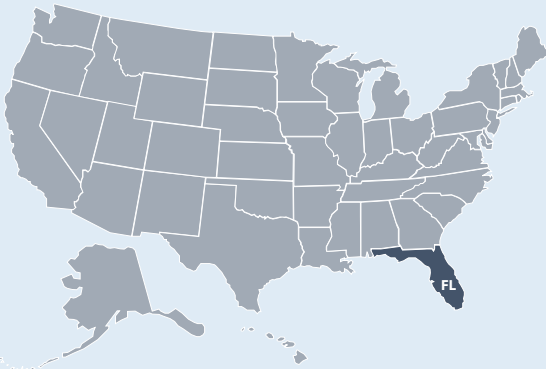




State of Florida ENERGY SECTOR RISK PROFILE



Florida State Facts



POPULATION

21.30 M



HOUSING UNITS
9.55 M



BUSINESS ESTABLISHMENTS
0.55 M

ENERGY EMPLOYMENT: 124,954 jobs
PUBLIC UTILITY COMMISSION: Florida Public Service Commission

STATE ENERGY OFFICE: Florida Office of Energy
EMERGENCY MANAGEMENT AGENCY: Florida Division of Emergency Management

AVERAGE ELECTRICITY TARIFF: 10.31 cents/kWh
ENERGY EXPENDITURES: \$2,721/capita
ENERGY CONSUMPTION PER CAPITA: 201 MMBtu (47th highest out of 50 states and Washington, D.C.)
GDP: \$1,039.2 billion

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

ANNUAL ENERGY CONSUMPTION

ELECTRIC POWER: 238,990 GWh

COAL: 13,900 MSTN

NATURAL GAS: 1,528 Bcf

MOTOR GASOLINE: 171,500 Mbbl

DISTILLATE FUEL: 54,400 Mbbl

ANNUAL ENERGY PRODUCTION

ELECTRIC POWER GENERATION: 210 plants, 245.6 TWh, 58.1 GW total capacity

Coal: 10 plants, 21.2 TWh, 8.6 GW total capacity

Hydro: 1 plant, 0.2 TWh, 0.0 GW total capacity

Natural Gas: 68 plants, 182.0 TWh, 46.4 GW total capacity

Nuclear: 2 plants, 29.1 TWh, 3.8 GW total capacity

Petroleum: 18 plants, 1.5 TWh, 3.9 GW total capacity

Wind & Solar: 65 plants, 3.9 TWh, 2.1 GW total capacity

Other sources: 46 plants, 7.6 TWh, 1.7 GW total capacity

COAL: 0 MSTN

NATURAL GAS: 0 Bcf

CRUDE OIL: 1,800 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 Florida'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.

Florida Risks and Hazards Overview

- The natural hazard that caused the greatest overall property loss between 2009 and 2019 was **Hurricanes** at \$873 million per year (5th leading cause nationwide at \$1.9 billion per year).
- Florida had 162 Major Disaster Declarations, 206 Emergency Declarations, and 3 Fire Management Assistance Declarations for 18 events between 2013 and 2019.
- Florida registered 43% fewer Heating Degree Days and 30% greater Cooling Degree Days than average in 2019.
- There are 3 Fusion Centers in Florida. The Primary Fusion Center is located in Tallahassee.

