

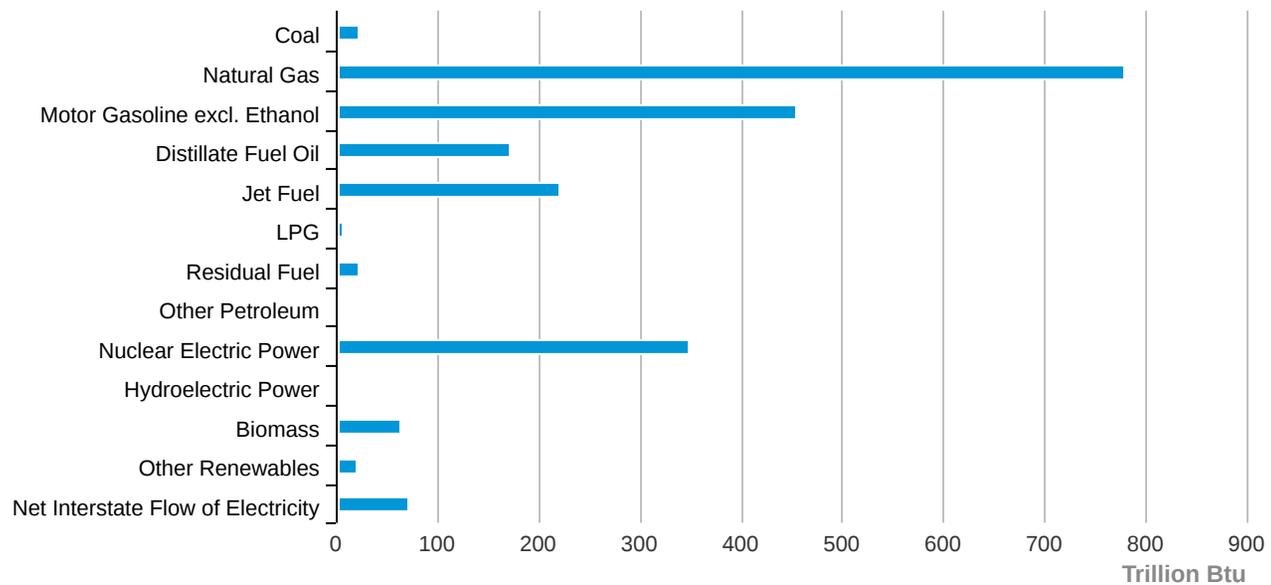
New Jersey State Energy Profile

New Jersey Quick Facts

- In 2016, for the first time, natural gas provided more than half the electricity generated in New Jersey. Nuclear power provided 39%, and, together, the two fuels provided 95% of the state's net electricity generation.
- New Jersey's Oyster Creek nuclear reactor, which is the oldest operating nuclear power plant in the United States, began operation in 1969 and is scheduled to shut down in 2019.
- New Jersey refineries added rail access for crude oil deliveries and can receive crude oil either by rail from North Dakota or by tanker from overseas, whichever is more economic.
- In 2016, solar power supplied 74% of New Jersey's renewable electricity generation from both utility and distributed (customer-sited, small-scale) sources. Nearly two-thirds of that solar electricity came from distributed solar panels.
- New Jersey has adopted a renewable portfolio standard that will require nearly one-fourth of net electricity sales to come from renewable energy resources by 2021. Specific solar and offshore wind requirements are included in the standard.

Last Updated: July 20, 2017

New Jersey Energy Consumption Estimates, 2015



Source: Energy Information Administration, State Energy Data System

Data

Last Update: August 17, 2017 | Next Update: September 21, 2017

Energy Indicators

Demography	New Jersey	Share of U.S.	Period
Population	8.9 million	2.8%	2016
Civilian Labor Force	4.5 million	2.8%	Jun-17
Economy	New Jersey	U.S. Rank	Period
Gross Domestic Product	\$ 581.1 billion	8	2016
Gross Domestic Product for the Manufacturing Sector	\$ 45,417 million	19	2016
Per Capita Personal Income	\$ 61,968	4	2016
Vehicle Miles Traveled	75,393 million miles	14	2015
Land in Farms	0.7 million acres	45	2012
Climate	New Jersey	U.S. Rank	Period
Average Temperature	55.0 degrees Fahrenheit	21	2016
Precipitation	40.2 inches	19	2016

