Memorandum

To: ISO Board of Governors

From: Benjamin F. Hobbs, Chair, ISO Market Surveillance Committee

Date: August 24, 2022

Re: **Briefing on MSC activities from March 9 to August 23, 2022**

This memorandum does not require Board action.

The Market Surveillance Committee of the California ISO held a general session meeting on May 13, 2022, in which two topics were discussed: the day-ahead market enhancements initiative, and the proposed implementation of a nodal flexibility ramp product. Two general session meetings are tentatively planned for September 2022.

1. General Session Meeting of May 13, 2022[1]

1.1 Day-Ahead Market Enhancements Discussion

This agenda item consisted of a presentation by George Angelidis and James Friedrich, who are, respectively, Executive Principal, Power Systems and Lead Policy Developer, Market and Infrastructure Policy at the ISO. Three specific topics were covered in their presentation:

1. the potential ability for resources to exercise local market power in the proposed imbalance reserves market, and the possibility of mitigation of imbalance reserve offers;
2. congestion effects in imbalance reserve pricing, and the ISO's proposal to not collect congestion revenue for those reserves; and
3. a proposal for how real-time energy offer costs could be accounted for in evaluating day-ahead offers to provide imbalance reserve capacity.

All three topics stimulated significant discussion by stakeholders and members of the committee.

In the first part of the presentation, the discussion of local market power was built around a three node example that illustrated flows of energy and imbalance reserves in the network under three day-ahead market scenarios:

- no attempt by resources to exercise local market power in the imbalance reserve market;
- one resource attempts to exercise market power by increasing its price offer for selling imbalance reserves; and

[1] www.caiso.com/informed/Pages/BoardCommittees/MarketSurveillanceCommittee/Default.aspx

- the one resource's high offer for imbalance reserves is mitigated.

In the second scenario, the exercise of market power did distort schedules and increase resource costs. In the discussion that followed this part of the presentation, stakeholders, ISO staff, and committee members addressed the several topics, including the following: the impact of possible mitigation of offers below the opportunity cost for reserves, and how those opportunity costs arise; the impact of mitigated energy offers upon the incentive to exercise market power for imbalance reserves; and the impact of eliminating a must-offer obligation for all resource adequacy resources in real-time.

In the second part of the presentation, the ISO proposed to make no changes to the existing nomination and auction processes for congestion revenue rights. One reason offered by the speakers is that it is proposed to not use locational prices for reserves to recover reserve costs, and so a congestion surplus will not be generated as a result of that product's network flows. A three node example of the day-ahead market was used to illustrate the impact of imbalance reserves upon energy congestion revenues; in the numerical example presented, imbalance reserve flows decreased those revenues. In the subsequent discussion by meeting participants, issues that were raised included recovery of congestion revenue shortfalls relative to rights payouts due to network changes, and whether those shortfalls would be increased because of reserve flows; possible shifts in assignments of costs that would disadvantage rights holders and shift costs among balancing authority areas; and the complexity of possible means of addressing these issues.

In the third part of the presentation, the question of how and whether to account for energy offer cost in upward capacity procurement was addressed. This issue arises because the day-ahead market would not differentiate between resources with the same imbalance reserves capacity bid, but different real-time energy bid costs, which could inflate resource costs in real-time. Although this is also an issue with contingency reserves, it is a bigger issue for imbalance reserves because their likelihood of deployment is greater. The presentation described various options considered by the ISO. From among these options, the ISO proposes a real-time energy bid price cap for awarded reserve products based on a simulated price that would occur if the entire upward uncertainty materialized. The simulation would be based on the previous day's bid stack, rescaled by next-day prices, and would not consider congestion.

1.2 Nodal Flexible Ramp Product Discussion

This agenda item consisted of a presentation by Kun Zhao, Senior Quantitative Analyst, Market Analysis and Forecasting at the ISO. During this presentation, she reviewed the mathematical formulation for implementing the proposed constraints representing the deliverability of deployed flexible ramp product under both of the following sets of constraints:

- the full set of network constraints; and
- transfer constraints among Balancing Area Authorities in the Energy Imbalance market.

The formulation presented is a revision of the existing flexible ramp up requirement constraints which involve a nesting procedure for balancing authority areas, and disregards possible congestion during deployment within those areas. The new formulation would accomplish the following:

- It simplifies the area-level constraints for all areas that pass the sufficiency test, which would make the results easier to interpret, and
- It imposes a full network model upon flows from flexible ramp resources for upward and downward deployment scenarios, to increase the likelihood that those resources would actually be deliverable in real-time if needed and not bottled up by internal area congestion.

Dr. Zhao explained seven cases, various combinations of two or three balancing authority areas passing or failing the resource sufficiency test. Discussion addressed, among other topics, the treatment of and impact upon the California ISO in the new formulation, since there are differences in how it is handled compared to other balancing authority areas in energy imbalance market.