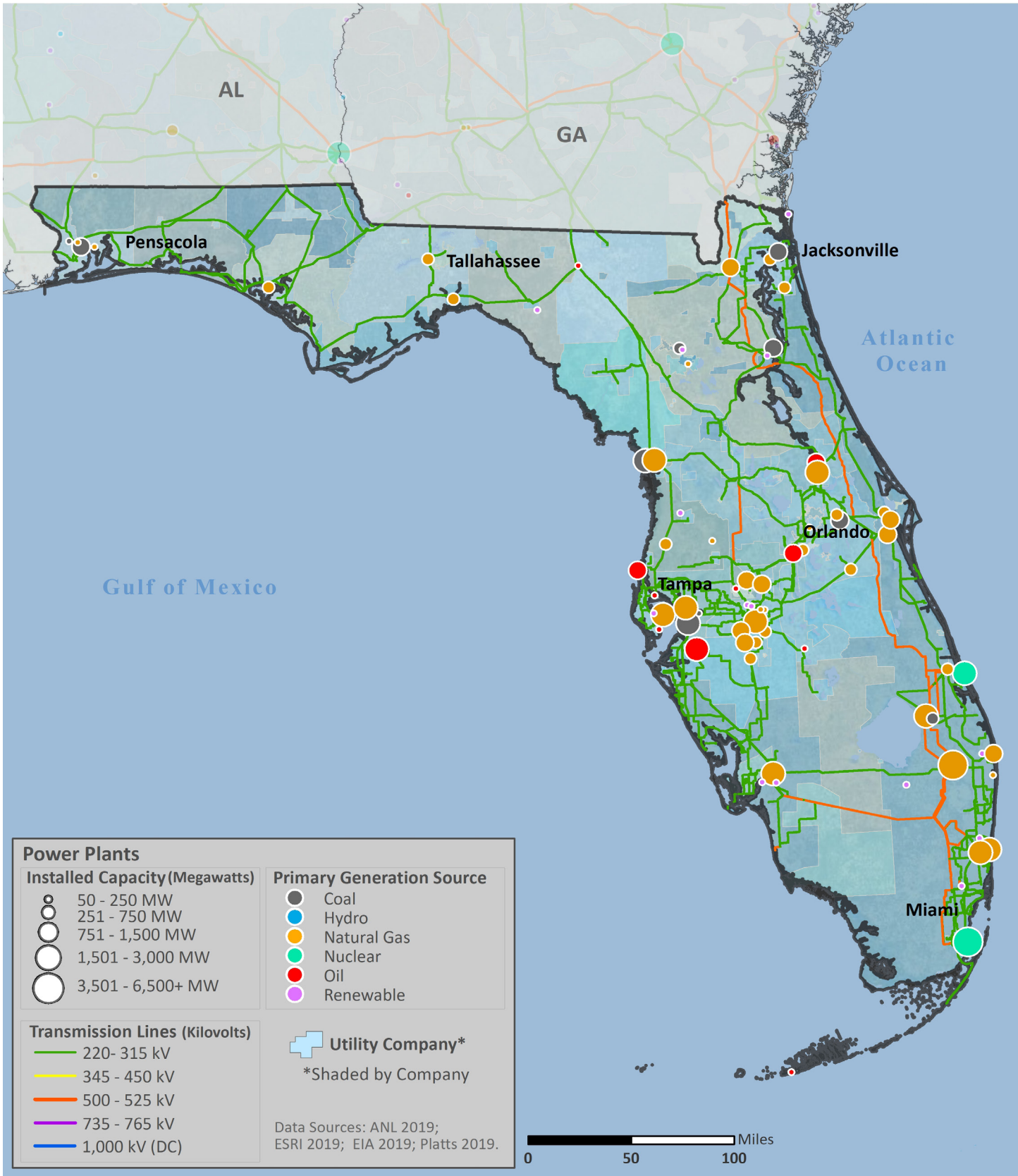
Annualized Frequency of and Property Damage Due to Natural Hazards, 2009 – 2019

	HAZARD FREQUENCY – Annualized	PROPERTY DAMAGE – Annualized (\$Million per year)
Drought	7	\$0
Earthquake (≥ 3.5 M)	0	\$0
Extreme Heat	1	\$0
Flood	38	\$230
Hurricane	5	\$873
Landslide	<1	\$0
Thunderstorm & Lightning	189	\$6
Tornado	44	\$9
Wildfire	11	\$1
Winter Storm & Extreme Cold	5	\$1

Data Sources: NOAA and USGS



ELECTRIC









Electric Infrastructure

- Florida has 58 electric utilities:
 - 4 Investor owned
 - 16 Cooperative
 - 33 Municipal
 - 5 Other utilities
- Plant retirements scheduled by 2025: 20 electric generating units totaling 3,066 MW of installed capacity.

