U.S. Energy Information Administration

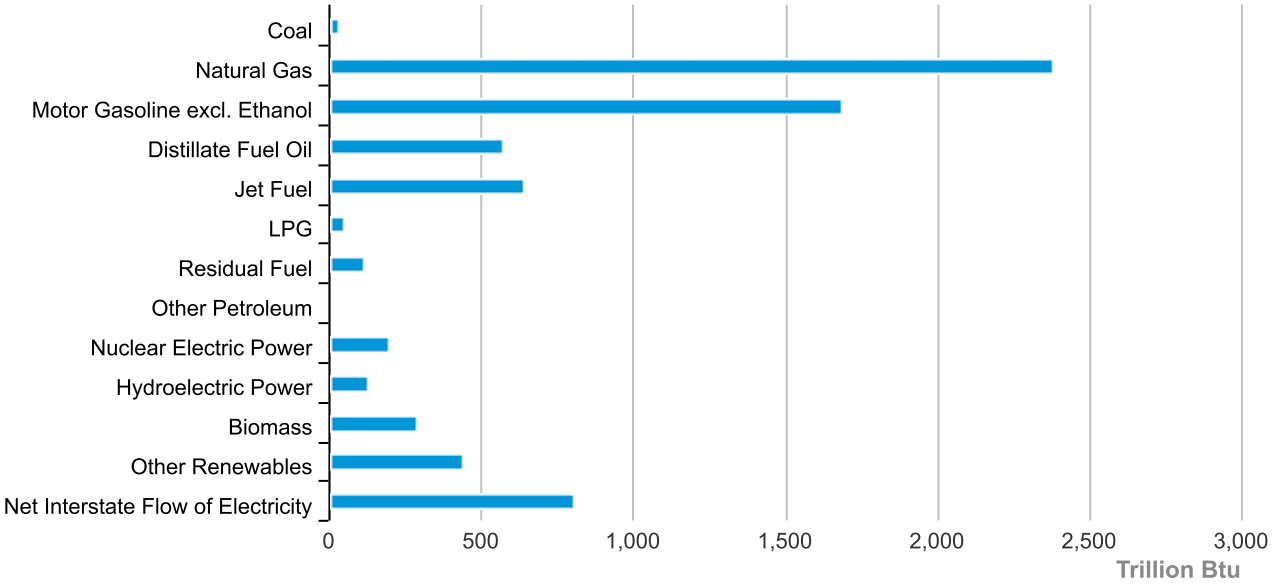
California State Energy Profile

California Quick Facts

- Excluding federal offshore areas, California was the third-largest producer of petroleum among the 50 states in 2016, after Texas and North Dakota, and, as of January 2017, third in oil refining capacity, with a combined capacity of almost 2 million barrels per calendar day at the state's 18 operable refineries.
- In 2015, California accounted for one-fifth of the nation’s jet fuel consumption.
- California's total energy consumption ranks among the highest in the nation, but, in 2015, the state's per capita energy consumption ranked 49th, due in part to its mild climate and its energy efficiency programs.
- In 2016, California ranked third in the nation in conventional hydroelectric generation, second in net electricity generation from all other renewable energy resources combined, and first as a producer of electricity from solar, geothermal, and biomass resources.
- California leads the nation in solar thermal electricity capacity and generation. In 2016, California had 73% of the nation's capacity and produced 71% of the nation's utility-scale electricity generation from solar thermal resources.

Last Updated: October 19, 2017

California Energy Consumption Estimates, 2015



Source: Energy Information Administration, State Energy Data System

Data

Last Update: November 16, 2017 | **Next Update:** December 21, 2017

Energy Indicators

Demography	California	Share of U.S.	Period
Population	39.3 million	12.1%	2016
Civilian Labor Force	19.5 million	12.1%	Sep-17
Economy	**California**	**U.S. Rank**	**Period**
Gross Domestic Product	$ 2,602.7 billion	1	2016
Gross Domestic Product for the Manufacturing Sector	$ 288,976 million	1	2016
Per Capita Personal Income	$ 55,987	8	2016
Vehicle Miles Traveled	335,539 million miles	1	2015
Land in Farms	25.6 million acres	16	2012
Climate	**California**	**U.S. Rank**	**Period**
Average Temperature	60.2 degrees Fahrenheit	12	2016
Precipitation	25.7 inches	37	2016

