

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

Order Instituting Rulemaking Regarding Policies,
Procedures and Rules for the California Solar
Initiative, the Self-Generation Incentive Program
and Other Distributed Generation Issues.

Rulemaking 12-11-005
(Filed November 8, 2012)

**REPLY COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE
AND THE NATURAL RESOURCES DEFENSE COUNCIL IN RESPONSE
TO THE ASSIGNED COMMISSIONER'S PROPOSED DECISION REVISING
THE GREENHOUSE GAS EMISSION FACTOR TO DETERMINE ELIGIBILITY
TO PARTICIPATE IN THE SELF-GENERATION INCENTIVE PROGRAM
PURSUANT TO PUBLIC UTILITIES CODE SECTION 379.6(b)(2)
AS AMENDED BY SENATE BILL 861**

Sierra Martinez
Legal Director
California Energy Project, Energy
& Transportation Program
NATURAL RESOURCES DEFENSE COUNCIL
111 Sutter Street, Floor 20
San Francisco, California 94104
Telephone: (415) 875-6108
Email: Smartinez@nrdc.org

Donald C. Liddell
DOUGLASS & LIDDELL
2928 2nd Avenue
San Diego, California 92103
Telephone: (619) 993-9096
Facsimile: (619) 296-4662
Email: liddell@energyattorney.com

Counsel for the
CALIFORNIA ENERGY STORAGE ALLIANCE

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The California Energy Storage Alliance (“CESA”)¹ and the Natural Resources Defense Council (“NRDC”) hereby submit these reply comments pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), and the *Proposed Decision Revising the Greenhouse Gas Emission Factor to Determine Eligibility to Participate in the Self-Generation Incentive Program Pursuant to Public Utilities Code Section 379.6(b)(2) as Amended by Senate Bill 861*, issued by Assigned Commissioner, President Michael Picker on July 10, 2015 (“PD”).

I. INTRODUCTION.

The overarching intent of SB 861 was to use the ratepayer-funded Self-Generation Incentive Program (“SGIP”) to curb greenhouse gas (“GHG”) emissions and other air pollutants and support energy technologies that increase the efficiency, reliability, and utilization of California’s existing electricity grid assets. CESA and NRDC provide these reply comments in response to opening comments filed by other parties regarding the proposed GHG emission threshold formula, use of degradation factors, and appropriateness of the formula set forth in the PD as it relates to the goals of SB 861.

¹ 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>).

II. THE PROPOSED DECISION DOES NOT PROVIDE A FORMULA THAT ADEQUATELY ADDRESSES THE REQUIREMENTS OF SB 861.

CESA and NRDC agree with the Sierra Club's Opening Comments that the Operating Margin² used in the proposed formula should reflect Renewables Portfolio Standard ("RPS") effects, consistent with SB 861. As proposed, the current formulation of the Operating Margin does not adequately take into account RPS effects. By considering only which grid generation resource is immediately "turned down" to balance a new SGIP-eligible generation resource, the Operating Margin implies that an SGIP-eligible resource can only offset marginal grid resources, and further implies that marginal resources can only be those fueled by natural gas.

To illustrate the inherent flaw in the Operating Margin formula in the PD, one need only observe how the formula would work in the extreme case of a 99% must-take RPS resources. The formula dictates that, even under a 99% RPS, an SGIP-eligible resource "turning on" can only offset natural gas-fired generation. In reality, however, an SGIP-eligible resource operating to serve load under these conditions would eliminate that load's usage of a 99% clean grid. This logical extreme shows that it is unreasonable to claim that the SGIP-eligible resource is solely responsible for offsetting the marginal resource. In fact, all resources play a causal role in which resource, at any time, is marginal. In the case of a 99% RPS grid, load would certainly not have been *only* served by the natural gas-fired generator; rather it would have been *mostly* served by renewable generation.

Further, marginal generation resources will not always be fueled by natural gas. Renewable resources have been shown to respond economically and can be marginal, especially in periods of overgeneration where the "p-min burden" of natural gas-fired generation can preclude their operation at the margin. In these cases, natural gas-fired generation becomes "must-take." However, energy storage resources can also be marginal. For instance, pumped hydro resources currently in operation can participate economically in the market and do not operate under must-take conditions. For these reasons, assuming that natural gas-fired generation is *always* on the margin is a counterintuitive assumption to apply to a forward-looking SGIP GHG Emission Factor formula. CESA's and NRDC's Opening Comments referenced

² Capitalized terms used in these reply comments, and not otherwise defined, have the meanings ascribed to them in the PD.

work by the California Independent System Operator (“CAISO”) that should inform the Commission on how to modify its marginal resource assumptions.³

Finally, CESA and NRDC agree with the Center for Sustainable Energy’s (“CSE’s”) view in its Opening Comments that the Build Factor emissions rates identified in the PD are outdated, and that more current assumptions should be used.⁴ To do otherwise would be in direct conflict with the intent of SB 861, which required “updates to the greenhouse gas emission factor based on the most recent data available to the California Air Resources Board for GHG emissions from electricity sales.” CSE specifically identifies Build Margin changes for natural gas-fired simple cycle combustion turbine (“CT”) and combined cycle gas turbine (“CCGT”) GHG emission rates to 462 and 342 kgCO₂/MWh respectively, compared to the current 524 and 368 kgCO₂/MWh used in the PD.⁵ These emissions rates appear reasonable to CESA and NRDC based on publically available data on modern CT and CCGT generator performance.⁶

III. THE EMISSIONS FACTOR FORMULA SHOULD ENSURE THAT SGIP-ELIGIBLE GENERATION TECHNOLOGIES ARE AT LEAST AS CLEAN, IF NOT CLEANER, THAN THE ELECTRICITY THEY DISPLACE IN EACH YEAR.