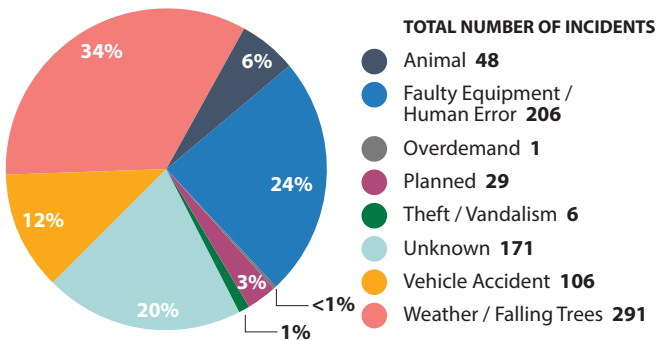
- In 2018, the average Florida electric customer experienced 1.1 service interruptions that lasted an average of less than 1 hour.
- In Florida, between 2008 and 2017:
 - The greatest number of electric outages occurred in **August** (3rd for outages nationwide)
 - The leading cause of electric outages was **Weather or Falling Trees** (leading cause nationwide)
 - Electric outages affected 2,475,162 customers on average

Electric Customers and Consumption by Sector, 2018

	 CUSTOMERS	 CONSUMPTION
Residential 	88%	53%
Commercial 	12%	40%
Industrial 	<1%	7%
Transportation 	<1%	<1%

