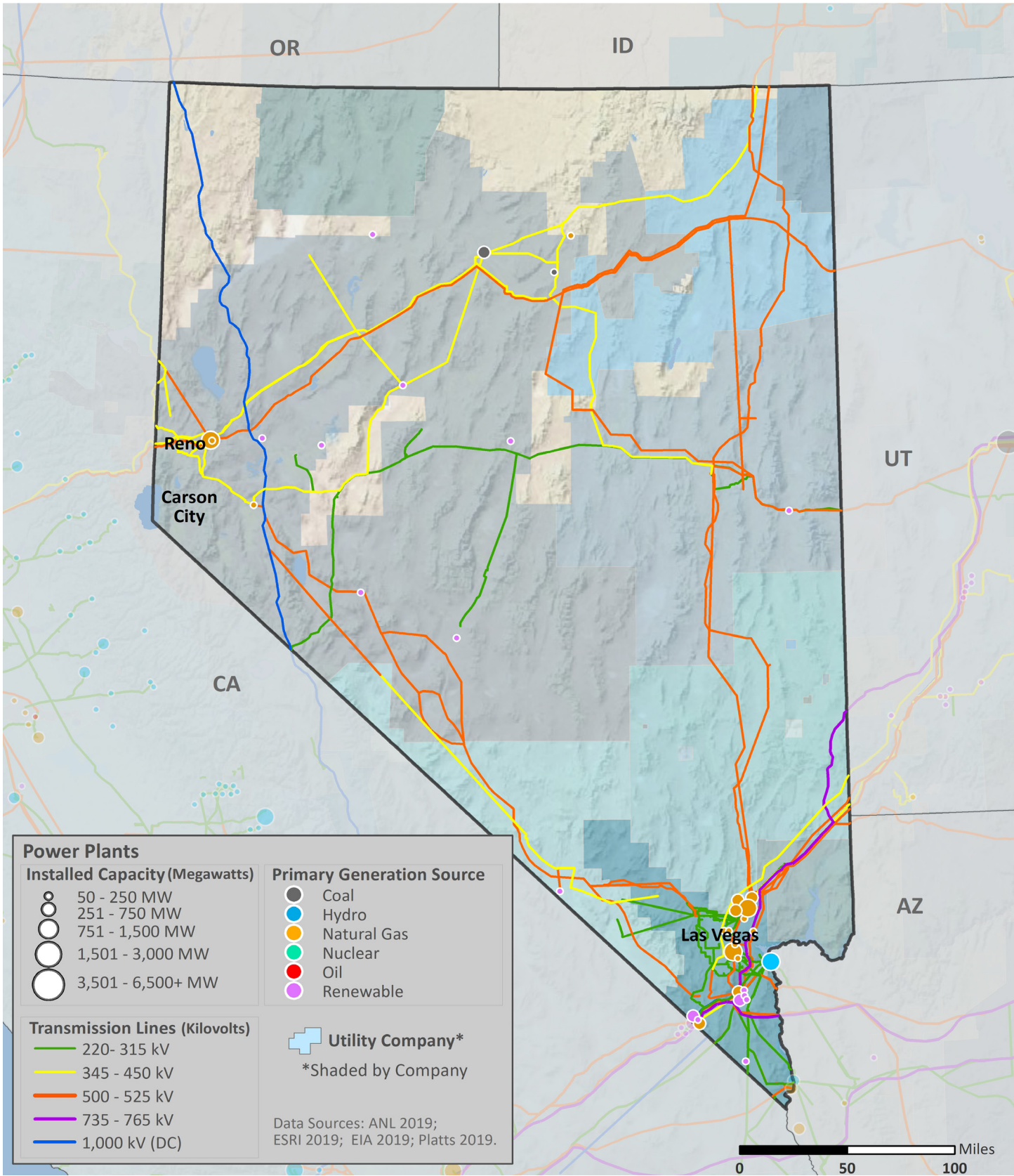
Annualized Frequency of and Property Damage Due to Natural Hazards, 2009 – 2019

	HAZARD FREQUENCY – Annualized	PROPERTY DAMAGE – Annualized (\$Million per year)
Drought	0	\$0
Earthquake (≥ 3.5 M)	15	\$0
Extreme Heat	11	\$0
Flood	17	\$7
Hurricane	0	\$0
Landslide	2	\$0
Thunderstorm & Lightning	55	\$13
Tornado	2	\$0
Wildfire	3	\$4
Winter Storm & Extreme Cold	22	\$1

Data Sources: NOAA and USGS



ELECTRIC









Electric Infrastructure

- Nevada has 15 electric utilities:
 - 2 Investor owned
 - 3 Cooperative
 - 6 Municipal / Public Utility Districts
 - 4 Other utilities
- Plant retirements scheduled by 2025: 19 electric generating units totaling 999 MW of installed capacity.

