June 16, 2021

CPUC Energy Division
505 Van Ness Avenue
San Francisco, California 94102

Re: Informal Comments of the California Energy Storage Alliance Regarding the CPUC/Lumen AB 2514 Evaluation Study and Workshop

Dear Sir or Madam:

Following the workshop held on May 26, 2021 on the Assembly Bill ("AB") 2514 Energy Storage Procurement Framework evaluation, the California Public Utilities Commission ("Commission") Energy Division ("ED") staff and its consultant, Lumen Energy Strategy ("Lumen"), solicited participant feedback. In addition to completing Lumen's survey, the California Energy Storage Alliance ("CESA") respectfully submits these informal comments to provide our perspective on key areas of improvement and/or clarification. We appreciate the additional time to submit this feedback and for your consideration of our additional comments.

I. INTRODUCTION & BACKGROUND.

CESA appreciates the consideration of feedback from stakeholders by ED staff and the Lumen evaluation team regarding the AB 2514 Energy Storage Procurement Framework. The Lumen team did an excellent job in presenting the detailed and thoughtful evaluation methodology at the workshop, and CESA is generally very supportive of the evaluation.

At a high level, as ED staff and the Lumen team may be very well aware, AB 2514 helped establish this framework as a market transformation program. In addition, any given project may have unique circumstances (*e.g.*, procurement schedule, location, services provided, contract type) or may be subject to unique grid conditions or incentives such that the evaluation results should be contextualized and framed with nuance. This study seems to be understanding of and incorporating such contextual factors already, which is appreciated, but we would like to emphasize this key point. In particular, we appreciate the scheduling of additional workshops and the openness of the Lumen team to address questions and provide feedback on methodology and key findings or takeaways.

II. DISCUSSION.

With the above in mind, CESA generally supports many elements of the evaluation methodology, but we offer several areas of further emphasis, clarification, or factors to consider.

1. **Market value: The retrospective analysis on market value should contextualize market saturation factors, available market tools, and local constraints in characterizing energy storage operations and consider a prospective analysis on evolving energy storage behavior.**

CESA supports and would like to affirm Lumen's plans to use historical price signals to conduct the retrospective analysis and consider ancillary service ("A/S") market saturation effects in the future-looking special study. This is important because the fact that current energy storage performance focused primarily on A/S provision instead of energy shifting has been inappropriately used as a refrain against further energy storage procurement and reliance. Energy storage resources are merely responding to CAISO price signals in their provision of energy versus A/S, where a saturation of the A/S market will shift incentives and behavior to providing energy arbitrage. Furthermore, as discussed during the new California Independent System Operator ("CAISO") Energy Storage Enhancements ("ESE") Initiative and as evidenced by the development of new market tools in other initiatives (*e.g.*, end-of-hour state of charge), the retrospective analysis should reflect that energy storage operations may still face barriers to operating in the CAISO market, which should change as these market tools and processes mature and are refined over time.

Furthermore, CESA recommends that the retrospective study explain or explore how energy storage operations correlate with wholesale market prices. Given the composition of resources in the CAISO grid, WattTime concluded that wholesale market prices are strongly correlated with marginal greenhouse gas ("GHG") emissions, whereby an economically rational energy storage resource responding to CAISO price signals can be assumed to reduce GHG emissions. Of course, there may be instances where nodal day-ahead market ("DAM") and real-time market ("RTM") market prices might be misaligned with system-wide marginal GHG emissions due to local constraints and/or the type of local generation resources at a particular location. However, whether through the core part of the evaluation or through a special study, an evaluation of the correlation of the marginal GHG emissions rate and CAISO wholesale market prices at a system and local level may support future policy work. For instance, affirmative findings regarding the high level of correlation will be particularly useful in affirming the GHG-reducing or zero-emission characteristics of CAISO-integrated energy storage resources, thus aiding in addressing resource eligibility questions when it comes to procurement, or in streamlining Commission approval processes for executed energy storage contracts.

2. <u>Capacity value</u>: The counterfactual analysis for capacity value should be situation-specific as much as possible.

CESA believes that the counterfactual analysis of the new generation investment deferred and/or the avoided short-term Resource Adequacy ("RA") contracts to retain existing resources, such as Reliability Must Run ("RMR") contracts, should be situation specific to the degree possible. As clarified at the workshop, CESA appreciates the differentiation of energy storage procured for System versus Local RA.

However, there are situation-specific factors that should be taken into account in determining capacity value. For example, some projects procured to comply with AB 2514 targets involved just-in-time procurement of energy storage within a compressed timeframe, such as the projects procured to mitigate Aliso Canyon facility limitations. As a result, an apples-to-apples comparison cannot be made to projects completed with much longer lead times (*e.g.*, contracts resulting from the Southern California Edison Company ["SCE"] 2013 Local Capacity Requirements ["LCR"] Request for Offers ["RFO"]). Locational differences must also be taken into account, where larger price differences for Local RA energy storage resources are often located where land costs are high (*e.g.*, Johanna projects resulting from SCE's Preferred Resources Pilot ["PRP"] 2 RFO). To the degree that these project cost drivers can be disaggregated to be able to make the apples-to-apples capacity value comparison, the Lumen study team should strive to do so.