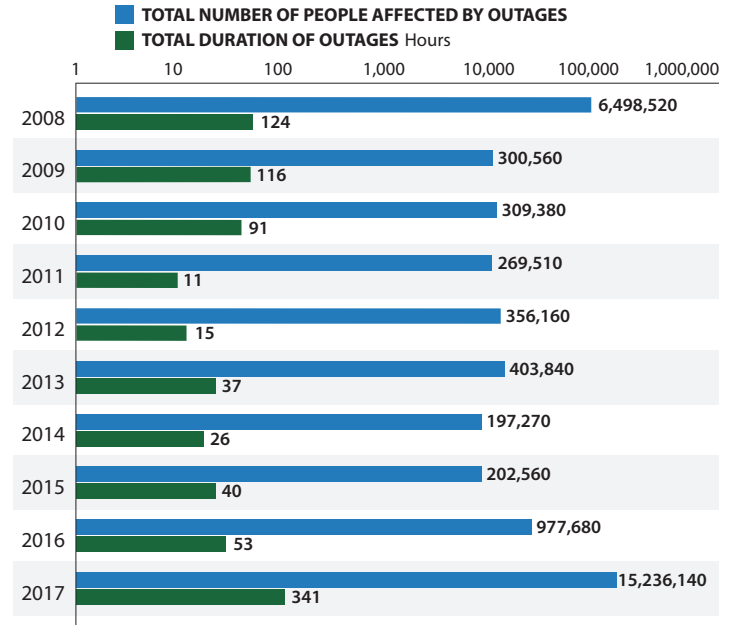
Data Source: EIA

Electric Utility-Reported Outages by Cause, 2008 – 2017



Data Source: Eaton

Electric Utility Outage Data, 2008 – 2017

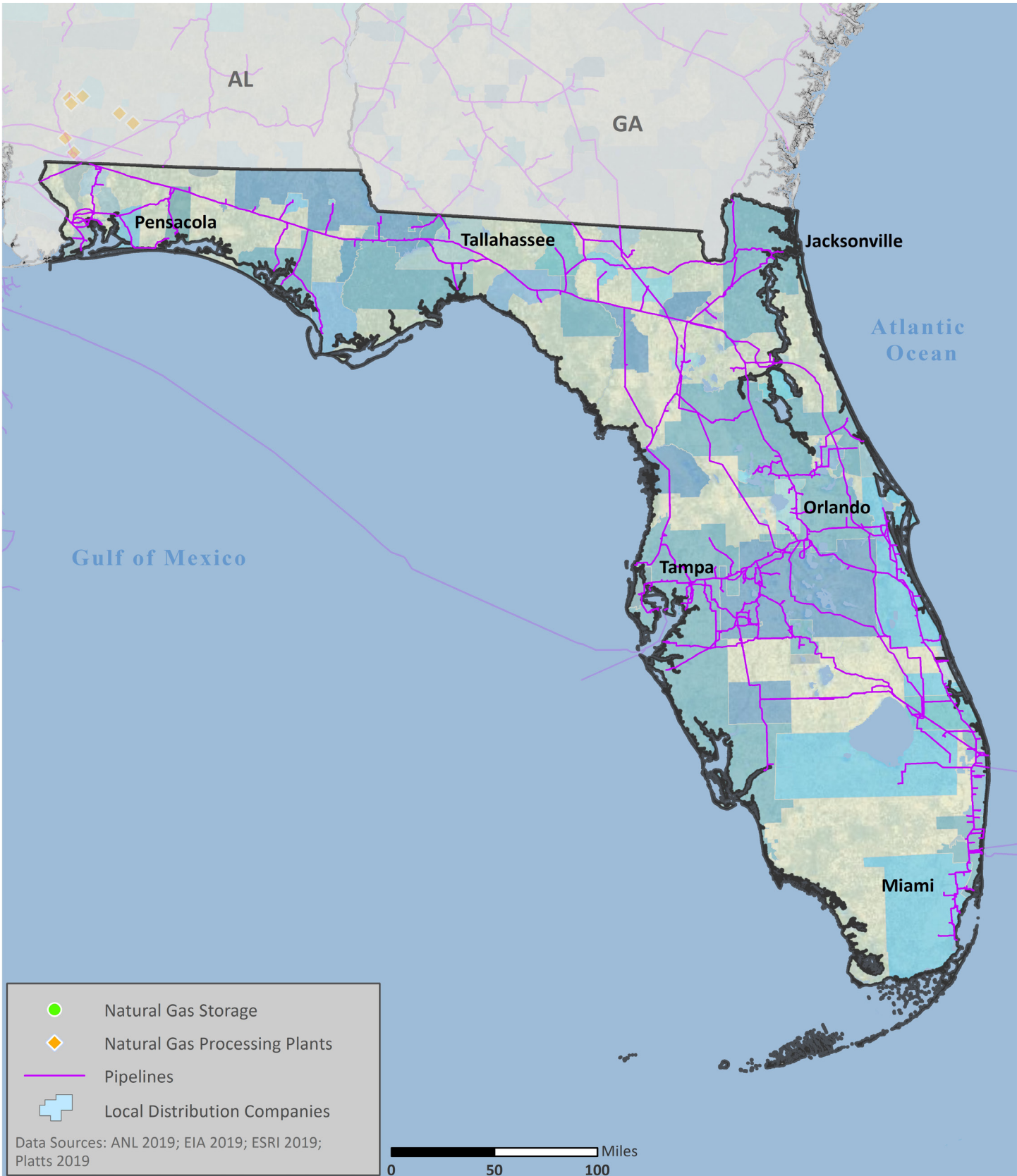


Note: This chart uses a logarithmic scale to display a very wide range of values.
Data Source: Eaton



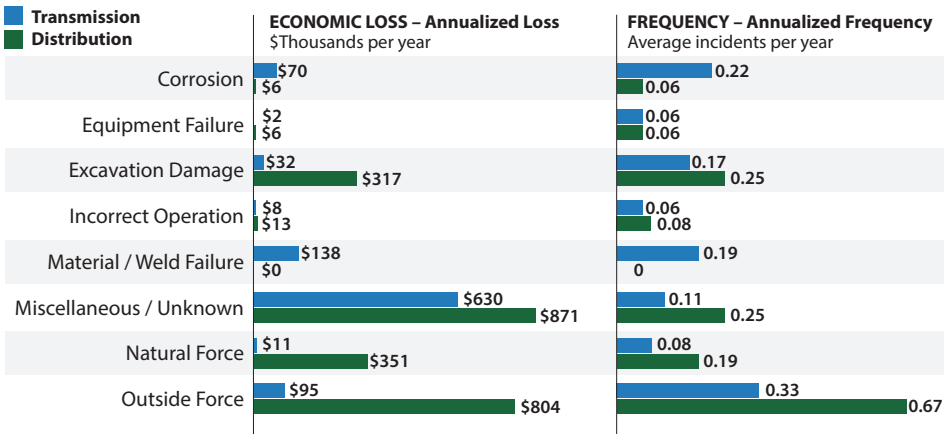


NATURAL GAS



Natural Gas Transport

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



Data Source: DOT PHMSA

- As of 2018, Florida had:
 - 5,474 miles of natural gas transmission pipelines
 - 29,621 miles of natural gas distribution pipelines
- 39% of Florida’s natural gas transmission system and 19% of the distribution system were constructed prior to 1970 or in an unknown year.
- Between 1984 and 2019, Florida’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)
 - **Miscellaneous or Unknown** events when transported by distribution pipelines (2nd leading cause nationwide at \$67.89M per year)