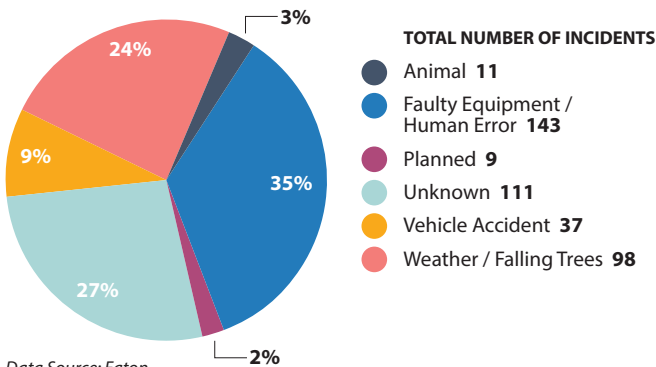
- In 2018, the average Nevada electric customer experienced 1 service interruption that lasted an average of 2.1 hours.
- In Nevada, between 2008 and 2017:
 - The greatest number of electric outages occurred in **November** (10th for outages nationwide)
 - The leading cause of electric outages was **Faulty Equipment or Human Error** (2nd leading cause nationwide)
 - Electric outages affected 115,508 customers on average

Electric Customers and Consumption by Sector, 2018

	 CUSTOMERS	 CONSUMPTION
Residential 	88%	36%
Commercial 	12%	32%
Industrial 	<1%	32%
Transportation 	<1%	<1%

