

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

Order Instituting Rulemaking on the Commission's
Own Motion to Improve Distribution Level
Interconnection Rules and Regulations for Certain
Classes of Electric Generators and Electric Storage
Resources.

R.11-09-011
Filed September 22, 2011

**RESPONSE OF THE CALIFORNIA ENERGY STORAGE ALLIANCE
TO JOINT MOTIONS OF SOUTHERN CALIFORNIA EDISON COMPANY, SAN
DIEGO GAS & ELECTRIC COMPANY, AND PACIFIC GAS AND ELECTRIC
COMPANY ON LANGUAGE IMPLEMENTING JOINT COST CERTAINTY
PROPOSAL AND REVISIONS TO STREAMLINE RULE 21 FOR BEHIND-THE-
METER NON-EXPORTING STORAGE DEVICES**

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Pursuant the California Public Utilities Commission ("Commission") Rules of Practice and Procedure, the California Energy Storage Alliance ("CESA")¹ provides this response to the *Motion of Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas And Electric Company on Language Implementing Joint Cost Certainty Proposal* ("Motion"), and *Joint Motion on Revisions to Streamline Rule 21 For Behind-The-Meter Non-*

¹ 1 Energy Systems Inc., Abengoa, Advanced Microgrid Solutions, AES Energy Storage, Aquion Energy, ARES North America, Brookfield, Chargepoint, Clean Energy Systems, CODA Energy, Consolidated Edison Development, Inc., Cumulus Energy Storage, Customized Energy Solutions, Demand Energy, Duke Energy, Dynapower Company, LLC, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, ELSYS Inc., Energy Storage Systems, Inc., Enersys, EnerVault Corporation, Enphase ENERGY, EV Grid, Flextronics, GE Energy Storage, Green Charge Networks, Greensmith Energy, Gridtential Energy, Inc., Hitachi Chemical Co., Ice Energy, IMERGY Power Systems, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Invenergy LLC, K&L Gates, LG Chem Power, Inc., LightSail Energy, Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Manatt, Phelps & Phillips, LLP, Mitsubishi Corporation (Americas), Mobile Solar, NEC Energy Solutions, Inc., NextEra Energy Resources, NRG Solar LLC, OutBack Power Technologies, Panasonic, Parker Hannifin Corporation, Powertree Services Inc., Primus Power Corporation, Princeton Power Systems, Recurrent Energy, Renewable Energy Systems Americas Inc., Rosendin Electric, S&C Electric Company, Saft America Inc., Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Sony Corporation of America, Sovereign Energy, STEM, SunEdison, SunPower, Toshiba International Corporation, Trimark Associates, Inc., Tri-Technic, Wellhead Electric..

Exporting Storage Devices filed April 1, 2015 (“Joint Motion”) (together, “Utility Motions”) filed in response to Administrative Law Judge’s Bushey’s *Ruling Setting Schedule for Supplement to Utility Cost Certainty Proposal and Comments*, issued by Administrative Law Judge (“ALJ”) Maribeth A. Bushey, on April 16, 2015 (“ALJ’s Ruling”), as supplemented by ALJ Bushey’s email granting request for additional time to file responses issued April 28, 2015.

I. INTRODUCTION

With respect to the Motion, while CESA appreciates the investor owned utilities’ (“IOUs”) effort to put forth a process that is reflective of parties’ needs and ratepayer interests, CESA believes the process could be substantially improved by adopting the alternate framework proposed by the Clean Coalition in their Response filed today. CESA will review the final Clean Coalition proposal and provide additional feedback in reply comments. Foremost, with respect to the Joint Motion, CESA urges the Commission to postpone a decision on amending Rule 21 Screens C and D until such time as a broader set of policy areas are addressed. Generally, CESA does not believe that the multitude of interrelated issues related to energy storage have been sufficiently addressed to act on the proposed revisions for behind-the-meter non-exporting storage devices, and CESA does not agree that sufficient consensus exists regarding whether load from energy storage is legitimately (or even currently) considered as being subject to Rule 21. Without this premise, the reasoning for approving the energy storage screens as a “streamlining” measure is premature. The Commission should therefore issue a ruling establishing a new track in this proceeding addressing a variety of broader energy storage interconnection issues that are clearly within the scope of Rule 21, including but not limited to, those outlined by the IOUs in the Joint Motions. This track should be coordinated by the

Commission's Energy Division and ultimately result in Commission directives for the IOUs to amend their Rule 21 tariffs.