Natural Gas Processing and Liquefied Natural Gas

Natural Gas Customers and Consumption by Sector, 2018

	CUSTOMERS	CONSUMPTION
Residential	92%	1%
Commercial	8%	4%
Industrial	<1%	7%
Transportation	<1%	<1%
Electric Power	<1%	87%
Other	<1%	<1%

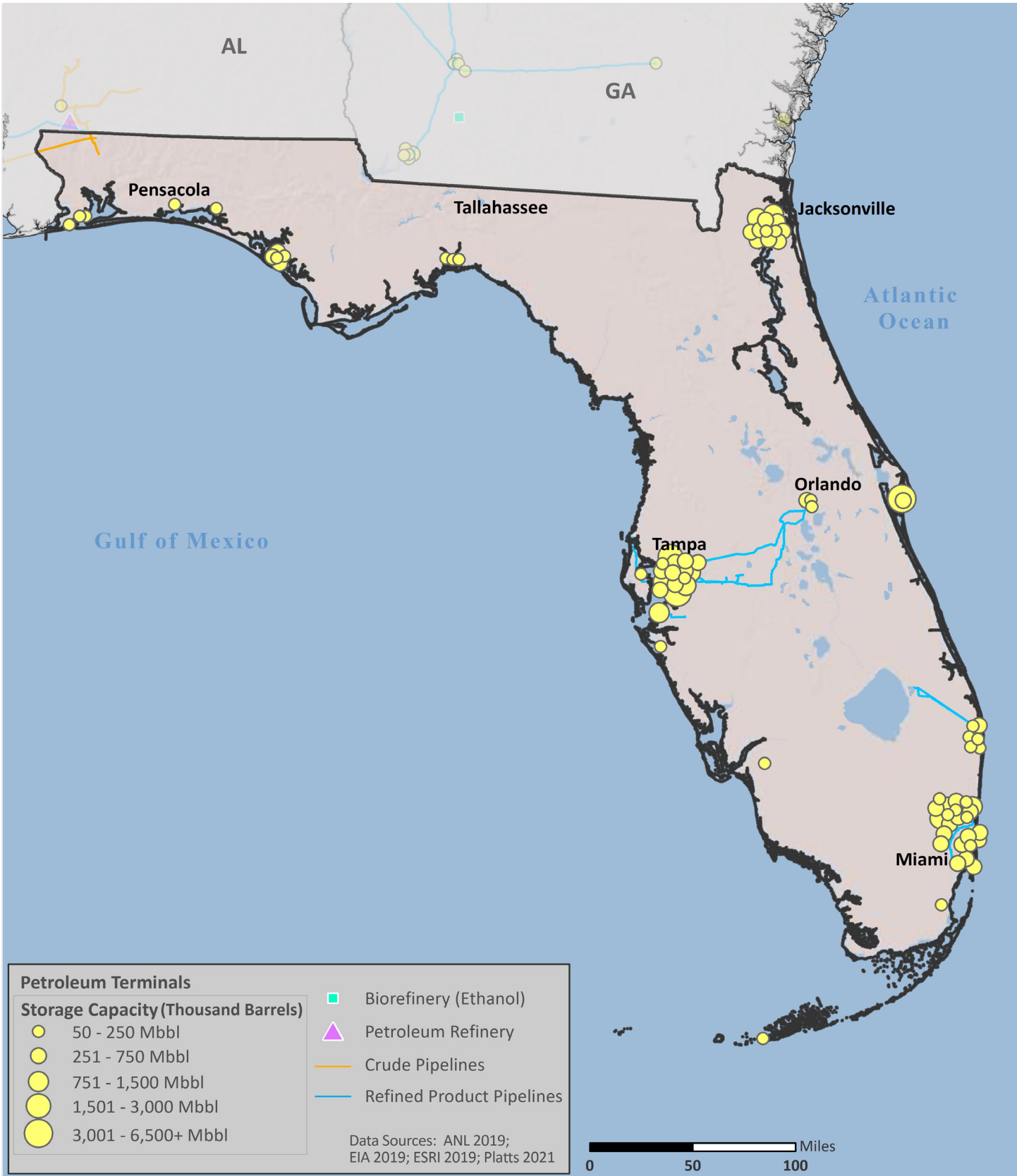
Data Source: EIA

- Florida has 0 natural gas processing facilities.
- Florida has 3 liquefied natural gas (LNG) facilities with a total storage capacity of 78,239 barrels.