Prices

Petroleum	California	U.S. Average	Period	find more
Domestic Crude Oil First Purchase	$ 46.94 /barrel	$ 44.96 /barrel	Aug-17	
Natural Gas	**California**	**U.S. Average**	**Period**	find more
City Gate	$ 3.22 /thousand cu ft	$ 4.55 /thousand cu ft	Aug-17	find more
Residential	$ 12.54 /thousand cu ft	$ 18.09 /thousand cu ft	Aug-17	find more
Coal	**California**	**U.S. Average**	**Period**	find more
Average Sales Price	--	$ 31.83 /short ton	2015	
Delivered to Electric Power Sector	$ 0.00 /million Btu	$ 2.07 /million Btu	Aug-17	
Electricity	**California**	**U.S. Average**	**Period**	find more
Residential	19.02 cents/kWh	13.19 cents/kWh	Aug-17	find more
Commercial	17.73 cents/kWh	11.04 cents/kWh	Aug-17	find more
Industrial	14.39 cents/kWh	7.25 cents/kWh	Aug-17	find more

Reserves

Reserves	California	Share of U.S.	Period	find more
Crude Oil (as of Dec. 31)	2,333 million barrels	7.2%	2015	find more
Expected Future Production of Dry Natural Gas (as of Dec. 31)	1,832 billion cu ft	0.6%	2015	find more
Expected Future Production of Natural Gas Plant Liquids	82 million barrels	0.6%	2015	find more
Recoverable Coal at Producing Mines	--	--	2015	find more
Rotary Rigs & Wells	**California**	**Share of U.S.**	**Period**	find more
Rotary Rigs in Operation	6 rigs	1.2%	2016	
Natural Gas Producing Wells	3,997 wells	0.7%	2016	find more
Capacity	**California**	**Share of U.S.**	**Period**	
Crude Oil Refinery Capacity (as of Jan. 1)	1,990,671 barrels/calendar day	10.7%	2017	
Electric Power Industry Net Summer Capacity	75,843 MW	7.0%	Aug-17	

Supply & Distribution

Production	California	Share of U.S.	Period	find more
Total Energy	2,353 trillion Btu	2.7%	2015	find more
Crude Oil	14,522 thousand barrels	5.1%	Aug-17	find more
Natural Gas - Marketed	205,024 million cu ft	0.7%	2016	find more
Coal	--	--	2015	find more
Total Utility-Scale Net Electricity Generation	**California**	**Share of U.S.**	**Period**	find more
Total Net Electricity Generation	21,943 thousand MWh	5.8%	Aug-17	
Utility-Scale Net Electricity Generation (share of total)	**California**	**U.S. Average**	**Period**	
Petroleum-Fired	*	0.3 %	Aug-17	find more
Natural Gas-Fired	50.5 %	36.2 %	Aug-17	find more
Coal-Fired	0.1 %	31.5 %	Aug-17	find more
Nuclear	7.7 %	19.0 %	Aug-17	find more

Supply & Distribution

Renewables	40.3 %	12.3 %	Aug-17	
Stocks	**California**	**Share of U.S.**	**Period**	find more
Motor Gasoline (Excludes Pipelines)	330 thousand barrels	2.0%	Aug-17	
Distillate Fuel Oil (Excludes Pipelines)	5,994 thousand barrels	5.1%	Aug-17	find more
Natural Gas in Underground Storage	491,240 million cu ft	6.5%	Aug-17	find more
Petroleum Stocks at Electric Power Producers	W	W	Aug-17	find more
Coal Stocks at Electric Power Producers	0 thousand tons	0.0%	Aug-17	find more
Fueling Stations	**California**	**Share of U.S.**	**Period**	
Motor Gasoline	7,344 stations	6.6%	2014	
Liquefied Petroleum Gases	279 stations	8.6%	2017	
Electricity	3,758 stations	23.8%	2017	
Ethanol	115 stations	4.0%	2017	
Compressed Natural Gas and Other Alternative Fuels	233 stations	18.4%	2017	

