

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

2928 2ND AVENUE

SAN DIEGO, CALIFORNIA 92103

telephone 619.993.9096

facsimile 619.296.4662

Email liddell@energyattorney.com

Daniel W. Douglass, A.P.C.
21700 Oxnard Street, Suite 1030
Woodland Hills, California 91367
Telephone 818.961.3001
Facsimile 818.961.3004

Gregory S.G. Klatt – Of Counsel
411 E. Huntington Drive, Suite 107-356
Arcadia, California 91007
Telephone 818.961.3002
Facsimile 818.961.3004

April 2, 2012

Edward Randolph, Director
Energy Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102

Re: California Energy Storage Alliance’s Appeal of Energy Division Staff’s Disposition of Advice Letters re Proposed Revisions to the Self Generation Incentive Program Handbook to Implement Decision D.11-09-015: Implementation of the Hybrid-Performance-Based Incentive Payment Structure; Metering and Monitoring Protocols; Other Amendments.

Dear Mr. Randolph:

Pursuant to Section 7.7.1 of the Commission’s General Order (G.O.) 96-B, the California Energy Storage Alliance (“CESA”)¹ hereby appeals the Energy Division Staff’s Disposition of the above-referenced Advice Letters (“Disposition”) and requests Commission review of the Disposition. CESA hereby requests that the Energy Division promptly prepare and place on the Commission’s meeting agenda a proposed resolution recommending a disposition of the Advice Letters by the Commission, in place of the Disposition issued by Energy Division Staff on March 22, 2012, that is consistent with the public policy justification and analysis set forth in this appeal.

CESA maintains first, that a Commission-approved resolution is the most appropriate process for an issue of this substantive importance and profile. Second, the substantive issues raised by the SGIP Program Administrators (“PAs”) and CESA (particularly the appropriate means to assess greenhouse gas (“GHG”) emissions reduction and the role over time of advanced

¹ The California Energy Storage Alliance consists of 4R Energy, A123 Systems, Bright Energy Storage Technologies, CALMAC, Chevron Energy Solutions, Debenham Energy, Deeya Energy, East Penn Manufacturing Co., Inc., EnerVault, Fluidic Energy, GE Transportation, Greensmith Energy Management Systems, HDR Engineering, Inc., Ice Energy, LG Chem, LightSail Energy, Inc., Powergetics, Primus Power, Prudent Energy, RedFlow Technologies Ltd., RES Americas, Saft America, Inc., Samsung SDI, SANYO Energy Corporation, Seeo, Sharp Labs of America, Silent Power, Sumitomo Electric, SunEdison, SunVerge, TAS Energy, and Xtreme Power. 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://www.storagealliance.org>.

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

Edward Randolph, Director
Energy Division
California Public Utilities Commission
April 2, 2012
Page 2

energy storage (“AES”) in meeting California’s GHG goals) warrant Commission consideration. Third, the specific SGIP issues that are still under discussion have important implications for other Commission and Legislative priorities, including renewable energy integration, peak-management goals, resource acquisition, mid-long term market transformation, and, perhaps most importantly, the comprehensive AB 2514-authorized energy storage rulemaking (R.10-12-007).

Specifically, CESA requests in this appeal that the Commission approve a Resolution that directs the Energy Division to work with the PAs to produce a new supplemental advice letter that amends the proposed SGIP Handbook that was submitted on February 17, 2012 as follows:

- Analyzes the likely GHG emissions impact of adding distributed AES to the power system more robustly than only assuming that distributed AES (while charging at night) would increase the use of a proxy combined cycle gas turbine (“CCGT”) and (while discharging during daytime peak hour) decrease the use of a proxy combustion turbine (“CT”);
- Factors into the GHG calculation the decrease in transmission and distribution line losses that is a universally accepted result from distributed AES-provided peak-shifting;
- Allows for AES that is predominately coupled with GHG-free renewable resources to be recognized *ex ante* as meeting the GHG-reduction requirements; and
- Recognizes the market-transforming goals of the SGIP program in advancing emerging technologies that are expected to improve over time.