In its Opening Comments, Bloom Energy advocates for changes to the formula and its inputs, the cumulative effect of which would yield an Emissions Factor of 452 kgCO₂/MWh,⁷ nearly equivalent to the GHG Emissions Rate of a modern simple cycle natural gas-fired

³ *Opening Comments of CESA and NRDC*, p. 9.

⁴ *Opening Comments of the Center for Sustainable Energy*, p. 3.

⁵ *Opening Comments of the Center for Sustainable Energy*, p. 3.

⁶ Publicly available performance specifications of modern plants, such as for the GE LMS100, the CT technology to be used in a recently approved Carlsbad facility, indicate a CT GHG Emissions Rate of 413kgCO₂/kWh, based on the Heat Rate of 7776 BTU/kW-hr. For CCGT rates, the specifications of the GE H-class Combined Cycle (7HA.01 1x1 combined cycle configuration) shows an emissions rate of 296kgCO₂/kWh based on a Heat Rate of 5570 BTU/kW-hr. To convert Heat Rate to kgCO₂, CESA and NRDC multiplied Heat Rates by a conversion factor from the Energy Information Administration (53.06kgCO₂/mmbtu from <http://www.eia.gov/oiaf/1605/coefficients.html>) and divide by 1000. CCGT specifications: https://powergen.gepower.com/plan-build/products/gas-turbines/7ha-gas-turbine/product-spec.html?cycletype=Combined_Cycle_1x1. CT specifications: <https://www.ge-distributedpower.com/products/power-generation/65-120mw/lms100-pb>.

⁷ *Opening Comments of Bloom Energy*, p. 14

“Peaker” power plant operating today, with an Emissions Rate of 462 kgCO₂/MWh.⁸ Even allowing for the possibility of the formula to yield this outcome – in which technologies with emission levels on par with the level of GHG emissions of Peakers could qualify – exposes a fundamental problem with the formula proposed by Bloom Energy. CESA and NRDC do not believe that Bloom Energy’s recommendations for an Emissions Factor above the proposed 360 kgCO₂/MWh would, or could, ever comply with the intent of SB 861.

IV. THE CENTER FOR SUSTAINABLE ENERGY’S PROPOSALS FOR MORE UPDATED INPUTS AND FOR MORE WEIGHTING ON THE BUILD MARGIN ARE CONSISTENT WITH THE INTENT OF SB 861.

Consistent with CESA’s and NRDC’s views that the operating margin should logically include an RPS adjustment, CESA and NRDC also agree with CSE that more weighting on the Build Margin factor is appropriate. CSE states in its Opening Comments that many SGIP-eligible resources have useful lives of 10-20 years and serve as *de facto* new capacity added to the State’s mix of generating resources.⁹ CSE’s approach is reasonable because it involves realistic and prudent consideration of future grid conditions, and recognizes that the PD’s ten-year look-ahead very likely understates the useful life of SGIP-eligible resource operations. If these resources are put into operation in the 2016-2017 timeframe, and actually offset capacity builds for more than 10 years, the Emissions Factor could reflect future grid conditions over the same time period.

V. THE EMISSIONS FACTOR SHOULD INCLUDE THE EFFECTS OF THE ASSUMED ONE PERCENT DEGRADATION FACTOR OVER THE ENTIRE LIFE OF SGIP-ELIGIBLE RESOURCES.

Bloom Energy’s Opening Comments assert that degradation factors make sense, but that assumed degradation factors should not be used to lower the Emission Factor threshold.¹⁰ CESA and NRDC disagree with this approach entirely. If accepted, this approach could allow resources to initially “beat” the Emission Factor and qualify for SGIP incentives, only to later fail to meet the intent of SB 861 by allowing higher GHG emissions over the remaining life of the SGIP-

⁸ *Opening Comments of the Center for Sustainable Energy*, p. 3. See also Footnote 7 which provides publicly available data showing modern Combustion Turbines can provide emissions rates as low as 413 kgCO₂/MWh.

⁹ *Opening Comments of the Center for Sustainable Energy*, p. 2.

¹⁰ *Opening Comments of Bloom Energy*, p. 4.

eligible resource. This approach is both illogical and demonstrably contrary to the intent of SB 861. Therefore, CESA and NRDC recommend that the calculated Emissions Factor for generation technology eligibility in the SGIP be additionally adjusted to reflect 1% per year performance degradation over the entire life of the SGIP-eligible resource.

VI. CONCLUSION.

CESA and NRDC thank the Commission for the opportunity to submit these reply comments on the PD.

Respectfully submitted,



Sierra Martinez
Legal Director
California Energy Project, Energy
& Transportation Program
NATURAL RESOURCES DEFENSE COUNCIL
111 Sutter Street, Floor 20
San Francisco, California 94104
Telephone: (415) 875-6108
Email: Smartinez@nrdc.org

Donald C. Liddell
DOUGLASS & LIDDELL
2928 2nd Avenue
San Diego, California 92103
Telephone: (619) 993-9096
Facsimile: (619) 296-4662
Email: liddell@energyattorney.com

Counsel for the
CALIFORNIA ENERGY STORAGE ALLIANCE

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