Consumption & Expenditures

Summary	**California**	**U.S. Rank**	**Period**	
Total Consumption	7,676 trillion Btu	2	2015	find more
Total Consumption per Capita	197 million Btu	49	2015	find more
Total Expenditures	$ 121,894 million	1	2015	find more
Total Expenditures per Capita	$ 3,126	43	2015	find more
by End-Use Sector	**California**	**Share of U.S.**	**Period**	
Consumption				
» Residential	1,357 trillion Btu	6.6%	2015	find more
» Commercial	1,465 trillion Btu	8.1%	2015	find more
» Industrial	1,837 trillion Btu	5.9%	2015	find more
» Transportation	3,017 trillion Btu	11.1%	2015	find more
Expenditures				

Consumption & Expenditures

» Residential	$ 20,417 million	8.2%	2015	find more
» Commercial	$ 22,336 million	11.9%	2015	find more
» Industrial	$ 14,323 million	7.7%	2015	find more
» Transportation	$ 64,819 million	12.8%	2015	find more
by Source	**California**	**Share of U.S.**	**Period**	
Consumption				
» Petroleum	651.1 million barrels	9.1%	2015	find more
» Natural Gas	2,298.9 billion cu ft	8.4%	2015	find more
» Coal	1.3 million short tons	0.2%	2015	find more
Expenditures				
» Petroleum	$ 70,898 million	11.4%	2015	find more
» Natural Gas	$ 13,393 million	9.5%	2015	find more
» Coal	$ 110 million	0.3%	2015	find more
Consumption for Electricity Generation	**California**	**Share of U.S.**	**Period**	find more
Petroleum	7 thousand barrels	0.4%	Aug-17	find more
Natural Gas	81,574 million cu ft	7.8%	Aug-17	find more
Coal	6 thousand short tons	*	Aug-17	find more
Energy Source Used for Home Heating (share of households)	**California**	**U.S. Average**	**Period**	
Natural Gas	65.0 %	48.6 %	2015	
Fuel Oil	0.3 %	5.6 %	2015	
Electricity	26.2 %	37.2 %	2015	
Liquefied Petroleum Gases	3.1 %	4.8 %	2015	
Other/None	5.4 %	3.8 %	2015	

Environment

Renewable Energy Capacity	**California**	**Share of U.S.**	**Period**	find more
Total Renewable Energy Electricity Net Summer Capacity	29,223 MW	14.3%	Aug-17	
Ethanol Plant Operating Production	219 million gal/year	1.4%	2017	

Environment

Renewable Energy Production	California	Share of U.S.	Period	find more
Utility-Scale Hydroelectric Net Electricity Generation	3,924 thousand MWh	18.3%	Aug-17	
Utility-Scale Solar, Wind, and Geothermal Net Electricity Generation	4,394 thousand MWh	22.0%	Aug-17	
Utility-Scale Biomass Net Electricity Generation	522 thousand MWh	9.5%	Aug-17	
Distributed (Small-Scale) Solar Photovoltaic Generation	1,112 thousand MWh	43.7%	Aug-17	
Ethanol Production	4,901 Thousand Barrels	1.4%	2015	
Renewable Energy Consumption	**California**	**U.S. Rank**	**Period**	find more
Renewable Energy Consumption as a Share of State Total	11.2 %	18	2015	
Ethanol Consumption	37,281 thousand barrels	1	2015	
Total Emissions	**California**	**Share of U.S.**	**Period**	find more
Carbon Dioxide	364.0 million metric tons	6.9%	2015	
Electric Power Industry Emissions	**California**	**Share of U.S.**	**Period**	find more
Carbon Dioxide	55,481 thousand metric tons	2.7%	2015	
Sulfur Dioxide	1 thousand metric tons	*	2015	
Nitrogen Oxide	73 thousand metric tons	4.0%	2015	

Analysis

Last Updated: October 19, 2017

Overview

California is the most populated state in the nation, and, with the largest economy, its total energy demand is second only to Texas.[1,2,3] Although California is a leader in many energy-intensive industries, the state has one of the lowest per capita total energy consumption levels in the country.[4,5] California's extensive efforts to increase energy efficiency, along with the implementation of alternative technologies, has restrained growth in energy demand.[6] California is also rich in energy resources. The state has an abundant supply of crude oil and is a top producer of conventional hydroelectric power.[7,8] California also leads the nation in electricity generation from solar, geothermal, and biomass resources.[9]

Residential energy use per person in California is lower than in every state except Hawaii.