II. CESA SUPPORTS THE CLEAN COALITION PROPOSAL ON COST CERTAINTY.

CESA appreciates the significant thought that went into the IOU proposal on cost certainty discussed in the Motion, but believes it could be substantially enhanced through the adoption of a modified "cost envelope" approach as proposed by the Clean Coalition in their Response filed today. Consistent with CESA's longstanding view that customers should have the option for in-depth studies to occur earlier in the interconnection study process, the Clean Coalition alternate proposal would create this mechanism, forming the basis of the cost envelope. CESA may comment further on the Clean Coalition's proposal as finalized in its Reply Comments, but, at this time, CESA supports its alternate approach and recommends further consideration by the Commission.

III. THE COMMISSION SHOULD DEFER APPROVAL OF THE PROPOSAL TO REVISE TWO SPECIFIC RULE 21 SCREENS AS DESCRIBED IN THE JOINT MOTION.

While CESA appreciates the utilities' focus on reforms to Rule 21, the utility proposal to revise the Rule 21 screens raises two concerns.

First, CESA is concerned that such screens are based on the presumption that Rule 21 is applicable to storage *load*. This presumption is far from settled fact and was repeatedly questioned on working group calls. In fact, this conclusion could imply a radical transformation to interconnections that both substantially increases the complexity and timeline to interconnect load and represents a fundamental shift in cost recovery and interconnection policy for grid-interactive load. While CESA appreciates that IOUs adopted the idea of designating certain

screens “not applicable,” in this case CESA believes it is a mischaracterization to state that the joint utility proposal “streamlines” interconnection for non-exporting storage *load* even though it would, perhaps, streamline interconnection for non-exporting *generation*.

Second, CESA is concerned that the proposed “Note” to be added to Rule 21 Screens C and D cannot be practically implemented by the IOU’s interconnection staff and could cause unnecessary delays in the processing of interconnection applications. In this way, the Motion fails to satisfy a burden of proof that the proposed revisions will produce real improvements in the interconnection process.

The “Note” will require interconnection engineers to verify whether or not “the energy storage device will have controls in place that will prevent it from increasing the Peak Demand on the distribution provider’s system such that the ratings of the transformer, secondary conductor, feeder, or substation transformer are exceeded.”² However, by the IOU’s own statements in the Joint Motion, the definition of those “controls” remains in question. Without an agreed-upon definition, the engineer has no standard by which to verify the compliance of the energy storage device. If each engineer or IOU then implements their own interpretation of these “controls”, further inconsistency is perpetuated, very likely giving rise to considerable disputes.

Further to this point, by the Motion’s statements, the IOUs may not be able to provide peak demand information prior to the submission of an interconnection application. Without such information the applicant cannot design appropriate controls. Operationally, installed systems will, in the near term, have no access to real-time data on when the distribution provider’s peak demand occurs and thus cannot design controls that assure that charging does not occur during that time.

² Joint Motion p. 6

CESA therefore believes that a decision on the revised screens should be deferred and resolved in conjunction with a broader Rule 21 issue list. The direction the Commission takes in the future on other issues will directly impact the need for and applicability of these revised screens. At a minimum, a decision on the Joint IOU proposal to modify screens Rule 21 C and D should be deferred until after the IOU-proposed Commission-sponsored stakeholder workshop to discuss Rule 21-related behind-the-meter non-exporting energy storage issues.

IV. CONSISTENT WITH OTHER GRID-INTERACTIVE LOAD, NON-EXPORTING ENERGY STORAGE SHOULD NOT BE REQUIRED TO APPLY FOR INTERCONNECTION UNDER RULE 21.