Furthermore, the Lumen study team should take into account that the counterfactual for certain energy storage projects are very specific, such as the Moss Landing energy storage projects that were procured and approved due to its cost-effectiveness as compared to the Metcalf RMR contracts. A generic counterfactual to a gas-fired plant may not capture the unique relative competitiveness of the energy storage resource. Similar nuances are needed when assessing energy storage contracts procured to support Moorpark and Goleta LCR needs, where the cost-effectiveness of energy storage was identified through the CAISO's 2017-2018 Transmission Planning Process ("TPP") as part of a broader alternatives study of energy storage systems and transmission solutions.

Additionally, it is important to recognize that, even if a resource provides several types of RA, these attributes are bundled and the combined values (*e.g.*, System, Local, and Flex RA) could have been the determining factor for procurement. Whether combined to reflect total avoided capacity costs or through a disaggregation of the avoided costs of these different RA products, the Lumen study team should clarify and contextualize these evaluations and findings.

Finally, CESA does not believe that deferred DR investments represent the best counterfactual to energy storage resources, where the comparative capacity costs may not highlight the higher resource performance capabilities of energy storage over DR. Even if only customer-sited energy storage is compared to DR in this capacity value comparison, the higher performance capabilities of storage-backed DR is currently not recognized as a result of the various use limitations applied to traditional DR programs Yet, despite these

differences, both resource types qualify as RA on the same level and in the same Maximum Cumulative Capacity ("MCC") bucket categories. Without capturing this nuance or making a more appropriate counterfactual assessment, storage-backed DR will only be evaluated unfavorably due to the relatively higher capital investment costs of customer-sited energy storage.

Notwithstanding our concerns above, CESA generally supports the approach and appreciates Lumen's remarks at the workshop that it will conduct a project-by-project accounting of the circumstances and counterfactuals for procurement.

3. **T&D deferral value: The counterfactual analysis should consider contractual provisions that guide energy storage resources procured for T&D deferral purposes.**

CESA generally supports the methodology used to support the evaluation of energy storage operations and performance for the transmission and distribution ("T&D") deferral use case. For the Lumen team's benefit, CESA raises to the team's attention that many energy storage resources procured under the Distribution Investment Deferral Framework ("DIDF") and through the biennial energy storage solicitations have contractual provisions that "productize" the service with defined number of hours and calls during the identified months of need. These are developed based on forecasted load, which is subject to uncertainty. Performance of energy storage resources as a non-wires alternative ("NWA") should thus be viewed within this context where "success" should be measured based on its adherence to the contract. If, for some reason, the energy storage resource was unable to meet a changing need, this should not be used to negatively portray the resource's performance.

Furthermore, the Lumen study team may already be considering multiple value streams and grid services from any given energy storage project, but CESA underscores that this should be reflected. Pacific Gas and Electric Company ("PG&E") has typically procured for distribution capacity as a standalone product, with counterparties free to contract for other grid services so long as they do not violate multiple-use application ("MUA") rules adopted in Rulemaking ("R.") 15-03-011. By contrast, SCE has favored the procurement of resources that combine distribution capacity with RA capacity, which should be captured in the evaluation.

4. **Outage management: The outage reduction value should be modified to differentiate outage types and consider whether specific incentives or performance requirements are in place for this service.**

CESA supports the evaluation of outage reduction value by assessing the operations of distributed and customer-sited storage during historical outage events to estimate the

outage reduction value. However, this should only be framed as an incremental benefit for the dispatch of energy storage during outage conditions, which is dependent on the purpose of the dispatch and the grid conditions during the blackout. Unless storage projects are explicitly incentivized or contracted to provide this service, such as the customer-sited energy storage projects claiming the Self-Generation Incentive Program ("SGIP") Equity Resiliency funds or the resiliency adder, outage reduction value will be an implicit and indirect benefit.

Moreover, if possible, CESA recommends that the outage reduction value be differentiated by those driven by Public Safety Power Shutoff ("PSPS") or distribution-related outages versus those driven by generation capacity shortages, such as during the August and September 2020 heat waves and rolling outages. Such an evaluation may be insightful to inform policy and programs moving forward.

5. **Customer bill management: The evaluation methodology and objectives should be further elaborated on customer bill management.**

CESA is the least clear on this aspect of the evaluation. While the Lumen proposed methodology will supplement the SGIP impact reports, it is unclear to what end. Since rates are not differentiated by location but by customer class, CESA does not understand how this will factor into this assessment of customer bill management, where customers do not capture value based on its facility or home location.

