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The Hurdles Of Meeting California's Ambitious Clean Energy Goals

S.B.350 increased the state's RPS and established several other mandates, creating some new challenges.

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As California basked in the spotlight at December's COP21 event in Paris for the state's leadership on renewable energy and climate change policy, California leaders were quietly pivoting to meet new challenges and opportunities arising from their successes.

Today, 25% of California's electricity comes from renewable resources. Millions of homes, farms and businesses are powered by behind-the-meter distributed wind and solar resources. Solar energy prices are falling, while advanced energy employment is rising. In October, Gov. Jerry Brown, D-Calif., signed legislation (S.B.350) that significantly boosts the state's renewable portfolio standard (RPS) goals, doubles energy-efficiency targets, authorizes a regional energy market, and requires energy regulators to focus energy procurement decisions on reducing greenhouse-gas (GHG) emissions. It also requires regulators to address how California's poorest communities can better access renewable energy, distributed energy resources (DERs) and electric vehicle (EV) opportunities.

S.B.350 signals a departure in California energy policy. California regulators have long focused on fostering growth of renewable energy markets. Now, regulators are turning their attention to the challenges of integrating widespread renewable and distributed resources into the grid while implementing other climate-friendly mandates.


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As they pivot to this next phase, regulators must balance political pressures from rooftop and large-scale solar developers, investor-owned utilities (IOUs), labor unions, environmental justice advocates, and the California legislature over who will participate and benefit from an advanced energy economy. They must also fend off criticism about how they are doing their jobs.

S.B.350 implementation

In addition to boosting California's RPS to 50% of retail electricity sales by 2030, S.B.350 also seeks to better integrate renewable energy resources into the California system by creating a regional energy market, and it mandates that agencies and utilities prioritize distributed generation and zero-carbon resources in planning for the future.

S.B.350 seeks better coordination of long-term planning for energy and transmission needs while taking into account GHG-reduction targets and new energy technologies like storage and demand response, which have not previously been considered in California Public Utility Commission (CPUC) long-term planning proceedings.

Starting in 2017, utilities will have to submit Integrated Resource Plans (IRPs) establishing how they will meet S.B.350 RPS goals and individual GHG-reduction targets while meeting a variety of other criteria, including enhancing distribution systems and demand-side energy management.

As part of the IRP process, the CPUC will be required to identify a portfolio of resources for a reliable electricity supply that optimizes the cost-effective integration of renewable and zero-carbon resources "to the maximum extent reasonable" to achieve GHG limits established by California's Global Warming Solutions Act of 2006.

The commission opened a new proceeding on IRPs in February and discussed its goals and process at a recent workshop. The process will develop load forecast, determine both supply- and demand-side energy resource portfolios for meeting the need, evaluate the cost and risk of resource portfolios for each utility, and use a common cost-effectiveness metric. The process will also encompass other existing related proceedings, some of which will be redefined, coordinated or eliminated.

The IRP mandates suggest that both DERs and renewable energy resources will figure more prominently into planning, while utilities may have more flexibility to pick which resources provide the best fit and lowest cost for meeting GHG-reduction, RPS and grid-integration targets.

Regional energy market

As the use of renewable energy and DERs continues to increase in California, regulators are facing the challenge of how to absorb oversupply and overgeneration. In March, the California Independent System Operator (CAISO) shut down some solar farms because they were producing more electricity than the system demanded. An analysis prepared by CAISO to understand how grid conditions will change as new energy policies are implemented between 2012 and 2020 highlighted the challenge for energy regulators.

The so-called "Duck Curve" graph generated by the study illustrates the difference between forecast load and expected electricity production at key times of the day. Solving for the sharp up and down swings of electricity produced by renewable sources such as wind and solar; oversupply when sun and wind resources are producing energy that exceeds demand; and decreased frequency response when fewer resources are operating and available to automatically adjust electricity generation to maintain grid reliability are some of the major challenges that will confront regulators as renewable energy generation and deployment of DERs continue to grow.

CAISO has called for the creation of a regional energy market with other western balancing area authorities (BAAs) as a cost-effective way to meet the challenge of integrating renewable resources and addressing concerns about renewables overgeneration and oversupply. CAISO contends that a regional energy market using sophisticated market and grid optimization systems would better use renewable resources and reduce GHG emissions and costs because integration of CAISO technology with other western BAAs would allow the agency to pick the lowest-cost energy to serve demand and give preference to renewable resources.

