Environmental Defense Fund

CALIFORNIA BENEFITS FROM GREATER WESTERN GRID INTEGRATION AND A REGIONAL MARKET

California has ambitious climate goals — and an updated, decarbonized electric grid is the linchpin to successfully meeting them. However, decarbonizing the grid at the pace needed to achieve these targets faces significant headwinds: new electric demand from vehicles and buildings are shifting the peak times for electricity consumption and changing the generation resources required; extreme weather events are leading to more significant swings in electricity demand and stressing existing generation assets beyond their design limits; and rising costs for California ratepayers have limited the ability to just spend more to tackle these issues. Put simply, the state needs an affordable, clean, and reliable grid as the backbone of a decarbonized economy — and a full regional market will help deliver on these key imperatives.

One key strategy is to use electricity markets to help optimize the design and dispatch of existing and new electric generation infrastructure. Policymakers, regulators, utilities, labor organizations, and consumer and environmental advocates across the West are actively considering how to develop a coordinated wholesale energy market that optimizes the use of both new and existing energy resources on a Western regional basis.

Transitioning to a full regional electricity market in the West would allow utilities and other load serving entities to draw on resources from across the region. Where the existing Energy Imbalance Market (EIM) and soon-to-launch day ahead market (EDAM) can help optimize existing resources, a new long-term market can help optimize the procurement and dispatch of *new* energy resources. This new regional market offers California four key benefits: reducing system costs, enhancing grid reliability and resilience, cutting pollution associated with electricity generation, and growing jobs in California.

FOUR REASONS WHY A REGIONAL MARKET IS THE RIGHT CHOICE FOR CALIFORNIA

1. A More Affordable Electric System

Participation in a larger regional grid can reduce costs by avoiding unnecessary infrastructure investment and energy purchases. Expected economic savings are as high as $574 million annually by 2030.[1]

California has already started to capture some savings. The state is currently a part of the EIM, a near-term electricity market covering Western states — and is in the process of launching a day-ahead market (EDAM) that builds on the EIM's success. To date, the EIM has already delivered $5.49 Billion in savings system wide, with $942 million in the CAISO footprint. This market has also avoided 951,970 metric tons of GHG emissions to date for California customers.

Deepening cooperation will unlock even greater benefits. Studies demonstrate that a full regional market provides opportunities for even greater economic benefits and cost savings to California. Studies also show that operational savings will increase with additional participation.[2]

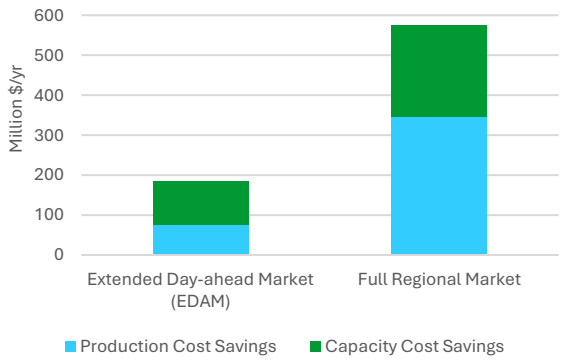

Figure 1: Annual Expected Cost Savings for California (2030)[3]

As California and other states in the West are contemplating forming a new long-term market, the Southwest Power Pool is also working to form a different market which, if successful, could leave California an electricity island akin to Texas. Studies indicate that two smaller markets will yield fewer benefits than one larger market.[4] California's leadership in developing a Western regional electricity market can maximize the full suite of benefits.

[1] National Renewable Energy Laboratory (NREL), "The Impacts on California of Expanded Regional Cooperation to Operate the Western Grid" (2023), at pg. 35.
[2] Energy Strategies, "The State-led Market Study: Technical Report" (2021), at pg. 40.
[3] Ibid.
[4] NREL (2013), at pg. 81.

