



**A SEAT AT THE TRADING TABLE:**

# PUBLIC POWER AND THE ENERGY IMBALANCE MARKETS

BY JOHN EGAN, CONTRIBUTING WRITER



**T**he emergence of energy imbalance markets, and their ability to bring a variety of benefits to public power utilities, is a sign of strategic change in the electricity business.

The public power entities that have moved to join or have already begun participation in these markets have determined that the projected benefits outweigh the costs and recognize how these marketplaces can support other goals.

## **INTRODUCING THE EIMS**

**E**nergy imbalance markets provide a platform for participants to voluntarily trade surpluses or deficits in generation in real-time. If there's a gap between generation and demand, that energy is traded in the EIM, typically on a five-minute or 15-minute basis.

The California Independent System Operator's Western Energy Imbalance Market was launched in 2014. Its current and future participants represent about 82% of the load in nine states: Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, and Washington.

Public power utilities including the Sacramento Municipal Utility District in California (as part of the Balancing Authority of Northern



California), Salt River Project in Arizona, and Seattle City Light in Washington have begun participating in the WEIM. Other public power entities, including Colorado Springs Utilities, the Los Angeles Department of Water and Power, Platte River Power Authority, Turlock Irrigation District, and Tacoma Public Utilities, are scheduled to join the CAISO WEIM in the next few years. A second phase of BANC's participation will include the Modesto Irrigation District, the City of Redding, the City of Roseville, and WAPA-Sierra Nevada Region.

The Southwest Power Pool's Western Energy Imbalance Service is scheduled to launch in early 2021, pending approval by the Federal Energy Regulatory Commission. Public power entities planning to join SPP's service include the Municipal Energy Agency of Nebraska and the Wyoming Municipal Power Agency.

Participation in an EIM does not require membership in the larger organizations that operate those real-time markets, but it does require signing an agreement with either the CAISO or SPP.

## **COST SAVINGS**

**S**ince its founding, CAISO estimates that participants have received \$920 million in cumulative gross benefits, mainly through providing them with access to lower-cost energy.

"We estimate that our first year of participating in the WEIM generated about \$7.1 million of net benefits, which is about 71% more than we originally projected," said Jim Shetler, general manager of BANC, which joined the WEIM in April 2019 on behalf of SMUD, one of its members.

BANC and SMUD thought it would take about two years to recover their outlays needed for BANC's participation in the WEIM, but better-than-expected benefits in their first year of participation have shortened the payback period.

BANC and SMUD incurred about \$8.9 million in first-year costs to participate in the WEIM, which included a \$4.4 million fee for annual operating costs.

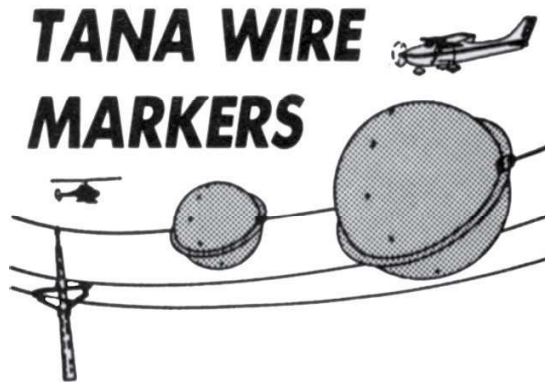
Shetler said most of the benefits derive from avoided costs, such as not turning on higher-cost generators to meet peak demand when lower-cost resources are available. In addition, BANC/SMUD also have had some incremental sales through the EIM.

SRP, which began participating in the WEIM in April 2020, thinks that participation will save the utility and its customers about \$4.5 million per year, Sara McCoy, SRP's director of EIM implementation, said in an interview. In SRP's service area, where energy costs rise sharply during the broiling summer months, participating in the WEIM is an opportunity to purchase lower-cost energy elsewhere.

"We incurred more than \$20 million in implementation costs, and we're estimating \$4.5 million of net benefits per year — or about a five-year payback," she said.