Stretching two-thirds of the way up the West Coast, California is the nation's third-largest state.[10] Transportation dominates California's energy consumption profile.[11] More motor vehicles are registered in California than in any other state, and commute times in California are among the longest in the country.[12,13] The state also accounts for one-fifth of the nation's jet fuel consumption.[14] California leads the nation in agricultural and manufacturing gross domestic product (GDP), and the industrial sector is the state's second-largest energy consumer.[15,16] However, per capita energy use in California's residential sector is lower than that of every other state except Hawaii.[17] In most of California's more densely populated areas, the climate is dry and relatively mild.[18,19] More than two-fifths of state households report that they do not have or do not use air conditioning, and about one-seventh do not have or do not use space heating.[20]

Petroleum

California has the third-largest share of petroleum reserves and is the third-largest producer of petroleum among the 50 states, after Texas and North Dakota. Petroleum reservoirs in the geologic basins along California's Pacific Coast and in the state's Central Valley contain major crude oil reserves; the most prolific oil-producing area in the state is the San Joaquin basin in the southern half of the Central Valley.[21,22,23,24] Even though California's crude oil production has declined overall in the past 30 years, the state remains one of the top producers of crude oil in the nation, accounting for about 6% of total U.S. production in 2016.[25,26]

Federal assessments of California's offshore areas indicate the potential for large, undiscovered recoverable crude oil resources in the federally administered Outer Continental Shelf (OCS).[27] Concerns about the cumulative impacts and risks of offshore oil and natural gas development after the 1969 Santa Barbara oil spill resulted in state legislation that imposed a permanent moratorium on offshore oil and natural gas leasing in state waters.[28] Congress imposed a federal moratorium on oil and natural gas leasing in California federal waters in 1982. The federal moratorium was lifted in 2008; however, no lease sales for the California federal OCS are currently planned.[29,30]

California ranks third in the nation in petroleum refining capacity and accounts for about one-tenth of the total U.S. capacity.[31] A network of crude oil pipelines connects the state's oil production to the refining centers located primarily in the Central Valley, the Los Angeles area, and the San Francisco Bay area.[32] California refiners also process large volumes of Alaskan and foreign crude oil received at the state's ports. Crude oil production in California and Alaska has declined, and California refineries have become increasingly dependent on imports to meet the state's needs.[33,34] Led by Saudi Arabia, Ecuador, and Columbia, foreign suppliers now provide more than half of the crude oil refined in California.[35,36]

Many of California's largest refineries are highly sophisticated and are capable of processing a wide variety of crude oil types. To meet strict federal and state environmental regulations, California refineries are configured to produce cleaner fuels, including reformulated motor gasoline and low-sulfur diesel. Refineries in the state often operate at or near maximum capacity because of the high demand for those petroleum products.[37] California requires that all motorists use, at a minimum, a specific blend of motor gasoline called CaRFG (California Reformulated Gasoline) as part of an overall program to reduce emissions from motor vehicles.[38] When unplanned refinery outages occur, replacement supplies must be brought in by marine tanker from refineries in the state of Washington or on the U.S. Gulf Coast. Refineries in several other countries can also supply CaRFG.[39] Locating and transporting replacement motor gasoline that conforms to California's strict fuel specifications from overseas can take several weeks.[40]

Petroleum is consumed almost exclusively by the transportation sector in California. The industrial sector, the second-largest consuming sector, uses only one-eighth as much petroleum as the transportation sector.[41] Less than 0.3% of California households heat with fuel oil or kerosene.[42]

Natural gas

California accounts for less than 1% of total U.S. natural gas reserves and production.[43] As with crude oil, California's natural gas production has experienced a gradual overall decline in the past three decades.[44] The state's reserves and

production are located primarily in geologic basins in the northern portion of the Central Valley. Some natural gas fields are also located in the southern portion of the Central Valley, in coastal areas in northern California, and offshore along the Southern California coast.[45]

California's natural gas output equals about one-tenth of state demand.[46,47] Almost two-thirds of California households use natural gas for home heating, and about half of California's utility-scale net electricity generation is fueled by natural gas.[48,49] Several interstate pipelines bring needed natural gas into California from the Southwest, the Rocky Mountain region, and western Canada, by way of Arizona, Nevada, and Oregon. In 2011, natural gas supplies began arriving via the Ruby Pipeline, which runs from Wyoming to Oregon, directly linking natural gas produced in the Rocky Mountain region to markets in Northern California.[50,51] Although a small amount of natural gas is exported to Mexico, almost all the natural gas delivered to California is used in the state or is placed in storage.[52] California has 14 natural gas storage fields that help stabilize supply; together the fields have an annual storage capacity of about 600 billion cubic feet of natural gas and a typical working natural gas capacity of about 375 billion cubic feet.[53,54,55]

