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**Colorado State University**



## About CNEE

Founded in 2011 as a department of Colorado State University, the Center for the New Energy Economy (CNEE) is led by Colorado's 41<sup>st</sup> Governor, Bill Ritter, who is assisted by a (small) team of energy and environmental policy experts.

The Center works directly with governors, state agencies, legislators, utilities, and clean energy advocates to advance policies that contribute to America's equitable transition to a low-carbon economy.

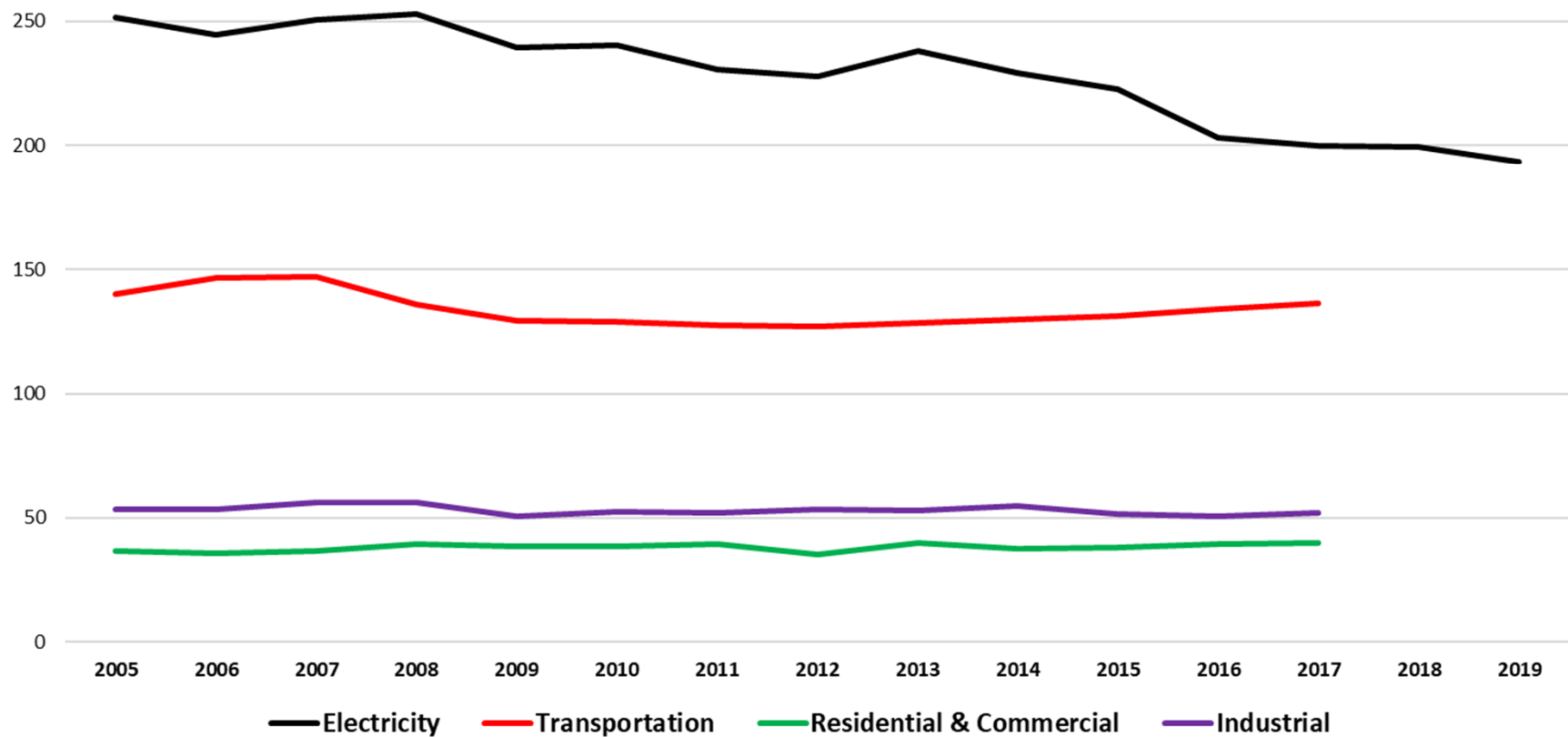
## Our Initiatives

- Clean Energy Legislative Academy
- Repowering the Western Economy
- Communities in Transition
- Clean Energy Policy Databases and Research