CESA fundamentally disagrees with the Joint Motion’s assertion that the load impacts of non-exporting energy storage systems should be subject to and studied under Rule 21, which inherently was designed as a tool to study impacts of – and allocate cost responsibility for upgrades to – generation resources. The cost of upgrades for new load is generally recovered through retail rates, which are designed to pass such costs through to customers.

Furthermore, in terms of utility-side power flows, nothing inherently differentiates a fixed on-site and non-exporting energy storage system from other conventional or grid responsive customer-controlled devices and appliances that do not require interconnection, such as electric vehicles, thermal energy storage, or even elevators or managed air conditioners. If Rule 21 interconnection requirements are imposed on fixed non-exporting batteries but not on other grid responsive resources, the Commission risks institutionalizing a discriminatory process. Such a policy seems unsound and potentially appears arbitrarily applied. Moving towards an “internet of things” with interactive loads – thermal storage, electric vehicles, elevators, and water heaters, for example – utilities and the Commission should envision a world in which all

grid-interactive resources in the “internet of things” are required to go through a Rule 21 interconnection process.

Whereas the IOUs apparently believe that load-related issues of energy storage must be resolved through Rule 21, CESA believes that such matters can be generally resolved instead through Rule 2, rate design, metering, or other tools. Contractual commitments with customers, informed by codes and standards developed to reflect the capabilities of technologies impacting the grid in a plug-and-play manner, can also address the IOUs’ categories of concerns. Under this latter path, CESA recommends that penalties be developed to apply to customers that violate the contractual commitment. If a customer makes a commitment not to export beyond the capabilities of the NEM-eligible renewable generator, for example, no study process should be required. If customers make a commitment to export only up to a certain amount, the study process should be based on such a commitment, with the consequence in either case of significant penalties (up to and including service disconnection) for violation of such commitments.

Developing and implementing a more “plug-and-play” approach to energy storage – particularly non-exporting energy storage – is a general policy goal in other critical proceedings at the Commission, such as the Distribution Resource Planning (R.14-08-013) and Integrated Demand Side Management (R.14-10-003) proceedings. As California moves to a cleaner, more participatory grid, grid resources at the distribution level need to more rapidly, easily, and cost-effectively interconnect. While industry doesn’t necessarily object to the screen modifications relating to the impact of *generation* from storage, imposing new requirements to study (and assign costs for) worst case impacts of both generation and *load* impacts of advanced grid technologies such as energy storage independent of a broader conversation concerning energy

storage interconnection issues would be premature, and likely move in a direction counter to future grid needs.

V. THE COMMISSION SHOULD INITIATE ONE OR MORE NEW TRACKS IN THIS PROCEEDING TO EXPEDITIOUSLY ADDRESS OTHER POTENTIAL IMPROVEMENTS TO RULE 21.

CESA appreciates the IOU recommendation to launch a second phase to recent energy storage-related efforts and generally agrees that the policy topics proposed by the IOUs should be included as an early issue list to be addressed by one or more new tracks. CESA also supports inclusion of the IOUs' proposed topics addressed in "*V. Ongoing Process to Update Rule 21.*"³ Regardless of whether this comes in the form of new tracks in this proceeding or via new working groups, CESA strongly believes this process is best led by Energy Division staff rather than the IOUs. CESA appreciates the willingness by the IOUs to allow stakeholder concerns to be voiced about the Rule 21 process, but that process ultimately resulted in overly narrow proposals for change from the IOUs that are on the fringe of what interconnection customers see as their top concerns. CESA's view is that discussions on most core issues have been unnecessarily deferred, and CESA believes that allowing a neutral third party such as the Commission's Energy Division to provide more directional leadership would remove potential conflicts of interest inherent in an IOU-led process, resulting in a better outcome for all stakeholders.

