

Informal Comments of the CAISO Department of Market Monitoring on the Track 3B.2 Slice-of-Day Workshops

R.19-11-009 and R.21-10-002

February 7, 2022

I. Summary

The Department of Market Monitoring (DMM) of the California Independent System Operator Corporation (CAISO) appreciates the opportunity to provide informal comments on the topics presented in the Track 3B.2 resource adequacy workshops on a Slice-of-Day framework.

DMM supports the efforts by the Commission to implement a restructured resource adequacy program in line with the principles stated in D.21-07-014.¹ DMM summarizes its comments below:

- DMM continues to support a 24-Hourly Slice framework as proposed by SCE as a viable design to be considered by the Commission. DMM supports the Commission focusing efforts to develop the details of a 24-Hourly Slice framework for implementation by resource adequacy year 2024.
- Counting methodologies for solar should include the ability to capture solar's contribution to charging storage resources. An hourly slice framework would support this better than the 2-slice variation of the proposals.
- A 24-Hourly Slice framework helps ensure that resources procured through IRP will be available to serve California load.
- DMM supports the Commission pursuing further examination of a hedging component within the resource adequacy reform.

¹ *Decision on Track 3B.2 Issues: Restructure of the Resource Adequacy Program*, July 15, 2021:
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M393/K334/393334426.PDF>

II. Discussion

DMM continues to support SCE's 24-Hourly Slice framework as a viable design.

The resource adequacy design that emerges from these workshops for delivery year 2024 must be durable and adaptable to the changes to the electric grid and resource mix that will occur as California transitions to meeting 60% of its retail electricity from renewable generation by 2030. A significant increase in solar and storage capacity will be needed on the system to meet this target.² The interactions between these two resource types will be increasingly important to meet load across the day. Solar generation will be critical for serving load midday, but will also be critical for charging storage capacity to meet load at net peak and through the night.

DMM continues to support SCE's variation of PG&E's slice-of-day concept. SCE's 24-Hourly Slice framework should capture the reliability requirements across all hours of the day. Participants appear to have coalesced around two versions of a slice of day proposal—one which considers hourly reliability requirements as proposed by SCE, and one which considers a two-slice requirement based on a gross and net load peak. As discussed in previous comments, DMM believes SCE's 24-Hourly Slice framework is better aligned to meet the reliability needs under a system more heavily comprised of preferred and intermittent resources in the future. We encourage the Commission to develop all details necessary for making the 24-Hourly Slice framework implementable by 2024.

²2021 SB 100 Joint Agency Report – Achieving 100 Percent Clean Electricity in California: An Initial Assessment, California Energy Commission/CPUC/CARB, March 2021:
<https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity>

Counting methodologies for solar should include the ability to capture solar's contribution to charging storage resources.

The SCE proposal suggests resources should be counted in hourly slices for load-serving entities' compliance showings. To mitigate concerns of the administrative burden of transacting 24 different requirements and products for each month, the SCE proposal seeks to retain simplicity by keeping resource attributes bundled and allowing load-serving entities to use those attributes to meet their hourly load requirements.

DMM shares the concerns expressed by some participants that slices of day larger than one hour could significantly undercount the contribution of operationally-limited resources – such as solar and demand response– towards meeting load requirements and charging storage resources. DMM also understands the concerns raised by some participants about the administrative burden as the number of slices increase. Therefore, DMM believes that SCE's variation of PG&E's slice-of-day concept has the potential for striking the right balance between these competing concerns, while still requiring each LSE to make sufficient resources available to CAISO to meet its energy and capacity needs across all hours of a month or season.

Solar resource adequacy values should be non-zero to the extent that solar resources' generation is necessary to charge the storage resources relied upon for meeting reliability requirements. In workshops stakeholders discussed the potential for solar ELCC values approaching zero if marginal ELCC values are used to develop solar QC values, particularly under a 2-slice proposal. If solar QC values approach zero, load serving entities may not contract with enough solar resources to provide the energy necessary for meeting demand midday and charging storage resources. If this capacity is not contracted with LSEs, or otherwise not shown to the CAISO as resource adequacy capacity, then these resources will not be bound by must

offer obligations to the CAISO and could be eligible for export outside of the CAISO market. Resources without a contract with a CAISO load serving entity, or load serving entities that have contracted resources but have not shown them as resource adequacy capacity, could instead sell the energy or capacity to support high priority exports out of CAISO. DMM believes a 24-Hourly Slice framework could help ensure that solar continues to be contracted and valued for its contribution to reliability in the resource adequacy program.

