

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

Order Instituting Rulemaking to Consider  
Streamlining Interconnection of Distributed  
Energy Resources and Improvements to  
Rule 21.

Rulemaking 17-07-007  
(Filed July 13, 2017)

**RESPONSE OF THE CALIFORNIA ENERGY STORAGE ALLIANCE  
TO THE ADMINISTRATIVE LAW JUDGE'S RULING DIRECTING RESPONSES TO  
QUESTIONS ON WORKING GROUP TWO REPORT**

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In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the California Energy Storage Alliance (“CESA”)<sup>1</sup> hereby submits this response to the *Administrative Law Judge’s Ruling Directing Responses to Questions on Working Group Two Report* (“Ruling”), issued by Administrative Law Judge Kelly A. Hymes on December 7, 2018. Pursuant to the Ruling, CESA is not separately filing comments to the October 31, 2018 Working Group Two Report in this response.

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<sup>1</sup> 174 Power Global, 8minutenergy Renewables, Able Grid Energy Solutions, Advanced Microgrid Solutions, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Avangrid Renewables, Axiom Exergy, Boston Energy Trading & Marketing, Brenmiller Energy, Bright Energy Storage Technologies, Brookfield Renewables, Carbon Solutions Group, Centrica Business Solutions, Clean Energy Associates, Consolidated Edison Development, Inc., Customized Energy Solutions, Dimension Renewable Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, ElectrIQ Power, eMotorWerks, Inc., Enel X North America, Energport, ENGIE, E.ON Climate & Renewables North America, esVolta, Fluence, Form Energy, GAF, General Electric Company, Greensmith Energy, Ingersoll Rand, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Johnson Controls, Lendlease Energy Development, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Magnum CAES, Mercedes-Benz Energy, NantEnergy, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Ltd., NRG Energy, Inc., Parker Hannifin Corporation, Pintail Power, Primus Power, Quidnet Energy, Range Energy Storage Systems, Recurrent Energy, Renewable Energy Systems (RES), SNC-Lavalin, Southwest Generation, Sovereign Energy, Stem, STOREME, Inc., Sunrun, Swell Energy, Tenaska, Inc., True North Venture Partners, Viridity Energy, VRB Energy, WattTime, Wellhead Electric, and Younicos. 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>).

## I. INTRODUCTION.

CESA supports the tremendous amount of work and collaboration involved in Rule 21 Working Group 2 that dealt with a wide range of interconnection issues that affect distributed energy resources (“DERs”) and culminated in the Working Group 2 Final Report (“Report”) published on October 31, 2018. CESA supports the continued improvements to the Rule 21 interconnection review process to ensure the technical reliability of DERs but also to enable streamlined and less costly processes to deploy more DERs to support our broader policy objectives.

## II. RESPONSE TO QUESTIONS.

### A. All Issues

**Question 1: For any proposals that developers support, and one or more utilities oppose based on a perceived reliability concern, explain whether and how developers and/or customers could voluntarily take on certain defined financial risks associated with the utility’s concerns, with agreement from the utility.**

Energy storage developers are generally able to assume some level of defined and known financial risks. Concerns about utility override of operations or retroactive changes in terms and conditions are likely not viable financial risks that a developer could take on, since it reduces the certainty of operations and bankability of the project due to increased uncertainty of revenues. For each of the issue proposals, CESA recommends that the Commission view reasonable and viable financial risk from that lens.

**Question 2: For any proposals that developers support, and one or more utilities oppose based on a perceived reliability concern, should the Commission require the utilities to pilot the proposal in an isolated geographic area? If yes, include a description of proposed parameters for the pilot.**

CESA is not opposed to the use of pilots and understands the value of using pilots to verify the safety and reliability of new Rule 21 processes. For the expedited interconnection pilot process for non-exporting energy storage systems, recent advice letters submitted by the investor-owned utilities (“IOUs”) highlighted the significantly reduced processing time for a standardized configuration of energy storage projects that follow the Rule 21 Section N criteria.<sup>2</sup> Southern California Edison Company (“SCE”), for example, reported that it saw the median process time decrease from 23 days in the control group to 16 days in the pilot group.<sup>3</sup> This has produced valuable information that creates greater ease and comfort for the IOUs to move forward with transitioning the pilot process to a mainstream one. Especially as many of the proposals in the Report are novel and innovative, CESA could support piloting of certain proposals to help the IOUs overcome some perceived reliability concerns. CESA recommends that these pilots provide reportable data that could serve as the basis for potential scaling if found to be successful.

