

California Defies Trump's Agenda

The state remains a strong market for wind energy as its value rises. But challenges persist.

By Nancy Rader

California will remain an oasis of progress in addressing climate change despite President Donald Trump's determination to dismantle former President Barack Obama's climate change legacy. California's political leaders are determined to not only resist the unraveling of Obama's environmental policies, but also counter that reversal with stronger goals, particularly in the electric sector. The extent to which this will translate to good news for the wind industry, nevertheless, remains an open question.

California's political leaders wasted no time asserting their resistance to Trump. Four days into the new year, state legislative leaders announced the hiring of former U.S. Attorney General Eric Holder Jr. to advise on legal strategy against the new administration on policy matters ranging from climate change to immigration.

Twenty days later, Gov. Jerry Brown delivered his State of the State address titled "California is not turning back. Not now, not ever."

Obliquely referring to the Trump administration, Brown declared, "Whatever they do in Washington," he said, "they can't change the facts. And these are the facts: The climate is changing, the temperatures are rising, and so are the oceans. Natural habitats everywhere are under increasing

stress. The world knows this."

Most Californians do, too. Last summer, a poll found that 68% of adults favored requiring greenhouse-gas emissions to be reduced 40% below 1990 levels by 2030 – a goal that was subsequently placed in statute by the California Legislature. A solid majority of adults (56%) were willing to help reduce global



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warming by paying more for electricity if it were generated by renewables. Indeed, in 2015, state senate leader Kevin de León had already lead the legislature in raising the state's renewable portfolio standard (RPS) to 50% by 2030.

Trump's unwinding of Obama's Clean Power Plan (CPP), which would have curbed the emissions of existing and new coal plants and fostered demand for clean power, is a great disappointment to the wind industry nationwide. But it will have no direct impact on California's clean



energy goals in the electric sector. California is already nearly coal-free, and its policies exceeded the CPP greenhouse-gas-reduction targets.

Further, de León recently introduced a bill that would move up the 50% RPS target to 2025 and raise the RPS to 100% by 2045. Whatever the fate of that bill, the value of wind energy in California's RPS market is rising, as the market dominance of solar energy in recent years is now significantly undercutting the value of future solar projects. But because land-use policies have curbed greenfield wind development inside California, most of that wind energy must come from outside of the state, which could prove politically and technically challenging. Even repowering California's pioneering fleet of 1980s projects is no slam-dunk.

Indirectly, the election of Trump did change the course of events in California in one significant way: by signaling the demise of Obama's CPP – now realized with Trump's March Executive Order directing the U.S. Environmental Protection Agency to begin the process of rescinding the CPP, which was the major incentive of the Interior-West states to cooperate with California in its clean energy ambitions that are all but evaporated. Among other things, the CPP's derailment undercut a key selling point of a proposal to expand the California Independent System Operator's (CAISO) territory into parts of five Western states: that joining an electricity market would help those states integrate the wind and solar resources that would be necessary for coal-dependent states to comply with CPP goals.

Although CAISO expansion, through a merger with PacifiCorp, was facing headwinds even before Trump's election, its odds now appear to be slim. The Interior-West states are distrustful of California's progressive policies, particularly CAISO's emissions tracking requirements, while some California environmental groups fear that Western coal generation could find its way into California through the geographically expanded

CAISO markets. Amid such concerns, fashioning a governance agreement that would not tilt policy and market control toward either side was already proving elusive. The derailment of federal climate policy has now removed any urgency felt by coal-consuming and -producing states to grapple with variable renewable resources.

California advocates of CAISO expansion argue that an expansion would facilitate the California grid operator's ability to export excess solar generation that could otherwise be lost to curtailment and that it would provide access to Western wind resources of tremendous quality. But there are numerous ways to deliver California's excess solar energy to neighboring states, should they want it, and Western wind to California without expanding CAISO's market footprint. Trump's campaign promise of an infrastructure spending plan may even help.

A draft list of potential infrastructure projects obtained by the press includes the TransWest Express transmission line, which would deliver Wyoming wind energy to load centers in California, Nevada and Arizona from the related massive Wyoming Chokecherry and Sierra Madre wind projects that are, themselves, also on the list. Other proposed projects, such as the Cleanline Centennial West HVDC project, could connect New Mexico wind resources to California.

In addition to these and other proposed new transmission lines that could directly connect major wind resource areas to the CAISO grid, developers could make more efficient use of the existing transmission grid to access wind projects dispersed across the West. The freed-up transmission capacity from scheduled coal-plant retirements could enable at least 5,000 MW of wind energy additions across the Western Electric Coordinating Council (WECC) footprint that would suffer little or no congestion using firm transmission service to deliver their energy into California.