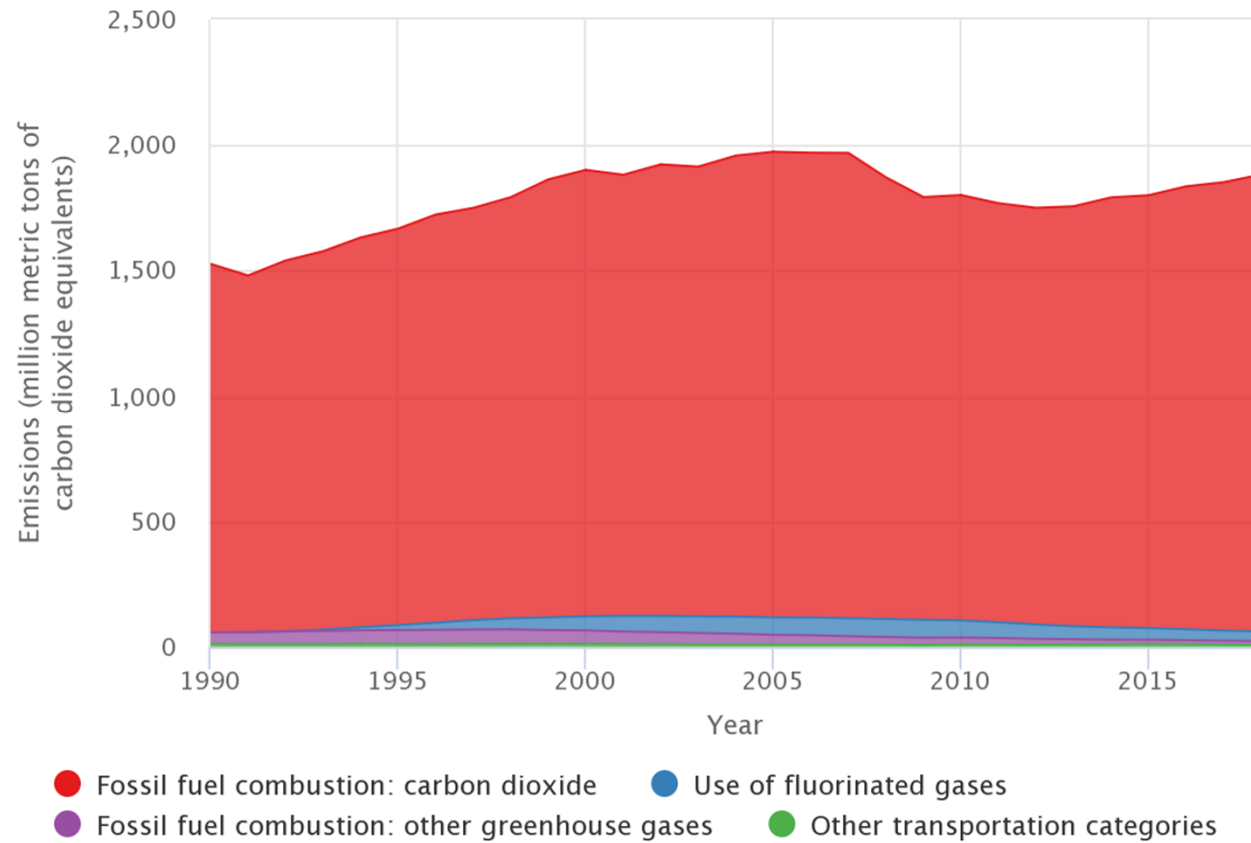
## Western states and utilities have established ambitious GHG & clean energy targets

