



ROBUST RENEWABLES: SB 350 AND ITS POTENTIAL IN THE INLAND EMPIRE

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Since the enactment of its first Renewables Portfolio Standard (RPS) Program in 2002, California has been a leader for clean energy reform. The program, which has been updated twice since its inception, sets targets for renewable energy use. The first target, established in 2002, was for 20% of all electricity to come from renewable sources by 2017. In 2011, this mandate was expanded to 30% of all electricity from renewable sources by 2020. On September 7, 2015, Governor Jerry Brown signed Senate Bill 350, the Clean Energy and Pollution Reduction Act of 2015, into law. It raises the mandate to 50% of all electricity from renewable sources by 2030.

The first push for renewable energy sources in California came in the wake of high oil prices due to the Iran-Iraq War around 1980. Coupled with the forced opening of the electrical grid to low-volume producers in the Public Utilities Regulatory Policies Act of 1978, California saw the deployment of hundreds of megawatts of renewable energy sources, especially from geothermal sources. After the RPS was introduced in 2002, California again saw a boom in renewable energy deployment, mostly from wind power. Near the end of the 2000s, solar power, both utility-scale (projects greater than 1MW) and rooftop, began to boom driven by state and federal subsidies.

California also took the lead in clean energy policy, establishing a cap-and-trade program for

carbon in Assembly Bill 32 (2006), facilitating electric/hybrid vehicle adoption, and creating a positive environment for advanced energy start-ups. This action has led Clean Edge, an independent research and consulting firm working in the clean energy field, to award California the top position in its Clean Tech Leadership Index of states for the past six years.

California's citizens believe in clean energy, as well. According to a July 2015 survey by the Public Policy Institute of California (PPIC), 86% of Californians believe that it is important for the state government to do something to prepare for the future effects of global warming. The drought appears to have affected public opinion about climate change as the percentage of Californians who believe global warming threatens California's future increased almost 10 points from 2014 surveys among Democrats and Independents polled (from 41% to 51% and 58% to 66%, respectively). Republican responses to the question did not change (stayed at 26%).

California utilities have duly adjusted to meet the RPS and in 2013 sourced about 24% of all electricity from renewables, two years earlier than mandated by SB 2. The California Public Utilities Commission (CPUC) monitors RPS implementation in a quarterly report and is optimistic that utilities will surpass the 2020 goal. CPUC predicts most of the renewable energy generation will come from photovoltaic solar energy, which

is expected to balloon in the next three years. The CPUC has not yet released any predictions on achieving the 2030 goals set in the bill. It is still in the process of drafting strategies for utility companies to meet their RPS obligations.

Governor Brown signed the newest update to the Renewables Portfolio Standard, SB 350 on October 7, 2015. The law promotes two energy goals explicitly outlined in Governor Brown's 2015 inaugural address: increasing the RPS mandate to 50% and seeking to double the energy efficiency of all buildings in California. Both goals are to be accomplished by 2030. Proponents of the law touted its potential to improve air quality and public health, save citizens money through energy-efficient buildings, and create new jobs in the clean energy industry. Opponents argued that the bill would crush business development and increase the costs of electricity, gasoline, and other products. A study by the Los Angeles County Economic Development Corp argued that the regulations threaten 11% of California's jobs and more than 14% of its GDP. It also faulted SB350 for ceding to the California Air Resources Board broad authority to implement policy to achieve the mandates. The July 2015 PPIC poll showed strong public support for SB 350's goals, with 82% supporting the higher RPS standard and 70% supporting the goal of doubling building efficiency.

Despite this public support, a third element of SB 350 was stripped from the bill before it was passed. Governor Brown's third climate change reduction goal was to reduce petroleum use of cars and trucks by 50%, but this element was removed after opposition from the oil lobby arose. The opposition was led by the Western States Petroleum Association, a collection of 27 oil companies including BP, Chevron, ExxonMobil, Shell Oil, and ConocoPhillips. The WSPA, acting through "grassroots" organizations such as the California Drivers' Alliance and Fed Up at the Pump, spent millions of dollars in order

to fight the adoption of the petroleum reduction policy. Lobbyists courted on-the-fence representatives with incentives ranging from campaign money to fancy dinners and tickets to Dodgers games.

Stakeholders also spent money on direct-mail fliers and advertisements in an attempt to change public opinion about SB 350. The ad campaigns emphasized the increased cost of gasoline that might result from such policies. Although the July 2015 PPIC poll showed that 73% of California residents supported cutting petroleum use, sponsor Kevin de León eventually removed the petroleum cuts from the final version of his bill.

The opposition campaign highlighted concerns of lawmakers representing poorer constituencies, often largely Latino or other minority communities. The concerns were predominantly over rising costs that might be incurred by increased regulation. "Does [the environment] continue to stay a number one issue for [my constituents] when their gas prices go up and their utility bills go up?" asked Assemblyman Ian Calderon (D) from Whittier in the *Los Angeles Times*. Other legislators such as Assemblyman Jim Cooper (D) of Elk Grove saw many of the reforms as benefiting the richer parts of the state. Solar panels and electric vehicles "are great, but they don't come to our neighborhoods," said Mr. Cooper. Dan Schnur, director of USC's Unruh Institute of Politics, pointed out in the *Los Angeles Times* that abstract ideals such as progressive climate policy are trumped by more immediate concerns like a more expensive commute. This issue may be particularly compelling in California, a state where gas prices are consistently above the national average and 60% of citizens commute by car to work.