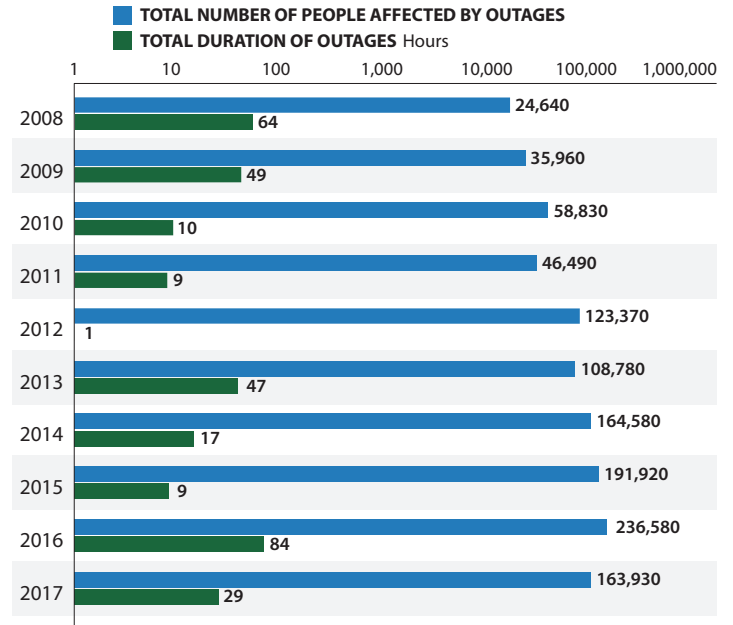
Data Source: EIA

Electric Utility-Reported Outages by Cause, 2008 – 2017



Data Source: Eaton

Electric Utility Outage Data, 2008 – 2017

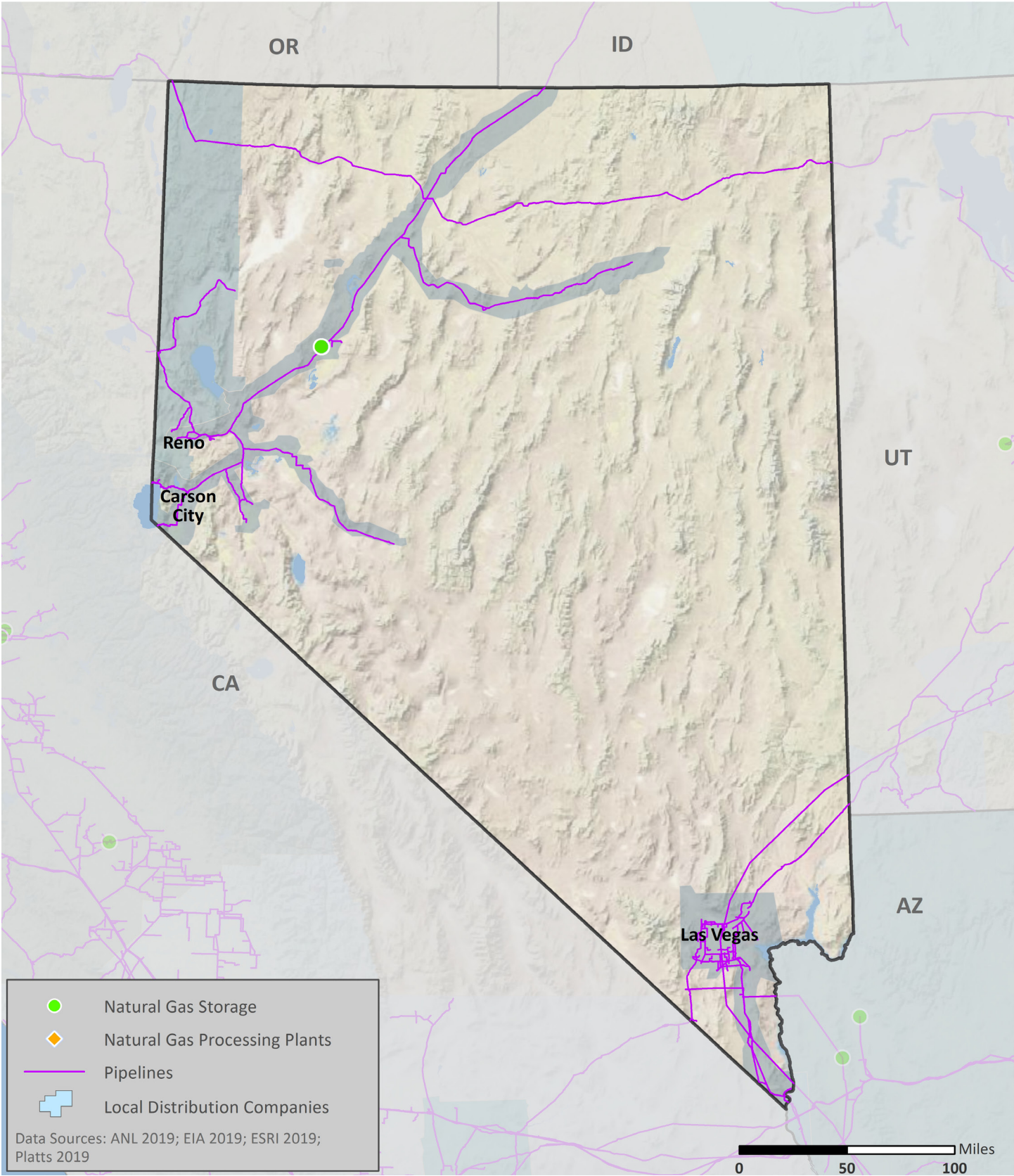


Note: This chart uses a logarithmic scale to display a very wide range of values.
Data Source: Eaton



