

California's Renewables Portfolio Standard (RPS) Program

California's Renewables Portfolio Standard (RPS) has positioned the state as a global leader in renewable energy and helped attract billions of investment dollars to industries that have directly or indirectly supported the development of new generation sources. This clean, safe, and homegrown electricity has helped California reduce harmful air pollution and global warming emissions. And unlike fossil fuels, which are finite sources of energy with historically volatile prices, renewable fuels like wind and solar energy provide free and inexhaustible sources of electricity. In short, California's investment in renewable energy is creating a more diverse and resilient electricity supply that will keep the lights on in the Golden State for decades to come.

The RPS has pushed California to capitalize on its vast renewable energy potential.

California's RPS, which requires utilities to produce 33 percent of their retail electricity from clean, renewable sources by 2020, is the highest standard among the 29 states that have adopted one. The RPS is technology-neutral, which gives utilities the ability to purchase whatever mix of qualified renewables works

The RPS is a market-based policy requiring utilities to deliver 33 percent of their retail electricity from clean, renewable sources by 2020.

best for their portfolio. This market-based approach has spurred investments in a variety of renewable resources including solar photovoltaics (PV), solar thermal, wind, geothermal, biomass, and biogas—fulfilling the promise of California's materially and geographically diverse natural resources. In addition, this diversity supports a reliable electricity grid because different types of technologies generate power at different times, creating a smoother and more consistent flow of electricity over the course of a day, week, or month.

Since the RPS was enacted in 2002 with bipartisan support, California's electricity rates have remained stable while construction and generation costs for renewable facilities have fallen dramatically. Installed renewable generation capacity in the state has grown by nearly 200 percent.

