



Blackouts Illuminate Pursuit of Renewables, Reliability Among California's Municipal Utilities

Authors



**CHRISTOPHER
WOODWARD**
VICE PRESIDENT
SENIOR ANALYST

Key Takeaways

- California's publicly owned electric utilities face a dual challenge: providing reliable power to customers while pursuing state mandates for renewable, carbon-free electricity generation.
- Monitoring the progress of publicly owned utilities toward renewable portfolio standards can help gauge potential credit impact.
- Resource adequacy and renewable or carbon-free generation are distinct goals that are inextricably linked in the transition to a 100 percent carbon-free electric system.



Gauging credit impact of renewable or carbon-free goals.

High temperatures, scorching winds, wildfires and rolling power blackouts in 2020 showed that California's publicly owned electric utilities face a dual challenge: providing reliable power to customers while pursuing state mandates for renewable, carbon-free electricity generation.

Through our ongoing research and surveillance of municipal power utilities, Breckinridge is tracking the progress of publicly owned utilities (POUs) across the country toward renewable portfolio standards (RPS). Renewable energy's success, in states with and without regulatory mandates, supports an ongoing transition from utilities delivering reliable power with only some integration of renewable energy to a reliable power generation system driven solely by carbon-free or carbon-neutral resources.

Over the next 20 or 30 years, many utilities will be charged with the expectation that they can blend intermittent wind and sun with technology and rate-policies to provide customers with the power they need when they want it. Our research and engagement discussions with bond issuers reveals stratification among POUs in California and other states when it comes to Reserve Margin—that is, resource adequacy—as well as in progress on planning for and integrating renewable energy sources.

Gauging credit impact of renewable or carbon-free goals.

Resource adequacy and renewable or carbon-free generation are distinct goals that are inextricably linked in the transition to a 100 percent carbon-free electric system. It is worth noting that California's SB350 law ended 2020 requiring 33 percent renewable power, before the superseding SB100 seeks to almost double the achievement to 60 percent by 2030. This ramps up the pressure on POUs to address their resource adequacy while integrating renewable sources.

California's transition is accelerated by regulatory mandates and highlighted by the attention its weather-related extremes engender. Still, POUs and investor-owned utilities across the country face the same challenges: planning to serve a future with assets different from ones used today. Useful older assets make utility managers reluctant to chase mandates, while some wait expecting renewables will only get cheaper. A confluence of "who goes first" is made worse for POUs when, unable to realize the tax-advantages of renewable ownership, they choose shorter-term contracts or grow their dependence upon the California grid while they wait.

Our reviews of Integrated Resource Plans (IRPs) and engagements with POU bond issuers reveal stratification of their plans along a spectrum that extends from being long or falling short of reliability and renewables goals, with implications for credit quality.

About regulatory mandates SB350 and SB 100, some POUs will be able to sell renewable energy credits, while others likely will not comply by mandated deadlines, perhaps in accordance with provisions included in the California Renewable Energy Resources Act (SB X 1-2) that permit delayed compliance.

To gauge the credit impact of resource adequacy and renewable or carbon-free energy goals we review IRPs. IRPs describe how utilities plan to meet future electricity needs. They examine foreseeable future resources for transmission lines, substations, power plants and end users, as well as the independent system operators (ISOs) responsible for taking care of the transmission and distribution of electricity to customers.



IRPs are a view to POU planning

That research combined with other elements of our POU bond analysis, industry sector research and engagements with representatives of the POUs shape our credit views on POUs in California and may also provide insights into the sector's efforts nationally to reach renewable or carbon-free goals.

IRPs are a view to POU planning

IRPs can provide a view to each POU's anticipated Reserve Margin—the cushion that a POU expects to have when energy demand is high, and supply is under pressure. California's IRPs follow five-year cycles, with 2014 the last most-common release. Utilities' 2019 IRPs offer insight to how they aim to comply with the state's accelerating goals, with several updating after the legislature passed its carbon-free mandate, SB100, that September.

California's 60 percent renewable mandate by 2030, and 100 percent carbon-free mandate by 2045 will phase-in, with relevant credit concerns falling along the crunch decade (2020 through 2030), where a large amount of wind and mostly solar is expected to help ramp from 33 percent to the 60 percent renewables goal.

