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CESA's Comments on Load Management Standards Scoping Memo

Additional submitted attachment is included below.

January 24, 2020

Email to: docket@energy.ca.gov
Docket Number: 19-OIR-01
Subject: CESA's Comments on the Draft 2020 Load Management Rulemaking Scoping Memo

Re: Comments of the California Energy Storage Alliance ("CESA") on the Draft 2020 Load Management Rulemaking Scoping Memo

The California Energy Storage Alliance (CESA)[1] appreciates the opportunity to comment on the Draft 2020 Load Management Rulemaking Scoping Memo (Scoping Memo) developed by the California Energy Commission (CEC). CESA recognizers the leadership of the CEC in planning for policies and practices that will enable California to achieve its goal of a 100% zero-carbon grid by 2045. As noted by the CEC in the Scoping Memo, the utilization and coordination of supply- and demand-side solutions is fundamental to accomplish said target; thus, CESA welcomes this initiative and will looks forward to participating in this docket.[2]

CESA, a 501(c)(6) organization representing over 85 member companies across the energy storage industry, is supportive of the Scoping Memo set forth by the CEC. Specifically, CESA is glad to see the inclusion of real-time rates, energy storage systems in all its forms, and automation-enabling technologies in the list of solutions considered by the CEC.[3] Considering this, CESA offers comments that seek to provided further detail regarding the actions and technologies the CEC should consider throughout the course of this rulemaking.

[1] 174 Power Global, 8minutenergy Solar Energy, Able Grid Energy Solutions, Advanced Microgrid Solutions, Aggreko, Alligent Scientific, AltaGas Services, Amber Kinetics, Ameresco, Aparrent, Avangrid Renewables, Axiom Exergy, Better Energies, Boston Energy Trading & Marketing, Brenmiller Energy, Bright Energy Storage Technologies, Brookfield Renewables, Carbon Solutions Group, Clean Energy Associates, ConEd Battery Development, Customized Energy Solutions, Dimension Renewable Energy, Doosan GridTech, E.ON Climate & Renewables, Eagle Crest Energy, East Penn Manufacturing, EDF Renewable Energy, Enel X, Energport Inc., Energy Vault, Engie, esVolta, Fluence, Form Energy, General Electric, Greensmith Energy, Gridwiz, Hecate Energy, Highview Power, Honda, Hydrostor, Jensen Hughes, Lendlease Energy Development, LG Chem Power, Li-Ion Tamer, Lockheed Martin AES, LS Energy Solutions, LS Power Development, Magnum CAES, Malta, Munich Re, NantEnergy, National Grid, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Nuvve, Ormat, Pattern Development, Pintail Power, Plus Power, PolyJoule, Primus Power Corporation, PxiSE, Quidnet Energy, Range Energy Storage, Recurrent Energy, Reimagine Power, RES Americas Inc., Shifted Energy, SNC-Lavalin, Soltage, Southwest Generation Company, Stem, STOREME Inc., Sumitomo Electric, Sunrun, Swell Energy, Tenaska, Tesla, Trane, True North Venture Partners, UL, VRB Energy, WattTime, and Wellhead Electric. The views expressed in these Comments are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. (http://storagealliance.org).

[2] Scoping Memo at 1.

[3] Scoping Memo at 4.

1. The development of dynamic pricing schemes is timely and fundamental

CESA is pleased to see the CEC push for a dynamic pricing strategy as part of the Scoping Memo. CESA is especially supportive of the consideration of real-time pricing (RTP) and other dynamic pricing schemes as a means to encourage the uptake and fully harness the benefits of distributed energy resources (DERs). The current time-of-use (TOU) structure, while a step in the right direction, does not provide signals that are sharp enough to impact customer behavior or granular enough to encourage customers to provide additional grid value through the adoption of automation and/or smart DER technologies, such as battery or thermal storage or vehicle-grid integration (VGI) resources (*e.g.*, smart managed charging, vehicle-to-grid [V2G]).

CESA believes that the development of a wide array of dynamic pricing schemes would allow the State to use existing generation in a more efficient manner, limit wasteful curtailment, and promote more widespread adoption of DERs and automation platforms that would further assist managing loads and increase the elasticity of customer demand. To this end, CESA urges the CEC to consider innovative designs beyond those based on an RTP structure, such as load-shape-based rates and/or discounts, and transactive energy schemes. Including more options to be considered reduces the risk of forcing certain customer classes to stick to non-dynamic rates, an undoubtedly inefficient outcome.