## **B. Issue 6**

For Issue 6, a draft DER aggregator agreement was included in the Report that would govern the terms and conditions under which a DER aggregator will provide communication functions, but this draft agreement was also recognized as incomplete and in development. Below, CESA provides our responses to questions specific to Issue 6.

### **Question 3: In order to consider whether to adopt the proposed draft Distributed Energy Resource Aggregation Agreement (Agreement),**

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<sup>2</sup> *PG&E Advice 5371-E: Information-Only Report on Rule 21 Expedited Non-Export Storage Pilot*, submitted on August 31, 2018; *SCE Advice 3858-E: Information-Only Advice Letter on Southern California Edison Company’s Expedited Interconnection Process for Non-Exporting Storage Facilities Pilot Pursuant to Decision 16-06-052*, submitted on August 31, 2018; *SDG&E Advice Letter 3300-E: Information-Only – San Diego Gas & Electric Company’s Expedited Interconnection Process for Non-Exporting Storage Facilities Pilot Pursuant to Decision 16-06-052*, submitted on August 31, 2018.

<sup>3</sup> *SCE Advice 3858-E: Information-Only Advice Letter on Southern California Edison Company’s Expedited Interconnection Process for Non-Exporting Storage Facilities Pilot Pursuant to Decision 16-06-052*, submitted on August 31, 2018, Attachment A, pp. 2-3

**explain whether the Commission needs to first determine if the agreement governs only the capabilities or the actual performance of generating facilities? Please also explain whether you think the Agreement governs only the capabilities or the actual performance of governing facilities.**

CESA believes that the Commission must make this *a priori* determination before moving forward with adopting a DER Aggregation Agreement, as the terms and conditions would need to reflect the actual performance, if it is determined that actual performance is required from generating facilities. In CESA's view, the agreement should only govern the capabilities of generating facilities at this time, as it aligns with the capability provisions of other smart inverter requirements at this time. By extension, since the DER agreement is a contract between the aggregator and the distribution provider, the agreement should only govern the capabilities of the aggregator to act as the communications conduit to individual generating facilities.

**Question 4: Does the Commission need to answer any other questions before parties continue negotiating the Agreement? If yes, explain both why an issue needs to be addressed now and your organization's position on that issue.**

The activation, utilization, and performance of many of these smart inverter functions appear to be on hold until broader operational requirement and compensation questions are discussed and resolved before requiring the actual use of these capabilities. Such questions are teed up in Issue 27 and 28 in Working Group 3 of this proceeding, so it would be prudent to await resolution of those issues prior to incorporating terms and conditions in the agreement around the actual performance of required capabilities. These discussions will resolve whether and to what level there are default settings for certain smart inverter functions, and whether and to what level any compensation, if any, is warranted for smart inverters that perform above and beyond their default settings. These policy issues need to be resolved prior to incorporating actual performance provisions in the DER agreement.

Therefore, at this time, the Commission should focus on negotiating the provisions around ensuring that DER aggregators have the capability of these communication functions. Negotiations around the capabilities can be continued immediately upon “answering” the following threshold questions:

- **What is the role of the aggregator?** This topic was inconclusive based on the working group discussions, but clarification on the role of the aggregator is a threshold question that will govern subsequent agreement discussions and negotiations and address which party holds liability for the agreement’s provisions. CESA recommends that the Commission determine that the aggregator is the conduit for communications but is not responsible for the resulting actions in response to the communicated message.
- **What is the criteria for an appropriate and reasonable testing and re-certification process?** Software changes rapidly and how the agreement handles the re-certification process is an important question that will impact IOU grid operations as well as DER aggregator operational costs. A reasonable balance must be struck and the Commission should outline the guidelines for the working group to begin negotiation on exact terms and processes by which re-certification should occur as software changes. Similarly, the criteria and general expectations for end-to-end testing should be defined by the Commission.
- **Should there be a fair and transparent process for any changes, or should the agreement provide unilateral ability to change these terms and conditions?** CESA believes that the terms and conditions of the agreement should not be easily changeable without some due process. Otherwise, DER aggregators face undue financial, operational, and legal risk from being subject to a ‘moving target’ of terms and conditions. Generally, some flexibility can be reasonably allowed as conditions change (though some of this can be built into the agreement that is negotiated between the IOUs and aggregators), but changes to various provisions (*e.g.*, cybersecurity, privacy) should not be done unilaterally without some due process (*e.g.*, advice letter process). Furthermore, the Commission should clarify whether retroactivity is allowed and if so, to what degree that should be allowed as the IOU moves to change the terms and conditions of the agreement.