Coal

California does not have any coal reserves or production and has phased out almost all use of coal for electricity generation.[56,57] Some coal is used at industrial facilities in California.[58] Almost all of the coal consumed in California originates from mines in Utah.[59] Some coal from western coal mines arrives in California by rail and is exported to overseas markets from port facilities located primarily in the Los Angeles and San Francisco areas.[60]

Electricity

Natural gas-fired power plants generated about half of California's total in-state net electricity generation in 2016. Another two-fifths of the state's net electricity generation was from renewable resources, including hydropower.[61] Nuclear power, which, until 2012, provided more than one-sixth of the state's total net electricity generation, supplied about one-tenth of California's net generation in 2016.[62,63] The two reactors at the San Onofre nuclear plant were permanently retired in mid-2013.[64,65] About one-eighth of the nation's conventional hydroelectric generating capacity is in California, but hydroelectric power's share of the state's net generation varies with annual precipitation.[66] In 2015, because of prolonged drought, hydropower supplied less than one-tenth of California's net generation. However, in 2016, hydropower's share rebounded with increased precipitation and provided one-seventh of the state's net generation.[67,68] Reductions in California's hydroelectric generation and nuclear capacity and generation have been largely made up for by renewable generation. Non-hydroelectric renewable technologies, such as solar, wind, geothermal, and biomass, provided more than one-fourth of the state's net generation in 2016.[69] In-state coal-fired power plants have not been significant contributors to power generation in California.[70] In 2016, less than 0.2% of the total net electricity generated in California came from coal-fired sources.[71]

Added transmission capability has helped the Southern California electric grid address the capacity shortage that resulted from the decrease in nuclear generation. The Sunrise Powerlink Transmission project, which was put into service in June 2012, added approximately 800 megawatts of transmission capability to the Southern California electric grid. It was designed to link electricity generated from renewable resources in the southeastern corner of the state to San Diego.[72,73] Additional transmission projects, many aimed at improved system reliability, have come online or are in the planning and construction phase.[74]

More than one-fourth of California's electricity supply comes from facilities outside the state.[75] In 2016, much of the power delivered to California from states in the Pacific Northwest was generated by wind. States in the Southwest delivered power generated at coal-fired power plants, at natural gas-fired power plants, and from nuclear generating stations.[76] Electricity supplied from out-of-state coal-fired power plants has decreased following the enactment of a state law in late 2006 that requires California utilities to limit new long-term financial investments in base-load generation to those power plants that meet California emissions performance standards.[77] In 2016, almost all of the state's coal-fueled electricity generation was imported, but it provided less than 5% of California's power.[78]

In 2003, as a response to electricity price instability and blackouts in 2000 and 2001, a California Energy Action Plan that was designed to eliminate outages and excessive price spikes was adopted. The Energy Action Plan's goals are to ensure that adequate, reliable, and reasonably priced electric power and natural gas supplies, including prudent reserves, are provided. The plan calls for increasing energy conservation and efficiency, building new in-state generation facilities, and upgrading and expanding California's electricity transmission and distribution infrastructure to ensure that generating facilities can quickly come online when needed.[79,80] A 2015 state law requires that annual targets be set in order to double statewide energy-efficiency savings by 2030. California utilities are required to invest in the maximum amount of cost-effective efficiency feasible.[81] Although California has the second-highest retail electricity sales in the nation, retail sales are the lowest in the nation on a per capita basis.[82,83] About one-fourth of California households use electricity for home heating.[84]

Renewable energy

California is among the top states in the nation in electricity generation from renewable resources and leads the nation in generation from solar, geothermal, and biomass energy. California is also the nation's third-largest producer of electricity from conventional hydroelectric power and the fifth-largest producer from wind energy.[85]

Solar energy provides about one-tenth of California's utility-scale net electricity generation.