Prices

Petroleum	New Jersey	U.S. Average	Period	find more
Domestic Crude Oil First Purchase	--	\$ 45.19 /barrel	May-17	
Natural Gas	New Jersey	U.S. Average	Period	find more

Prices

City Gate	\$ 4.56 /thousand cu ft	\$ 4.38 /thousand cu ft	May-17	find more
Residential	\$ 9.68 /thousand cu ft	\$ 13.21 /thousand cu ft	May-17	find more
Coal	New Jersey	U.S. Average	Period	find more
Average Sales Price	--	\$ 31.83 /short ton	2015	
Delivered to Electric Power Sector	W	\$ 2.12 /million Btu	May-17	
Electricity	New Jersey	U.S. Average	Period	find more
Residential	15.96 cents/kWh	13.22 cents/kWh	Jun-17	find more
Commercial	13.34 cents/kWh	10.99 cents/kWh	Jun-17	find more
Industrial	11.11 cents/kWh	7.22 cents/kWh	Jun-17	find more

Reserves & Supply

Reserves	New Jersey	Share of U.S.	Period	find more
Crude Oil (as of Dec. 31)	--	--	2015	find more
Expected Future Production of Dry Natural Gas (as of Dec. 31)	--	--	2015	find more
Expected Future Production of Natural Gas Plant Liquids	--	--	2015	find more
Recoverable Coal at Producing Mines	--	--	2015	find more
Rotary Rigs & Wells	New Jersey	Share of U.S.	Period	find more
Rotary Rigs in Operation	0 rigs	0.0%	2014	

Reserves & Supply

Natural Gas Producing Wells	--	--	2015	find more
Production	New Jersey	Share of U.S.	Period	find more
Total Energy	398 trillion Btu	0.5%	2015	find more
Crude Oil	--	--	May-17	find more
Natural Gas - Marketed	--	--	2015	find more
Coal	--	--	2015	find more
Capacity	New Jersey	Share of U.S.	Period	
Crude Oil Refinery Capacity (as of Jan. 1)	475,000 barrels/calendar day	2.6%	2017	
Electric Power Industry Net Summer Capacity	17,747 MW	1.6%	Jun-17	
Total Utility-Scale Net Electricity Generation	New Jersey	Share of U.S.	Period	find more
Total Net Electricity Generation	4,908 thousand MWh	1.5%	May-17	
Utility-Scale Net Electricity Generation (share of total)	New Jersey	U.S. Average	Period	
Petroleum-Fired	NM	0.3 %	May-17	find more
Natural Gas-Fired	47.2 %	30.0 %	May-17	find more
Coal-Fired	1.6 %	29.0 %	May-17	find more
Nuclear	45.8 %	19.1 %	May-17	find more
Renewables	4.2 %	20.8 %	May-17	
Stocks	New Jersey	Share of U.S.	Period	find more
Motor Gasoline (Excludes Pipelines)	22 thousand barrels	0.1%	May-17	

Reserves & Supply

Distillate Fuel Oil (Excludes Pipelines)	14,359 thousand barrels	11.6%	May-17	find more
Natural Gas in Underground Storage	--	--	May-17	find more
Petroleum Stocks at Electric Power Producers	533 thousand barrels	1.9%	May-17	find more
Coal Stocks at Electric Power Producers	595 thousand tons	0.4%	May-17	find more
Production Facilities	New Jersey			
Major Coal Mines	None			find more
Petroleum Refineries	Axeon Specialty Products (Paulsboro), Nustar Asphalt Refining (Paulsboro), Paulsboro Refining (Paulsboro), Phillips 66 Company (Linden)			find more
Major Non-Nuclear Electricity Generating Plants	PSEG Linden Generating Station (PSEG Fossil LLC) ; Bergen Generating Station (PSEG Fossil LLC) ; Liberty Generating Station (Liberty Generating Co LLC) ; PSEG Hudson Generating Station (PSEG Fossil LLC) ; Linden Cogen Plant (Cogen Technologies Linden Vent)			
Nuclear Power Plants	PSEG Salem Generating Station (PSEG Nuclear LLC), PSEG Hope Creek Generating Station (PSEG Nuclear LLC)			find more

