



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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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
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**Reply Comments of the Center for Sustainable Energy® regarding the
Assigned Commissioner's Ruling (1) Issuing an Energy Division Proposal on
Senate Bill 861 Modifications to the Self-Generation Incentive Program (2)
Entering the Staff Proposal into the Record**

Center for Sustainable Energy®

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I. INTRODUCTION

The Center for Sustainable Energy® (CSE) appreciates the opportunity to provide reply comments regarding the *Assigned Commissioner's Ruling (1) Issuing an Energy Division Proposal on Senate Bill 861 Modifications to the Self-Generation Incentive Program (2) Entering the Staff Proposal into the Record* (Ruling). CSE appreciates the comprehensive review by Parties and thoughtful comments submitted in response to the Energy Division Proposal on Senate Bill (SB) 861 Modifications to the Self-Generation Incentive Program (SGIP) (Staff Proposal). In general, we emphasize the concern expressed by many parties that demand for SGIP incentives outweighs availability. Overall, we urge the Commission to carefully consider and implement measures that will allow for a more equitable and beneficial distribution of funds, fostering fair participation in the SGIP and facilitating market transformation. Furthermore, we emphasize that changes to specific aspects of the program will typically affect other areas of the program and urge the Commission to consider the resultant effects that program changes might have on all aspects of the SGIP.¹ Accordingly, CSE provides reply comments regarding the following topics presented in parties' comments:

- Section V: Budget Categories and Rebate Design
- Section III: Eligible Technologies
- Section IV: Biogas
- Section VI: Additional Topics

II. SECTION V: BUDGET CATEGORIES AND REBATE DESIGN

Proper design of the budget categories and incentive rates will allow SGIP incentives to fund greater generation and storage capacity, increasing the benefits that the SGIP provides.

¹ For example, changing the budget allocation between the storage and generation categories will subsequently change the amount of funds an installer/developer can receive where the cap is set at a percentage of incentives for that category.

Many parties proposed ideas to address the “opening-day stampede”, place-holder projects, project attrition, and an early subscription of SGIP funds.² In its comments, Pacific Gas and Electric (PG&E) suggested reforming the SGIP funding structure into a lottery system with applications and drawings occurring every six months.³ While CSE does not oppose PG&E piloting a lottery system in its territory for the first 50% program opening in 2016, as PG&E has requested,⁴ CSE strongly opposes permanently shifting the program to a lottery system. PG&E argues that the proposed “dollar-based system will, without question, increase the stampede and submission of phantom projects,” and “a lottery can be designed with certain attributes that can completely, or almost completely, eliminate those problems.”⁵ CSE agrees that the anticipated “opening-day stampede” and submission of phantom projects are major concerns, but we firmly believe that a lottery system will not resolve these issues. A lottery system would not prevent an “opening-day stampede” because there would still be a short window of time in which to submit applications, and it would have the unintended effect of encouraging applicants to submit as many applications as they could in order to increase the likelihood of having their projects chosen, regardless of the quality or preparedness of the applications themselves. A lottery system, especially when implemented in conjunction with the biennial program opening mechanism as proposed by PG&E, offers no market certainty or transparency for project developers and may dramatically increase the frustration with the program when projects are rejected and must reapply in another six months rather than

² *Pacific Gas and Electric Company’s (U 39 E) Comments on the Staff Proposal to Modify the Self-Generation Incentive Program*, January 7, 2016, page 15; *Comments of SolarCity Corporation on the Energy Division Proposal on Senate Bill 861 Modifications to the Self-Generation Incentive Program*, January 7, 2016, page 17; *Comments of the California Energy Storage Alliance on the Energy Division Staff Proposal to Modify the Self-Generation Incentive Program*, January 7, 2016, page 9-10; *Comments of Robert Bosch LLC on Energy Division Staff Proposal to Modify the Self-Generation Incentive Program*, January 7, 2016, page 8; *Comments of Commercial Energy on the Energy Division Staff Proposal*, January 7, 2016, page 14; and *Comments of Stem, Inc on the Energy Division Proposal on Modifications to the Self-Generation Incentive Program*, January 7, 2016, page 3.