- Legislative and executive action in 2019 established new GHG emission reduction and renewable/clean energy targets in Colorado, New Mexico, Nevada, and Montana
- State policy across the West is being bolstered by commitments from electric utilities
- Local governments and corporations continue to demand and support investments in clean energy

CO2 Emissions Trends in 8 Western States (WECC minus W. Coast)  
(million tonnes - EIA & EPA)

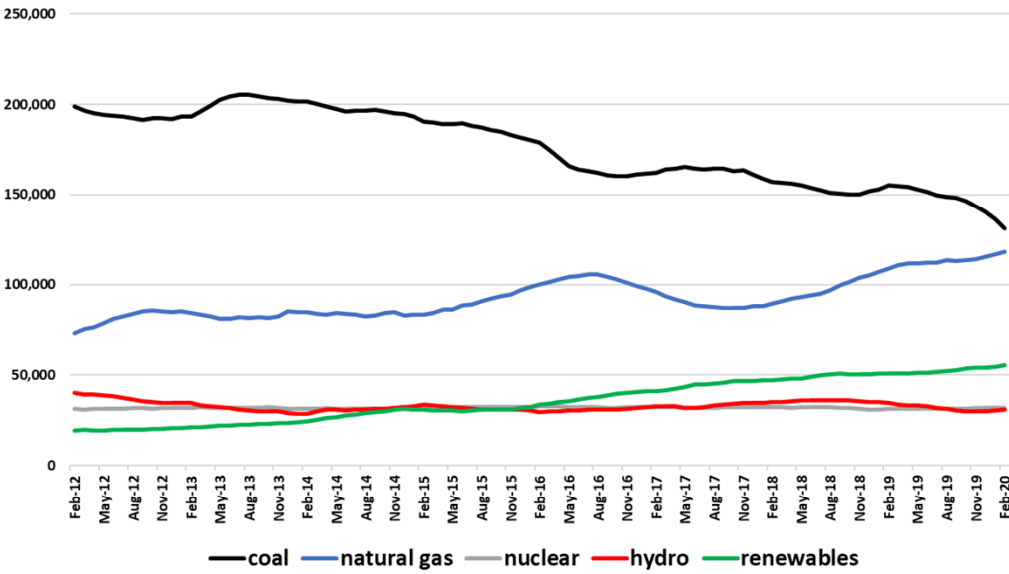


## U.S. Greenhouse Gas Emissions from the Transportation Sector, 1990-2018

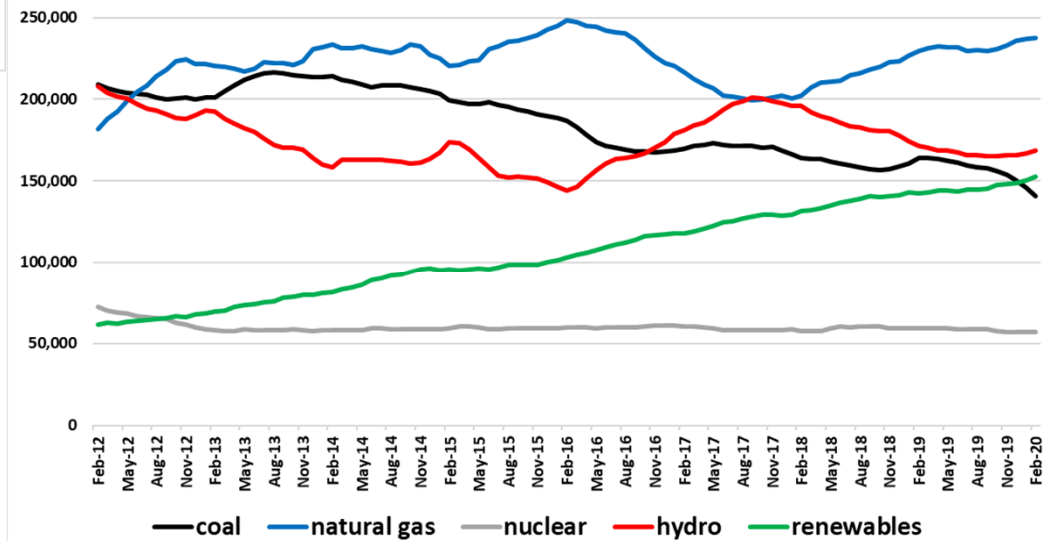


Source: U.S. EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018.  
<https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

