As my colleague Ethan Elkind already described, Governor Jerry Brown signed Senate Bill 100 today, committing California to procuring 100% of its electricity from carbon-free sources by 2045. The law also increases the state's 2030 target from 50% to 60%, demonstrating just how far the state has come in achieving its ambitious renewable energy goals. Recent history shows that California can reach this new, most ambitious goal.

SB 100 can rightly be viewed as a capstone accomplishment for the progressive climate change agendas of Governor Brown and state Senator Kevin de León, who sponsored the bill as well as its predecessor in advancing the renewable energy standard, SB 350 (2015). Coming on the eve of the Global Climate Action Summit in San Francisco this week, SB 100 is a powerful signal that California will continue to lead the nation and the world in setting, and meeting, aggressive emission reduction targets.

Like prior laws that established and increased the Renewables Portfolio Standard or RPS (the formal program title for the renewable procurement requirements), SB 100 does not set out explicit instructions for how the state will achieve the 2030 and 2045 targets. Rather, it directs the state agencies responsible for energy and climate policy—primarily the California Public Utilities Commission, the California Energy Commission, and the California Air Resources Board—to set and enforce standards for the generation and procurement of electricity, with steadily increasing minimums for renewable sources. Electric utilities must prepare plans for meeting the new targets and face potential penalties if they fail to do so. The combination of regulatory enforcement and the knowledge that competitors are working toward the same goal drives rapid shifts in the affordability and availability of renewable resources.

This approach works. Since the introduction of the RPS, the state's three main electric utilities have consistently met and exceeded its requirements. SB 350, enacted in 2015, set the RPS at 33% in 2020 and 50% in 2030 using the same basic method that SB 100 has just adopted (and SB 1078 pioneered), targets that were viewed as very ambitious at the time. The utilities reached nearly 35% renewable generation in 2016, easily beating that year's interim goal of 25% and surpassing the 2020 goal four years early. According to the Public Utilities Commission, they are on pace to meet the 50% goal a full ten years early. Continued support from the executive and legislative branches has aided the utilities and the key agencies in this remarkable achievement. This history of success shows that California can achieve the goals enacted today.

Despite this admirable track record, few doubt that reaching 100% renewable energy by 2045 will still be a substantial challenge. A few potential issues include:

- Maintaining a reliable electrical grid as more intermittent wind and solar resources are integrated;
- Ensuring a fossil fuel-free grid in light of California's interconnections with neighboring states and the potential development of a regional Western Interconnection;
- Protecting lower-income and disadvantaged communities from possible price spikes and disproportionate air quality impacts; and
- Insulating California's innovative program from hostility and interference at the federal level.

Addressing these questions and achieving the vision of SB 100 will require significant coordinated effort among the Air Resources Board, the Public Utilities Commission, and the Energy Commission, as well as local governments, the utilities, power generators, community and environmental groups, and businesses. The technology-forcing mandate of SB 100 will have to help reduce battery storage costs, increase incentives to construct new solar and wind facilities, drive public awareness of the benefits of clean energy, and much more. And all levels of the state government, including the incoming Governor and the leadership of key agencies, will need to prioritize a sustained focus on the goal of 100% renewable energy in California. Fortunately for Californians and all those interested in fighting climate change, the state has already demonstrated that it has the ability to get it done.

(Note: a prior version of this post mistakenly substituted "renewable" for "clean" energy in the title. )