³ PG&E at 28-30.

⁴ *Id.* at 30.

⁵ *Id.* at 28.

remaining in the queue for reservation as funds are available. Moreover, a lottery system may create more complexity and burden on the Program Administrators (PAs) than already exists, and perpetuate the “opening-day stampede” difficulties every six months.

Nevertheless, CSE does agree with PG&E and many other parties that the current problems of program oversubscription, “opening-day stampede”, phantom projects, and project attrition must be addressed through program design and reduced or eliminated to the greatest extent possible. To accomplish this, CSE supports implementing several measures presented in parties’ comments in conjunction with the tiered incentive structure recommended in the Staff Proposal. Specifically, CSE supports lowering the installer/developer cap, increasing the application fee, requiring the signed customer contract earlier in the application process, lowering incentives for advanced energy storage (AES), and creating mechanisms to adjust the incentive rates or rate structure in the event that tiers are being subscribed too quickly.

Lower the installer/developer cap:

For reasons described in more detail in the “Individual Manufacturer and Installer Caps” subsection below, CSE supports implementation of an installer/developer cap rather than a manufacturing cap. Several parties proposed lowering the installer/developer cap.⁶ CSE strongly supports this proposal and suggests setting the cap at 20% in PG&E’s and Southern California Edison’s (SCE’s) territories. Because CSE’s and Southern California Gas’ (SoCalGas’) budgets are considerably smaller than PG&E’s and SCE’s, a 20% cap may not be high enough to allow for funding of more than one or two projects; therefore, for CSE and SoCalGas, CSE proposes setting the cap at 30%.

⁶ PG&E at 23-24; SolarCity at 12; Bosch at 4; Commercial Energy at 8; *Opening Comments of Foundation Windpower, LLC on Staff Proposal to Modify the Self Generation Incentive Program*, January 7, 2016, pages 14-15; *Comments of Juicebox Energy, Inc on the Energy Division Staff Proposal to Modify the Self Generation Incentive Program*, January 7, 2016, page 3.

Decreasing the installer/developer cap could provide several benefits to the program and its participants. First, it would further limit the amount of funds for which any one installer/developer may apply in any given tier and PA territory. Consequently, this mechanism encourages applicants to submit applications for what are considered truly viable projects to ensure that they do not reach their cap and squander higher incentive rates with projects likely to fall out. Therefore, a lower cap would significantly reduce the number of phantom applications as the projects applying to the SGIP are more likely to be completed. The expected “opening-day stampede” would not be as severe if applicants are more limited by the amount of funds available for their specific projects. Additionally, as the program continues, more applicants/developers will be able to participate in the SGIP without funds in each tier being fully subscribed by either a few applicants/developers or a few large projects.

Increasing the Application Fee

Several parties suggested increasing the application fee from 1%.⁷ A higher application fee could potentially deter applicants from submitting phantom applications. CSE is supportive of this measure given that several industry representatives have proposed it. However, CSE recognizes that an increased application fee may also prevent applicants or developers with viable projects but fewer financial resources from applying to the program. Thus, if parties provide compelling arguments that an increased application fee would serve as a significant barrier to participation, CSE would prefer to maintain the 1% application fee.

Signed Customer Contract Due Earlier in the Application Process

SolarCity and Stem both proposed that the signed customer contract should be due at the Reservation Request stage of the application process for commercial customers, while maintaining the current timeline for government and public entities.⁸ CSE supports this

⁷ PG&E at 28-30; SolarCity at 17; CESA at 10; Commercial Energy at 13; Stem at 3; JuiceBox Energy at 4.

⁸ SolarCity at 17; Stem at 3.

concept as it will reduce the amount of phantom projects submitted to the program and likely result in lower project attrition. Requiring a signed customer contract upfront would ensure that customers have agreed to move forward with the project and project details have been confirmed before an application is submitted. Furthermore, had this been previously implemented, it likely would have avoided the situation that Tesla and SolarCity have described where certain developers listed Tesla equipment on their applications without contacting Tesla then later switched equipment, causing Tesla to hit its manufacturer cap and prohibiting additional applications from using Tesla equipment.⁹ Additionally, requiring a signed customer contract upfront would reduce the “opening-day stampede” as well as SGIP administrative costs associated with reviewing uncertain project documentation at the Reservation Request stage of the application process and cancelling and returning application fees for phantom projects, and eliminate the need for Proof of Project Milestone (PPM) extension requests.