	One Market	Two Markets
Full RTO	8.3%	4.9%–7.9%
Day-ahead market	2.1%	1.5%

Figure 2: California's Estimated Annual Savings in Production Costs in 2030 [5]

2. Greater Grid Reliability and Resilience

Conditions such as extreme weather events, natural disasters, and other factors can put immense stress on the power grid and can impact the availability of power generation and transmission. The ability to more easily and efficiently import and export power across the Western region can "smooth out" these extreme weather "shocks" to the electric system, and help ensure that there is always clean, affordable power available when needed.

3. A Cleaner Grid with Fewer Emissions

A 2016 study conducted by the Brattle Group found that joining a regional market could reduce California's electricity sector annual carbon emissions by an additional 7% to 11% compared to what would be expected under current market structures in 2030. The study also found that a Western regional market would reduce carbon emissions from electricity generation across the entire Western Interconnection (WECC) by more than 3%.[6]

Greater cooperation facilitated by a regional market would allow renewable energy to be moved more efficiently across market participants with fewer curtailments of solar and wind, leading to lower emissions.[7]

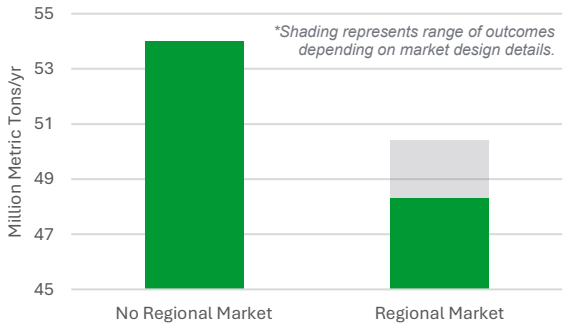

Figure 3: Annual California Electricity Sector Emissions (2030)

4. Job Growth in California

Research suggests that greater integration of the power market across the West could lead to increased jobs *in California* as a result of lower electricity costs for businesses. Specifically, a fully-integrated grid could provide between 34,400 and 138,700 permanent jobs across California, with those jobs averaging total compensation of over $90,000 annually.[8] This is in addition to temporary construction jobs needed for the development of additional clean energy resources.

A WESTERN REGIONAL ELECTRICITY MARKET IS THE CORRECT CHOICE FOR CALIFORNIA

California electricity customers urgently need these economic, reliability, climate, and job benefits that a regional electricity market offers. Regional electric cooperation is a key ingredient to help ensure that ALL Californians receive an electric grid that is affordable, clean, and reliable. Moreover, the proposed structure developed over the last year will not change the CAISO footprint itself — instead we are separating CAISO's market capabilities and administering the market under a new regional organization; as a result, the state can achieve these benefits without forfeiting authority over state policy and retail electricity regulation, including the renewable portfolio standard.

The benefits outlined above are maximized with the largest market possible, and these benefits will begin to be realized as soon as the market launches. We are already seeing significant interest across the West, including the Pacific Northwest and the Southwestern, and with participants from these two regions the market has the potential to be robust enough to yield meaningful ratepayer benefits. As such, California can lead the way and ensure there are a significant and diverse number of market participants to form this important market.

NOW is the time for a Western regional electricity market.

[5] *Ibid.* Figures in comparison to current market structures.
[6] The Brattle Group, "Senate Bill 350 Study: The Impacts of a Regional ISO-Operated Power Market on California" (2016), at pg. I-46 to I-48, prepared for CAISO.
[7] The Brattle Group (2016) at pg. I-ix.
[8] Advanced Energy United, "Western RTO Economic Impact Study: California Results" (2022), at pg.13.

For more information, please contact

- **Michael Colvin, Director, California Energy Program, 415.293.6122, mcolvin@edf.org**
- **Katelyn Roedner Sutter, California State Director, 207.286.5041, kroedner@edf.org**

Environmental Defense Fund
123 Mission St. — 28th floor
San Francisco, CA 94105

T 212 505 2100
F 212 505 2375
EDF.org

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