

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

Order Instituting Rulemaking to Develop an
Electricity Integrated Resource Planning
Framework and to Coordinate and Refine
Long-Term Procurement Planning
Requirements.

Rulemaking 16-02-007
(Filed February 11, 2016)

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE
TO THE ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON
GREENHOUSE GAS EMISSIONS ACCOUNTING METHODS AND ADDRESSING
UPDATED GREENHOUSE GAS BENCHMARKS**

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In accordance with Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the California Energy Storage Alliance (“CESA”)¹ hereby submits these comments to the *Administrative Law Judge’s Ruling Seeking Comment on Greenhouse Gas Emissions Accounting Methods and Addressing Updated Greenhouse Gas Benchmarks* (“Ruling”), filed by Administrative Law Judge Julie A. Fitch on April 3, 2018.

¹ 8minutenergy Renewables, Able Grid Energy Solutions, Advanced Microgrid Solutions, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Axiom Exergy, Brenmiller Energy, Bright Energy Storage Technologies, BrightSource Energy, Brookfield Renewables, Centrica Business Solutions, Consolidated Edison Development, Inc., Customized Energy Solutions, Demand Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, ElectrIQ Power, eMotorWerks, Inc., Energport, Energy Storage Systems Inc., EnerNOC, ENGIE Energy Storage, E.ON Climate & Renewables North America, Fluence Energy, GAF, Geli, Greensmith Energy, Gridscape Solutions, IE Softworks, Ingersoll Rand, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Iteros, 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, National Grid, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Ltd., NRG Energy, Inc., Ormat Technologies, Parker Hannifin Corporation, Pintail Power, Qnovo, Range Energy Storage Systems, Recurrent Energy, Renewable Energy Systems (RES), Sempra Renewables, Sharp Electronics Corporation, SNC Lavalin, Southwest Generation, Sovereign Energy, Stem, STOREME, Inc., Sunrun, Swell Energy, True North Venture Partners, Viridity Energy, 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 Commission’s goal to develop a common methodology and set of assumptions for load-serving entities (“LSEs”) to use in accounting for the greenhouse gas (“GHG”) emissions in their proposed Integrated Resource Plan (“IRP”) portfolios² because we believe it is important to ensure that the Commission can reasonably and accurately account for the GHG emissions profile of each LSE’s proposed IRP portfolio. CESA therefore supports the Clean Net Short (“CNS”) proposal included in the Ruling as more reasonably ensuring GHG reduction credits are given to clean generation that serves its demand.

By contrast, as highlighted in the CNS proposal in the Ruling, net *annual* approaches may inaccurately credit GHG emission reductions for electricity generated that is not used to serve an LSE’s load (*e.g.*, renewable overgeneration) and may not accurately account for the GHG emissions attributed to generation used to serve an LSE’s load during the evening peak. CESA agrees with the Ruling that a more granular ‘net short’ assessment may align procurement with actual grid conditions in helpful ways, emphasizing the roles that ramping and integration resources play in routine grid operations. With recognition of these real-world conditions, procurements can be steered towards meeting an LSEs or other goals and needs – *e.g.*, to pursue greater GHG emission reductions versus a comparative fleet.

In these comments, CESA also highlights areas for further discussion and/or improvement to the CNS proposal in our responses to the Ruling’s questions, albeit while generally supporting the proposed CNS methodology as a smart initial approach to be adopted in this proceeding.

II. RESPONSE TO QUESTIONS.

Below, CESA provides our responses to the questions posed in the Ruling.

² Ruling, p. 2.

Question 1: Are the basic steps of the accounting methodology described in Attachment A and the associated GHG calculator tool internally consistent and technically sound? Why or why not? Identify any flaws in the method that are likely to have a material impact on long-term planning and explain how these deficiencies should be addressed.

Yes, CESA believes the basic steps of the accounting methodology are consistent and technically sound. While the CNS proposal is a good initial methodology, CESA highlights a few areas for potential refinement and further discussion.

First, CESA observes that the CNS proposal and the associated GHG calculator tool is geared toward matching GHG tracking and accounting for IRP purposes with actual grid operations. With a focus only on *energy* within an hour block, the proposed methodology may overlook the GHG emissions of resources providing *ancillary services* and *ramping* – realities of grid operations that should be factored in as the state moves toward a high renewables future. Some solution is needed to address the charge and discharge of energy storage systems within the hour, but CESA understands that it would be difficult to forecast all sub-hourly dispatch across all hours through 2030. This issue therefore requires further discussion. Energy storage, for example, is a type of resource that can be used to provide frequency regulation that may substitute for or limit the operations of more GHG-intensive resources, or that may charge and discharge rapidly in an hour. As another example, it is unclear how the proposed CNS proposal would treat energy storage that is used to enhance gas-fired generation to provide short-term, sub-hourly charge and discharge to reduce some of the GHG emissions from the gas-fired generation asset. Such resources that operate within the hour can have significant GHG emissions reduction impacts, but these are not factored into the CNS methodology, causing the GHG emissions benefit to potentially be understated for energy storage resources.