In addition, as expressed throughout our comments, this part of the evaluation should be contextualized to examine how rates may not always be aligned with grid conditions, which was an issue appropriately recognized during the SGIP impact evaluation report. As a retrospective study, Lumen should also carefully consider how rates may be subject to regulatory lags in updating rates in accordance with changing grid conditions.

Finally, this may be a special study area to identify the rate design structures and features that unlock the most value for customers. Similar to the forward-looking study on energy value, a special study structured in this prospective way of optimal dispatch can provide valuable insights.

6. **GHG emissions: The GHG emissions impact methodology is reasonable, especially as it considers capacity-related impacts as well.**

CESA generally supports the use of historical GHG signals for SGIP projects' compliance, with the caveat that nodal DAM and RTM might be misaligned with system-wide marginal GHG emissions due to local context and constraints. Even if the storage resource is operating in an economically efficient manner for the location, we may not see positive GHG-reducing impact. As a retrospective study, energy storage resources providing

A/S should not be framed as operating in the same way going forward, as the A/S market saturates. In addition, CESA supports the incorporation of build-margin impacts of energy storage, where energy storage can support the building of additional renewable generation facilities.

Consistent with the project-by-project analysis, the Lumen study team should reflect the site-specific GHG and local pollutant reducing benefits of hybridizing energy storage with gas units. There may only be a handful of such projects, including one procured by SCE in response to the emergency Aliso Canyon reliability need.

7. **Renewable curtailment: The renewable curtailment methodology should be clarified, and the Lumen team should consider a hybrid and co-located project special study.**

CESA generally supports the proposed approach to analyze historical storage charge and discharge during periods of renewable curtailments, differentiated by those driven by local versus system-wide constraints, but we wonder whether it should be assessed against *actual* curtailments versus *potential* curtailments. There may be various reasons for actual curtailment (*e.g.*, economic, reliability), and for energy storage to avoid renewable curtailment (*e.g.*, capture REC value), CESA assumes that energy storage will need to charge during potential periods of curtailment, which may not show up in settlement data as actual curtailment. However, it is unclear how this will result in a value representing avoided RPS overbuild.

Additionally, there may be a special study opportunity to look at specific hybrid and co-located projects as well, considering many standalone solar projects were retrofitted with energy storage to meet 2021-2023 system reliability needs. With the study covering these years as these hybrid and co-located projects come online, there may be an opportunity to look at specific projects and assess curtailments prior to storage additions behind the same point of interconnection ("POI") versus the curtailments following the storage additions.

8. **Cost effectiveness: CESA recommends a net present value methodology for cost-effectiveness, consistent with AB 2514 requirements, and seeks clarity on the normalization approach.**

CESA is unclear on the applicability of the Total Resource Cost ("TRC") and Program Administrator Cost ("PAC") tests for AB 2514 energy storage projects since these tests are typically used to assess the cost-effectiveness of distributed energy resource ("DER") programs. However, cost-effectiveness for the AB 2514 Energy Storage Procurement Framework only requires benefits to exceed costs, where energy storage contracts were approved in competitive solicitations using net present value ("NPV")

methodologies. Lastly, CESA seeks more clarity on the normalization approach given that each project will have very specific counterfactual. It is thus unclear how a ranking would be applicable.

9. <u>Miscellaneous</u>: If possible, a qualitative assessment of procurement- and deployment-related lessons learned should be conducted.

While supportive of the overall intent of the evaluation, CESA believes it will be helpful to also generate any lessons learned or insights regarding the actual procurement practices and processes for energy storage resources. In our view, the entire focus of the evaluation is on understanding how energy storage operates on a retrospective basis and delivered actual value. Since data and information on actual energy storage operations are lacking by comparison, it is reasonable to have the evaluation focus here. However, some level of qualitative analysis of the procurement and deployment of energy storage may also be helpful.

Significant amount of energy storage procurement, interconnection, and deployment will likely need to occur through 2045, where any insights from AB 2514 projects could inform ways to streamline or improve bid/offer evaluation methods, interconnection practices, and contracting approaches. For example, with several contract failures or terminations, it may be helpful to understand the general cause(s) of failures or terminations while ensuring confidentiality to any specific project or counterparty. To this end, there will also be a significant amount of non-lithium-ion storage technologies that will need to be procured over the next few years and beyond, where barriers identified to their consideration in competitive solicitations (*e.g.*, experience requirements, diversity criteria) will provide insight on how to support their commercial procurement and deployment. If Lumen is not positioned or equipped to conduct an in-depth analysis in this regard, a simpler qualitative assessment may be beneficial.

III. CONCLUSION.

CESA appreciates the opportunity to submit these comments regarding the workshop and looks forward to collaborating with the Commission and stakeholders in this proceeding.

Respectfully submitted,

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