Today, California Already Connects to And Trades Electricity Throughout the West

- Power is bought and sold all across the western United States throughout the Western Electric Coordinating Council (WECC) region.

- California has participated in WECC for decades and already imports 25% of its renewable energy from out-of-state without the need for a regional grid operator.

- CA already trades renewable energy through bilateral agreements and CA ISO spot markets without compromising state authority.

Regionalization is Not Needed for California to Access to Out-Of-State Renewable Energy

Source: Western Electric Coordinating Council (WECC) via (EIA); California Independent System Operator (CAISO)
How AB 813 Changes California’s Current Electricity Market & Grid Operators

California Independent System Operator (CAISO)

- CA “public benefit” corporation requires ISO to protect CA ratepayers, environment, and health REPEALED
- CAISO board members - Governor appoints and State Senate confirms the board members REPEALED
- ISO’s status as a CA public benefits corporation REPEALED (eliminating accountability, transparency and conflict of interest requirements)
- Runs a market to buy and sell electricity in California EXPANDED THRU/O WEST
- Operates the transmission lines owned by the utilities, 80% of California’s electric grid EXPANDED THRU/O WEST

Source: California Independent System Operator (CAISO)
Regionalization Will Tie California to Coal and Fossil Heavy States

5 of 11 states in proposed western grid sued the EPA over the clean power plan (states in black). Montana and Wyoming mines produce 45% of all coal mined in the U.S.

On average, 57% of in-state electricity production is generated using coal. (states in black and brown)

51% and 32% of the electricity consumed in Idaho and Oregon respectively is generated by burning coal. 78% of Nevada’s in-state electricity production comes from fossil fuel sources. (in orange)

California’s electricity produced from coal has declined to only 4% and will phase out completely by 2026. Washington's last in-state coal plant will cease operations in 2025.

A Bailout for Coal – Trump Administration Plans to Subsidize Coal and Nuclear Power Sources

• Sept 29, 2017 - “Rick Perry just proposed sweeping new steps to help struggling coal and nuclear plants” ~Washington Post
• Jan 18, 2018
  FERC rejected a national plan but ordered regional grid operators to consider regional coal and nuclear subsidy proposals
• March 9, 2018
  Regional operators like PJM submitted plans to subsidize coal and nuclear.
• June 1, 2018
  Leaked memo reveals Trump plan to use Emergency Powers to keep coal & nuclear plants open ~New York Times
Coal States Already Threatening Legal Action Against Green States

Montana and Wyoming threaten Washington’s proposed carbon tax:
In Feb. 2018, MT and WY sent a letter challenging Washington’s proposed carbon tax bill, asserting that it conflicts with FERC authority and violates the Interstate Commerce Clause.

Utah:
Utah lawmakers approved a proposal in February of 2018 that would set aside $2 million to sue California over rules that make coal-fired power more expensive.

Source: Associated Press - Carbon Tax Letter from MT and WY attorney generals, Utah moves to sue California over fee on coal power
Supreme Court Ruling Upholds FERC’s Authority to Preempt State Laws for States that have Joined RTOs

In 2016 the Supreme Court ruled in Hughes v. Talen Energy Marketing, LLC, that the Federal Energy Regulatory Commission properly exercised its powers when overruling Maryland’s decision to require its utilities to contract with in-state power plants which would sell power into the interstate wholesale market.

*The legal landscape is in flux; states are more vulnerable to assertions of federal authority over their energy choices*

FERC Ready to Undermine Renewable Portfolio Standards

“FERC has made clear in its recent actions that it can and will make life difficult for state-supported clean energy resources. That’s a very bad sign for states that support nuclear or renewable energy yet participate in regional energy markets.”

~Danny Cullenward - Professor of energy and climate law, Stanford Law School.

~Shelley Welton - Professor of energy, climate and environmental law, University of South Carolina
California Faces Critical Turning Point That Will Determine Its Energy Future

Regional

VS.

Local DERs

The CAISO study assumed 3,000 miles of additional out-of-state transmission lines for regionalization. That would result in billions of dollars in lifetime costs and would allow the import of dirty, fossil fuel energy into California.

“A residential solar-plus-storage [battery] system installed today in SDG&E, PG&E or SCE’s service territory in California can break even within seven years, even without the Self-Generation Incentive Program.”

~GTM Research

Source: Pollution Photo, Solar Photo, GTM Research,
The CAISO study showed that a regional grid, “would result in an increase in the dispatch of coal power plants that would lead to higher greenhouse gas emissions in the region by 2020.”