I. Background.

Pacific Gas and Electric Company (“PG&E”), for itself and on behalf of the Self Generation Incentive Program (“SGIP”) PAs,² submitted the Advice Letters for approval by the Commission.³ The Advice Letters were submitted on February 17, 2012, to comply with the

² The PAs are Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, and the California Center for Sustainable Energy in the service territory of San Diego Gas & Electric Company.

³ The term “Advice Letters” is used in this appeal as a short hand term of reference for the convenience of the Commission. Actually, PG&E submitted a Joint Advice Letter on November 7, 2011, and a Supplemental Advice Letter on February 27, 2012 for itself and on behalf of the other PAs. In parallel with each filing, each of the PAs also submitted separate companion advice letters and supplemental advice letters in their own names that were identical in substance, referred to respectively as (PG&E AL 3250-G/3940-E, CCSE Advice Letter 24, SCE Advice Letter 2651-E, and SoCalGas Advice Letter 429) and (PG&E AL 3253-G/3940-E, CCSE Advice Letter 24-A, SCE Advice Letter 2651-E-A, and SoCalGas Advice Letter 4292-A).

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

Edward Randolph, Director
Energy Division
California Public Utilities Commission
April 2, 2012
Page 3

Commission's direction in D.11-09-015⁴ (Ordering Paragraph Numbers 2 and 3, at pp. 70 and 71) requiring the Energy Division and the PA's to file Tier 2 advice letters⁵ proposing revisions to the SGIP Handbook necessary to implement the decision modifying the SGIP and implementing Senate Bill 412.

The reason that the issues related to greenhouse gas emission ("GHG") requirements for advanced energy storage ("AES") technology that are the primary subject matter of the Protests were filed a full five months after the decision was issued by the Commission in September 2011, is that they were only fully presented for comment in proposed revisions to the SGIP Handbook in February 2012 for the first time.⁶ Although the subject of a "greenhouse gas emission rate testing protocol for electric-only technologies that consume fossil fuels" was addressed in October 2011, the specific GHG testing protocol for distributed AES was first addressed under the catch-all category of "revisions necessary to implement this decision and as summarized in Attachment A", captured (presumably) in the Advice Letters as "Other Amendments". The GHG testing protocol for AES that is the subject of the Protest does not appear anywhere in Attachment A.

On February 27, 2012, CESA submitted a Protest and Response to the Advice Letters⁷. In its Protest and Response, CESA requested an extension to the shortened deadline to protest or respond in order to submit additional information and analysis, which was granted by the Energy Division. On March 12, 2012, CESA filed a Supplemental Protest, which is referred to together with the Protest and Response in this appeal as the "Protest." On March 19, 2012, the PAs submitted a Reply to the Protest requesting that the Energy Division reject the Protest.

⁴ *Decision Modifying the Self-Generation Incentive Program and Implementing Senate Bill 412*, issued September 8, 2011.

⁵ *Industry Rule 5. Tier Classifications for Advice Letters* A Utility submitting an advice letter shall designate the appropriate tier, based on the content of the advice letter. A Tier 1 or Tier 2 advice letter is subject to disposition under General Rule 7.6.1; a Tier 3 advice letter is subject to disposition under General Rule 7.6.2

⁶ The PAs were directed by D.11-09-015 to submit two Advice letters, 30 and 60 days, respectively, after the September 16, 2011 decision. The decision lent itself to an interpretation that AES technologies, *as a group*, would reduce GHG emissions, and a specific protocol therefore might not be required.

⁷ Ordering Paragraph 3 of D.11-09-015 gave the PAs until 60 days of its effective date to include revisions to the SGIP Handbook related to the hybrid incentive model, but the PAs chose to address much of the topic out of sequence in advice letters filed on October 10, 2011. Similarly, the PAs chose to rearrange the subject matter of workshop out of the sequence directed by the Commission in Ordering Paragraphs 2 and 3 in a manner that led to small but significant omissions not relevant to this appeal. CESA's Protest and Response filed by CCSE, on behalf of the PA's on November 28, 2011, related to aspects of decision that the Commission originally ordered to have been addressed within 30 days of the decision, included the catch-all category of "revisions necessary to implement this decision and as summarized in Attachment A".