Distribution & Marketing

Distribution Centers	New Jersey			
Petroleum Ports	Camden-Gloucester, Paulsboro, New York.			find more
Natural Gas Market Hubs	None			
Major Pipelines	New Jersey			
Crude Oil	None			

Distribution & Marketing

Petroleum Product	Sunoco, Buckeye Partners, Colonial Pipeline		
Natural Gas Liquids	None		
Interstate Natural Gas Pipelines	Algonquin Gas Transmission Company, Columbia Gas Transmission Corporation, Tennessee Gas Pipeline Company, Texas Eastern Transmission LP, Transcontinental Gas Pipeline		
Fueling Stations	New Jersey	Share of U.S.	Period
Motor Gasoline	2,372 stations	2.1%	2014
Liquefied Petroleum Gases	21 stations	0.6%	2017
Electricity	206 stations	1.3%	2017
Ethanol	3 stations	0.1%	2017
Compressed Natural Gas and Other Alternative Fuels	14 stations	1.1%	2017

Consumption & Expenditures

Summary	New Jersey	U.S. Rank	Period	
Total Consumption	2,288 trillion Btu	14	2015	find more
Total Consumption per Capita	256 million Btu	37	2015	find more
Total Expenditures	\$ 31,137 million	10	2015	find more
Total Expenditures per Capita	\$ 3,485	33	2015	find more
by End-Use Sector	New Jersey	Share of U.S.	Period	
Consumption				
» Residential	588 trillion Btu	2.9%	2015	find more

Consumption & Expenditures

» Commercial	597 trillion Btu	3.3%	2015	find more
» Industrial	251 trillion Btu	0.8%	2015	find more
» Transportation	852 trillion Btu	3.1%	2015	find more
Expenditures				
» Residential	\$ 7,307 million	3.0%	2015	find more
» Commercial	\$ 6,754 million	3.6%	2015	find more
» Industrial	\$ 2,288 million	1.2%	2015	find more
» Transportation	\$ 14,789 million	2.9%	2015	find more
by Source	New Jersey	Share of U.S.	Period	
Consumption				
» Petroleum	187.7 million barrels	2.6%	2015	find more
» Natural Gas	745.8 billion cu ft	2.7%	2015	find more
» Coal	0.9 million short tons	0.1%	2015	find more
Expenditures				
» Petroleum	\$ 17,198 million	2.8%	2015	find more
» Natural Gas	\$ 4,448 million	3.2%	2015	find more
» Coal	\$ 88 million	0.2%	2015	find more
Consumption for Electricity Generation	New Jersey	Share of U.S.	Period	find more
Petroleum	11 thousand barrels	0.6%	Jun-17	find more
Natural Gas	20,607 million cu ft	2.4%	Jun-17	find more
Coal	41 thousand short tons	0.1%	Jun-17	find more
Energy Source Used for Home Heating (share of households)	New Jersey	U.S. Average	Period	

Consumption & Expenditures

Natural Gas	74.4 %	48.6 %	2015
Fuel Oil	10.5 %	5.6 %	2015
Electricity	11.9 %	37.2 %	2015
Liquefied Petroleum Gases	1.9 %	4.8 %	2015
Other/None	1.2 %	3.8 %	2015

Environment

Renewable Energy Capacity	New Jersey	Share of U.S.	Period	find more
Total Renewable Energy Electricity Net Summer Capacity	881 MW	0.4%	Jun-17	
Ethanol Plant Operating Production	0 million gal/year	0.0%	2017	
Renewable Energy Production	New Jersey	Share of U.S.	Period	find more
Utility-Scale Hydroelectric Net Electricity Generation	NM	NM	Jun-17	
Utility-Scale Solar, Wind, and Geothermal Net Electricity Generation	135 thousand MWh	0.5%	May-17	
Utility-Scale Biomass Net Electricity Generation	72 thousand MWh	1.4%	Jun-17	
Distributed (Small-Scale) Solar Photovoltaic Generation	196 thousand MWh	7.9%	May-17	