S.B.350 sanctions the transformation of CAISO into a regional market that could ultimately include 38 BAAs. CAISO already operates the Energy Imbalance Market (EIM), along with utilities in six states owned by PacifiCorp. In 2015, CAISO reported benefits from eight months of EIM operation totaling $21.41 million in cost savings.

But not everyone is sold on the regional market approach. Environmental groups, such as the Sierra Club, have criticized the partnership with PacifiCorp, pointing out that 60% of the energy produced by the company's utilities comes from coal-fired generation. Organized labor worries that a regional market could slow growth in California's advanced energy economy employment.

In February, a group of legislators - including the newly elected speaker of the California State Assembly, Anthony Rendon - signed a letter raising concerns about partnering with PacifiCorp and putting down a marker concerning the transformation of CAISO into a regional market. The letter cautioned that any regional market structure must not preempt or weaken California's energy and climate laws and must reduce GHG pollution; protect the newly minted S.B.350 50% renewables mandate; lower costs to ratepayers; and support low-cost EV charging, economic growth and job creation.

Because S.B.350 gives the state legislature final approval over the transformation of CAISO into a regional organization, CAISO and the Brown administration will need to proceed carefully in crafting the governance structure of a regional market to balance the politics of the legislature with the logistics and economics of a viable marketplace.

Environmental justice

S.B.350 requires regulators to consider, for the first time, the impact of energy and climate policy on

disadvantaged communities, defined roughly as areas that are disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure or environmental degradation, or where there is a concentration of low-income residents, high unemployment, low levels of homeownership, high-rent burden or low levels of educational attainment.

Environmental justice, or EJ, advocates have long argued for green energy policies that reduce pollution in impacted communities and create new green economy job opportunities related to the manufacture, installation and maintenance of alternative energy systems. The impact of California's renewable energy and climate change policy on disadvantaged communities was front and center during the debate over passage of S.B.350.

EJ advocates argued that the legislation must address economic and technological barriers that keep many communities from benefiting from programs such as net metering, energy efficiency and EV subsidies. Representatives from some of the state's poorest communities questioned whether the costs of California climate and energy policies were falling disproportionately on the poorest residents in a state where nearly 24% of its 38 million people live at or below the federal poverty level. As former Fresno Assemblyman Henry Perea put it, "I believe we have to deal with the impacts of climate change. I also represent a population that just can't afford all of these things."

S.B.350 seeks to address hurdles that prevent low-income and disadvantaged communities from participation in PV solar generation, DERs and EV incentives. It directs the California Energy Commission (CEC) and Air Resources Board (ARB) to undertake several studies to identify and assess the barriers to, and opportunities for, low-income customers and disadvantaged communities to have greater access to options like rooftop solar generation and energy efficiency and weatherization, as well as to participate in zero-emission and near-zero-emission transportation options. The CEC and ARB are already moving forward on the studies.

S.B.350 also requires the CPUC to establish an advisory council on disadvantaged communities, as well as to account for the advantages of renewable energy and the use of distributed generation "to the extent it provides economic and environmental benefits in disadvantaged communities." Finally, S.B.350 requires utilities to prioritize reduction of localized air pollutants and other GHG emissions in disadvantaged communities as part of the newly mandated IRPs.

'Our concern is that the CPUC is too big.'

In a major victory for EJ groups, the membership of the ARB was expanded to include two members appointed by the legislature who have direct experience working with communities that are "most significantly burdened by, and vulnerable to, high levels of pollution, including, but not limited to, communities with diverse racial and ethnic populations and communities with low-income populations." The two legislative appointees, former state Sen. Dean Florez and Diane Takvorian, are expected to ensure that EJ concerns have a greater voice in ARB decision-making.

Although it is unclear how much influence these new advisory councils, studies and planning requirements will have on agency policy and rulemaking, S.B.350 represents a clear departure from previous policy and a tacit recognition of the growing importance of poverty as an issue in California energy and climate policy. One major EJ group praised S.B.350, saying the law directs the state to "give preference to communities with high poverty and unemployment in developing renewable energy, prioritizes job training in disadvantaged communities, and mandates agencies to coordinate with environmental justice organizations."

That's a tall order. At a minimum, the provisions will give EJ advocates a seat at decision-making on renewable energy policy and ask policymakers and stakeholders to consider how California's poorest communities can benefit from DERs and behind-the-meter solar PV generation.