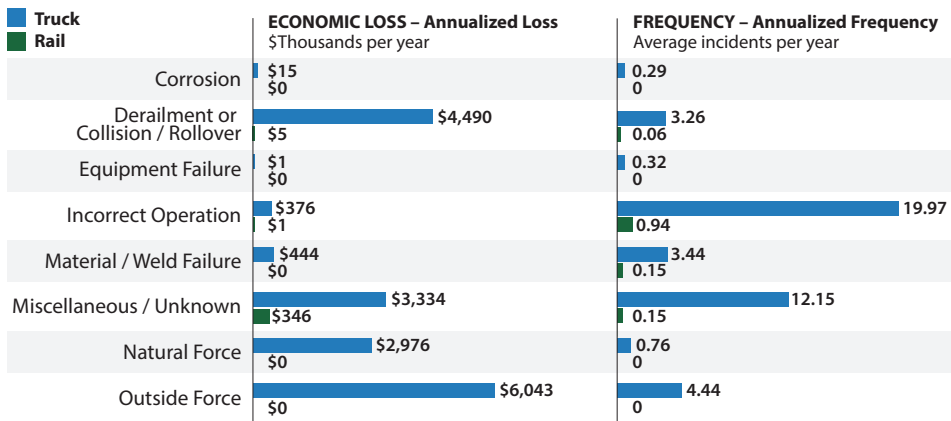


PETROLEUM



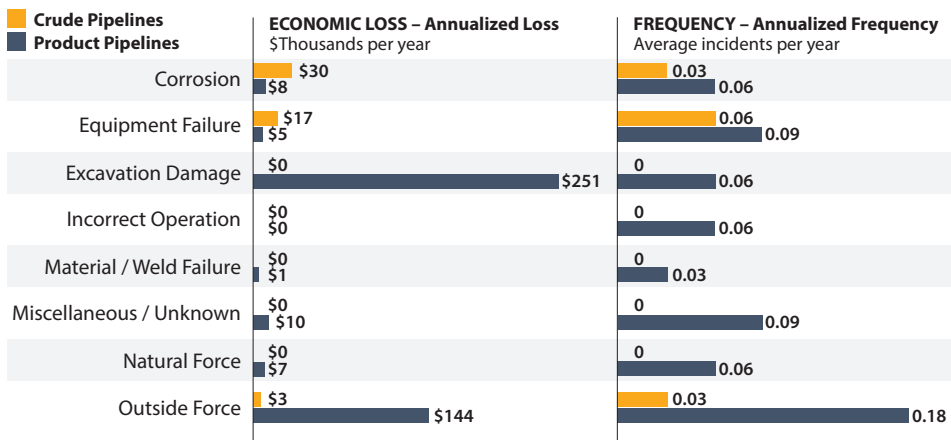
Petroleum Transport

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, Florida had:
 - 44 miles of crude oil pipelines
 - 318 miles of refined product pipelines
 - 0 miles of biofuels pipelines
- 11% of Florida’s petroleum pipeline systems were constructed prior to 1970 or in an unknown year.
- Between 1986 and 2019, Florida’s petroleum supply was most impacted by:
 - **Outside Forces** when transported by truck (2nd leading cause nationwide at \$60.45M per year)
 - **Miscellaneous or Unknown** events when transported by rail (3rd leading cause nationwide at \$6.11M per year)
 - **Corrosion** when transported by crude pipelines (3rd leading cause nationwide at \$14.51M per year)
 - **Excavation Damage** when transported by product pipelines (5th leading cause nationwide at \$5.74M per year)
- Disruptions in other states may impact supply.

Petroleum Refineries

- There are no operating petroleum refineries in Florida.