Environment

Ethanol Production	0 Thousand Barrels	0.0%	2015	
Renewable Energy Consumption	New Jersey	U.S. Rank	Period	find more
Renewable Energy Consumption as a Share of State Total	3.7 %	46	2015	
Ethanol Consumption	10,081 thousand barrels	10	2015	
Total Emissions	New Jersey	Share of U.S.	Period	find more
Carbon Dioxide	114.0 million metric tons	2.1%	2014	
Electric Power Industry Emissions	New Jersey	Share of U.S.	Period	find more
Carbon Dioxide	19,427 thousand metric tons	1.0%	2015	
Sulfur Dioxide	3 thousand metric tons	0.1%	2015	
Nitrogen Oxide	12 thousand metric tons	0.7%	2015	

Analysis

Last Updated: July 20, 2017

Overview

New Jersey has no fossil energy reserves but does have substantial wind and solar energy resources. Shipping complexes on the Delaware River and the New York-New Jersey harbor—with their connecting pipeline, rail, and air terminals—make the state a major distribution center for petroleum products for the Northeast.¹ Situated between New York and Pennsylvania, New Jersey has the highest population density of any state in the nation.^{2,3} Many New Jersey residents commute to work in the New York City or Philadelphia metropolitan areas, and the state has some of the nation's longest commute times.^{4,5} New Jersey also has extensive Atlantic Ocean beaches and, in the north, the Ramapo Mountains, part of the Appalachian chain. The state's climate is temperate. Weather in coastal areas is moderated by the sea, and, in the north, by the mountains. In metropolitan areas, local temperatures are influenced by urban heat

New Jersey is a major distribution center for petroleum products to the northeastern United States.

islands.⁶

New Jersey is a major consumer of petroleum products,⁷ and the petroleum-dependent transportation sector consumes more energy than any other sector in the state.⁸ New Jersey depends on natural gas and nuclear power for most of its in-state electricity generation.⁹ The state's industrial sector energy consumption is below the national median despite its energy-intensive chemical manufacturing and petroleum-refining industries.¹⁰ Overall, New Jersey ranks in the lowest one-fifth of states in energy consumed per dollar of gross domestic product¹¹ and the lower one-third in energy consumed per capita.¹²

Petroleum

New Jersey has no crude oil reserves or production,^{13,14} but the state has three operating oil refineries.¹⁵ Two complex refineries produce a range of refined products, including motor gasoline, diesel fuel, and heating oil,^{16,17} and one refinery produces asphalt.¹⁸ When the cost of imported crude oil feedstock rose in recent years, refinery owners in New Jersey, Pennsylvania, and Delaware developed rail shipping capability for crude oil feedstock from Canada and North Dakota's Bakken Shale to enable continued operations.^{19,20} The refineries can now take feedstock by rail or tanker, whichever is more economic. Rail shipments declined in 2016.^{21,22,23} Three other New Jersey refineries were shut down between 2010 and 2013.²⁴ Some shutdown refinery sites have been converted into petroleum storage terminals, taking advantage of the pipeline, rail, road, and marine facilities already on location.^{25,26}

A large part of New York Harbor lies on the New Jersey shore. The harbor has petroleum bulk terminal storage capacity of about 75 million barrels, making it the largest petroleum product hub in the Northeast.^{27,28} The federal Northeast Home Heating Oil Reserve, established in 2000 to avert heating oil shortages during extreme winter weather, is stored partly at Port Reading, New Jersey, and partly at depots in Connecticut and Massachusetts.²⁹ In 2011, the federal government converted the reserve to ultra-low sulfur diesel (ULSD) following decisions made by several states, including New Jersey, to begin requiring ULSD for home heating fuel.^{30,31} Slightly more than 1 in 10 New Jersey households depend on fuel oil as their primary source of home heating.³²

New Jersey is crossed by major petroleum product pipeline systems. Linden, New Jersey, is the northern terminus of the Colonial Pipeline, the nation's largest product pipeline and a critical supplier from Gulf Coast refineries to the New York and New England markets. The Colonial Pipeline system was expanded to increase the supply of finished petroleum products to the Northeast after several regional refineries shut down.^{33,34} Other pipeline systems distribute refined petroleum products from New Jersey refineries and terminals west to Pennsylvania and upstate New York.³⁵ New Jersey also receives petroleum product imports by tanker from all over the world.³⁶

New Jersey is one of the few states that require statewide use of reformulated motor gasoline blended with ethanol.³⁷ The New York Harbor area is the primary regional distribution hub for ethanol supplies.³⁸ Several petroleum logistics firms have facilities in New Jersey to receive ethanol shipments by unit train from the Midwest and by ship from other countries. The ethanol is distributed throughout the Northeast for blending with motor gasoline.³⁹