Once these threshold questions are addressed, the working group can work to negotiate the specific terms and conditions of the agreement. The above questions were some of the key areas of disagreement between stakeholders and the IOUs that would benefit from clarity and guidance from the Commission to allow negotiations to move forward.

**Question 5: What procedural mechanism should the utilities use to seek Commission approval of the Agreement?**

CESA recommends that additional working group time be given to further negotiate the agreement, such as the key terms and conditions. Subsequently, the IOUs can submit a finalized agreement via an advice letter, followed by the Commission adopting the finalized agreement in a subsequent Resolution. This procedural mechanism allows for more expedient review and approval. Once the agreement is approved, the IOUs should also work to develop a DER Aggregator Manual or similar type of best-practice, user-friendly handbook to guide aggregators through the contracting, certification, and testing processes.

**Question 6: What is the recommended deadline for the utilities to ask for such approval? Justify that deadline.**

The Commission granted a six-month delay to August 22, 2019 to require Phase 2 communication functions. To ensure that an agreement for DER aggregators are put in place before this deadline, CESA recommends that the Commission direct a working group between the investor-owned utilities (“IOUs”) and stakeholders to negotiate and finalize an agreement that reflects capabilities only, not utilization or performance of these functions. To meet this deadline, the Commission should direct this working group to begin meeting and negotiating as soon as possible, with the goal of having the IOUs submit proposed contracts for approval in an advice letter by June 22, 2019. This provides stakeholders with up to four months to continue negotiations and provides a two-month period prior to the August 22, 2019 deadline for stakeholders to provide final input, for the Commission to review, modify, and/or approve the contracts through a Resolution, and for the IOUs to publish and implement the agreement with DER aggregators. However, this timeline requires the Commission to act quickly and direct working group negotiations immediately.

CESA recommends the following issues also be addressed by the Commission in parallel with the working group negotiations with the intent to provide guidance to the IOUs in time for the advice letter filing.

- Aggregators that will use cloud services to implement the communications conduit do not have full operational control over every piece of hardware and software involved in the conduit. The Commission should clarify which portions of the conduit are the direct responsibility of the aggregator to certify and maintain versus the portions that the aggregator must maintain through contract with a separate vendor (such as a cloud service provider).
- In negotiating the agreement, debate arose regarding the mixing of the terms “aggregator” and “supplier”. The Commission should clarify that the supplier is the legal entity executing the contract with the distribution provider whereas the aggregator is providing the service from a regulatory perspective. This clarification is necessary to correctly write contract provisions regarding the “location” of the supplier and the constraints on “dual participation”.
- Pursuant to the bullet above, the Commission should also clarify whether a single facility is allowed to contract with multiple Rule 21 aggregators.

### **C. Issue 8**

For Issue 8, a number of ‘sub-proposals’ was submitted in the Report that would streamline the Rule 21 interconnection process leveraging the Integrated Capacity Analysis (“ICA”) values. CESA finds the collection of Issue 8 proposals to be very innovative and informative and is generally supportive of the incorporation of the ICA to streamline interconnection review and bypass certain applicable screens, as appropriate.

