

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Oversee
the Resource Adequacy Program,
Consider Program Refinements, and
Establish Annual Local and Flexible
Procurement Obligations for the 2019
and 2020 Compliance Years.

Rulemaking 17-09-020

**REPLY COMMENTS OF THE DEPARTMENT OF MARKET MONITORING
OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

The Department of Market Monitoring (“DMM”) of the California Independent System Operator Corporation (“CAISO”) submits these reply comments on the Commission’s *Proposed Decision Clarifying Resource Adequacy Import Rules* (“Proposed Decision” or “PD”).

In opening comments, the CAISO “summarizes the material negative impacts that a resource adequacy must-flow requirement will have on California ratepayers,” and “illustrates the potential unintended consequences that the must-flow requirement will have.”¹ DMM believes that analysis in DMM’s prior comments shows that requiring RA imports to be delivered only during the Availability Assessment Hours (“AAH”) from 4 p.m. to 9 p.m. is likely to effectively mitigate most of the theoretical concerns described by the CAISO. These reply comments provide further analysis and discussion that DMM believes can help to assess the potential market and reliability impacts of the PD described in the CAISO’s comments.

Shaping of imports to fit load ramp

CAISO correctly notes that “in the day-ahead market, import levels increase as the net load peak is reached and decrease after the net load peak. This shaping allows imports to follow changes in net load, helping the system meet daily, critical ramping needs.” However, the CAISO goes on to assert that the PD “would foreclose the ability

¹ CAISO opening comments, p. 2.

for resource adequacy imports to help the CAISO shape net-load ramps” and “would enforce self-schedules of block imports when flexibility is necessary.”² DMM believes that Figure 1 in DMM’s prior comments shows that the additional RA imports that would be scheduled in the day-ahead market would not prevent the “shaping” of imports to fit the CAISO’s net load ramp.³

Impact on flexible generation during AAH hours

The CAISO also contends that “schedules for imports increases the need for flexible generation because it increases the amount of inflexible supply.” However, the PD would only require that additional RA imports be scheduled in the day-ahead market during the evening ramping hours when the CAISO’s reliance on imports and need for *upward* 15-minute and 5-minute flexibility is generally highest. In real-time, these additional day-ahead RA imports would *increase* (rather than *decrease*) the total supply and intra-hour *upward* flexibility during the peak net load ramping hours. For example, analysis in DMM’s initial comments indicate that about 28% of the generation not scheduled in the day-ahead market as a result of increased scheduling of RA imports consisted of gas-fired capacity in AAH hours, while hydro accounted for about 7% of generation that might be displaced by additional RA imports. These flexible resources would continue to have a must offer obligation in the real-time market and would therefore provide additional upward ramping capacity during the AAH hours. Meanwhile, lack of downward flexibility is generally not an issue during the AAH hours.

Impact of PD on self-scheduled imports

In practice, the impact of the PD on overall self-scheduling of imports is limited by several factors. Currently, about 97% of all RA imports scheduled in the in the day-ahead market are self-scheduled in real-time. In addition, DMM’s analysis also indicated that about 32% of the supply that may be displaced by additional RA imports in the day-ahead market would consist of non-RA imports -- most of which would also be self-scheduled in real-time. For example, based on the analysis for July 2019 shown in

² CAISO opening comments, p. 2.

³ DMM opening comments, p. 6.

Figure 1 of DMM's initial comments, the net incremental impact of the PD would be to increase total self-scheduled imports by about 650 to 1,050 MW during the AAH hours.

Ramping sufficiency tests

The CAISO also asserts that the PD could prevent CAISO from passing EIM resource sufficiency tests and could drive ramp constraints resulting in administrative pricing at the bid floor or cap.⁴ The CAISO contends that “large changes in intertie schedules that are inconsistent with the net load movement due to extensive self-scheduling would require more flexible resources for the CAISO balancing authority area to pass the flexible ramping sufficiency test.” However, DMM believes that Figure 1 in DMM's opening comments shows that the additional RA imports that would be scheduled in the day-ahead market due to the PD would generally be consistent with net load movement and rather than “inconsistent with the net load movement.”