CESA generally supports the draft Scoping Memo on RTP and dynamic pricing. The CEC should strive to design dynamic pricing structures based on wholesale market prices in the California Independent System Operator (CAISO) markets. As part of this rulemaking, one of the key outcomes should be to set a standard that all investor-owned utility (IOU) general rate cases should include an RTP or dynamic pricing option for voluntary customer enrollment and lay out the principles for IOUs to follow in proposing and for the California Public Utilities Commission (CPUC) to use in assessing such rate options.

- **Price granularity:** Increased alignment with price granularity with that of the CAISO markets will provide value to customers that have deployed DERs and automation technologies. This is particularly true when considering the incidence of negatively priced intervals, which, according to CAISO, were more frequent in the real-time market (5-minute market run) than in the 15-minute market and the day-ahead market.[4] Such increased benefits could further encourage investment in these technologies, accelerating market growth and reducing costs in the mid- to long-run. Furthermore, with the increased availability of sub-hourly metering, California programs today are already requiring participating DERs to respond to RTP signals, such as in the Self-Generation Incentive Program (SGIP), where a 5-minute price signal will be used to measure greenhouse gas (GHG) compliance requirements.[5] Many

[4] See CAISO, *2018 Annual Report on Market Issues & Performance,* May 2019 at 73 and at 86-88. http://www.caiso.com/Documents/2018AnnualReportonMarketIssuesandPerformance.pdf

[5] *Decision Approving Greenhouse Gas Emission Reduction Requirements for the Self Generation Incentive Program Storage Budget*, D.19-08-001, issued on August 9, 2019 in R.12-11-005 at 86. http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M310/K260/310260347.PDF

DERs, such as those participating in the Demand Response Auction Mechanism (DRAM) or other demand response (DR) programs, are already integrating into the CAISO markets and thus are capable of responding to RTP signals. Given this, the CEC should set a minimum standard for dynamic pricing options to have hourly level of granularity, while encouraging more granular price signals. Otherwise, CESA sees just incremental benefits relative to the current multi-hour TOU structure of rates today. The enabling technologies and infrastructure are in place today to push for greater price granularity through standards development in this docket.[6]

- **Spatial or locational granularity:** CESA recommends using the sub-load aggregation point (sub-LAP) prices as basis since they generally strike the appropriate balance between granularity and feasibility. Nonetheless, CESA recognizes that some load-serving entities (LSEs) might have more targeted issues in specific circuits and could opt for a more granular approach. This docket should assess the state of technologies and platforms available today to determine the level of spatial or locational granularity that can be provided – by which the CEC can then determine what the appropriate standard should be for rate cases going forward.

- **Optionality:** CESA understands that different customer types or classes may have different abilities to respond to rates. As such, optionality of RTP and dynamic pricing should be a key principle to allow customers with the ability to provide additional grid value to do so and to encourage customers to adopt enabling technologies and/or certain behaviors. For example, in addition to an RTP option, an IOU could also offer a dynamic pricing scheme that leverages day-ahead pricing if customers are unable to respond to RTP signals.[7] However, the elasticity and responsiveness of customers should not be seen as a barrier to participation in one dynamic pricing scheme, but as an opportunity to develop new schemes that can work for each distinct customer class. At the same time, it will be important to set principles against unreasonable cost shifts between customer classes and participants versus non-participants.

- **Cost recovery:** CESA understands that one of the challenges with RTP structures is the certainty of cost recovery aspects of it. On this issue, the CEC could propose principles or guidance around ensuring some certainty around the recovery of costs without using rate elements that might dilute the RTP or dynamic pricing signals, such as through large fixed charges.

[6] Note in D.19-08-001

[7] Depending on whether customers have adopted automated or human response, an RTP or less granular dynamic pricing option could be adopted. For example, in the Power Your Drive (PYD) Program of San Diego Gas and Electric Company (SDG&E), day-ahead prices are used in pass-through rates since EV drivers are less able to respond to RTP. If the difference between the day-ahead and real-time pricing exceeds a certain percentage, there is an after-the-fact adjustment. This is an example where RTP can be "incorporated" or accounted for in a way that accommodates customer capabilities.

2. Storage in all its forms can provide bulk load management, among other benefits to ratepayers

CESA sees tremendous potential for the CEC to direct the development of advanced load management programs. In particular, CESA is greatly pleased to see the CEC realizes the need for long-duration storage (LDS) as a means to manage excess generation and use existing resources in a more efficient manner. CESA is certain that a highly renewable future where cross-sectoral decarbonization is imperative will require the coordinate utilization of different storage technologies with distinct performance advantages. Harnessing the benefits of different storage technologies will enable the acceleration of decarbonization in several sectors. Furthermore, CESA would like to highlight to the CEC the potential of renewably-produced hydrogen in the advancement of transportation and building decarbonization. While several LDS technologies are well suited to provide decarbonization impacts within the power and light-duty transportation sectors, hydrogen, by virtue of being a fuel, can provide further decarbonization of end-uses currently dominated by fossil fuels.

