

**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

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE  
ON REVISIONS TO INCORPORATE SMART INVERTER WORKING GROUP  
PHASE I RECOMMENDATIONS INTO RULE 21 IN COMPLIANCE WITH  
ASSIGNED COMMISSIONER'S SCOPING MEMO AND RULING**

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August 18, 2014

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Pursuant the California Public Utilities Commission (“Commission”) Rules of Practice and Procedure, the California Energy Storage Alliance (“CESA”)<sup>1</sup> provides these comments on the *Revisions To Incorporate Smart Inverter Working Group Phase I Recommendations Into Rule 21 In Compliance With Assigned Commissioner’s Scoping Memo And Ruling in the form of draft Advice Letters attached to a Joint Motion Of Pacific Gas And Electric Company, Southern*

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<sup>1</sup> 1 Energy Systems Inc. | A123 Energy Systems | AES Energy Storage | Alton Energy | American Vanadium | Aquion Energy | ARES North America | Beacon Power, LLC | Bosch Energy Storage Solutions Company LLC | Bright Energy Storage Technologies | Brookfield | CALMAC | Chargepoint | Clean Energy Systems | Coda Energy | Consolidated Edison Development, Inc. | Customized Energy Solutions | Demand Energy | DN Tanks | Duke Energy | Eagle Crest Energy Company | EaglePicher Technologies, LLC | East Penn Manufacturing Company | Ecoult | EDF Renewable Energy | Enersys | EnerVault Corporation | EV Grid | FAFCO Thermal Storage Systems | FIAMM Energy Storage Solutions | Flextronics | Foresight Renewable Solutions | GE Energy Storage | Green Charge Networks | Greensmith Energy | Gridscape Solutions | Gridtential Energy, Inc. | Halotechnics | Hitachi Chemical Co. | Hydrogenics | Ice Energy | Imergy Power Systems | ImMODO Energy Services Corporation | Sumitomo Electric Group | Invenergy LLC | K&L Gates | KYOCERA Solar, Inc. | LG Chem | LightSail Energy | LS Power Development, LLC | Mitsubishi International Corporation | NextEra Energy Resources | NRG Solar LLC | OCI Company | OutBack Power Technologies | Panasonic | Parker Hannifin Corporation | PDE Total Energy Solutions | Powertree Services Inc. | Primus Power Corporation | Recurrent Energy | Renewable Energy Systems Americas Inc. | Rosendin Electric | S&C Electric Company | Saft America Inc. | SEEO | Sharp Electronics Corporation | SolarCity | Sovereign Energy Storage LLC | STEM | Stoel Rives | SunPower | TAS Energy | Tri-Technic | UniEnergy Technologies, LLC | 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>

*California Edison Company And San Diego Gas & Electric Company Regarding Implementation Of Smart Inverter Functionalities* (“Joint Motion”).

**I. INTRODUCTION.**

CESA generally agrees with intent and purpose of the Joint Motion. CESA is supportive of the changes to Rule 21 proposed in the *Recommendations for Updating the Technical Requirements for Inverters in Distributed Energy Resources* produced by the Smart Inverter Working Group (“SIWG Recommendations”). CESA believes smart inverters hold great promise to enhance to grid and customer benefits for a variety of distributed resources including energy storage. CESA has the following recommendations to enhance the proposed Rule 21 language in the Draft Advice Letters intended to implement the Recommendations.

**II. THE COMMISSION SHOULD REQUIRE MODEST REVISIONS TO THE DRAFT ADVICE LETTERS REGARDING TIMING OF IMPLEMENTATION.**

CESA recognizes the desire for new inverter technology to be implemented quickly by producers, product design and certifications done per the new UL1741 procedures will take time. An eighteen-month timeline would give industry the necessary time to do appropriate R&D and UL certification. As such, CESA proposes the following changes to Section H (p. 100-101 of 142):

**H. GENERATING FACILITY DESIGN AND OPERATING REQUIREMENTS**

Section H shall be used for interconnection of non-inverter based technologies.

Section H shall also continue to be used for interconnection of inverter based technologies until the later of two dates: either (1) ~~December 31, 2015~~ ***Eighteen months after publication of Rule 21 Smart Inverter functions*** or (2) the date ***12 months after release of*** the Supplement SA of UL1741, (with CA requirements) is approved by the full UL-1741 Standards Technical Panel (STP). Following such date, Section Hh Shall

apply for interconnection of inverter-based technologies. Until such date, Section Hh, may be used in all or in part, for inverter-based technologies by mutual agreement of the Distribution Provider and the Applicant.

**3. d. i.** Inverter based systems may continue to be installed per Section H until the later of either (1) ~~December 31, 2015~~ **Eighteen months after publication of Rule 21 Smart Inverter functions** or (2) the date **12 months after release of** the Supplement SA of UL-1741 (with California requirements) is approved. Section Hh, may be used in all or in part, for inverter based technologies by mutual agreement of the Distribution Provider and the Applicant.

**3. d. ii.** The replacement of an existing inverter to an inverter that is not classified as a Smart Inverter is allowed per Section H ~~until the later of either (1) December 31, 2015 or (2) the date the Supplement SA of UL-1741 (with California requirements) is approved.~~ Section Hh, may be used in all or in part, for inverter based technologies by mutual agreement of the Distribution Provider and the Applicant.

CESA also recommends that the following language should be added to Sections Hh and

I

(p. 105 of 142):

*Hh 1. f. Analysis Required.*

*The smart inverter will be performed as expected in terms of control, however, the control algorithm of an inverter is very prone to output impedance between inverter output and utility. A stability analysis of the controller for the inverter would be useful that could ranges from a  $Impedance_{min}$  to  $Impedance_{max}$  when a manufacturer supplies the smart inverter.*

(p. 116 of 142)

#### I 1. Interconnection Facilities and Distribution Upgrades

Except as provided for in the Generator Interconnection Agreement of this Rule, Interconnection Facilities connected to Distribution Provider's side of the PCC and Distribution Upgrades shall be provided, installed, owned, and maintained by Distribution Provider at Producer's expense. *Producer may elect to install a delta/gye configuration MV transformer to maximize current balance.*

**III. CONCLUSION.**

CESA appreciates the opportunity to submit these comments on the Joint Motion, and looks forward to actively working with the Commission and stakeholders in this proceeding.

Respectfully submitted,



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