Combined with CAISO's ability to dynamically schedule wind resources located outside of its service ter-

ritory, freed-up transmission could open up the California market to wind resources across the West. Dynamic scheduling puts resources under CAISO control as if they were physically located within CAISO's balancing area, qualifying them for the most-valuable tranche of California's RPS requirement. Over 700 MW of New Mexico wind energy projects using dynamic scheduling and firm transmission service on existing lines have already signed power purchase agreements (PPAs) with two California utilities.

Transmission upgrades in the WECC region, such as PacifiCorp's Gateway West project, or "feeder" lines connecting wind resources to the Western grid, such as the proposed Lucky Corridor, Cleanline Western Spirit or SunZia lines, could further facilitate wind deliveries to California.

More exciting still is the potential to use "conditional firm" transmission service – service that anticipates a very limited, pre-defined amount of transmission capacity unavailability. This service could enable far more wind energy to be transmitted on the existing grid of the WECC, particularly when combined with advanced grid technologies and relatively inexpensive "feeder" lines. The path from the WECC grid to California load centers, on the California side, is also clearer, as CAISO has found that its grid has the potential to transmit an additional 23,000 MW of renewable energy capacity to load centers without transmission upgrades.

The potential to transmit wind energy on the existing Western grid with limited or no transmission upgrades was highlighted in the product of a joint initiative among California's energy agencies – the Renewable Energy Transmission Initiative 2.0 Plenary Report. The report supported consideration of a wide range of options to access out-of-state resources alongside new transmission lines.

The politics of wind from outside of California borders, no matter how delivered, is another matter. In reaction to the proposed CAISO expansion early last year, along with its promise of

access to Western wind, the leaders of the California Legislature announced several concerns about CAISO expansion. They made clear that they viewed CAISO expansion as a “serious challenge to California jobs and its economy.”

The jobs associated with California’s clean energy policies have been a major selling point for those policies. In their purchases of out-of-state power, which can be perfectly legal under the RPS statute, utilities and other power purchasers will, nevertheless, have to overcome political pressure with two main arguments: Land-use restrictions have largely closed the door on in-state greenfield wind developments, and low-cost, out-of-state wind energy will help keep achievement of the state’s policies that are more affordable for electricity consumers.

Those arguments could be difficult as long as California’s historical wind projects, spurred by the policies of Brown’s first administration in the early 1980s, remain without long-term PPAs. Projects totaling at least 500 MW are in this position, as their original 30-year PPAs have expired or soon will expire. These projects, with their early-generation turbines, face tough times, as current market demand has been low because utilities bought more energy, largely from new solar facilities, than they needed to meet their pre-2020 RPS targets. On top of that, the utilities are increasingly losing load to cities and counties that are buying power for their jurisdictions through “community choice aggregation” programs. Community Choice Aggregators (CCAs)

may, therefore, be the best bet for near-term demand, given that most are premised on exceeding California’s clean energy targets and supporting local economies.

Whether CCAs will sign the long-term contracts needed to support the revitalization and repowering of California’s pioneer projects that launched the wind industry globally is yet unclear, however. So is the ability of developers, particularly developers without a large asset base, to obtain financing with power purchasers that have little or no credit history or assets.

In the long run, there are strong arguments that substantial wind energy – on the order of 10,000 MW by 2030 under California’s current 50% RPS – will be needed to maintain affordable retail rates. Although solar photovoltaic projects have been the fastest-growing renewable resource in California in recent years, it is now widely recognized that the value of additional solar energy is plummeting and – barring plummeting storage costs – wind energy will be needed to cost-effectively balance a growing renewable energy portfolio. To wit, the scale and frequency of solar-driven energy curtailments are increasing, with CAISO already expected to curtail 8,000 MW of power (largely solar) in midday hours this spring and predicting as much as 13,000 MW of curtailed power by 2024. As the sun goes down, the three-hour ramping requirement needed to meet rising evening demand is expected to reach 13,000 MW by 2020.

Accompanying these added indirect costs of solar is a steep decline

in its capacity (reliability) value, expected after the conclusion of a multiyear regulatory process of updating methodologies required under a California Wind Energy Association-initiated change in statute. Regulators are expected to reduce the monthly capacity values of solar already in the portfolio from an average of about 44% to 17% while raising the capacity value of wind from about 14% to 23%. (Maximum summer-month solar values decline from 80% to 33%, while maximum summer-month wind values rise from 33% to 47%.) The comparative values of incremental solar and wind purchases are expected to be even more stark.

The de León bill establishing the 50% RPS also required the state’s energy agencies and utilities to cost-effectively plan the state’s clean energy portfolio on a total-cost basis. Such “Integrated Resources Planning” should, if faithfully implemented, reflect the indirect costs and values of wind and solar and situate wind energy very well under California’s progressive climate change policies, despite Trump’s hostility toward them. If, instead, lawmakers pressure power purchasers to shun out-of-state wind or put a thumb on the scale of in-state resources, whether baseload renewables or solar combined with storage, wind won’t fare as well. The scale and success of wind industry engagement in California’s regulatory and political processes will influence the outcome. **NP**

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