**Net Generation - 8 Western States (WECC minus West Coast)**  
**Thousand MWh - EIA/12-mo rolling total**

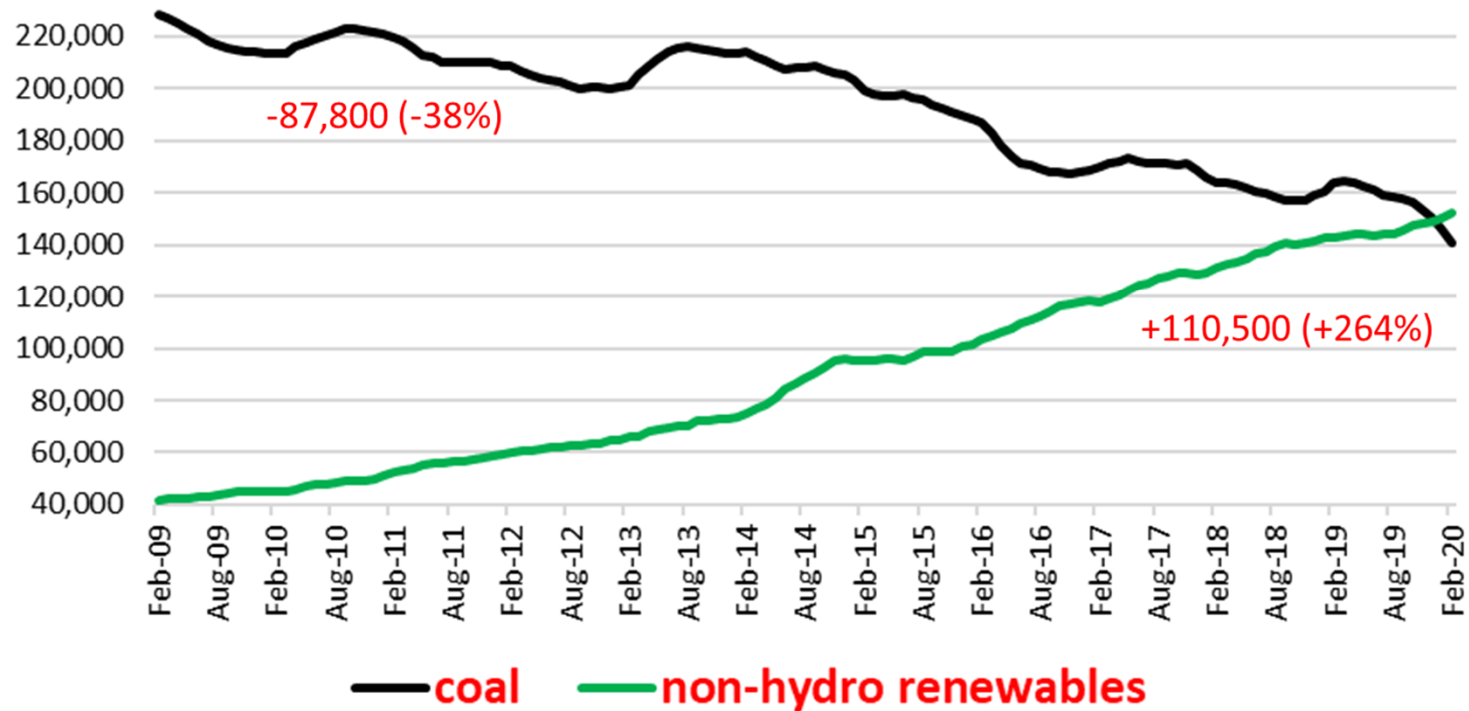


**WECC - Net Generation**  
**Thousand MWh - EIA/12-mo rolling