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

Edward Randolph, Director
Energy Division
California Public Utilities Commission
April 2, 2012
Page 4

By the Disposition, the Energy Division has erroneously determined that the Advice Letters are in compliance with the Commission's direction ordered in D.11-09-015. This appeal requests that the Commission modify the Energy Division's conclusions in the Determination and issue a resolution directing the Energy Division and the PAs to revise the SGIP Handbook in accordance with the Commission's direction in the decision and the resolution.

II. The Energy Division Is Required to Prepare for the Commission's Consideration and Place on a Commission Meeting Agenda a Resolution Containing the Energy Division's Analysis and Recommendation Regarding the Advice Letters.

Disposition of an advice letter must be made by resolution adopted by the Commission, except for advice letters that are subject to disposition by Commission staff pursuant to G.O. Section 7.6.1, which provides that an advice letter is subject to disposition by the reviewing Commission staff whenever such a disposition would be a "ministerial act."⁸ Whenever such a determination requires more than ministerial action, requiring no exercise of discretion at all on the part of the staff, the disposition of the advice letter on the merits must be by Commission resolution. All resolutions must contain the Energy Division's recommended disposition and analysis supporting any such disposition. As provided in General Rule 7.6.1, the Commission staff must prepare and place on the Commission's meeting agenda a resolution approving, rejecting, or modifying the Advice Letters.

The Joint protest fairly and candidly states that: "While it is within the purview of the Commission to issue a resolution to resolve the advice filing, the SGIP PAs believe that CESA is incorrect in arguing that disposition of the advice letter *must* be by Commission resolution". Rather than G.O. Section 7.6.2, it is G.O. Section 7.6.1 that should govern the Commission's view of the Disposition. CESA agrees completely with the Joint Reply's characterization of the GHG testing protocols, and related issues discussed in the Joint Reply as "complex", but respectfully disagrees entirely with the assertion that they "raise no policy concerns or other substantive issues". Commission policy should take full account of the reality that AES (particularly customer-side, distributed AES) are emerging technologies and it is reasonable to expect that experts in the distributed generation and energy storage industries have differing views of the weight to give to a number of very sophisticated variables that involve significant professional judgment. CESA submits that, as a matter of good public policy, the Commission should adopt approaches to SGIP Handbook revisions that will not *knowingly* exclude a substantial and very promising segment of distributed AES technologies.

⁸ The Protest was also directed to the October Advice Letters and the November Advice Letters in D.07-01-041, issued January 25, 2007, in which the Commission adopted G.O. 96-B, correction of a calculation that proves to be mistaken was given as an example of what would be considered ministerial. (p. 8, fn. 4).

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

Edward Randolph, Director
Energy Division
California Public Utilities Commission
April 2, 2012
Page 5

III. The GHG Analysis of Advanced Energy Storage Should Make Appropriate Assumptions Regarding the GHG Emissions of the Generating Resources They Impact.

GHG requirements for AES are not addressed in detail in D.11-09-015 and thus D.11-09-015 does not provide adequate guidance as to how distributed AES should be treated or the basis for analyzing its merits. The only public statement by the Energy Division Staff addressing GHG reduction requirements for distributed AES was the Staff Proposal published on September 30, 2010 (“Staff Proposal”), which stated:

“Energy storage technologies do not perform like other generating technologies and therefore the analysis of GHG impacts for energy storage had to be calculated slightly differently. Staff assumed that energy storage technologies, regardless of whether they are coupled with a renewable DG technology, would charge primarily from the grid and primarily during off-peak hours. Staff also assumed that these storage technologies would be discharging exclusively during on-peak hours to help reduce a customer’s peak energy and demand charges. Since the emissions profile of the grid differs significantly during on-peak versus off-peak hours with less efficient, higher emitting resources operating during peak hours and more efficient, lower emissions resources operating at night—this analysis used different emissions factors for charging and discharging of energy storage technologies.” (p. 59).

Similarly SB 412 requires only that “Eligibility for incentives under the [SGIP] program shall be limited to distributed energy resources that the commission, in consultation with the State Air Resources Board, determines will achieve reductions of greenhouse gas emissions pursuant to the California Global Warming Solutions Act of 2006.”