FIGURE 1. In-State Renewable Generation, 2003–2013

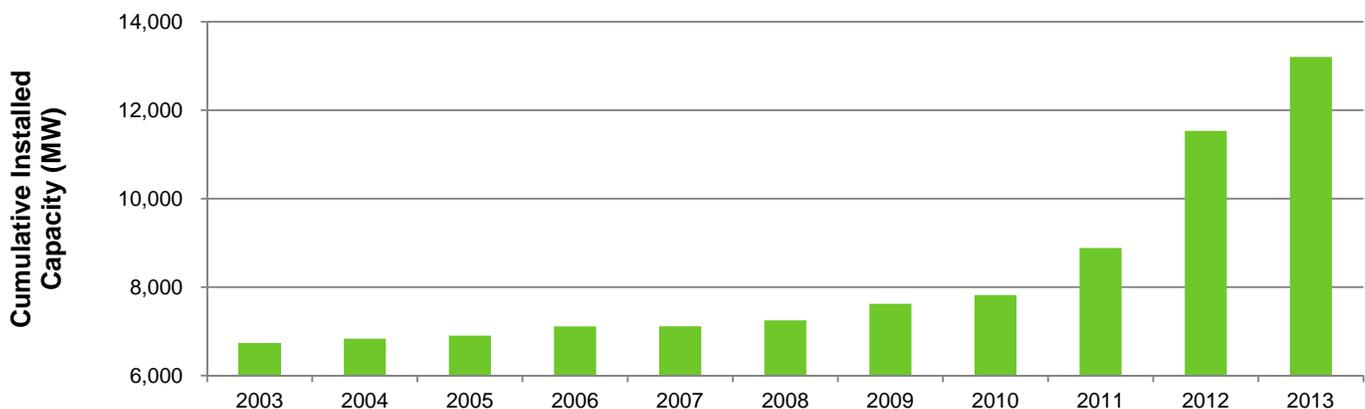
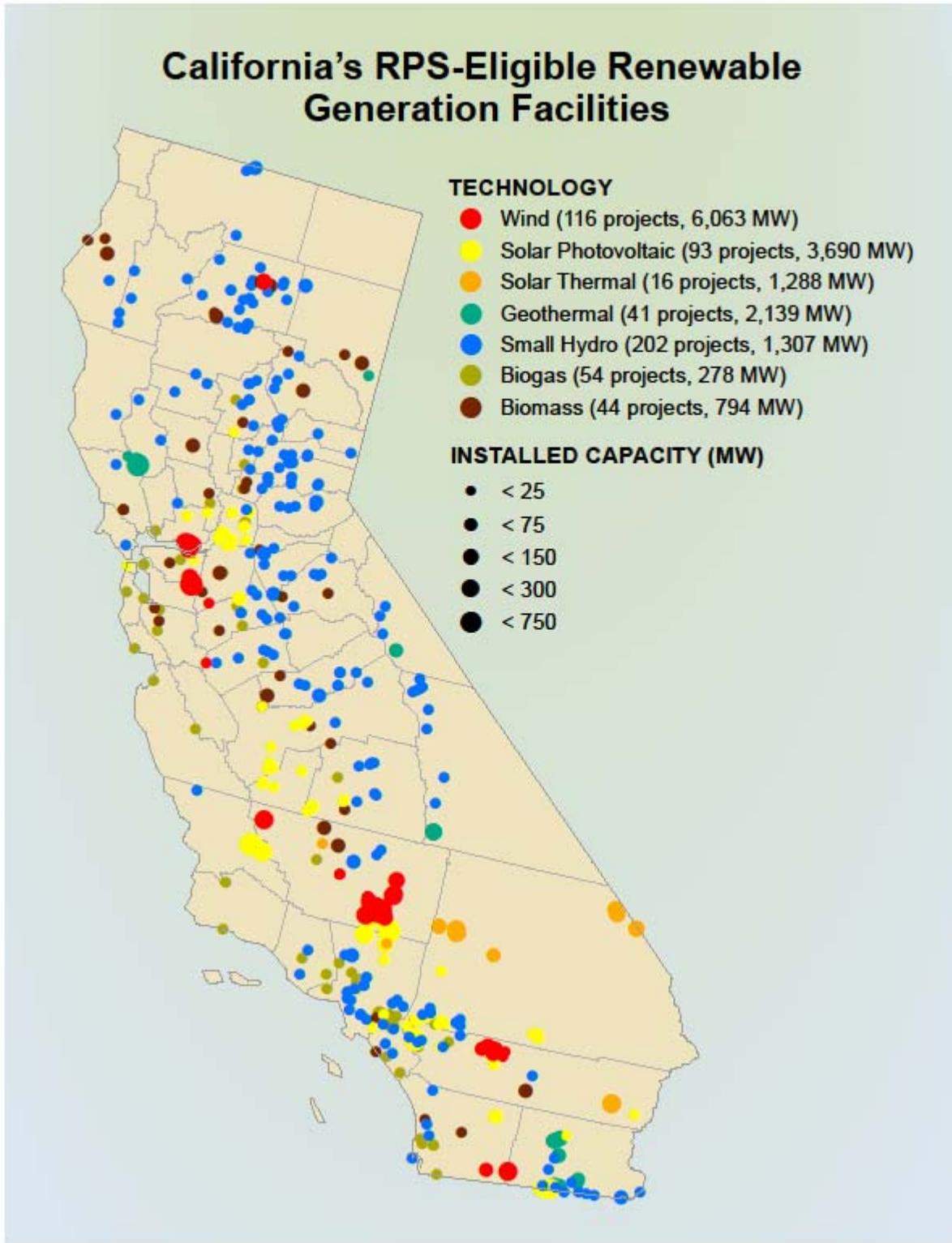


FIGURE 2. California's RPS-Eligible Renewable Generation Facilities



Today there are more than 500 projects in California generating nearly 40,000 gigawatt-hours of clean and reliable electricity each year, accounting for roughly 20 percent of all electricity generated in the state.¹ This is enough electricity to power more than 5 million homes, and that number is expected to nearly double by 2020.



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Nearly every county in the state hosts renewable energy projects, with new projects concentrated in the counties most in need of economic stimulation. Indeed, the majority of projects built in the last decade—almost three-quarters of the state total—are located in counties with unemployment levels of 10 percent or higher.ⁱⁱ These new projects have supported jobs for local residents and helped "jump-start" the revitalization of local economies.

In 2012, California became the first state to install more than one gigawatt of new solar PV in one year, and has now surpassed three gigawatts of PV (including rooftop installations that serve on-site energy needs). California also led all states but one in new wind energy deployment in 2012, with 1.65 gigawatts. Wind power now meets more than 5 percent of California's electricity needs.

The RPS is helping California reduce air pollution and mitigate climate change.

Without the RPS, the state would rely a lot more on polluting fossil fuels than it does today. California's renewable generation in 2012 was equivalent to generation from the 9 biggest generating natural gas plants in the state, which emitted roughly 16 million metric tons of carbon dioxide during the same timeframe. This means renewable energy is already helping Golden State residents avoid an amount of global warming pollution equal to that produced by 3 million typical cars.^{iii,iv,v}

Electricity generation was once one of California's top sources of heat-trapping emissions that contribute to climate change. But thanks to a combination of energy conservation, clean energy investment policies (including the RPS), and changes in California's economy, emissions from the electricity sector declined 18 percent—more than any sector—between 2003 and 2010.^{vi}

The majority of RPS projects in California are located in areas with high unemployment.