total**



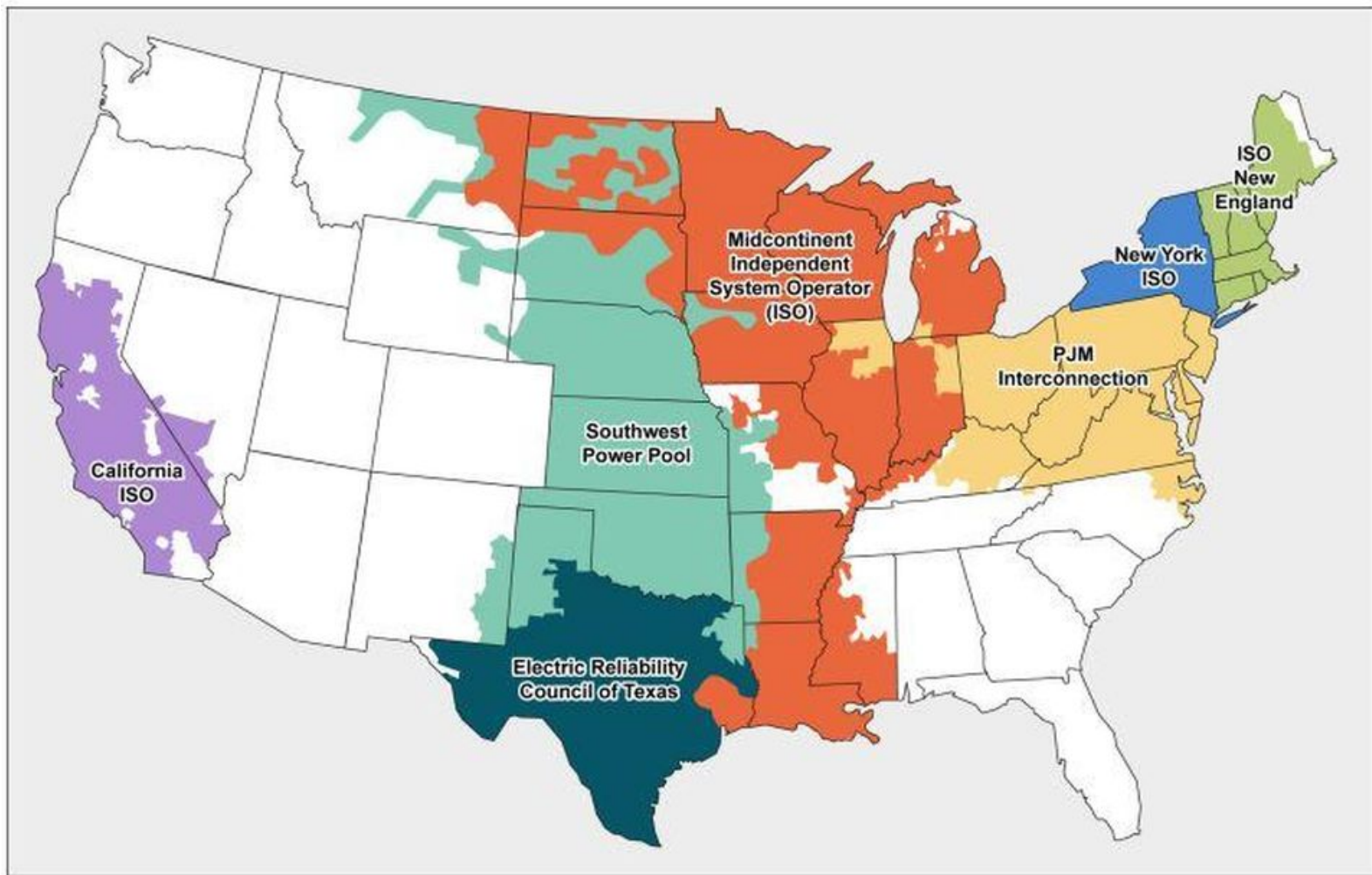
## Net Generation on the Western Grid

1000 MWHrs - EIA / 12-mo rolling total

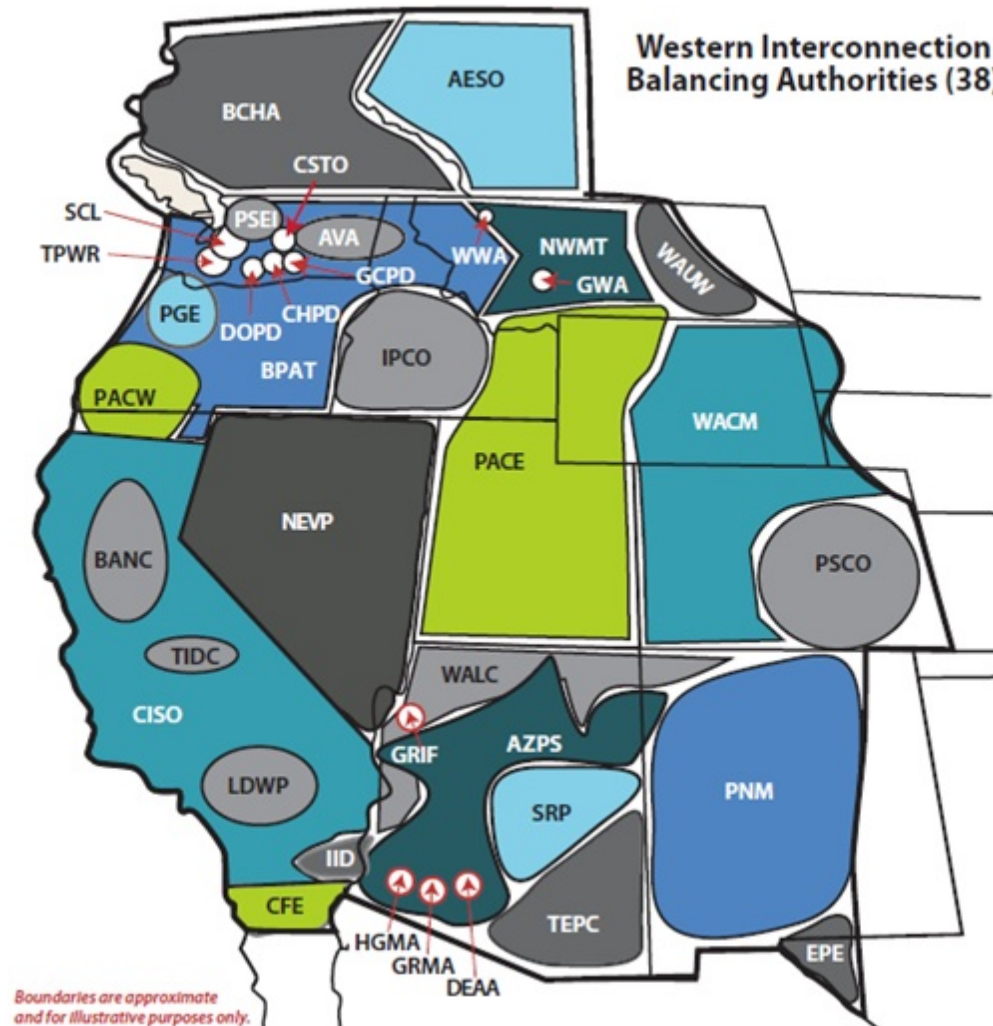


## North American Electric Power Grids