In 2014, California became the first state in the nation to get more than 5% of its utility-scale electricity generation from its solar resources.[86] In 2016, solar resources provided about one-tenth of the state's utility-scale net electricity generation. When distributed (customer-sited, small-scale) generation is included, solar energy provided almost one-seventh of the state's net generation. California leads the nation in electricity generation from solar photovoltaics (PV), accounting for almost half of the U.S. total. About one-third of the solar PV generation in the state is from distributed generation. Seven-tenths of all U.S. solar thermal generation is in California as well.[87] California's greatest solar resource is in the state's southeastern deserts, where several of the world's largest solar thermal and solar PV plants are located.[88,89,90,91,92,93] On a smaller scale, the California Solar Initiative encourages Californians to install solar power systems on the rooftops of their homes and businesses.[94] California has about 9,800 megawatts of installed utility-scale solar power generating capacity, more than any other state, and, when distributed generation is included, the state has almost 20,000 megawatts of installed solar capacity.[95,96]

California is the top producer of electricity from geothermal energy in the nation.

California is the top producer of electricity from geothermal energy in the nation with more than 2,700 megawatts of installed capacity and 43 operating geothermal power plants. The state accounts for more than seven-tenths of the nation's total electricity generation from geothermal energy.[97,98] Substantial geothermal resources are found in California's coastal mountain ranges, in the volcanic areas of northern California, near the Salton Sea, and along the state's border with Nevada.[99] The facility known as The Geysers, located in the Mayacamas Mountains north of San Francisco, is the largest complex of geothermal power plants in the nation and has about 725 megawatts of installed capacity.[100]

California also leads the nation in utility-scale electricity generation from biomass.[101] About three-fifths of California's biomass generating capacity comes from plants fueled by wood and wood waste, although those plants account for only one-sixth of the total number of biomass generators in the state.[102]

California produces more than 6% of the U.S. total utility-scale wind generation, ranking fifth in the nation behind Texas, Iowa, Oklahoma, and Kansas.[103] California's wind power potential is widespread, especially along the state's many mountain crests and offshore in the northern part of the state.[104] There are six large wind resource areas in the state

and several smaller wind sites.[105] As of mid-2017, California had more than 5,500 megawatts of installed wind capacity.[106]

Concern over the environment prompted several policy initiatives to reduce greenhouse gas (GHG) emissions. California's Low Carbon Fuel Standard, issued in January 2007, called for a reduction of at least 10% in the carbon intensity of California's transportation fuels by 2020. The standard requires fossil fuel substitutes that demonstrate lower lifecycle GHG emissions than the fuels they replace.[107] A number of alternative pathways have been identified that reduce the levels of GHG emissions in the production of ethanol, biodiesel, and renewable diesel.[108] California has seven ethanol production plants and nine biodiesel plants with more under construction.[109,110] The state accounts for more than one-ninth of the nation's fuel ethanol consumption but produces only about one-eighth of the fuel ethanol that is consumed in California. Most of the state's ethanol supply arrives from elsewhere. [111,112]

California established an emissions cap-and-trade program as part of the state's Global Warming Solutions Act of 2006. The program's goal is the reduction of the state's GHG emissions to 1990 levels by 2020, to 40% of 1990 levels by 2030, and eventually to 80% of 1990 levels by 2050. Major sources of GHG emissions must meet GHG caps. To minimize the costs of pollution controls, a program for trading emissions allowances was created, and quarterly auctions began in November 2012.[113,114,115]

The California renewable portfolio standard (RPS), created in 2002, requires that 33% of retail sales of electricity in California come from eligible renewable resources by 2020 and 50% by 2050. Eligible resources include wind, solar thermal, solar PV, geothermal, biomass, landfill gas, municipal solid waste, tidal, wave, ocean thermal, anaerobic digestion, fuel cells that use renewable fuels, and small hydroelectric facilities.[116] The state requires that retail electricity suppliers disclose the fuel sources used to generate the power they supply.[117]

California recognized cost-effective energy-efficiency as an important resource for meeting the state's clean energy targets. In addition to the RPS, California created an energy-efficiency resource standard. The standard's goal is to lower electricity and natural gas consumption through increased energy efficiency and reduced demand.[118] In 2015, additional legislation required a cumulative doubling of state energy-efficiency savings in electricity and natural gas final end uses by 2030.[119] Targets will be reached through a variety of measures, including enhanced appliance standards, efficiency improvements in public buildings, and financial incentives for retail customers.[120]