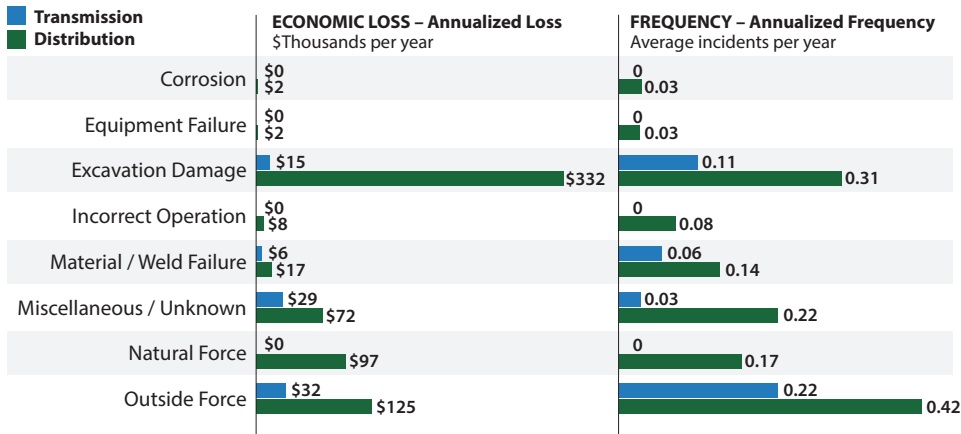


NATURAL GAS



Natural Gas Transport

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



Data Source: DOT PHMSA

- As of 2018, Nevada had:
 - 2,035 miles of natural gas transmission pipelines
 - 10,329 miles of natural gas distribution pipelines
- 37% of Nevada’s natural gas transmission system and 3% of the distribution system were constructed prior to 1970 or in an unknown year.
- Between 1984 and 2019, Nevada’s natural gas supply was most impacted by:
 - **Outside Forces** when transported by transmission pipelines (3rd leading cause nationwide at \$20.65M per year)
 - **Excavation Damage** when transported by distribution pipelines (5th leading cause nationwide at \$16.56M per year)

Natural Gas Processing and Liquefied Natural Gas

Natural Gas Customers and Consumption by Sector, 2018

	CUSTOMERS	CONSUMPTION
Residential	95%	14%
Commercial	5%	11%
Industrial	<1%	7%
Transportation	<1%	<1%
Electric Power	<1%	68%
Other	<1%	<1%