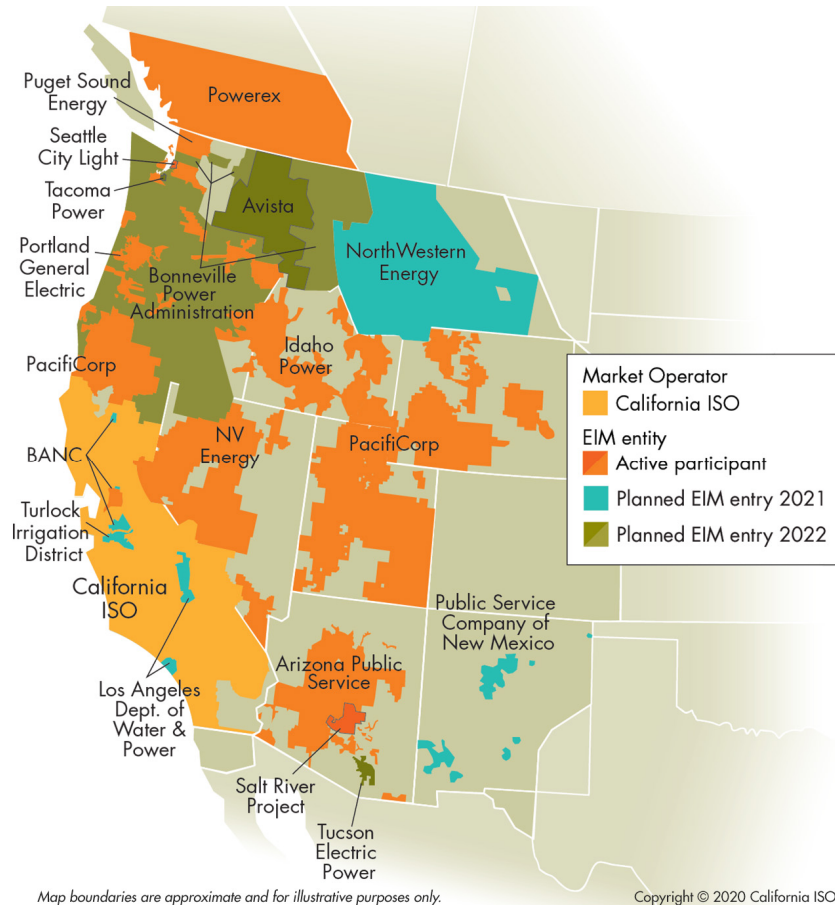


# Western Interconnection Balancing Authorities (38)



# Western Energy Imbalance Market

<https://www.westerneim.com/pages/default.aspx>



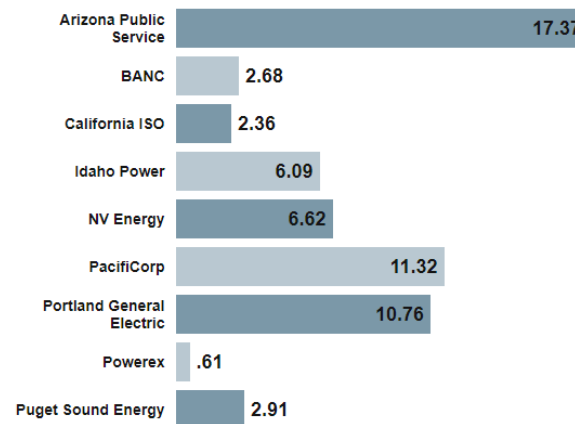
EIM Lands Xcel, 3 Other Colo. Utilities (December 18, 2019)

Xcel Energy, Black Hills Colorado Electric, Colorado Springs Utilities and Platte River Power Authority announced they will join CAISO's EIM as soon as 2021.

