



Data Sources and National Comparisons

ENERGY SECTOR RISK PROFILES

ABBREVIATED UNITS

ENERGY [↗](#)

MMBtu

Million British Thermal Units

ELECTRICITY [↗](#)

kWh Kilowatt-hour
GWh Gigawatt-hour
TWh Terawatt-hour
MW Megawatt
GW Gigawatt [↗](#)

COAL [↗](#)

MSTN Thousand Short Tons

NATURAL GAS [↗](#)

Bcf Billion Cubic Feet
MMcf/d Million Cubic Feet per Day

PETROLEUM [↗](#)

Mbbbl Thousand Barrels
Mb/d Thousand Barrels per Day

State Facts

- Census Bureau (2020) State and County QuickFacts [↗](#)
- Energy Futures Initiative and NASEO (2018) U.S. Energy & Employment Report [↗](#)
- NARUC (2020) Regulatory Commission [↗](#)
- NASEO (2020) State Energy Offices [↗](#)
- FEMA (2020) Emergency Management Agencies [↗](#)
- National Association of Fusion Centers (2020) Fusion Centers [↗](#)
- EIA (2019) State Energy Data System [↗](#)

Risks and Hazards Overview

- FEMA (2019) OpenFEMA Dataset: Disaster Declarations Summary [↗](#)
- NOAA (2019) Climate at a Glance [↗](#)
- USGS (2019) Earthquake Hazards Program [↗](#)
- NOAA (2019) Storm Events Database [↗](#)

Consumption Numbers

- EIA (2018) Total Electricity Industry Retail Sales (EIA-861) [↗](#)
- EIA (2018) Annual Coal Consumption [↗](#)
- EIA (2019) Natural Gas Consumption by End Use [↗](#)
- EIA (2019) Prime Supplier Sales Volumes [↗](#)
- EIA (2019) Form-860 Power Plants [↗](#)

Production Numbers

- EIA (2019) Electricity: Detailed State Data (EIA-861) [↗](#)
- EIA (2019) Table P1 Energy Production Estimates in Physical Units [↗](#)

Electric

- EIA (2018) Electricity: Detailed State Data (EIA-860, EIA-861) [↗](#)
- Eaton (2017) Blackout and Power Outage Tracker [↗](#)

Natural Gas and LNG

- DOT PHMSA (2018) Pipeline Mileage and Facilities [↗](#)
- DOT PHMSA (2019) Distribution, Transmission & Gathering, LNG, and Liquid Accident and Incident Data [↗](#)
- EIA (2017) Natural Gas Processing Facilities [↗](#)

Notes

Page 1:

- A *business establishment* is a single physical location at which business is conducted or operations are performed. It is not necessarily a company, which may consist of multiple establishments.
- Electricity tariff data is an average for all consumers (residential, commercial, industrial, and transportation).
- *Total capacity* refers to the maximum power output that generating equipment can supply.
- Wind or solar plants with a nameplate capacity of 1 MW or greater, and that are connected to the power grid, are included as part of a state's annual energy production data.
- *Heating Degree Days* are a measure of how cold the temperature was on a given day or during a period of days. *Cooling Degree Days* are a measure of how hot the temperature was on a given day or during a period of days.
- Under Natural Hazards, *Other* includes extreme weather events such as dense smoke, frost / freeze, and rip currents.
- Page 2: *Utility company* includes investor-owned utilities (IOUs) and non-IOUs. For more information about utility service territories, see the [American Public Power Association \(APPA\)](#), [Edison Electric Institute \(EEI\)](#), and [National Rural Electric Cooperative Association \(NRECA\)](#).

Page 3:

- *Other utilities* includes retail and wholesale power marketers, federal and state government utilities, political subdivisions, and others as categorized by EIA.
- Electricity outage data is collected from multiple sources and attempts to provide an accurate picture of the total number of individual persons impacted by electric outages.
- Pages 3, 5, and 7: Each incident type is an assembly of similar causes reported in the data source.
 - *Overdemand* refers to outages that occur when the demand for electricity is greater than the supply, causing forced curtailment.
 - Explanations for the indescribable incident types are as follows:
 - *Miscellaneous / Unknown* includes releases or failures resulting from any other cause not listed or of an unknowable nature.
 - *Natural Forces* refers to damage that occurs as a result of earth movements, flooding, high winds, etc.
 - *Outside Forces* refers to pipeline failures due to activities caused by outside parties or forces (excluding excavation or naturally occurring events), such as vehicle accidents and vandalism.









