

California Battery Array Song. The Battery Array of California Is as Powerful as 12 Nuclear Power Plants. Here is What is on the Horizon. An expert in the energy grid of California explains how the state is faring amid federal cuts. For example A lithium-ion battery is installed at a home in Granada Hills, California. Which State Leads in Battery Energy Storage? It Depends on How You Measure. In San Francisco as families settled into their evening routines in late March, cooking dinner on electric stoves and flipping on their TV, the California energy grid was working hard. For the first time, California discharged just over Twelve Thousand megawatts, equivalent to Twelve large nuclear plants of energy from its battery arrays. That is enough to meet over Forty percent of the California energy demand. The California grid is in a continued state of transition. While more than more than Sixty percent of California electricity generation came from carbon-free sources last year, momentum toward bridging the last gap is fraught, as Trump takes aim at offshore wind, as Trump orders oil pipelines to reopen and as Trump retires renewable energy tax credits. There has been the very rapid addition of grid-connected batteries and the use of those batteries to provide peak demand capacity. California is transitioning fairly quickly from using primarily natural gas resources to now using batteries. The batteries are used during the peak period, which is in the evening, typically around seven o'clock, producing as much as Forty percent of the peak capacity requirements. Load growth over the next decade through Two Thousand Thirty Five will be driven by a combination of factors including electrification of transportation, electric vehicles, heat pumps, and electrification of buildings. More immediately we are looking at the addition of large-scale data centers, mostly in the Bay Area. So to meet those loads and stay on course to meet the policy goal of a hundred percent clean energy by Two Thousand Forty Five, California is going to have to add a significant amount of additional batteries, and it is going to have to add the clean energy generators that can be used to charge the batteries. Does the renewable sector have enough momentum to push through attacks from the Trump administration? The bill that was passed by Congress last year eliminated or phased out the tax credits that were available to wind and solar. The way it is structured is that any project that is not completed by the end of Two Thousand Thirty will not be eligible for the tax credits, which is as much as Thirty percent of the capital cost. So that is a significant blow going forward, but there is still significant momentum for new projects to be completed and interconnected and start producing power before Two Thousand Thirty. Is there an assumed slowdown come Two Thousand Thirty in the renewable energy sector? Right now we are seeing the momentum at least through Two Thousand Thirty Two in California for procurement of new resources. We are also going to see some wind resources that are already being developed coming in from Wyoming over the Trans West Express transmission line that will be completed in Two Thousand Thirty. So then the issue becomes what happens post Two Thousand Thirty Two? There is a lot of uncertainty about that, including what the federal administration policy is going to be going forward after this administration. Are certain parts of the renewable energy sector such as batteries, wind, and solar, is any more resilient to these attacks than others? I would say that the offshore wind projects are the most vulnerable projects and require federal support and they are complex projects that require developing the ports where the projects can be assembled and taken out to sea, as well as new high-voltage transmission lines to take them from the North Coast and the Central Coast into the bulk power grid. I think there is a lot of uncertainty there. Solar is doing very well just because of the magnitude of the solar industry internationally and in the United States. Solar has become the least-cost new resource, so there is still a lot of momentum. What about battery arrays?

Interestingly, the Trump administration has been supportive of batteries and the One Big Beautiful Bill, or whatever it is called, continued the investment tax credit for batteries through Two Thousand Thirty Two. So, batteries are looking pretty good. What has the war on Iran shown us about the renewable energy market in the U.S. and in California specifically? It reinforces the understanding that fossil fuels are volatile, insecure, vulnerable to these international disruptions. So it makes sense to continue to develop renewable resources and to electrify the economy and particularly electric vehicles, so there is less dependence on fossil fuels.