Natural gas

New Jersey has geologic indications of natural gas deposits in its northern half but no proved natural gas reserves.^{40,41} The state does not produce natural gas.⁴² Controversy over hydraulic fracturing in the Marcellus Shale in neighboring states has spilled over to New Jersey because of shared concern about protecting the quality of Delaware River Basin drinking water. Although no drilling has been proposed in the state, New Jersey banned hydraulic fracturing for the year 2012, the legislature has passed bills barring disposal of drilling wastes in the state, and proposals for new natural gas pipelines have met some opposition.^{43,44}

New Jersey's natural gas has traditionally come from the Gulf of Mexico region, but, with the growth of natural gas production in Pennsylvania, that state has become New Jersey's main supplier. The state is crossed by five interstate pipelines that are primary carriers of natural gas into New York and New England, and about half of the natural gas entering New Jersey is shipped on to other states.^{45,46,47} New pipeline sections are being built to transport more natural gas from Pennsylvania's nearby Marcellus Shale into the Northeast,^{48,49,50} and distribution infrastructure within New Jersey is being upgraded.⁵¹ In New Jersey, natural gas is used primarily by the electric power and residential sectors. In the years 2011 through 2016, natural gas consumption for electricity generation increased by two-thirds.⁵² In 2015–16, new infrastructure enabled the opening of two new electricity generating plants fueled with natural gas in the state.^{53,54,55,56} About three-fourths of households in the state use natural gas as their primary home heating fuel.⁵⁷

Coal

New Jersey does not have any coal reserves or coal mining.⁵⁸ The state's coal-fired electricity generating plants receive coal by rail, usually from Pennsylvania, West Virginia, and Virginia,^{59,60} and also have imported coal from Latin America and Asia.⁶¹ New Jersey obtains less than 2% of its net electricity generation from coal, down from one-fifth in the 1990s.^{62,63} Most of New Jersey's coal-fired power plants have been shut down or converted to natural gas. Two of the last five stations were shut down in mid-2017,^{64,65} leaving just one coal-fired electric utility station, which will be converted to natural gas when a fuel supply pipeline is available,^{66,67} and two coal-fired cogeneration stations, which produce electricity and steam for industrial enterprises.^{68,69,70,71}

Electricity

Since 2011, natural gas and nuclear power have supplied more than nine-tenths of the electricity generated in New Jersey.^{72,73} Through 2013, nuclear power typically supplied about half of New Jersey's net electricity generation.⁷⁴ But the share of generation from natural gas has been growing and, in 2016, for the first time, natural gas supplied more than half of the state's net generation.^{75,76} The state has three nuclear power plants, but the oldest is scheduled to be shut permanently in 2019.⁷⁷ New generation is overwhelmingly natural gas-fired,⁷⁸ and some coal-fired plants have

The largest U.S. petroleum products pipeline from the Gulf Coast region terminates in New Jersey.

been converted to natural gas, nearly doubling natural gas-fired electricity generation from 2010 to 2016.^{79,80,81} In 2016, coal and renewables together provided almost 7% of in-state electricity generation.⁸²

New Jersey is part of the PJM Interconnection, the mid-Atlantic regional electricity grid.⁸³ Electricity consumption in New Jersey has been declining, and the state obtains just under one-tenth of its power from generators in other states.^{84,85,86} The commercial sector uses half of all electricity consumed in the state, and the residential sector consumes two-fifths.⁸⁷ Only one in nine New Jersey households use electricity as their primary heat source.⁸⁸ New Jersey's average electricity prices are typically among the 10 highest of the 50 states.⁸⁹ The state restructured its electricity industry in 1999 and allows customers to choose retail electricity suppliers.⁹⁰ More than one in six customers has opted for non-utility suppliers.^{91,92}

Renewable energy

Renewable energy supplies almost 5% of New Jersey's net electricity generation. Solar power is the state's leading renewable energy source, supplying nearly three-fourths of net renewable electricity generation from utility-scale and distributed (customer-sited, small-scale) facilities. Previously, biomass—principally municipal solid waste and landfill gas—had been the largest renewable power provider, and, in 2016, biomass facilities supplied nearly all the state's non-solar renewable electricity generation.⁹³