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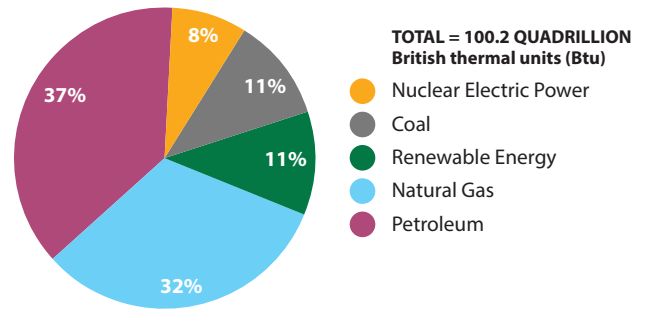
National Consumption by Sector, 2018

Electric Customers and Consumption

	 CUSTOMERS	 CONSUMPTION
Residential 	87%	35%
Commercial 	12%	38%
Industrial 	<1%	27%
Transportation 	<1%	<1%








Data Source: EIA

U.S. Primary Energy Consumption By Energy Source, 2019









Note: Sum of components may not equal 100% because of independent rounding.
Data Source: U.S. Energy Information Administration, Monthly Energy Review, Table 1.3 and 10.1, February 2021.

Natural Gas Customers and Consumption

	 CUSTOMERS	 CONSUMPTION
Residential 	92%	18%
Commercial 	7%	13%
Industrial 	<1%	30%
Transportation 	<1%	<1%
Electric Power 	<1%	39%
Other	<1%	<1%

Data Source: EIA

Petroleum Consumption

	 CONSUMPTION
Residential 	3%
Commercial 	2%
Industrial 	26%
Transportation 	68%
Electric Power 	<1%

Data Source: EIA





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Natural Hazards

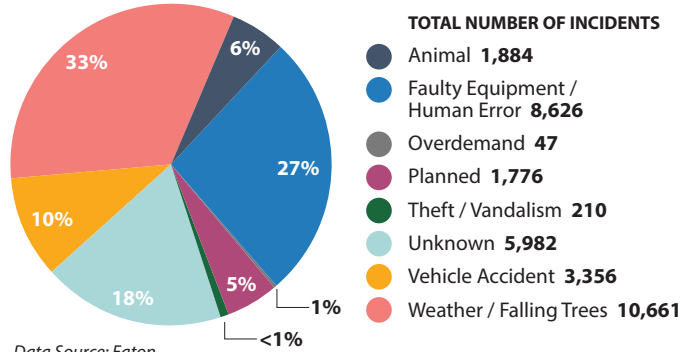
Annualized Frequency of and Property Damage Due to Natural Hazards, 2009 – 2019

	HAZARD FREQUENCY – Annualized	PROPERTY DAMAGE – Annualized (\$Million per year)
Drought	285	\$111
Earthquake (≥ 3.5 M)	1,414	\$578
Extreme Heat	179	\$2
Flood	1,917	\$12,080
Hurricane	32	\$1,940
Landslide	74	\$79
Thunderstorm & Lightning	5,958	\$2,828
Tornado	681	\$2,047
Wildfire	275	\$2,098
Winter Storm & Extreme Cold	1,710	\$418
Other	347	\$2

Note: The vast majority of earthquakes occurred in Alaska and California.
Data Sources: NOAA and USGS