This high level of generality in the statute, decision and Staff Proposal is very reasonable considering the multiple elements that must be modeled or otherwise analyzed regarding distributed AES’s ability to reduce GHG emissions. With GHG reduction being the most critical requirement of the SGIP, eligibility must be determined by looking broadly at the *classes* of technologies and understanding as best as possible the total impact of the technologies and their effect *over time* on reducing GHG emissions. CESA maintains that, as an emerging technology that shifts demand from congested on-peak hours to nighttime off-peak hours, and consistent with both the letter and spirit of SB 412, it should be recognized as very reasonable that distributed energy storage will meet the overarching goals of SB 412 – including “achiev[ing] reductions of greenhouse gas emissions pursuant to the California Global Warming Solutions Act

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

Edward Randolph, Director
Energy Division
California Public Utilities Commission
April 2, 2012
Page 6

of 2006” – even if there is no single, universally accepted protocol at this time to model all scenarios and technologies precisely.

Additionally, as experience with distributed AES in the SGIP quickly develops over the coming months (including, for the first time, experience with standalone AES in the program), the Energy Division Staff should be directed to closely monitor the methodology and basis for GHG compliance for distributed AES with an eye to potential future refinements (and further tightening the current “zone of reasonableness”).⁹

It is worth underscoring why the methodology used in the Staff Report and by the PAs is not appropriate, even as a “temporary” approach. They assume that just a single resource (namely a generic CCGT of 10,807 heat rate) is the only resource at the margin for purposes of calculating the GHG reductions of distributed AES. In actual field operations, distributed AES will for the most part be charged over many hours, if not the *entire* nighttime period, as distributed AES systems are *slow-charged over many hours* to preserve overall life and enhance performance.

By contrast, during the day, the stored energy will be discharged *only* during peak times and, by contrast to nighttime charging, only for a couple of hours and only to offset a portion of the customer’s highest load. In other words, energy storage will be discharged on peak to clip the customer’s marginal kWh consumed during peak times. Thus, it is correct to assume (as the PAs and CESA do) that energy storage – cycled on the customer side of the meter only for a few hours and only for a portion of that customer’s peak demand – is in fact primarily displacing marginal peaker generation, not baseload or overall generation.

At night, off-peak, the change at the margin due to the addition of distributed AES into the mix affects a “basket” of existing grid resources not just CCGTs, and thus the most appropriate way to calculate the marginal emissions changes is to model or otherwise analyze the emissions profile of the actual mix of generating resources in that “basket”, not just a CCGT.

⁹ The PAs report that the GHG methodology proposed by the PAs will not jeopardize eligibility of the projects that were received in 2011 for participation. Statewide, SGIP has received 147 AES applications in 2011 (mainly lithium-ion), and all of them meet the RTE of 67.9% making them eligible for SGIP participation.

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

Edward Randolph, Director
Energy Division
California Public Utilities Commission
April 2, 2012
Page 7

A. The GHG Analysis of Advanced Energy Storage Should Consider the Significant Decrease in Transmission and Distribution Line Losses that Result from Distributed AES-provided Peak-Shifting.

CESA notes that the PAs proposed methodology does not recognize the universally accepted fact that transmission and distribution line losses increase very significantly with peak demand as more current passes through power lines (the I^2R losses), particularly during warmer daytime temperatures (which is typically the case during peak times). This invariably results in greater line losses per MWh during peak times than during off-peak times. A 2010 Sandia National Laboratory report¹⁰ describes these losses as follows:

“As with any process involving conversion or transfer of energy, energy losses occur during electric energy transmission and distribution. These T&D energy losses (sometimes referred to as I^2R or ‘I squared R’ energy losses) tend to be lower at night and when loading is light and higher during the day and when loading is heavy. T&D energy losses increase as the amount of current flow in T&D equipment increases and as the ambient temperature increases. Thus, losses are greatest on days when T&D equipment is heavily loaded and the temperature is high.”

Thus, deploying distributed AES that shifts consumption (and the associated transmission and distribution) from peak to off-peak times will reduce line losses per MWh and reduce GHG emission commensurately. The Regulatory Assistance Project states that resistive losses can be “four times as great during the summer afternoon peak as they average over the year”¹¹ and cites FERC data referring to average annual losses ranging from 6 – 11%. The Center for the Study of Energy Markets estimates average line losses at 6.8%, with minimum losses at 4.3% and maximum losses at 12%.¹² CESA acknowledges that the precise amount of savings from this shift cannot be determined in advance and we conservatively recommend assuming 5% based upon the available data.