New Jersey's renewable portfolio standard (RPS) was initiated in 1999 as part of electricity regulatory restructuring. Since 1999, the state legislature has enacted several substantial revisions to the RPS, including adding specific minimum requirements for solar energy,⁹⁴ offshore wind energy, and small-scale hydroelectric or waste-to-energy facilities.^{95,96,97} Overall, the law currently requires nearly one-fourth of the electricity sold in New Jersey after 2021 to come from qualified renewable sources. Requirements for additional solar power continue to increase until 2027.^{98,99}

The state requires electric utilities to offer net metering to distributed renewable facilities,¹⁰⁰ and, in 2012, the New Jersey legislature accelerated the RPS solar requirements.^{101,102} By April 2017, more than 73,000 solar photovoltaic (PV) facilities were installed around the state on residential and business rooftops, with solar capacity exceeding 1,630 megawatts from distributed generation and 495 megawatts from utility-scale generation.¹⁰³ In 2016, more than three-fifths of all solar electricity generation in New Jersey came from distributed facilities.¹⁰⁴ The state's commercial solar PV farms include two facilities that each have a capacity of 19.9 megawatts.¹⁰⁵ State regulatory policies have favored solar farms that are sited on former industrial sites such as municipal landfills.¹⁰⁶ At the end of 2016, New Jersey ranked fifth among the states in installed solar PV capacity, and fourth in net solar generation.^{107,108}

In 2016, solar power supplied nearly three-fourths of New Jersey's renewable electricity generation.

Only a small fraction of New Jersey's renewable electricity is generated by wind,¹⁰⁹ at two facilities located on the Atlantic Ocean coast.¹¹⁰ New Jersey's best wind power potential is found offshore along its coastline,^{111,112} and New Jersey was the first state to establish a specific requirement for offshore wind,¹¹³ mandating 1,100 megawatts by 2021. Wind projects proposed for state and federal waters off the New Jersey coast are still in the planning stages.^{114,115} New Jersey electric and natural gas utilities also offer a variety of energy efficiency programs that are credited both with saving energy and with reducing electricity demand peaks.^{116,117} Programs include incentives to improve efficiency by retrofitting commercial boilers with combined heat and power systems.¹¹⁸

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Other Resources

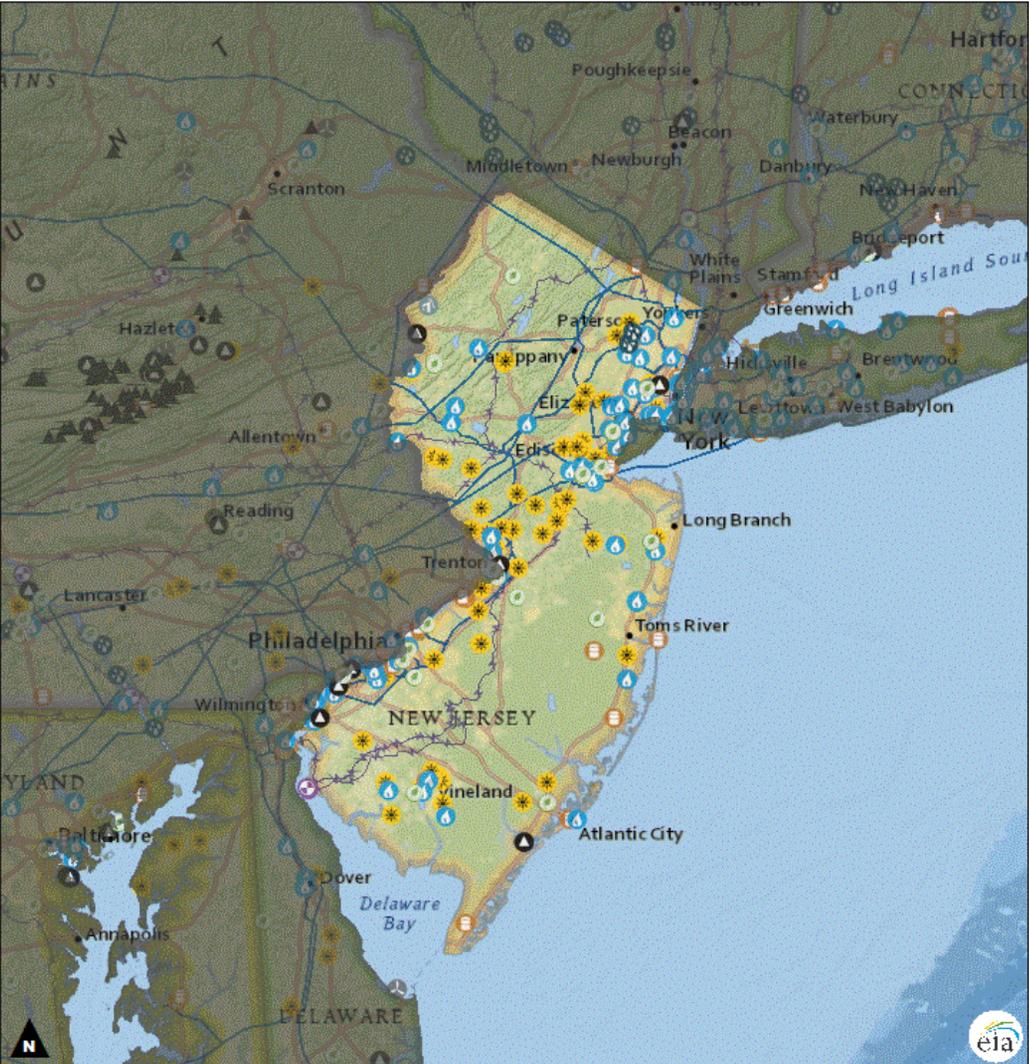
Energy-Related Regions and Organizations