Disparate trends in planning emerge

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IRPs were conducted before the August wildfires and power blackouts. Several already reflect changes, with disparate trends emerging, including:

- **Reserve Margin (resource adequacy):** Spread in utilities' anticipated preparedness within 10 years for future peak demand events, as measured by Reserve Margin, ranged from a 29 percent deficit to an ample reserve of 32 percent excess. The values did not include market access as an integrated resource in favor of medium- to long-term power purchases agreements (PPA) and traditionally owned assets.
- **Demand Side Management (DSM):** DSM is allowed as a resource in IRPs. It is worth noting that DSM proved less than effective during August's blackouts. Overreliance on planned DSM, without utility control or assurance that the customer will respond, can weaken the integrity of an IRP, leading to blackouts, customer dissatisfaction and the follow-on credit concerns associated with a ratepayer's willingness to pay.
- **The Mandate:** Just as POUs are likely to fall long, or short, of their needed power resources, several will at times aim to be greater than 10 percent long or short of California's renewables mandate. Either a reliance upon monetizing excess renewable credits or a planning to procure them is apt to be a financial risk factor independent from power prices. To the extent renewable credits or carbon allowances are volatile, so too may be financial results.
- **Energy Imbalance Market (EIM):** IRPs mentioned EIM for multi-state renewables. Consider this: California during brief periods produces solar power exceeding demand while Washington struggles to value its hydropower at night. While a large western-state's grid could offer economies as a potential regional power exchange, it is stalling politically. California enjoys autonomy as a single-state ISO. Within a broader EIM, it would more frequently fall under the authority of the Federal Energy Regulatory Commission (FERC). California appears to be reluctant, perhaps due to a loss of independence. Failing to maximize participation in an EIM is a risk-factor for any California utility planning to purchase or resell renewable energy across state lines.



Engagement meetings provide added insights

- **Batteries:** Batteries may be economical, short duration peakers: energy resources that can meet relatively brief periods of high electricity demand or during times when renewable energy generation declines significantly. Batteries can offset a need for new power plants that might operate as little as just a few hours per year. One California POU's plan is for 200 megawatt (MW) hours of batteries, which it sees as replacing 50MW of otherwise needed transmission cable. Batteries primary benefits also include time-shifting supply to meet demand.
- **Effective Load Carrying Capability (ELCC):** ELCC is a planning method incorporating intermittent renewables shoulder-to-shoulder with more traditional power generation. ELCC addresses the timing difference between solar output and grid needs, effectively smoothing the bumps between supply and demand.
- **Wires:** Whether to a small city, or from a large utility-scale renewables site, the geographic nature of wind and solar resources is inherently distributed. We have addressed distributed energy resources (DERs) in the past (*Microgrid and Ownership: Unlocking Resilient, Sustainable Electricity Delivery*), making the opposite case where local generation siting can reduce the need for wires. However, as California seeks to ramp through a concentrated growth period of space-hungry renewables—during the crunch decade of moving from 33 percent to 60 percent—smaller public utilities especially emphasized wire needs.

During 2020, we held engagement meetings with six POUs, including three from California. Each discussion provided additional insight about the paths they are following to achieve 50 to 100 percent carbon-free power while continuing to deliver reliable power. Several common strategies were discussed including the use of batteries and the growing cost effectiveness of renewable energy sources. During the discussions, we also were able to delve deeper into the IRPs that POUs presented.

For example, one POU showed as 44 percent eligible renewable as of 2020, forming the long end of the compliance spectrum, with risk potentially found in any anticipated revenues as they sell renewable energy credits. Another POU claimed it would be selling renewable energy credits banked from the past, which means the emergence of renewables-procurement risk the moment the credits are gone.

Breckinridge closely monitors trends in power generation as utilities that issue municipal bonds seek to adapt their power delivery strategies to meet mandates for renewable and carbon-free standards. Those issuers that effectively leverage the most efficient technologies will likely provide more sustainable services to their customers and more reliably meet their obligations to bondholders. Our research, including direct engagement with issuers, is focused on supporting our evaluations of new investment opportunities, ongoing surveillance of current holdings and insight to developments in the broader utility sector.