

United States Government

Department of Energy

memorandum

Western Area Power Administration

DATE: August 10, 2021

REPLY TO
ATTN OF: G0000, J. Murray

SUBJECT: Approval for the Western Area Lower Colorado Balancing Authority to participate in California Independent System Operator's Energy Imbalance Market

TO: T. LeBeau, A0000, Lakewood, CO

ISSUE: Western Area Power Administration's (WAPA) Desert Southwest (DSW) region has completed its evaluation of energy imbalance market options for Western Area Lower Colorado Balancing Authority (WALC BA). DSW recommends participation in California Independent System Operator's (CAISO) Energy Imbalance Market (EIM). Your approval is required for participation in EIM.

BACKGROUND: The electric industry in the U.S. is undergoing a fundamental shift that increasingly affects bulk electric system operations, marketing, and planning. The combined impact of low natural gas prices, wider distribution of natural gas and variable renewable generation, changes in consumer demand patterns, addition of storage resources, and advancement of demand-side technologies are creating a significantly more dynamic system than what electricity utilities have managed in the past.

Additionally, the rules and regulations associated with operating the system have evolved over time. It has become an increasingly complex task to optimize the efficiency of the system while managing reliability. These dynamics affect system operations and economics at both the wholesale and retail levels, which motivates the expansion and creation of centralized markets for energy and ancillary services. Power flow topologies across the interconnection are changing as interactions between the BES and the distribution system increase, impacting both short- and long-term purchase power transactions.

Due to these changes, the way the system has historically been operated is becoming increasingly untenable, and there is an increasing need for broader situational awareness and operational control. Additionally, access to geographically and operationally diverse generation resources, flow-based transmission operations, and sub-hourly energy trading necessitates the need to function within fast-dispatch dynamic centralized markets.

Market expansion has made procurement of timely hourly or sub-hourly power increasingly difficult for DSW as more counterparties are focused on market activity. The loss of timely hourly and sub-hourly trading will significantly impact customer rates. However, participation in an energy imbalance market will allow for unlimited sub-hourly transactions at structured market prices. More importantly it provides WALC BA with the ability to mitigate the uncertainties of power consumption. The market provides a forecast and then a robust platform to address deviations from the forecasts. New approaches to managing energy imbalance have the potential to provide benefits

to customers by selling sub-hourly surplus hydropower, preserving reliability, and hedging against risks associated with ongoing changes in the electricity industry.

Almost all electricity providers in the West have evaluated participation in an energy imbalance market and chosen to participate in either CAISO's EIM or the Southwest Power Pool's Western Energy Imbalance Service Market (WEIS). By 2023, 22 active EIM participants will represent over 83 percent of the load within the Western interconnection. WEIS participants currently include Basin Electric Power Cooperative, Deseret Power Electric Cooperative, the Municipal Energy Agency of Nebraska, Tri-State Generation and Transmission Association, the Wyoming Municipal Power Agency, and WAPA.

OPTIONS: DSW has been seeking energy imbalance options to provide long-term solutions for DSW and WALC BA as they adapt to a changing energy industry while maintaining reliable operations. In 2019, DSW began to evaluate participation in EIM or WEIS. WALC BA would become the participating balancing authority in the market. WALC BA generation resources including Boulder Canyon Project, Parker Davis Project (PDP), and the transmission systems of Central Arizona Project, PDP, and Pacific Northwest-Pacific Southwest Intertie Project will all be subject to EIM or WEIS participation.

DSW considered the cost and benefits, internal stakeholder input, and customer input in evaluating participation in EIM or WEIS.

Cost and Benefit Studies

Both a benefits and cost assessment study were completed by Energy Environmental and Economics (E3) and Utilicast respectively. The E3 study participants included Arizona Electric Power Cooperative (AEPSCO), Southwest Public Power Association (SPPA), and Central Arizona Water Conservation District.

The benefits study indicated that WALC BA and the DSW customers would experience \$1.3 million more of gross benefits in EIM rather than WEIS. The cost assessment indicated that EIM was less expensive by \$767,000, primarily due to WEIS' higher on-going market fees. Supporting documentation for these amounts is included in the attached presentation from a meeting DSW held with its customers on June 22, 2021.

Internal Stakeholder Input

Independent of the E3 and Utilicast study, DSW solicited input from a broad range of internal stakeholders on EIM and WEIS. This input considered the relative risks of trading partners, governance, impact to staff, system reliability, market expansion, and regulatory impacts, among others. The stakeholders felt participation in EIM was less risky than WEIS for DSW. Details of those risks and their evaluation are included in the attached decision process document.

Customer Input

The WALC BA is comprised of 18 distinct load and/or generation customers, and DSW has a

total of 75 firm electric service customers and numerous customers only taking transmission service. DSW solicited input from customers informally throughout the study process as well as providing a formal 30-day comment period. Support for EIM was expressed by the three study participants, which represent 70% of the load in the WALC BA, and eight other customers. Including the members of AEPCO and SPPA, this support for EIM encompasses approximately 38 public power providers including municipalities, electrical districts, irrigation and water districts, cooperatives, and Tribes. No customers expressed support for WEIS.

SENSITIVITIES: None. No adverse customer reaction is expected as a result of WALC BA’s participation in EIM. DSW has met with customers and internal stakeholders numerous times to discuss energy imbalance market options; EIM is well supported by them.

POLICY IMPACT: None. WAPA’s other regions and the Colorado River Storage Project Management Center have already evaluated and committed to participation in an energy imbalance market.

URGENCY: In order for WALC BA to participate in EIM during CAISO’s next open period for new members, April 2023, WAPA’s decision to participate must be made by August 31, 2021.

RECOMMENDATION: With full consideration of the study results, internal stakeholder input, and customer input, DSW recommends proceeding with WALC BA’s participation in EIM. DSW requests you sign where indicated below and return this memorandum to DSW.

Jack D.
Murray

Digitally signed by Jack D.
Murray
Date: 2021.08.10
15:36:47 -07'00'

Jack D. Murray
Acting Senior Vice President and
Desert Southwest Regional Manager

2 Attachments

APPROVE: TRACEY LEBEAU Digitally signed by TRACEY LEBEAU Date: 2021.08.18 09:36:46 -07'00' DISAPPROVE: _____ DATE: _____

- cc:
S. Anderson, N0000, SNR, Folsom, CA
R. Bailey, A0000, HQ, Salt Lake City, UT
B. Barnhart, J0000, RMR, Loveland, CO
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