UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corp.	Docket No. ER19-2347-000

COMMENTS OF THE PACIFIC NORTHWEST JOINT COMMENTERS

Pursuant to the July 3, 2019 Combined Notice of Filings #1, the Pacific Northwest Joint Commenters ("Joint Commenters") hereby submit comments regarding the California Independent System Operator Corp.'s ("CAISO") proposed revisions to the local market power mitigation ("LMPM") measures contained in the CAISO Tariff in order to facilitate the participation of energy-limited hydroelectric resources in the Western Energy Imbalance Market ("EIM").[1]

I. COMMENTS

The Joint Commenters include the Eugene Water & Electric Board ("EWEB"), Powerex Corp., Public Generating Pool ("PGP")[2], Public Power Council ("PPC")[3], Public Utility District No. 1 of Chelan County, Public Utility District No. 1

[1] *Cal. Indep. Sys. Operator Corp.,* CAISO Tariff Amendments To Enhance Local Market Power Mitigation And Reflect Hydroelectric Resource Opportunity Costs in Default Energy Bids, Docket No. ER19-2347-000 (filed July 2, 2019).

[2] PGP is composed of ten publicly-owned electric utility districts serving some 975,000 customers in Washington and Oregon, including Benton PUD, Chelan County PUD, Clark Public Utilities, Cowlitz County PUD, Eugene Water & Electric Board, Grant County PUD, Klickitat County PUD, Lewis County PUD, Snohomish County PUD and Tacoma Power.

[3] PPC is a non-profit trade organization that represents the common interests of approximately 100 consumer-owned electric utilities located in Oregon, Washington, Idaho, Montana, Wyoming and Nevada. PPC's members range from small rural distribution utilities that do not own generation to very large urban utilities that own both generation and transmission facilities. All PPC members are preference customers of the Bonneville Power Administration ("BPA").

of Snohomish County, and Seattle City Light. Collectively, Joint Commenters represent entities that supply energy in the Western Interconnection from hydroelectric facilities located in the Pacific Northwest, with a total collective nameplate rating exceeding 17 GW. The majority of Joint Commenters' resources are large-scale publicly owned and operated energy-limited hydroelectric systems with storage capability. Joint Commenters include current, new and prospective members of the Western EIM.

The expansion of the EIM footprint into the Pacific Northwest has provided an opportunity for the multi-state market to benefit from the voluntary participation of a substantial set of large-scale energy-limited hydroelectric resources. In particular, fast-ramping storage hydro in the Pacific Northwest offers economic, operational, environmental, and reliability benefits to a rapidly changing western grid. Collectively, the Joint Commenters' clean hydro resources are capable of providing substantial ramping capability that is ideally suited to complement and integrate the West's growing fleet of renewable generation resources.

Currently, however, aspects of the EIM's existing LMPM framework discourage the voluntary participation of energy-limited hydroelectric resources. As discussed further below, the Joint Commenters believe that CAISO's proposed tariff revisions represent a critical step towards the implementation of a more workable framework to facilitate such participation.

A. The Proposed Amendments Are The Product of A Robust Stakeholder Process

The CAISO's proposed tariff amendments represent the culmination of a comprehensive and inclusive stakeholder effort that began in April 2018[4] – involving multiple stakeholder workshops and the exchange of detailed information and analyses by both CAISO and a wide array of stakeholders. The CAISO's final proposed amendments recognized the critical nature of the issue at hand, and are responsive to Joint Commenters' input during the stakeholder process regarding the unique characteristics and needs of the hydro systems in the Pacific Northwest.

Collectively, these efforts have resulted in a framework that Joint Commenters believe will ensure that the rules governing participation in the EIM better take into account the complex and unique considerations of energy-limited hydro resources with storage capability, while continuing to protect against the potential exercise of market power. In particular, CAISO's proposal will help reduce existing impediments for the participation of energy-limited hydro resources in the EIM by establishing a transparent and workable LMPM framework that substantially reduces the potential that these resources will be inefficiently depleted due to uneconomic mitigation, over-mitigation or forced sales during times of mitigation. The proposed tariff amendments represent a critical step toward promoting market outcomes that are mutually beneficial for loads and resources across the EIM's multi-state market footprint.

[4] CAISO initiated a discussion on this topic in its EIM Offer Rules workshops, which first convened on April 30, 2018.