Moreover, CAISO market data also show that the CAISO has failed the flexible resource sufficiency test in an extremely limited number of hours, and that none of these failures occurred in hour ending 17 in the downward direction or hour ending 22 in the upward direction, the scenarios in which increased RA imports during the AAH might directly contribute to resource sufficiency test failures.⁵ If additional resource adequacy imports were required to self-schedule between HE 17 and 21 as a result of the PD, this could have two effects:

- (1) In HE 17, a larger *positive* change in intertie schedules would require more *downward* flexible capability to pass the downward sufficiency test; and
- (2) In HE 22, a larger *negative* change in intertie schedules would require more *upward* flexible capability to pass the upward sufficiency test.

In practice, however, the availability of downward ramping capability in HE17 and upward ramping capability in HE 22 does not appear to be limited relative to demand for downward and upward ramping capacity in these hours, respectively.

⁴ CAISO *opening comments*, pp. 2-3.

⁵ DMM's analysis goes back to January 2017.

For example, the CAISO BAA has never failed the downward flexible ramping sufficiency test in HE 17 and has never failed the upward flexible ramping sufficiency test in HE 22.⁶ Furthermore, the CAISO BAA has never failed the downward flexibility test within AAH hours. The CAISO BAA failed the upward ramping test during 5 hours within the AAH period since January 2017. However, as previously explained, additional RA imports that may be scheduled during the AAH hours are likely to only *increase* the available supply of *upward* ramping capacity in real-time, since flexible gas and hydro capacity displaced in the day-ahead market by additional RA imports would continue to have a must-offer obligation in the real-time market.

Potential future Imbalance Reserve product

CAISO also notes that self-scheduled imports will be unable to provide a new Imbalance Reserve product that the CAISO may develop in future years “to help the CAISO address uncertainty between the day-ahead and real-time markets” because the market will not be able to co-optimize a self-scheduled resource’s energy and capacity.⁷ DMM understands that any new Imbalance Reserve product that the CAISO may develop is unlikely to be implemented before 2021.

As noted in DMM’s opening comments, DMM views the PD as a temporary measure that could be implemented by the Commission under current rules to help ensure reliability of RA imports while other options are developed as part of the Commission’s other proceedings and the CAISO’s ongoing stakeholder processes. Thus, DMM is hopeful that other options could be developed by the time any new Imbalance Reserve product might actually be implemented.

In addition, as previously noted, DMM’s analysis shows about 34% of the resources that may not clear in the day-ahead ahead due to scheduling of RA imports are much more flexible gas and hydro resources that can be freed up to provide any Imbalance Reserve product the CAISO may develop in the future. DMM’s analysis indicated that another 32% of the supply that may be displaced by RA imports consisted of non-RA imports, which will presumably not be able to provide the new Imbalance

⁶ DMM’s analysis goes back to January 2017.

⁷ CAISO *opening comments*, p. 3.

Reserve product developed by the CAISO and are unlikely to be any more reliable than RA imports. DMM's analysis showed that another 31% of the supply displaced by RA imports may consist of virtual supply, which will presumably not be able to provide this new product and may actually increase the need for such a product.

Non-resource-specific RA imports

DMM agrees with SCE's understanding expressed in opening comments that the proposed clarification does not apply to resource-specific import RA (i.e. dynamic transfers and pseudo-tie resources).⁸ These resources can also be eligible to provide flexible RA and ancillary services and can be scheduled intra-hour. DMM's analyses in opening and reply comments do not include resource-specific import RA capacity.

Other modifications to the RA import rules

As noted in DMM's prior comments, DMM recognizes that market efficiency and system flexibility could be improved by avoiding large volumes of self-schedules in the CAISO market. DMM views the PD as a temporary measure that can be enforced under existing Commission decisions to ensure the reliability of RA imports during the CAISO peak ramping hours. However, DMM is supportive of the Commission's proposed clarification only as an interim measure, while alternative solutions that would allow import RA to participate more flexibly in the market are developed.

DMM has also noted that the Commission could consider further limiting the energy delivery requirements, such as excluding the spring months from the PD. Similarly, DMM suggests that an option for addressing concerns raised in comments about the impact of the PD could be to further limit these requirements to summer months when the reliability of RA imports during the CAISO peak ramping hours is of most concern.

⁸ *SCE opening comments on Proposed Decision*, pp. 4-5.

Respectfully submitted,

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