As mentioned above, issues could be addressed through one track or broken into multiple tracks; perhaps one dealing with storage-related issues specifically, and another one dealing with broader Rule 21 policy issues. CESA supports including the IOU issue list as topics to be

³ Joint Motion p. 10

addressed in the new storage track. CESA also believes two non-exporting storage-related issues are ripe for resolution:

- i. STEM's proposal presented in the December 2014 workshop for a more straightforward notification – rather than the current “review and approve” – process with 5-day cycle time for non-exporting resources.
- ii. SolarCity's proposal to more clearly define what constitutes a non-export situation. Enforcement should be through a standard commercial agreement policed by metering schemes.⁴

In addition, CESA believes the following broader Rule 21 issues warrant expeditious resolution and so encourages their inclusion in the above track on in a separate track addressed as part of Rule 21:

- **Rule 21 Business Practice Manuals.** The Commission should direct utilities to develop Rule 21 Business Practice Manuals (“BPMs”) to provide additional details on protocol and on the implementation of tariff language. The California Independent System Operator's (“CAISO's”) GIDAP BPM, for example, provides substantial additional clarity that parties can reference to ensure clear and concise guidance on how tariff rules will be implemented.
- **Upgrade Minimization Option.** Consistent with the policies in development in R.14-10-003, this proceeding should create a new interconnection option for interconnection customers to request that an interconnection be studied for optimal configuration and/or for operational restrictions that minimize

⁴ These may have been covered by the IOUs in its references to a more clear definition of what constitutes “non-export” in “V. ONGOING PROCESS TO UPDATE RULE 21.” However, CESA believes this to be important enough to call out as an issue that specifically should be addressed.

interconnection costs, rather than an assumed “worst case” unconstrained scenario. Energy storage, in particular, is a resource class that seeks to solve, rather than create, grid issues. The traditional study model may therefore be overly conservative for studying energy storage interconnections. This optimal configuration methodology should also apply to all relevant distributed energy resources (“DERs”) (or even a bundle of to-be-determined DERs at any given point of interconnection). Such an option would enable customers to receive sufficient interconnection information to design a DER system that operates within localized system constraints and therefore is “plug-and-play” with minimal upgrades.

- **Deferred Maintenance.** Interconnection customers should not be required to pay for IOU’s deferred maintenance (for example, replacing equipment that is old or overloaded). IOUs should allocate funds from their existing budgets to complete deferred maintenance in a manner that allows interconnection to be achieved in a reasonable timeframe.
- **Upgrades Unnecessary for the Safe Operation of the Grid.** Interconnection customers should not be required to pay for equipment that is not required to safely interconnect a project to the grid based on NERC planning standards, even if such an upgrade might enhance grid operations.
- **Design Review Fees.** Utilities should charge considerably less for simple design review requests, and have such costs capped.
- **Metering Placement.** The electrical location of where wholesale and retail meters are placed in an interconnection customer’s one-line diagram impacts how

each meter records load and generation. The Commission's Energy Division should be directed to immediately consider and develop revisions to Rule 21 so that retail metering placements adjacent to CAISO wholesale metering doesn't result in "double counting" of energy as both wholesale and retail.

- **Mobile Inverters.** A new section should be added to Section H.3 addressing acceptable EVSE mobile inverter technology. For example, when the standard is finalized, SAE Standard J 3072 certified mobile equipment should be deemed acceptable for interconnection under Rule 21.

VI. IF THE COMMISSION APPROVES THE JOINT IOU PROPOSAL TO MODIFY SCREENS C AND D, CESA SUPPORTS MOST MODIFICATIONS PROPOSED BY IREC.

While CESA does not support moving ahead at this time, if the Commission chooses to move forward at this time, CESA believes that the majority of IREC's recommendations are sensible and should be adopted. Specifically:

1. The definition of adequate "controls to ensure customer will not charge the energy storage device during distribution provider system peak" needs to be specified in order for the screen to function properly and to enable adequate transparency for an efficient process.
2. The means to provide customer's and distribution provider's peak load information as part of the Rule 21 pre-application report should be established prior to implementing the screens.
3. Controls should not be required if an energy storage system can charge from the grid without overloading the transformer, secondary conductor, feeder or substation transformer.

4. The requirements in Screens C and D should be consistent with either IEEE C57, which allows transformer overloading up to 120% of nameplate rating, or the IOU's internal transformer overload guidelines

VII. CONCLUSION.

CESA appreciates the opportunity to submit this response to the Utility Motions, and looks forward to working with the Commission and stakeholders as this proceeding progresses.

Respectfully submitted,



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