¹⁰ Sandia National Laboratory, Energy Storage for the Electricity Grid: Benefits and Market Potential Assessment Guide, Report SAND2010-0815, February 2010, p. 138.

¹¹ Regulatory Assistance Project (Jim Lazar and Xavier Baldwin), “Valuing the Contribution of Energy Efficiency to Avoided Marginal Line Losses and Reserve Requirements.” August 2011.

¹² Center for the Study of Energy Markets, University of California Energy Institute (Severin Borenstein) “The Market Value and Cost of Solar Photovoltaic Electricity Production.” January 2008.

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

Edward Randolph, Director
Energy Division
California Public Utilities Commission
April 2, 2012
Page 8

B. Advanced Energy Storage Coupled with Eligible Renewable Generation Should be Recognized as Complying With GHG Requirements.

The SGIP Handbook inappropriately treats AES charged from renewable generation the same way as it does standalone AES (charged from the grid) with respect to GHG reduction requirements. CESA recommends that customer-side AES charged predominately from renewables will reduce GHG emissions as the original source of its energy is GHG-free. Furthermore, it will add system-wide GHG reduction benefit to the grid by matching renewable supply to energy demand. Specifically, CESA recommends using the same 75% standard that is used by the federal rules for renewable energy Investment Tax Credits (“ITC”), and the same basic methodology for determining the 75% performance that is proscribed in the federal tax code. U.S. Treasury Reg. §1.48-9 (d) (6) states that:

“Such equipment is solar energy property (i) only if its use of energy from sources other than solar energy does not exceed 25 percent of its total energy input in an annual measuring period and (ii) only to the extent of its basis of cost allocable to its use of solar or wind energy during an annual measuring period. An ‘annual measuring period’ for an item of dual use equipment is the 365 day period beginning with the day it is placed in service or a 365 day period beginning the day after the last day of the immediately preceding annual measuring period.”¹³

This standard for distributed AES coupled with renewable energy is not only substantively meritorious but has the additional benefit that because the SGIP program is already linked to the federal renewable energy ITC (as the ITC is deducted from the portion paid by SGIP) and thus provides a harmonized test that applies to both the SGIP as well as the federal ITC. By adopting the same method and criteria, developers using AES with renewable generation would have a single set of criteria to meet for both federal ITC and SGIP incentive calculation.¹⁴

¹³ See, Reg §1.48-9. Definition of energy property. At <http://www.gpo.gov/fdsys/pkg/CFR-2011-title26-vol1/pdf/CFR-2011-title26-vol1-sec1-48-9.pdf>.

¹⁴ Recognizing that AES is an important but emerging technology with limited performance data to date, regardless of the methodology chosen by the Commission at this juncture, CESA recommends analyzing the salient data from AES systems operating in the field under the SGIP in the next year or two to see if changes to the methodology are warranted.

DOUGLASS & LIDDELL

AN ASSOCIATION OF
PROFESSIONAL CORPORATIONS

Edward Randolph, Director
Energy Division
California Public Utilities Commission
April 2, 2012
Page 9

IV. Conclusion.

The SGIP Handbook should be modified and clarified in accordance with the discussion and analysis set forth above. CESA re-iterates its hope that the Energy Division Staff, PAs and CESA will be able to agree on these remaining key issues, allowing CESA to withdraw its protest, response, supplemental protest, and this appeal, and that the SGIP will be able to re-open at the earliest opportunity.

Very truly yours,



Donald C. Liddell
DOUGLASS & LIDDELL

cc: Maria Salinas (mas@cpuc.ca.gov)
Brian K. Cherry, PG&E, Vice President, Regulation and Rates (PGETariffs@pge.com)
Ann L. Trowbridge, Clean DG Coalition (atrowbridge@daycartermurphy.com)
Billy Gamboa, California Center for Sustainable Energy (billy.gamboa@energycenter.org)
Jana Kopyciok, California Center for Sustainable Energy (jana.kopyciok@energycenter.org)
Rosie Magana, SoCalGas (rmagana@semprautiities.com)
Caitlin Henig, PG&E (CJSv@pge.com)
Jim Stevenson, SCE (james.stevenson@sce.com)