- [Petroleum Administration for Defense District \(PADD\)](#): 1B
- [North American Electric Reliability Corporation \(NERC\) Regional Entity](#): Reliability First Corporation (RFC)
- [Regional Transmission Organization \(RTO\)/Independent System Operator \(ISO\)](#): PJM Interconnection (PJM)

Other Websites

- [New Jersey Board of Public Utilities](#)
- [New Jersey Business Portal, Financing and Incentives, Clean and Renewable Energy](#)
- [New Jersey Clean Energy Program](#)
- [New Jersey Clean Energy Program, Renewable Energy](#)
- [New Jersey Clean Energy Program, Commercial, Industrial, and Local Government Programs](#)
- [New Jersey Clean Energy Program, Economic Development Authority Programs](#)
- [New Jersey Economic Development Authority, Clean Energy Resources](#)
- [New Jersey Department of Environmental Protection \(DEP\)](#)
- [New Jersey DEP, Office of Air Quality, Energy and Sustainability](#)
- [New Jersey Department of Community Affairs, Energy Assistance](#)
- [Alternative Fuels and Advanced Vehicle Data Center, Federal and State Incentives and Laws](#)
- [United States Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Low Income Home Energy Assistance Program](#)
- [Benefits.Gov, Energy Assistance](#)
- [NC Clean Technology Center, Database of State Incentives for Renewables and Efficiency \(DSIRE\)](#)
- [National Association of Regulatory Utility Commissioners \(NARUC\)](#)
- [National Association of State Energy Officials \(NASEO\)](#)
- [National Renewable Energy Laboratory \(NREL\)-Dynamic Maps, Geographic Information System \(GIS\) Data and Analysis Tools](#)
- [U.S. Geological Survey \(USGS\), Publications](#)
- [U.S. Bureau of Ocean Energy Management](#)
- [National Conference of State Legislatures \(NCSL\), Energy](#)
- [U.S. Geological Survey, Maps](#)

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- States:Electricity Transmission Lines - Ventyx, Velocity Suite;Grey Base:National
- 0 12.5 25 50 Miles
- Mask
 - ⊕ Hydroelectric Power Plant
 - Ⓜ Pumped Storage Power Plant
 - ▲ Surface Coal Mine
 - ⦿ Natural Gas Power Plant
 - ☀ Solar Power Plant
 - ⬆ Underground Coal Mine
 - ⊕ Nuclear Power Plant
 - ⚙ Wind Power Plant
 - ⊕ Biomass Power Plant
 - Other Power Plant
 - ⊕ Wood Power Plant
 - ⬆ Coal Power Plant
 - Other Fossil Gases Power Plant
 - Petroleum Refinery