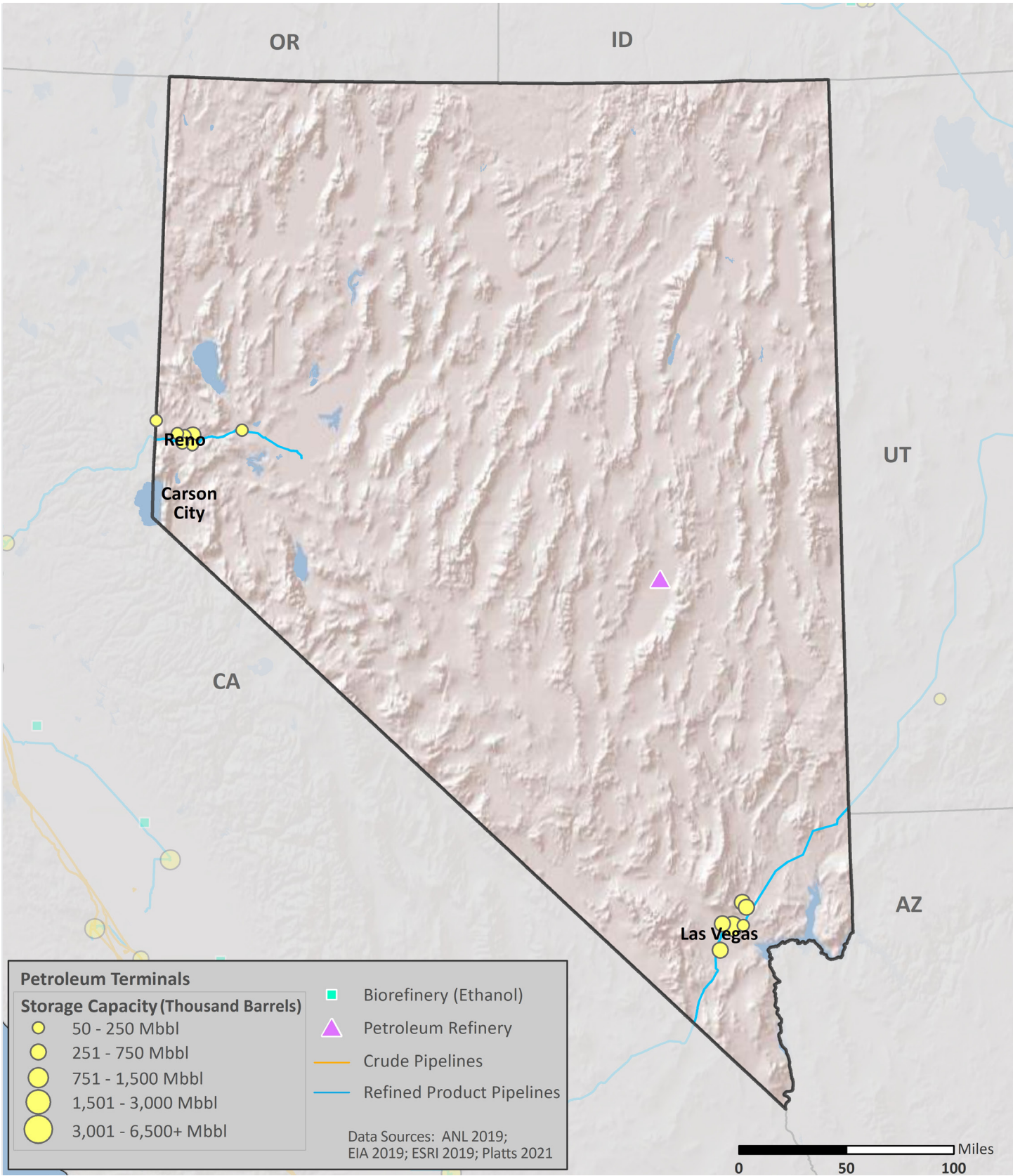
Data Source: EIA

- Nevada has 0 natural gas processing facilities.
- Nevada has 1 liquefied natural gas (LNG) facility with a total storage capacity of 290,000 barrels.



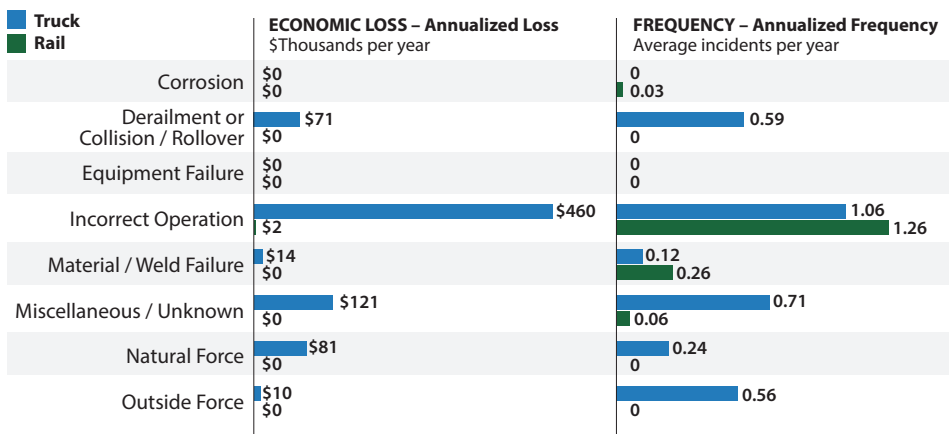


PETROLEUM



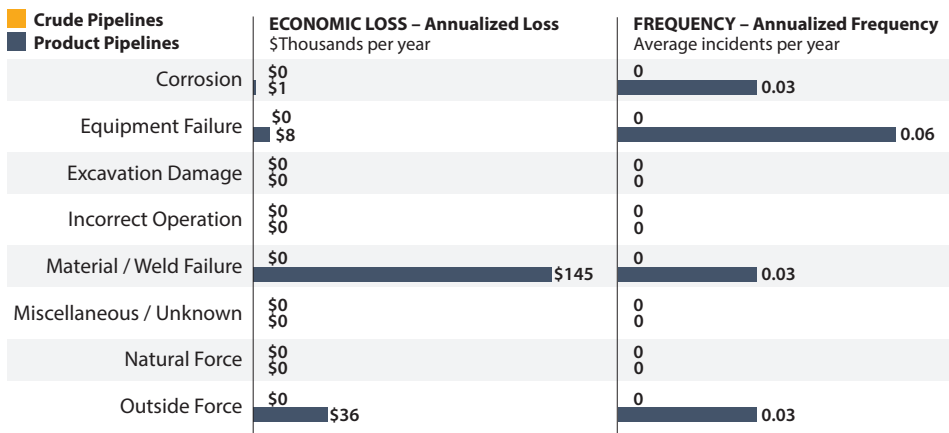
Petroleum Transport

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, Nevada had:
 - 0 miles of crude oil pipelines
 - 276 miles of refined product pipelines
 - 0 miles of biofuels pipelines
- 42% of Nevada’s petroleum pipeline systems were constructed prior to 1970 or in an unknown year.
- Between 1986 and 2019, Nevada’s petroleum supply was most impacted by:
 - **Incorrect Operations** when transported by truck (5th leading cause nationwide at \$11.01M per year)
 - **Incorrect Operations** when transported by rail (4th leading cause nationwide at \$2.02M per year)
 - **Material Failures** when transported by product pipelines (4th leading cause nationwide at \$9.47M per year)
- Disruptions in other states may impact supply.

Petroleum Refineries

- Nevada has 1 petroleum refinery with a total operable capacity of 2 Mb/d.
- Between 2009 and 2019, no petroleum refinery disruptions were recorded in Nevada.