Colorado Springs Utilities, which serves about 235,000 electric customers in Colorado, expects to have first-time costs of between \$100,000 and \$300,000 to participate in CAI-

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SO's WEIM, and the utility expects net annual benefits of between \$500,000 and \$1.5 million, according to its CEO, Aram Benyamin.

SPP hopes its WEIS can duplicate the success of a sibling wholesale market, the Integrated Marketplace, which SPP opened in 2014. The SPP estimates its Integrated Marketplace has saved participants over \$3.5 billion since 2014.

MEAN, which provides wholesale power and related services to 69 utilities in four states (Nebraska, Colorado, Iowa, and Wyoming), expects to pay about \$500,000 in first-year costs to participate in SPP's WEIS market, said Brad Hans, director of wholesale electric operations for MEAN.

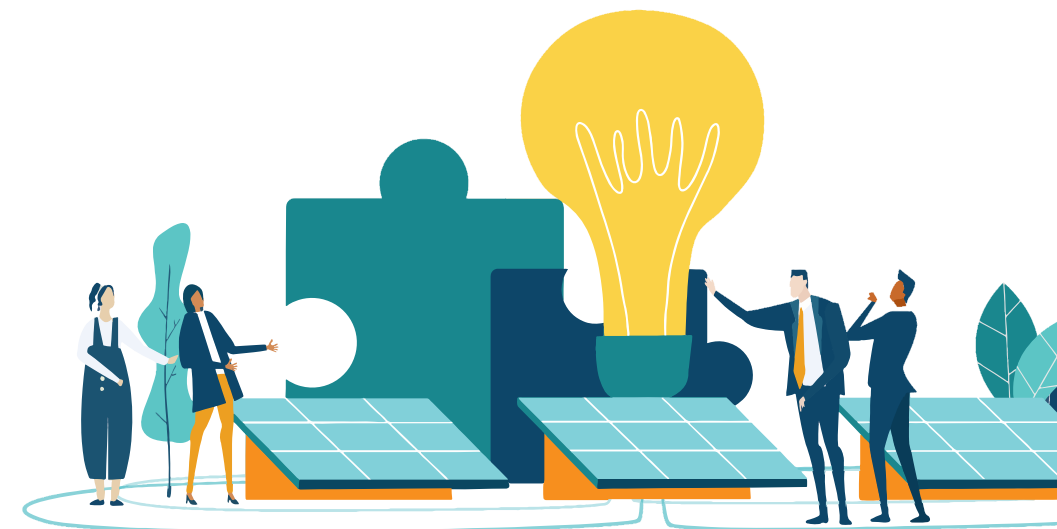
## CUTTING CARBON

**P**articipating in an EIM can also help entities to achieve carbon-reduction goals.

Platte River Power Authority, situated in north-central Colorado, has a long-term generation plan that includes retiring a coal-fired unit and achieving a zero carbon energy mix by 2030. The plan to reach this goal relies in part on being able to join an EIM.

"Participation with the WEIM amounts to another significant step on the path to reach our 100% noncarbon energy goal," said Jason Frisbie, general manager and CEO of Platte River. "We determined that the WEIM provides the best opportunity to manage and access additional noncarbon resources while lowering our cost profile, which amounts to a win-win for our owner communities."

Steve Roalstad, communications and marketing manager for Platte River, explained that its location allows the joint action agency to interact with counterparts in the Western transmission interconnection, meaning it can take advantage of the wind generation east of



the Rockies and the solar generation west of the Rockies.

"Wind and solar complement each other, and we can take advantage of different renewable resources," Roalstad continued. "For us, wind generation is plentiful in the morning, while solar output peaks in the afternoon, just when wind output is falling."

Platte River and Colorado Springs Utilities participate with investor-owned utilities Xcel Energy and Black Hills Electric Colorado in a joint dispatch agreement. The utilities hired a consultant to weigh the potential costs and benefits of joining either the WEIM or the SPP EIS market.