Despite these criticisms, a revised SB 350 (without the provision to reduce petroleum use) still passed through the California Senate and Assembly with substantial majorities (+12 and

+24, respectively). Among California Democrats polled in July 2015 by PPIC, 90% favored the new RPS of 50% clean energy and 82% favored doubling energy efficiency in buildings. Republicans polled about 30 points lower at 63% and 52% in favor, respectively. Legislators representing the Inland Empire similarly split along party lines. All Democrats in the Assembly and Senate voted for the bill while Republicans from the Inland Empire uniformly voted against it.

The Inland Empire is a leading region for solar and wind energy in California, with 34% of all solar and 12.3% of wind production in California originating there. The region is home to 52 wind farms with a total generating capacity of 753.4 MW. Most of the wind farms are inside the San Geronio Pass Wind Farm complex. It generates 610 MW of energy, enough to power 43.5 million CFL lightbulbs at once.

Solar energy thrives in the Inland Empire, as well. The region plays host to a number of massive solar power plants, many of which claimed the title of “World’s Largest” at the time of their opening. These plants include the Desert Sunlight (550 MW generating capacity), Ivanpah (392 MW), Mojave (280 MW), and Genesis (250 MW) solar projects. Two other large solar projects, Desert Quartzite (300 MW) and Soda Mountain (350 MW) have also been proposed and are working through the regulatory approval process.

SB 350 could prompt economic growth in an area that typically lags behind the rest of the state in terms of employment and income. Both wind and solar projects generate thousands of jobs, mostly for the initial construction of facilities. The Ivanpah solar project (392 MW) created 2,636 jobs over three years at its peak and now employs 65 permanent or seasonal employees. It will also pay approximately \$350 million in state and local taxes over its first 30 years of operation. A report by the Advanced Energy Economy In-

stitute found that 3.8% of all Inland Empire jobs are connected to the advanced energy industry, 1.5 times the average throughout California. Most of these jobs are connected to utility-scale renewable energy plants.

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Some worry, however, that power plant construction is not the economic boon that it first appears. Although power plant construction can bring jobs to the area, they seldom yield many permanent positions - the real jobs that towns and counties need to increase tax revenues. Furthermore, construction can actually impose costs on local governments. In January 2011, BrightSource Energy, one of the co-owners of Ivanpah, began to plan a 500 MW solar project in Inyo County. While the county was initially in favor of the project as a welcome opportunity for growth, its enthusiasm quickly waned after hiring an economic analyst to research the potential economic effects on the county. Although the power plant would pay \$377,000 annually in taxes to the county, Inyo County would need to spend \$11 million to \$12 million on road renovations to support the project’s construction. Even after construction, Inyo County would need to spend an additional \$2 million per year in order to provide required amounts of emergency and public safety services. In May 2015, the county requested that the California Energy Commission terminate the project’s application. BrightSource quickly withdrew its application.

Large plants like those in the Inland Empire need to overcome other challenges if they are to be completely successful. As the Rose Institute

documented in 2011, utility-scale power plants like Ivanpah present many issues because of their size. For one, homeowners often object to the aesthetics of large, industrial power plants. Although this may be less of a concern in a less populated desert area such as the Inland Empire, the people who live there still worry that property values may be driven down by sprawling fields of solar or wind power generators.

There are also environmental concerns about large projects. Conservationists worry about the effects of large power plants on the ecosystems in which the plants are built. When Ivanpah was first constructed, conservationists brought up concerns that desert tortoises would become endangered, even if relocated. Eventually, Ivanpah was forced to purchase a total of 12,000 acres of land, only 4,000 of which was used to build the plant. The additional 8,000 acres was solely for conservation.

Even after Ivanpah was built, it has continued to raise ecological concerns. The main concern now is birds. Ivanpah was recently the subject of a US Fish and Wildlife Service report which concluded that the large solar project was a “mega-trap” for birds. The report found that the solar projects attract insects which, in turn, attract birds. Many of these birds are killed or injured when flying over the mirrors because the intense

reflected sunlight sears or burns them. The Desert Sun reports that NRG Energy, one of the owners of Ivanpah, has committed to exploring “humane avian deterrent systems,” and other large-scale solar plants that were in the planning stages have been put on hold.

Despite environmental concerns, the future of solar energy in the Inland Empire still appears bright. This is largely due to technological advances that are bringing prices down to levels competitive with conventional energy generation sources. The price of solar energy has been subsidized by the Federal Investment Tax Credit, which provides a 30% tax credit to residential and commercial solar construction. The Federal ITC, renewed in December 2015, will decline to a 22% credit in 2021 and then drop off to a 10% credit for commercial projects and be eliminated for residential projects. Even though the subsidies are set to decline, the California Energy Commission reports that two more projects are under construction and several more have been approved and are available for construction. This suggests that price parity may be just as important a driver for solar expansion as the ITC. The most recent CPUC report predicts that solar power in California will expand rapidly in the next five years, and the Inland Empire is in a perfect position to capitalize on this.