B. The Existing LMPM Framework Is Unworkable For Energy-Limited Hydro Resources

The Commission previously has recognized the importance of ensuring that market rules are designed in a manner that takes into account the unique facts and circumstances of energy-limited resources. In particular, the Commission has recognized that a principal driver of the marginal cost of energy-limited resources is the opportunity cost associated with foregoing the ability to make sales in later periods or in different markets.[5] As the Commission has recognized, the failure to account for the opportunity cost of energy-limited resources can create unjust and unreasonable outcomes by leading "to inefficient use of scarce resources and increas[ing] costs to customers."[6]

This is particularly true in the case of the large hydroelectric storage resources of the Pacific Northwest, which are subject to complex operational, legal, and regulatory limitations and to a wide range of bilateral market alternatives that affect the opportunity costs associated with making sales. The marginal costs of such resources are highly variable, with opportunity costs primarily driven by projections of water supply, domestic needs, and an array of operational constraints across each resource's storage horizon, which can range from hours to years. The task of modeling these variables is exceedingly complex and involves a dynamic range of objective and unique subjective factors that can

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[5] *See, e.g., N.Y. Indep. Sys. Operator, Inc*., 97 FERC ¶ 61,242 at 62,098 (2001) (acknowledging that "hydro units should not be subject to . . . mitigation because their volatile bids often reflect their opportunity costs, not market power"); *N.E. Power Pool*, 85 FERC ¶ 61,379 at n.41 (1998) (explaining that "the opportunity cost of a hydro unit that spills water today might be tomorrow's market clearing price").

[6] *PJM Interconnection, L.L.C.,* 126 FERC ¶ 61,145 at P 42 n.34 (2009).

change rapidly over the course of a day, including environmental constraints, estimated inflows, discharge levels, reservoir elevation, treaty and other obligations, and expected market prices over the relevant storage horizon. The task is made even more complex in the case of energy-limited resources located outside of the CAISO balancing authority area; such entitles have a broad array of commercial alternatives to the CAISO markets, with opportunity costs that require an evaluation of the potential future price of energy at numerous market locations throughout the west over each resource's storage horizon.

Currently, none of the options for the calculation of a resource's Default Energy Bid ("DEB") under the CAISO Tariff is well-suited to the situation of energy-limited hydro storage resources:

- The existing variable cost option, for instance, was designed around the characteristics of internal fossil-fueled resources with more easily quantifiable variable production costs.
- The LMP option is based on dispatched market prices at a resource's location over a recent historical period, and is not suited to resources with marginal costs that vary substantially and/or are based on opportunity costs that are forward-looking in nature.
- The negotiated DEB option requires a lengthy negotiation process that may be a barrier to entry for smaller market participants, and has been unworkable in practice for new entrants with energy-limited hydroelectric storage resources whose opportunity costs cannot be fixed with precision.

In addition to the shortcomings of the CAISO's current DEB options, other key features of the CAISO's current LMPM process have been shown to result in uneconomic and inefficient dispatch of energy-limited hydro resources currently participating in the EIM. As CAISO notes in its filing, its analysis found that the existing LMPM framework "can result in energy bids being mitigated when market power is not actually detected in the interval."[7] Also the application of the existing LMPM framework has been shown to result in "EIM resources being forced to sell energy for transfers out of their balancing authority at mitigated prices in market intervals in which no market power was detected."[8] Collectively, these factors have led the existing LMPM mechanism to be triggered too often, resulting in sellers' offers being replaced with inaccurate DEBs. This has created a powerful disincentive for the participation of energy-limited hydro storage resources in the EIM. Joint Commenters consider CAISO's amendments to be an essential response to foster the continued growth of a robust multi-state EIM.

C. CAISO's Proposal Will Help Address Existing Impediments To The Participation Of Energy-Limited Resources

The Joint Commenters believe that the suite of tariff amendments proposed by the CAISO has the potential to address a number of the key concerns outlined above. Although CAISO rightly notes that each of the components of its proposed amendments can stand on its own, the Joint Commenters encourage the Commission to approve these proposals as an inter-related suite of reforms that, when taken as a whole, provide a comprehensive and balanced resolution of the complex set of issues that have been identified by the CAISO and stakeholders.

1. The New Hydro DEB Option Represents A Workable Compromise To Facilitate The Participation Of Energy-Limited Hydro Resources In the EIM

The Joint Commenters view the proposed new DEB as the cornerstone of CAISO's proposal and a critical component of establishing a workable LMPM

[7] Transmittal at 2.

[8] Transmittal at 13.

framework for participating hydro resources. Importantly, energy-limited hydro storage resources will only be encouraged to increase their participation in the EIM if their DEBs provide enough certainty that their view of their resources' opportunity costs will be reasonably reflected under most circumstances.