While supportive of the proposals being developed, CESA recommends that future considerations of how the ICA can be leveraged to streamline interconnection also consider how energy storage interconnections can be streamlined. The Issue 8 proposals appear to be largely geared toward fixed generation profile resources such as rooftop solar, but energy storage resources are dispatchable and do not necessarily have a fixed profile. ICA values may thus be less applicable to energy storage systems as it relates to streamlining interconnection review, but



there may be future opportunities to consider how valuable ICA information can be provided upfront to define reasonable charge and discharge periods below the ICA Static Generation (“ICA-SG”) value that could allow for the bypassing of certain Rule 21 screens. This could be facilitated by the modification of the ICA Translator, which currently only looks at variations of fixed solar profiles from PV Watts, to also look at energy storage systems and potentially create upfront windows where charge and discharge periods could be defined to allow for streamlined interconnection. Similar to Rule 21 Section N processes for expedited interconnection of non-exporting energy storage systems under a certain size threshold and that operate without increasing customer peak load, the ICA values could create similar but more granular types of expedited interconnection processes.

Below, CESA selectively responds to some of the questions posed to stakeholders.

**Question 11: For the utilities: If Screen I is not moved to Rule 21’s technical framework overview, how soon and with what frequency do you anticipate that the distribution grid will experience overvoltage conditions and possible overloads that would otherwise have been addressed through the interconnection process? What is the range of typical costs for upgrades that would be required to mitigate these issues?**

While this question is posed to the utilities, CESA underscores the importance of adopting Option B of Proposal 8.i that would *not* relocate Screen I to the Rule 21 technical framework so that non-exporting projects above 30 kVA are reviewed under all screens.<sup>4</sup> CESA strongly disagrees with the proposal to subject non-exporting DERs to other screens because of cost responsibility concerns for backflow and overvoltage issues when non-exporting DERs take away load from the distribution system. Stakeholders raised points around making non-exporting DERs

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<sup>4</sup> Report, p. 54.

pay for upgrades from reducing load to be unprecedented and not a reliability issue at this time.<sup>5</sup> CESA agrees with these points but also believes that any specific non-exporting DER should not have the cost responsibility for overvoltage and overload conditions created by other DERs on the grid. That cost responsibility should lie with the actual DERs directly creating the overvoltage and overload conditions, as customers should have the right to reduce and manage their load, similar to how other load-modifying resources (*e.g.*, energy efficiency, demand response) are not subject to Rule 21 upgrade costs. For example, a non-exporting energy storage system connecting to the distribution grid should not be paying for distribution upgrades caused by the significant backflow created by a high penetration of solar PV systems at that location.

#### **D. Issue 9**

For Issue 9, the Report included proposals to develop interconnection procedures that would allow a DER to submit a “limited generation profile” as part of their interconnection agreement to enable generation profile limiting functionalities and to allow the IOU to alter that profile if circumstances warrant. Parties did not reach consensus, with IOUs expressing concerns about forecast error, DER responsiveness, modeling complexity, impact of grid upgrades on operational constraints, etc. Meanwhile, the IOUs submitted a counterproposal that bases limited generating profiles based on seasonal differences, leveraging certified Phase III Function 3.

CESA has no comment at this time but observes that energy storage may have a future a role in supporting the operation of a DER within ICA limits and, in some cases, increase ICA values. The Issue 9 proposals, however, focus on fixed generation profiles, so the ability to be dispatchable within ICA limits are not contemplated here.

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<sup>5</sup> *Ibid*, pp. 54-55.

### **E. Issue 10**

For Issue 10, the proposals in the Report focus on coordination of the ICA with Rules 2, 15, and 16. CESA has no comment at this time.

### **F. Issue 11**

For Issue 11, the Report featured a Lightning Review process proposal that explored the criteria to be used to determine which projects would be eligible for a notification-only or other expedited process for non-exporting energy storage systems. CESA strongly supports Proposals B1, B2, and B3, which leverage existing interconnection processes but add eligibility for non-exporting energy storage systems.

**Question 29: On page 141 of the October Report, the utilities present five issues with expanding Proposal B1 to include all generating facilities with aggregate gross nameplate inverter rating under 30 kVA regardless of whether those systems are exporting or non-exporting. Propose solutions to each of the identified issues**

CESA agrees with the IOUs that the scope of this process should be limited to standalone non-exporting energy storage systems at this time due to their valid concerns about the Rule 21 jurisdiction for DERs that are not Net Energy Metering (“NEM”) facilities. In cases where exporting systems provide distribution capacity to the distribution utility, CESA believes such use cases are Rule 21 jurisdictional, but we find it more appropriate to discuss the Lightning Review process for a more limited scope of standalone non-exporting energy storage systems at this time. In the future, the extension of this Lightning Review process to other DER types and use cases should be explored.