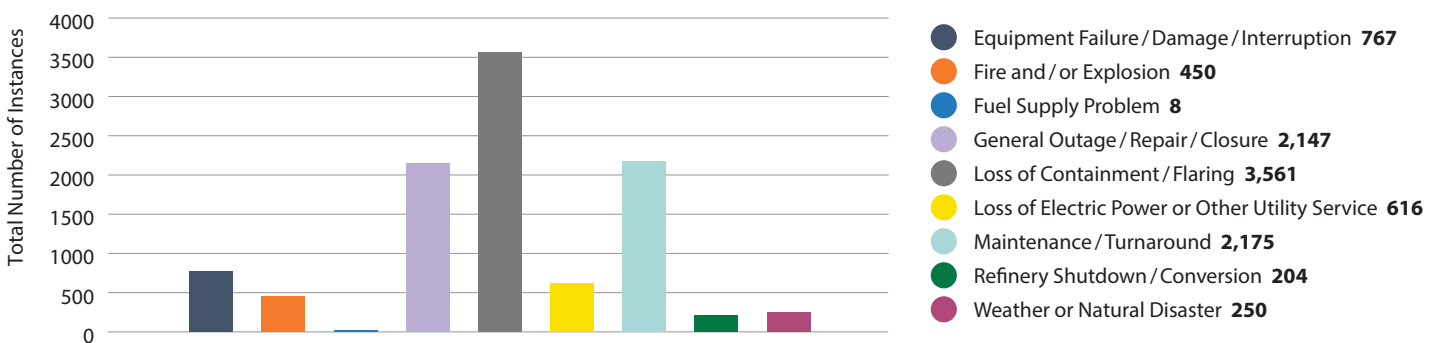
Electric

Electric Utility-Reported Outages by Cause, 2008 – 2017



Petroleum Refineries

Causes and Frequency of Petroleum Refinery Disruptions, 2009 – 2019



Data Source: Hydrocarbon Publishing



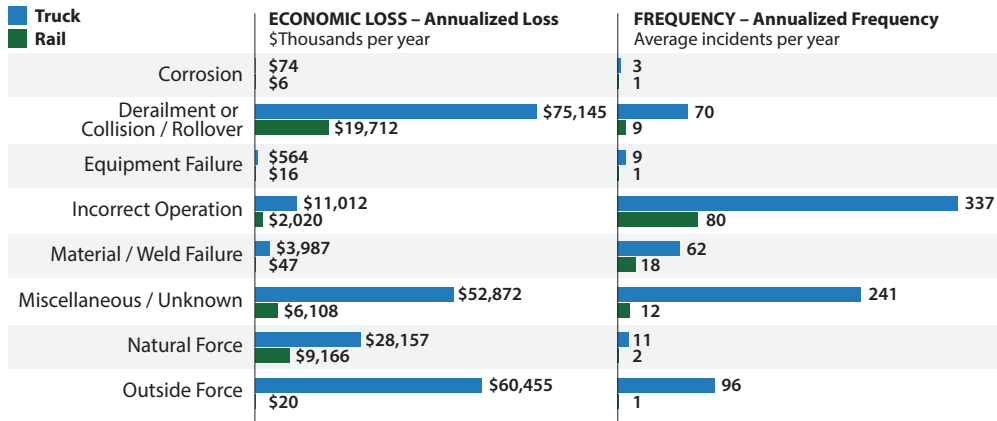


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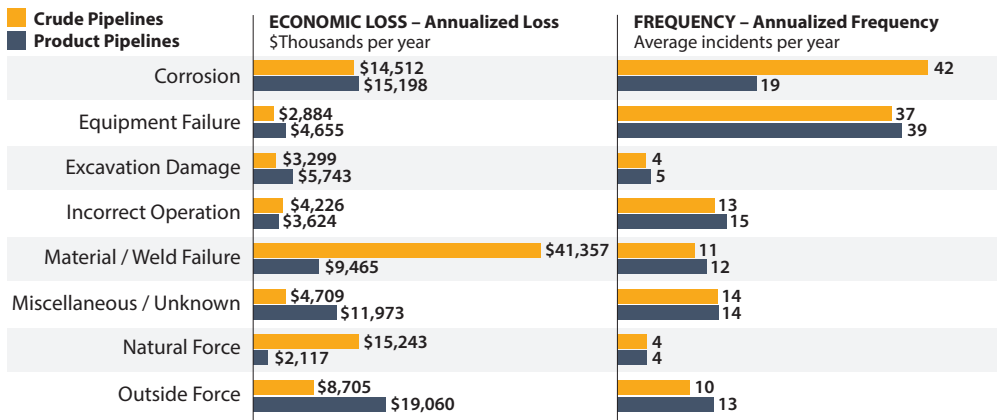
Petroleum and Natural Gas Transport

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



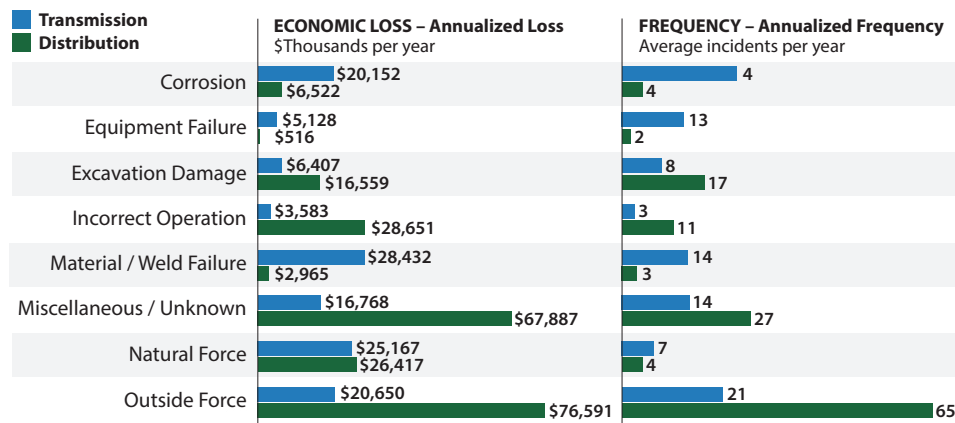
Data Source: DOT PHMSA

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



Data Source: DOT PHMSA

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



Data Source: DOT PHMSA



FOR MORE INFORMATION CONTACT
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