More specifically, CAISO's proposal—to establish a DEB that incorporates elements intended to reflect the short-term and long-term commercial opportunities available to such resources at a variety of commercial locations, subject to a gas floor—captures key relevant determinants that are broadly applicable to hydro resources, and is likely to be workable across a wide variety of situations. In particular, the Joint Commenters believe that CAISO's proposal appropriately recognizes that, subject to operational and other limitations:

- A hydro resource will, as a general matter, seek to sell surplus capability on the most valuable days and hours and at the most valuable locations; and
- The marginal cost of a hydro resource is most frequently the opportunity cost of generating today versus foregoing the opportunity to sell energy at higher prices in proximate or distant locations in the future.

The Joint Commenters believe that CAISO's proposal strikes a reasonable middle ground between establishing a relatively simple, transparent and workable framework that guards against market power being exerted and can be applied to a diverse set of resources, while still maintaining the flexibility to accommodate resource-specific factors such as storage horizons and access to geographic market opportunities in order to maintain meaningful distinctions between resources. Although a number of Joint Commenters requested that CAISO modify limited aspects of its proposal during the stakeholder process, out of concern that the proposal does not fully account for the full range of potential opportunity costs they routinely encounter, the Joint Commenters recognize that the proposed DEB option is not designed to be a precise reflection of each individual participating hydro resource's opportunity cost—since no formula can incorporate the dynamic, complex and subjective nature of such considerations. On balance, Joint Commenters believe that the proposed new DEB option will provide participants with energy-limited storage hydro resources with an improved ability to recover their opportunity costs, consistent with FERC precedent, in the limited application of the EIM and in intervals where local market power conditions exist. Such a modification represents a just and reasonable step forward to facilitate the participation of energy-limited hydro storage resources in the EIM.

2. CAISO's Proposed Enhancements To the LMPM Framework Will Reduce The Potential For Inefficient Dispatch and Depletion Of Resources

The Joint Commenters also support CAISO's proposals to address other problematic aspects of CAISO's current mitigation process. As CAISO acknowledges in its proposal, additional modifications are intended to address a number of problematic outcomes of the existing mechanism—all of which have been observed in the course of the operation of the EIM and have the potential to cause significant harm to energy-limited hydro resources. For example,

- CAISO's proposed enhancements are intended to address the potential for "flow reversal," which occurs when an EIM entity (or group of EIM entities) is import constrained in the market power mitigation run, triggering mitigation, which then results in the entity becoming an exporter at mitigated prices. The result is that the resources are mitigated for exports of power, despite the fact that there is no risk of the exercise of market power because the entity (or group of entities) is not constrained as to exports. CAISO's proposal would reduce the potential for flow reversal to occur by assessing market power independently in each interval, and by only applying mitigation to those specific intervals in which the potential for market power has been detected. In addition, when a resource has been mitigated to the competitive LMP, CAISO's proposal would apply a nominal adder to the resource's bid in order to help ensure that the market mitigation process will not result in the dispatch of a resource to export power from constrained regions at mitigated bid prices.

- CAISO's proposed enhancements would substantially limit the potential that the application of bid mitigation may cause an increase in EIM transfers out of an EIM entity, as is occurring today. By giving EIM entities the ex-ante option to limit transfers to the pre-mitigation transfer quantity and the exporting entity's flexible ramping product requirement and awards, CAISO's proposal will limit the potential that the application of LMPM will continue to result in forced sales of energy from resources at levels above those voluntarily offered into the EIM.

Although these proposals will not fully eliminate the potential risk of flow reversal and uneconomic sales, the Joint Commenters believe that CAISO's proposed measures represent reasonable solutions that that can be immediately implemented to significantly reduce the potential of such issues occurring. CAISO's proposed amendments directly ameliorate those aspects of the existing market power mitigation procedures that have the potential to cause particular harm to energy-limited resources that must carefully select the days, hours, and prices at which they will deplete their reservoirs. The Joint Commenters believe that CAISO's additional proposed enhancements will encourage the voluntary participation of energy-limited resources in the EIM by significantly reducing the risk that they will be dispatched in a manner that results in inefficient depletion.

II.
CONCLUSION

Wherefore, for the foregoing reasons, the Pacific Northwest Joint Commenters request that the Commission approve CAISO's filing as requested.

Respectfully submitted,

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For Powerex Corp.

July 23, 2019

CERTIFICATE OF SERVICE

Pursuant to Rule 2010 of the Commission's Rules of Practice and Procedure, I hereby certify that I have this day served a copy of the foregoing on all persons designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 23rd day of July, 2019.

/s/ Stephen J. Hug
Stephen J. Hug