Energy on tribal lands

California has one of the largest Native American populations in the nation.[121] The state is home to more than 100 federally recognized tribal groups.[122] Although tribal areas are spread throughout the state, they account for less than 1% of state lands.[123,124] Many of the tribal lands are small, including the nation's smallest reservation, the 1.32-acre Pit River Tribe cemetery.[125] The Colorado River Tribe Reservation, which straddles the Colorado River and the California-Arizona border, is among the larger reservations in the state, although only about 67 square miles of the reservation's almost 450-square-mile area is within California.[126]

California's diverse geography gives tribes access to a variety of renewable energy resources, and several tribes are developing those resources. In 2017, the U.S. Department of Energy announced awards to seven California tribes to assist in the development of renewable energy and energy efficiency on tribal lands.[127] Previously, the Ramona Band of Cahuilla became one of the first reservations in the nation to become independent of the grid, establishing a microgrid and meeting all of their energy needs with renewable resources.[128] Other reservations in the state have pursued similar goals. In 2016, as part of the construction of its microgrid, the Blue Lake Rancheria installed a 500-kilowatt solar array, and, in 2017, the microgrid became operational.[129,130] The Bear River Band of the Rohnerville Rancheria in Northern California began installing a hybrid microgrid in 2015 that uses solar and wind energy for power generation.[131]

The Campo Kumeyaay Nation in Southern California was the first tribe in the nation to develop a utility-scale wind project with 25 wind turbines constructed on land leased from the tribe.[132] The Agua Caliente Band of Cahuilla Indians is working on the development of a combined wind and solar project on their large reservation in Southern California.[133]

Other tribes are in areas of abundant biomass potential. The Blue Lake Rancheria Tribe in Humboldt County uses wood waste from timber harvesting to fuel a first-of-a-kind biogas fuel-cell system.[134] California tribes have abundant solar resources. The Agua Caliente Band of Cahuilla Indians and the Bishop Paiute Tribe are each involved in projects that will bring solar PV to offices and homes on their reservations.[135,136] Some California tribal lands, particularly in the Imperial Valley in southern California, in the Geysers area in northern California, and along the state's eastern border, also have geothermal electricity generation potential.[137]

Endnotes

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[4] U.S. Bureau of Economic Analysis, Interactive Data, Regional Data, GDP and Personal Income, Regional Data, Annual Gross Domestic Product (GDP) by State, GDP in current dollars, NAICS, All industries, California and United States, 2015.

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[12] U.S. Census Bureau, Statistical Abstract of the United States: 2012 (131st Edition) (August 2011), Table 1098, State Motor Vehicle Registrations, 1990 to 2009, Motorcycle Registrations and Licensed Drivers by State: 2009.

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[14] U.S. EIA, State Energy Data System, Table F2, Jet fuel consumption, price, and expenditure estimates, 2015.

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[16] U.S. Bureau of Economic Analysis, Interactive Data, Regional Data, GDP and Personal Income, Annual Gross Domestic Product (GDP) by State, GDP in current dollars, NAICS, All industries, All Areas, 2016.

[17] U.S. EIA, State Energy Consumption Estimates, 1960 through 2015, DOE/EIA-0214(2015) (June 2017), Table C13, Energy Consumption per Capita by End-Use Sector, Ranked by State, 2015.

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[23] U.S. EIA, Top 100 U.S. Oil & Gas Fields (March 2015), p. 5-7, 11.

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Other Resources

Energy-Related Regions and Organizations

- Petroleum Administration for Defense District (PADD): 5
- North American Electric Reliability Corporation (NERC) Regional Entity: Western Electricity Coordinating Council (WECC)
- Regional Transmission Organization (RTO)/Independent System Operator (ISO): California Independent System Operator (CAISO)