An analysis by The Brattle Group said joining CAISO's WEIM would save the utilities about \$2 million per year.

"Participating in an energy imbalance market is a more economical solution, and in this business, it all comes down to economics," said Colorado Springs Utilities' Benyamin.

He added that while the cost savings were the most important reason to participate in the EIM, the decarbonization potential was also attractive. The utility's integrated resource plan calls for retiring the use of coal-fired generation and cutting its carbon emissions 80% by 2030 compared to 2005 levels.

"The industry is moving to a low-carbon future, and we don't intend to stand still,"

Benyamin said. "Participating in an EIM helps us complete our resource equation ... It means we don't need to build additional peaking generation."

"If you have surplus low-cost generation," Hans said, "or if you have higher-cost generation that can be backed down in favor of lower-cost resources, you should definitely investigate participating in an EIM."

Participants said there's plenty of room at the table for other public power utilities, and that the benefits and costs of participating in an EIM scale with size.

"Smaller utilities will have smaller benefits," said Benyamin. "If you have some generation to contribute, even if it's only 5 megawatts, that is better than having no generation to contribute." Springs Utilities has about 1,000 MW of generation and a peak electric demand of about 965 MW.

"The benefits are directly proportional to how much generation and transmission you can commit to a market," added BANC's Shetler. He noted that utilities with less than 1,000 MW of generating capacity would have a harder time justifying stand-alone membership. "But if smaller utilities join together to form a larger virtual group, that could allow sharing of costs, which would make joining more cost effective."

That kind of group could be similar to the joint dispatch agreement between Platte River, Springs Utilities, Xcel Energy and Black Hills.

Utilities that can't commit generation to an EIM may still be able to participate if they have price-responsive dispatchable demand response programs, according to Mark Rothleder, vice president of market policy and performance at the CAISO.

"The EIM will facilitate demand response participation," said Rothleder. "We have had large industrial facilities participating in EIM that were dispatched based on their bids."

## OTHER BENEFITS

All sources interviewed indicated they were happy with their respective EIM journeys so far. The public power utilities that only recently began participating — SRP and Seattle City Light — reported no negative experiences. Other public power utilities, whose participation is scheduled to begin in 2021 or 2022, said they were comfortable with the way their onboarding has progressed.

SRP's McCoy said there was another benefit from the EIM participation process: The journey was an opportunity for the organization to improve its processes and drive toward operational excellence.

Hans said MEAN joined SPP's EIS because it wanted a seat at the decision-maker's table.

"The governance structure of SPP's EIS was very appealing to us," Hans said. "Each participant will have a seat on the board. That's the way MEAN operates — each of our members has a seat on the organization's board. They may not make it to every meeting, but there's a seat for them if they do."

There's yet another reason for public power utilities to consider participating in these markets: the increased migration of entities to the CAISO WEIM has had the effect of removing potential intra-hour (i.e., five-minute or 15-minute) trading counterparties, and the same outcome will likely result as entities join the WEIS..

"The reality is that among entities that have not joined a real-time market like the WEIM or the WEIS, there are less potential trading counterparties," commented Shetler. "That's an important reason for public power utilities to participate in an organized real-time market."

## HOMEWORK REQUIRED

The rules of the CAISO and SPP marketplaces are different, and in many cases, the devil's in the details. To better understand the costs, benefits and rules of each, prospective participants can talk to current participants — including other public power utilities, electric cooperatives and investor-owned utilities — or consider hiring a consultant that can quantify and detail the likely costs and benefits for that participant.

"Actively investigate the benefits and costs of participating in an EIM. Pay attention to details and timelines," said Hans. "Don't rush into it, but don't run away from it, either. Not participating in an energy imbalance market could mean your power costs stay level while others' are declining."

**"Participating in an energy imbalance market is a more economical solution, and in this business, it all comes down to economics"**

ARAM BENYAMIN

CEO

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