“Air quality in disadvantaged communities and communities already breathing unhealthy air could be worse under a regional grid: The studies conducted by CAISO show emission increases at some facilities due to a regional market.”

~ Sierra Club

~California Environmental Justice Alliance


California Environmental Justice Alliance September 2017 letter opposing regionalization bills
Regionalization is Antithetical to Community Choice Energy

- Takes jobs away from local communities by prioritizing centralized energy generation.
- Promotes regional power delivery via expensive interstate transmission lines.
- Benefits large corporations, not state or local communities; drives revenue away from local communities.

Community Choice Energy... not “Federal Choice Energy”
Regionalization Ships California Green Jobs Out-Of-State:

- Labor estimates that regionalization would cost CA 110,000 good green jobs.

- “The proposed expansion would likely lead to the loss of jobs and economic opportunities in disadvantaged communities.” ~ California Environmental Justice Alliance – June 11, 2018

- Even the CAISO Study found CA will lose 23,000 green jobs with regionalization.

- CAISO study assumes the following out-of-state projects will need to be built -- & CA ratepayers will help pay for them:
  - Over 3,000 miles of transmission
  - 500 MW of solar
  - 1,500 MW of wind (on existing transmission)
  - 3,000 MW of wind (on new transmission)

Source: 110,000 June 2018 – Labor / Sierra Club letter opposing AB 813
California Independent System Operator SB 350 Study Volume 4, Table 23, p. 56; & Volume 9, Transmission Table 2.8; Study Volume 8, Jobs Fig 5 (23,000 jobs lost through full regionalization; ~15,000 solar jobs; ~8,000 wind jobs); Volume 10, disadvantaged community jobs, page X-36
In February 2018, the PUC concluded that CA can both exceed its renewable energy goals (up to 53-57% renewable energy by 2030) and can reduce its GHG emissions in a cost-effective way under the current grid & market structure.¹

- The PUC's 2/18 decision used more current and robust data than the ISO's 2016 study did.
- The ISO itself admits that many different tools exist to increase renewable energy use.
- CA does not need to regionalize its grid or markets or give up its ISO appointment authority to use more renewable energy.
Easy Options Exist for Using or Storing All Renewable Energy CA Produces

- Energy Storage/Batteries - Pair energy storage with solar and wind production.
- Electric Vehicle (EV) Batteries – Gigawatts of batteries that can be charged when it is most beneficial to the grid.
- Gas Plant Flexibility – CA needs to dispatch clean energy to the grid first. Fossil electricity generation can be and should be ramped down to make room for renewable energy.
- Existing EIM - Use California’s existing Energy Imbalance Market.
- Limited Curtailment Cost Effective – The National Renewable Energy Laboratory\(^1\) found that some curtailment is a sign of a well functioning grid, and is reasonable.

Photo Source: Tesla large scale battery

1: NREL – “There is a tradeoff between costs of flexibility and benefits of reduced (or no) curtailment, hence a certain level of curtailment may be a sign that the system has an economically optimal amount of flexibility.”
Electric Vehicles Alone Can Eliminate “Renewable Energy Curtailment”

- A Union of Concerned Scientists study found\(^1\) that 9 GW of batteries or demand response would virtually eliminate CA renewable curtailment through 2030. (reduced to 0.1%)

- In May 2018, a Lawrence Berkeley National Laboratory study\(^2\) found that EV batteries will provide the equivalent services of 16.5 GW of stationary storage.

- In June 2018, the PUC authorized $738M to pay for EV charging stations and rebates throughout CA.

- Demand response and energy storage will provide further system flexibility, almost eliminating renewable curtailment beyond 2030.

- What the ISO deemed “excess” renewable power yesterday will be fully used to benefit Californians in the near future.

Source:
1. The Union of Concerned Scientists Achieving 50 Percent Renewable Electricity in California - (Fig ES-3)
2. Lawrence Berkeley National Laboratory EV study Clean vehicles as an enabler for a clean electricity grid – “[A mix of V2G and V1G] EVs provide equivalent services of 5.0 GW of stationary storage for valley-filling and ramp-up mitigation.” [fig 4] The study assumed 1.5 million vehicles. The above bullet point assumes 5 million vehicles to align with Brown’s executive order using an adjustment factor of 3.3 or \((5 ÷ 1.5)\). Thus \((5 \text{ GW} \times 3.3) = 16.5 \text{ GW}\)
"It is easy to hack into [the grid] and cause it to malfunction but it is basically impossible to hack 10 million solar power systems"

~ Jon Wellinghoff - Former FERC Chairman