Other Websites

- California Energy Commission
- California Public Utilities Commission (CPUC), Energy
- California Department of Community Services and Development
- California Department of Conservation, Division of Oil, Gas and Geothermal Resources
- California Air Resources Board
- Energy Upgrade California
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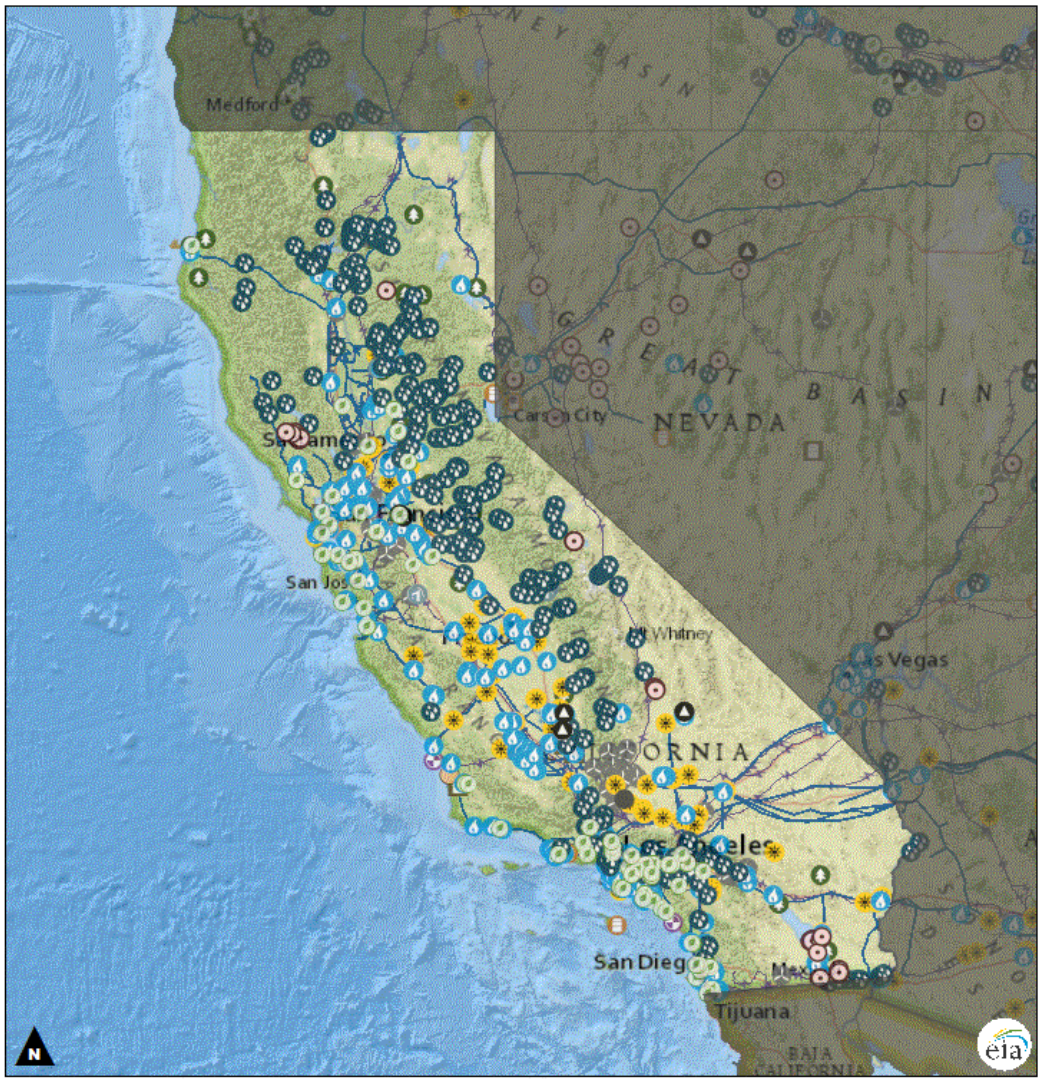
- Western Governors Association
- Western Interstate Energy Board
- Western Area Power Administration
- Bonneville Power Administration
- United States Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Low Income Home Energy Assistance Program
- United States Department of Energy, Indian Energy Policy and Programs
- U.S. Geological Survey, Maps

Email suggestions for additional California website resources to: states@eia.gov.



States:Electricity Transmission Lines - Ventyx, Velocity Suite;Grey Base:National

0 45 90 180 Miles

- Mask
- Surface Coal Mine
- Underground Coal Mine
- Biomass Power Plant
- Coal Power Plant
- Geothermal Power Plant
- Hydroelectric Power Plant
- Natural Gas Power Plant
- Nuclear Power Plant
- Other Power Plant
- Other Fossil Gases Power Plant
- Petroleum Power Plant
- Pumped Storage Power Plant
- Solar Power Plant
- Wind Power Plant
- Wood Power Plant
- Petroleum Refinery
- Strategic Petroleum Reserve

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