Various energy storage technologies are well-positioned to realize the more dynamic load response sought by the CEC as part of this rulemaking. As noted previously, energy storage technologies are being incentivized to participate more dynamically directly in the CAISO markets (*e.g.*, DRAM, DR programs) or indirectly through rates or signals informed by real-time economic signals (*e.g.*, 5-minute SGIP GHG signal).

However, to encourage greater energy storage participation in various programs, CESA believes that certain standards need to be developed as part of this rulemaking, including:

- **Dynamic performance evaluation methodologies for thermal energy storage (TES) systems:** Certain TES technologies have weather-sensitive kWh outputs that are not captured in measurement and verification (M&V) methodologies used in the current landscape of programs, such as SGIP, which presents significant barriers to their participation in load management programs even though they are able to provide dynamic, real-time responses to economic signals. The assessment and establishment of dynamic performance evaluation methodologies for TES technologies should be considered here. As reference for CEC staff, CESA has worked on these issues separately as part of the SGIP proceeding.[8]

- **Use of sub-metering performance evaluation methodologies:** The CAISO approved a sub-metering approach for directly measuring the output of energy storage systems in response to CAISO economic signals, but such methodologies have not been widely adopted across various DR programs. Such sub-metering measurement approaches are critical to more accurately and appropriately

[8] See Appendix E of *Comments of the California Energy Storage Alliance to the Assigned Commissioner's Ruling Seeking Comment on Implementation of Senate Bill 700 and Other Program Modifications* filed on May 30, 2019 in R.12-11-005. http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M299/K659/299659232.PDF

assessing the performance of energy storage systems. The merits of establishing this as a base standard should be considered as part of this docket.

- **Frequently dispatched DR programs:** Energy storage systems are capable of more frequent dispatch without the customer attrition risks faced by traditional DR technologies. However, many DR programs today set minimum performance standards that favor the "least common denominator" technology that enables broader DR participation by customers but may discourage customers with technologies that can enable more frequent and reliable responses. Since energy storage technologies represent relatively larger capital investments that require higher levels of compensation commensurate with the more frequent and reliable response, CESA is exploring the potential for new types of DR programs that could support energy storage investments and participation, but also other enabling technologies that may have similar characteristics. As a result, as part of this docket, CESA recommends that the CEC explore the higher program and performance standards that could inform the development of a new type of program that may invite higher levels of performance from the current portfolio of DR programs and compensate such performance accordingly.

3. Automation mechanisms and protocols are necessary to unlock the full potential of DERs and RTP

As mentioned in previous comments in this document, CESA is fully supportive of increased alignment between the rates perceived by customers and the real-time prices seen in the CAISO markets. This alignment will encourage the adoption of DERs and the efficient use of grid assets, in addition to creating price signals that evolve over time that reflect changing grid conditions – something that traditional rate structures may be unable to do given the time lag of rate changes through general rate case proceedings.

Building upon this, CESA encourages the CEC to consider programs and incentives that would promote the retrofitting and of existing DERs, and deployment of incremental DERs, with automation mechanisms. Furthermore, CESA urges the CEC to evaluate the development of automation protocols for electric vehicle (EV) supply equipment given the content of Executive Order B-48-18. Such mechanisms and protocols would enable grid operators to unlock the full potential of DERs and RTP. As automation becomes more widespread, the certainty regarding the operation of energy shifting and shedding technologies would increase, allowing demand-side solutions to provide grid services at scale while maintaining the bill management benefits sought by customers.

4. Conclusion

In conclusion, CESA is supportive of the Scoping Memo. CESA believes dynamic pricing schemes are fundamental to encourage the deployment DERs as they continue to provide ratepayer value and operational certainty. In addition, CESA commends the CEC for recognizing that energy storage, in all its forms and applications, is a resource class capable of providing flexibility, reliability and ratepayer value while furthering the integration of renewables, allowing the phaseout of gas-fired generation, and maintaining the lights on regardless of weather variations.

CESA appreciates the opportunity to provide these comments and feedback on the Scoping Memo. We look forward to collaborating with the CEC and other stakeholders in this proceeding.

Sincerely,

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