Second, it is unclear under the current CNS proposal regarding how GHG emissions from resources procured under a shared cost recovery mechanism are attributed fairly and

proportionately to LSEs of all benefiting customers. CESA raises this point because we have seen energy storage procurement done through the Cost Allocation Mechanism (“CAM”), in which case it is unclear how the GHG emissions impact attributed to the charge and discharge of the resource is allocated across all relevant LSEs. CESA has no specific view on this matter but raises it for Commission and stakeholder consideration.

Third, CESA is unclear on how the proposed CNS methodology would account for behind-the-meter (“BTM”) energy storage resources and distributed energy resources (“DERs”) that operate as supply-side resources. We recognize that the 2017-2018 IRP cycle did not incorporate BTM energy storage resources and DERs as supply-side resources in optimal resource selection in RESOLVE, and it thus may not be an immediate priority to address for the adoption of the current CNS methodology, but CESA raises this point because BTM energy storage resources and DERs need to be included in the CNS methodology in the future. It may be possible to incorporate GHG effects of BTM resources acting as supply-side resources by representing them as load reductions across applicable hours in the CNS methodology, in turn reducing the need for certain GHG-emitting generation during those hours.

Fourth and finally, CESA seeks to understand whether the CAISO system average emissions rate is the appropriate emissions factor to use for the LSE’s load met by non-LSE-contracted generation for *all* cases. In *some* cases, it may be more appropriate to consider localized or regionalized GHG emissions factors, as the system average emissions rate might not accurately represent emissions rate of generation in local capacity areas where locally-sited resources are required to serve local load due to transmission constraints. Ultimately, such an approach may not be appropriate or necessary, but CESA just seeks clarity on the CNS methodology in this regard.

Question 2: What impacts might using the method described in Attachment A and the associated calculator tool have on an individual LSE’s long-term

resource investment decisions? Provide any suggestions for how the method could be modified to reduce or eliminate any negative impacts identified.

With more accurate GHG accounting through the CNS proposal, CESA believes that LSEs will be encouraged to procure a portfolio that will more closely attribute GHG emissions to the specific LSE. For example, rather than over-procuring utility-scale solar to create mid-day overgeneration beyond the LSE's load, an LSE may be incentivized to diversify its renewable resource procurement (*e.g.*, utility-scale wind) and/or pair solar assets with energy storage to shift GHG-free generation to serve its evening peak demand. This is a positive impact of the proposed CNS methodology and more accurately accounts for GHG emissions by LSE.

Question 3: Does the method in Attachment A hinder or improve the state's ability to achieve its long-term GHG emissions reduction goals? Explain your answer.

CESA believes that this is an important matter and that it is likely reasonable for LSEs to dedicate resources towards GHG tracking of this nature.

Question 4: Do you agree or disagree with the characterization of renewable energy credits related to compliance with the renewables portfolio standard program and their relationship to IRP's GHG emissions goals in the proposed methodology in Attachment A? Explain why or why not.

Yes, CESA agrees with the characterization in the Ruling, as the proposed CNS methodology could create a mismatch between the Renewable Portfolio Standard ("RPS") Program's Portfolio Content Category ("PCC") rules that focuses on compliance based on where and how energy was generated and the IRP GHG accounting methodology herein that focuses on evaluation and approval based on how generation meets load. While the RPS Program goals are important, CESA believes the IRP modeling and planning is clearly focused on GHG emissions targets, as optimized in RESOLVE, and that the Commission has the authority to ensure that LSEs demonstrate compliance with the IRP objectives. So, though the goals are different, CESA

believes that this proceeding should focus on the IRP objectives, which ultimately lead to LSEs being able to meet their RPS goals and rules as a byproduct of the IRP efforts.

Question 5: Provide any suggestions for improving the GHG calculator tool.

CESA has no major suggestions at this time but recommends that the Commission consider how the GHG calculator tool can incorporate the recommended refinements to the proposed CNS methodology, as discussed in our response to Question 1.

Question 6: Comment on any specific aspects of the methodology in Attachment A with which you disagree and explain your proposed alternative approach.

CESA has no proposed alternative approach, but as noted above, we believe the CNS methodology will require improvements and modifications to account for hybrid energy storage systems, supply-side BTM energy storage and DERs, and energy storage systems being dispatched within the hour – *e.g.*, by providing ancillary services.

Question 7: Describe any alternative GHG accounting methodology that the Commission should consider adopting for IRP purposes and explain why the alternative is preferable to the method described in Attachment A.

CESA has no alternative GHG accounting methodology at this time. Instead, CESA is focusing on how the current proposed CNS methodology can be refined to reflect open issues as highlighted in our response to Question 1.

Question 8: Comment on any other aspect of the methodology in Attachment A that was not already covered in the previous questions, explaining your rationale and suggested modifications.

CESA has no comment at this time.

III. CONCLUSION.

CESA appreciates the opportunity to submit these comments to the Ruling and looks forward to working with the Commission going forward in this proceeding.

Respectfully submitted,



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