Regulatory reform

Another wrinkle facing regulators as they implement S.B.350 is what the

future holds for the embattled CPUC. The 100-year-old agency has come under scrutiny for being too cozy with the utilities it regulates in the wake of the 2010 explosion of a gas pipeline that killed eight people in San Bruno, Calif., and allegations that commissioners engaged in inappropriate ex-parte communications with utility executives concerning the decommissioned San Onofre Nuclear Generating Station. More recently, the CPUC came under attack for a massive leak at a Southern California gas storage facility that forced the evacuation of an adjacent community for several months.

A growing chorus of critics led by the chair of the Assembly Utilities and Commerce Committee, Mike Gatto, has expressed concerns that the CPUC is too big and saddled with too many responsibilities to be an effective and efficient regulator and should be broken up.

"It's the opposite of 'too big to fail,'"

said Gatto. "Our concern is that the CPUC is too big to succeed."

Last year, Gov. Brown vetoed six bills aimed at improving transparency and limiting ex-parte communications between CPUC commissioners and regulated parties. While labeling some of the proposals as "unworkable," Brown committed to collaborate with the legislature to address issues at the commission.

As of this writing, momentum is gathering for passage of a constitutional amendment, ACA 11, authored by Gatto to abolish the 100-year-old agency. If passed by a two-thirds vote of the legislature and approved by California voters in November, the amendment would repeal Article XII of the California Constitution, which establishes the CPUC as an independent body, and would give the legislature two years to set up new regulatory structures to carry out the CPUC's current responsibilities while furthering the goals of consumer protection, public health, environmental protection, increased transparency, public access, and the ability of third parties to "intervene on behalf of those that need their advocacy."

It also would direct the legislature to adopt structures to "provide greater accountability" for IOUs and to focus regulatory efforts on safety, reliability, and rate setting and to implement statutorily authorized programs for reducing emissions of greenhouse gases. The measure cleared its first committee on a 12-1 bipartisan vote.

Although it is not clear at press time whether ACA 11 will garner enough political support to go before the voters, the debate over whether to break up the CPUC raises huge issues for the energy industry in California and an opportunity for stakeholders to raise concerns and put forward proposals for making the agency or its successors more effective.

The prospect of ACA 11 passing also raises interesting questions about the implementation of S.B.350 and scores of other ongoing proceedings at the CPUC. If voters approved ACA 11, lawmakers would have until Jan. 1, 2019, to restructure the CPUC and transition its duties to other agencies and regulators. During that transition period, the CPUC would continue to operate as a regulatory body with ongoing rulemaking and rate-setting proceedings covering a wide variety of initiatives.

Moreover, between November 2016 and Jan. 1, 2019, the CPUC would have a number of S.B.350 milestones to hit, including establishing procurement targets for RPS compliance periods; reviewing the IOUs' applications for programs and investments to accelerate transportation electrification; concluding a proceeding on the impacts of charging infrastructure investment; adopting a process and schedule for utilities to file and update IRPs; and identifying a diverse and balanced portfolio to ensure optimal integration of renewable and zero-carbon resources in a cost-effective manner.

It is possible that a lame-duck CPUC would slow its work on S.B.350 implementation and other proceedings while awaiting direction from the legislature on a new regulatory structure. However, many of the deadlines for deliverables under S.B.350 are dictated by the statute itself and, therefore, must be adhered to unless the legislature amends the law. It is also possible that stakeholders that are disaffected with decision-making at the CPUC could lobby the legislature and the governor to delay certain proceedings or decisions until a new regulatory authority is in place.

Another plausible scenario is that the Brown administration and Senate President pro Tempore Kevin de León would push the CPUC to keep S.B.350 implementation on track. Both Brown and de León will be forced from office by term limits in 2018, and both view S.B.350 as a major part of their climate policy legacy. They may not be content to see implementation of their initiative delayed while the legislature and the administration work out details of a successor to the CPUC. In fact, Brown and de León may push to speed progress on major S.B.350 milestones before they leave office.

Conclusion

Although California can take pride in its success in pushing renewable and advanced energy and climate policies, that success has created new challenges, new opportunities and new political conflicts. The state's future as a clean energy leader depends on how it meets the difficulties of integrating renewable resources and reducing GHG emissions while maintaining a reliable grid and distribution system with rates that don't shock ratepayers. California must also address a growing green energy divide between its wealthiest and poorest communities to ensure that all of its citizens can enjoy the benefits of an advanced energy economy.

Moving forward, the state's energy regulators will have to wade through all of these barriers as they tame what has become the Wild West of energy policy.

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