The 24-Hourly Slice framework helps ensure that resources procured through IRP will be available to serve California load.

Some participants have argued that the resource adequacy design can assume that the integrated resource planning process will result in sufficient clean energy and storage being constructed in California to meet these challenges.³ However, it is not clear how a resource adequacy framework that only counts resources' contributions to peak gross load and peak net load would ensure that the clean energy and storage capacity necessary for meeting load overnight in 2030 and beyond remain under contract to California load serving entities, and that those resources are ultimately made available to the CAISO markets.

In the absence of a robust resource adequacy program that considers the energy needed to charge storage resources and the storage capacity needed to meet load through the night, there does not appear to be a mechanism to assure that the critical energy and capacity will be made available to CAISO. Resources that were constructed through the IRP process may instead sign contracts, or California load serving entities who have them under contract may instead sell their energy and capacity, to support high priority exports to other balancing areas. Compared to

³ *Resource Adequacy Seasonal Slice Proposal*, Gridwell Consulting presentation at November 1, 2021 Slice-of-Day workshop, p. 21.

resource adequacy frameworks that only count resources' contributions to peak gross and/or peak net load, SCE's 24-Hourly Slice framework seems to provide much better assurance that load serving entities will contract with resources that could collectively meet energy requirements across all hours of the day and will make these resources available to the CAISO.

Hedging is an important issue in this proceeding but warrants further discussion on how it should be implemented.

In D.21-07-014, the Commission noted concern that resource adequacy reform proposals 'lack a means to ensure that RA is linked with energy bidding behavior in order to balance reliability with minimizing costs to customers' and directed parties to propose a hedging component as part of the final proposed framework.⁴ In the second to last working group meeting, PG&E presented two potential hedging approaches: a variable cost hedge and a price cap rebate.⁵ DMM believes these two types of hedges could potentially provide benefits for both suppliers and load-serving entities. However, requiring these hedges as a necessary component of a resource adequacy contract warrants further discussion to how it could fit with the hedging strategies already employed by market participants today.

Under PG&E's proposal, a price cap rebate would limit any excess energy revenues received by a generator when spot market prices exceed a fixed price cap. Any excess revenues resulting from the spot market price above the price cap would be returned to the load serving entity counter-party to the contract. A variable cost hedge would function similar to a price cap rebate except the strike price would be based on a cost-based reference price instead of a fixed price.

⁴ Ibid. pg. 38

⁵ *RA Reform: Hedging*, Pacific Gas & Electric presentation on January 5, 2021 Slice-of-Day workshop

Some participants in the working group expressed concerns that either of these proposed hedging components would result in a price increase of resource adequacy contracts. As other stakeholders have stated in the working group process, hedging is not free. However, DMM notes that high levels of hedging in the overall market can also provide indirect benefits to all LSE's by significantly reducing the potential for the exercise of market power. Therefore, requiring each LSE to acquire a hedge for most or all of its resource adequacy obligation may be cost-effective because it would reduce each LSE's exposure to risky spot market price spikes and also mitigate the potential exercise of market power in CAISO spot markets. A carefully designed hedging requirement could also potentially create sufficient incentive for importers to support resource adequacy imports with dedicated physical capacity. This may allow the CPUC to relax the requirement that import resource adequacy must bid at or below \$0/MWh in CAISO markets.

While DMM continues to support the possibility of the Commission requiring some form of energy hedge for resource adequacy capacity, the details of the requirement should be carefully worked out with stakeholders in order to avoid unintended detrimental consequences. For example, a simple price-cap rebate on its own may undermine incentives for generators to sell fixed price energy contracts. The design of an energy hedging component for resource adequacy warrants further discussion going forward.

Respectfully submitted,

By: /s/ Sean Maxson

Eric Hildebrandt, Ph.D.
Executive Director, Market Monitoring
Ryan Kurlinski
Manager, Market Monitoring
Sean Maxson
Senior Market Monitor
Department of Market Monitoring
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: 916-936-6988
smaxson@caiso.com

Independent Market Monitor for the California
Independent System Operator

Dated February 07, 2022