Electrifying vehicles will reduce pollution from cars and trucks.

The transportation sector is responsible for the largest source of heat-trapping emissions in California, and the primary source of toxic air pollution. Several studies that analyzed how California could make deep cuts in global warming pollution all concluded that it will be necessary to electrify a large portion of the light-duty car and truck, rail, and buses fleets in the coming decades.^{vii,viii,ix} With more electric vehicles on the road, strong clean energy policies will be critical to reducing emissions in both the electricity and transportation sectors of California's economy.



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Clean energy development is an economic catalyst.

The state's leadership on clean energy has put people to work: the American Wind Energy Association and the Solar Foundation estimate that California's wind and solar industries currently employ more than 48,000 people.^{x,xi}

In addition, California led the nation in the amount of clean energy venture capital—more than \$2 billion—it attracted in 2012. That amount is nearly equivalent to the total invested in the next nine states combined.^{xii}

California should begin planning now for the next phase of clean energy investments.

Although the current RPS does not expire until 2020, the state should not wait that long to decide how it plans to move forward on clean energy. Markets and investors need long-term policy signals like the RPS to continue driving growth in the clean energy sector, which remains one of the brightest spots in California's economy. Since investments in a cleaner electricity grid take years to pay off, the state should be thinking now about how to maximize its clean energy generation potential in the decades to come.

The state still relies on fossil fuels—coal and natural gas—to supply nearly 45 percent of its electricity needs.^{xiii} In the coming decade, California will face significant decisions regarding how to modernize its aging generation fleet and electricity grid, while reducing its air pollution and global warming emissions. To ensure that clean energy will be ready to meet our long-term electricity needs, California needs a strong and lasting policy that will encourage additional renewable energy investments in the years after 2020.

ENDNOTES

- ⁱ *SNL Financial*. 2013. *SNL Interactive*. June 15. Online at <http://www.snl.com>.
- ⁱⁱ *U.S. Bureau of Labor Statistics*. 2013. *Unemployment rates by county: June 2010–May 2013 averages*. Online at <http://www.bls.gov/lau/maps/twmcort.pdf>.
- ⁱⁱⁱ *California Energy Commission*. 2012. *California power plants*. November 6. Online at <http://energyalmanac.ca.gov/powerplants/index.html>.
- ^{iv} *U.S. Environmental Protection Agency*. 2013. *2011 greenhouse gas emissions from large facilities*. February 17. Online at <http://ghgdata.epa.gov/ghgp/main.do>.
- ^v *U.S. Environmental Protection Agency*. 2011. *Greenhouse gas emissions from a typical passenger vehicle*. December. Online at <http://www.epa.gov/otaq/climate/documents/420f11041.pdf>.
- ^{vi} *California Air Resource Board*. 2013. *California greenhouse gas inventory for 2000–2010—by category as defined in the scoping plan*. March 21. Online at <http://www.arb.ca.gov/cc/inventory/data/data.htm>.
- ^{vii} *Greenblatt, J., et al*. 2011. *California's Energy Future, the view to 2050: Summary report*. California Council on Science and Technology. [CCST].
- ^{viii} *Wei, M., et al*. 2012. *Deep carbon reductions in California require electrification and integration across environmental sectors*. *Environmental Research Letters*. 7:1-9 [LBNL-1]
- ^{ix} *Williams, J. H., et al*. 2011. *The Technology Path to Deep Greenhouse Gas Emission cuts by 2050: the pivotal role of electricity*. *Science Express [E3]*
- ^x *American Wind Energy Association*. 2012. *Wind energy facts: California*. October. Online at <http://www.awea.org/learnabout/publications/factsheets/upload/3Q-12-California.pdf>.
- ^{xi} *The Solar Foundation*. 2012. *National solar jobs census*. November. Online at <http://thesolarfoundation.org/research/national-solar-jobs-census-2012>.
- ^{xii} *Clean Edge*. 2013. *2013 U.S. clean tech leadership index*. June. Online at <http://www.cleantech.com/research/leadership-index>.
- ^{xiii} *California Energy Commission*. 2012. *Total electricity system power*. August 1. Online at http://energyalmanac.ca.gov/electricity/total_system_power.html.

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