**Question 30: For non-utility stakeholders: What is the approximate percentage of overall projects, on an annual nameplate basis by customer segment and technology type, that you expect to use the Lightning Review Process going forward (e.g., X percent of annual MW of residential rooftop solar + storage)? What are the public policy**

**reasons the Commission should focus on streamlining the interconnection process for these specific project types?**

Developers may be in a better position to answer this question with more specific numbers, but CESA believes that it is important for public policy reasons for the Commission to direct the IOUs to implement Phase 1 of the Lightning Review process to enable the greatest extent of streamlining to allow customer-sited non-exporting energy storage systems to be quickly deployed for customer benefit, especially as the state moves toward default time-of-use (“TOU”) rates for residential customers and explores more complex opt-in rate designs for more sophisticated customers. With the prevalence of defaulting residential customers on TOU rates, there will be an increasing incentive for new residential customers to deploy standalone storage for time-variant bill management, especially for certain rates where peak-to-off-peak ratios are sharper, as opposed to deploying solar-paired-storage.

In addition, the Commission is focusing on how DERs can provide Resource Adequacy (“RA”) capacity and distribution services in other proceedings. Streamlined and expedited interconnection processes are instrumental to the competitiveness of customer-sited energy storage systems in competing in many of these competitive solicitations, where there are tight deployment timelines. For example, the Demand Response Auction Mechanism (“DRAM”) pilots have required potential supply-side DR resources to be interconnected, installed, and tested within a 7-10 month period to ensure that resources are receive their qualifying capacity (“QC”) values and are included in the IOUs’ year-ahead and month-ahead supply plans. These are tight timelines, and DERs like energy storage face an additional interconnection barrier that other traditional purely load-side demand response (“DR”) resources do not face. Similarly, in the Integrated Distributed Energy Resource (“IDER”) Request for Offers (“RFO”) to procure DERs for distribution deferral, there are relatively small windows between contract approval and

commercial operation date (“COD”) that make it imperative for streamlined interconnection processes to ensure the fulfillment of contracts with high performance requirements. This small window from contract approval to COD is required in the IDER RFOs because of the near-term planning window that the IOUs look at to balance cost-effective procurement of non-wires alternatives while mitigating forecast uncertainty and allowing for time to incorporate mitigation plans if DERs do not materialize in the RFO or deployment stages. In both cases, timely and streamlined interconnection is important to support the competitiveness and success of DERs like energy storage in key Commission policy objectives.

In sum, CESA views the NEM program as being a major success in driving rooftop solar PV deployment in California, where the expedited interconnection process for NEM systems were a major factor to the fast growth of their deployment. CESA believes it is prudent public policy to extend this streamlined process to other DERs, beginning with non-exporting energy storage systems.

**Question 31: Provide rough estimates of the costs and benefits (in terms of shortened timelines, reduced interconnection study costs, staff time spent reviewing applications, costs to develop software, etc.) for each phase of the Lightning Review Process**

CESA does not have specific estimates of the costs and benefits for each phase of the Lightning Review process, but CESA imagines that:

- **Phase 1** will involve very incremental costs in the form of time from stakeholders and IOU staff to adapt existing interconnection processes for NEM expedited review and to develop modified forms and certain changes to the interconnection portal.
- **Phase 2** will involve some study of the distribution grid to assess the safety and reliability of increasing the size eligibility of non-exporting energy storage systems to this Lightning Review process. Given that the IOUs are already calculating and publishing ICA values as part of their operations going forward, CESA believes that this would be part of that workstream.

- **Phase 3** would likely require a similar working group and study process as done in Working Group 2 to discuss how the ICA values can be used to make specific Rule 21 improvements. This may involve additional study processes but we imagine this should also fit in well and supplement the existing workstream.

### III. CONCLUSION.

CESA appreciates the opportunity to submit these comments to the October Working Group Report and responses to the Ruling. CESA looks forward to working with the Commission and stakeholders in this proceeding.

Respectfully submitted,



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