**\$60.72m savings in Q4 2019**

[Read full report >>](#) [Read news release >>](#)  
(millions \$)

**TOTAL \$861.79m**  
gross benefits since Nov 2014



[Home](#) > [Stay Informed](#) > [Stakeholder Processes](#) > [Extended day-ahead market](#)

## INITIATIVE: Extended day-ahead market

EIM | E2

Started: Oct 03, 2019

### Leads

Don Tretheway

This initiative will develop an approach to extend participation in the day-ahead market to the Western Energy Imbalance Market (EIM) entities in a framework similar to the existing EIM approach for the real-time market, rather than requiring full integration into the California ISO balancing area. The extended day-ahead market (EDAM) will improve market efficiency by integrating renewable resources using day-ahead unit commitment and scheduling across a larger area.



Relevant notices



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# WESTERN ENERGY IMBALANCE SERVICE MARKET

## Quick Links

### WEIS

[Western Energy Services](#)[Western RC Services](#)

## SPP invites utilities to help build an electricity market to serve the west

SPP's Western Energy Imbalance Service market (WEIS) will balance generation and load regionally and in real time for participants in the Western Interconnection.

SPP will administer the WEIS on a contract basis beginning February 2021. Utilities do not have to be a member of the SPP regional transmission organization (RTO) to participate. The market will centrally dispatch energy from participating resources throughout the region every five minutes, enhancing both the reliability and affordability of electricity delivery from utilities to their customers.

Eight utilities will be participants of the WEIS Market when it launches in February 2021:

- Basin Electric Power Cooperative
- Deseret Power Electric Cooperative
- Municipal Energy Agency of Nebraska
- Tri-State Generation and Transmission Association
- Western Area Power Administration
  - Upper Great Plains West
  - Rocky Mountain Region
  - Colorado River Storage Projects
- Wyoming Municipal Power Agency

# Market Mechanisms – “Putting a Price on Carbon”

## Cap-and-Invest

- Fixed emissions limit (“cap”) in every year; variable carbon price
  - EU Emissions Trading System (EU-ETS) – limits emissions from nearly 11,000 power plants and manufacturing installations as well as over 500 aircraft operators flying between EEA's airports
    - The system covers around 45% of the EU's GHG emissions.
  - Western Climate Initiative (California & Quebec) – economy wide (covers about 80% of emissions)
    - Phase 1 (2013-2020) = 1990 levels by 2020
    - Phase 2 (2021-2030) = 40% below 1990 levels by 2030
  - Regional Greenhouse Gas Initiative (RGGI) – electricity sector
  - Transportation and Climate Initiative (TCI) – under development; covers transportation sector

## Carbon Tax or Fee: Fixed carbon price in every year; variable emissions reductions

- There are no state or federal carbon taxes currently in the US

Carbon market mechanisms are combined with sector specific strategies to reduce emissions – “complementary policies” (e.g. RPS, building codes, ZEV targets, etc.)

# Market Mechanisms – “Putting a Price on Carbon”

- Direct Impact
  - Reduced energy consumption due to higher fossil fuel costs
  - Increased investments in energy-efficient equipment or carbon-saving technologies
- Indirect Impact
  - Revenue raised from a carbon market can fund mitigation programs or help ease equity concerns by returning money to low-income or disadvantaged communities

# Clean Fuels Standard/Low Carbon Fuels Standard

- A Clean Fuels Standard (CFS)/Low Carbon Fuels Standard(LCFS) reduces greenhouse gas emissions from transportation fuels without prescribing the fuel type by using a **life-cycle intensity standard**.
- A CFS/LCFS requires a regulated fuel provider to **reduce its average fuel carbon intensity** by some amount from a defined baseline year.
- These carbon intensity reductions can result from **incorporating alternative fuels** such as ethanol, biodiesel, compressed bio-natural gas, and electricity for transportation use; as well as **improvements to petroleum fuel refineries** and **Carbon Capture and Sequestration (CCS)** technology.
- Program design typically allows for trading and banking of emission credits in order to enhance **flexibility** and support **innovation**.
- **2 States** have adopted an CFS/LCFS program:
  - California's LCFS reduces carbon intensity by **20% below 2010 levels by 2030**
  - Oregon's CFS reduces carbon intensity by **10% below 2015 levels by 2025**