CSE notes that the SGIP currently requires residential and small¹⁰ non-residential customers to submit the signed customer contract at the Reservation Request stage. These customers must follow the “2-step” application process, as outlined in section 2.2 of the 2015 SGIP Handbook. As this process has not posed a significant barrier to customers in the program, CSE suggests that all non-public entities could be subject to the 2-step application process. If the 18-month timeline is maintained for commercial applications, the 2-step process would grant projects an additional three months to complete their projects from the time they sign and submit their contracts compared to the current 3-step process. Government and public entities should remain on the 3-step application process as it is currently implemented.

However, CSE acknowledges that certain commercial customers and developers may be unwilling to sign a contract unless the proposed project has already received a conditional

⁹ *Tesla Motors, Inc.’s Comments on the Staff Proposal to Modify the Self-Generation Incentive Program*, January 7, 2016, pages 5-6; SolarCity at 9.

¹⁰ Defined as systems less than 10 kW.

reservation from the SGIP PA. Thus, we urge the Commission to investigate this theory via a public workshop or by other means before a decision is finalized. Recognizing that SGIP has evolved from a program of relatively few participants and an excess of annual funding to the current program where demand is plentiful and incentive funds are limited and extremely coveted, requiring the contract upfront could provide an effective safeguard against the consequences of unwarranted project modifications and attrition. However, if the Commission decides to maintain the 3-step process for commercial customers,¹¹ and the signed customer contract is due at the Proof of Project Milestone (PPM) stage, we recommend that deadline for PPM documentation submittal be shortened from 90 days to 30 days from the date of conditional reservation.¹² A tighter deadline to submit the PPM documents could act as another deterrent to the submission of phantom projects.

Lowering Incentives for AES technologies

In our opening comments, CSE strongly advocated for workshops and more rigorous analyses in determining the appropriate initial incentive rates for storage and generation technologies. We agree with Bosch's recommendation that the Commission "review each eligible technology on its own merit and whether the current incentive rates are appropriate or if a reduction or increase is needed."¹³ Tesla's comments further supported the need to set AES incentives at appropriate levels that will not over-incentivize projects.¹⁴ CSE agrees with Tesla that initial incentive rates should be set at a level that guarantees minimum customer investment. CSE disagrees with CESA that if the initial rebate is too high, the market will eventually come to equilibrium when the incentive rate declines.¹⁵ Because SGIP funds are now so limited, the program does not have enough funding to allow for a high initial incentive

¹¹ Defined as systems equal to or more than 10 kW.

¹² Currently, commercial applications have 90 days to submit PPM documentation from the time a conditional reservation is issued.

¹³ Bosch at 7.

¹⁴ Tesla at 8-9.

¹⁵ CESA at 13.

rate to reach equilibrium over time. If the initial rate is set too high, the first several tiers could be fully subscribed within just weeks or months and would not contribute to market transformation, nor would it be an appropriate use of ratepayer funds. Rather, CSE contends that the initial incentive must be carefully set at a level that will encourage deployment of AES systems without over-incentivizing projects. Accordingly, CSE suggests lowering the incentive from the Staff Proposal's \$1.20/watt and encourages the Commission to conduct workshops to gain industry insight and data in order to set an initial incentive rate that will allow for more projects to be funded, prevent tiers from being subscribed too quickly, and better contribute to market transformation goals in conjunction with the dollar-based incentive decline structure.

Mechanisms to adjust the incentive rates or rate structure

CSE agrees with Stem that the SGIP should have mechanisms in place to adjust the incentive rates or rate structure to ensure more equitable distribution of funds in the event that funds are being reserved too quickly.¹⁶ The SGIP PAs should have the ability to work with Energy Division and the Commission to quickly resolve any and all issues pertaining to incentive rates or rate structure if funds are subscribed too quickly.

III. SECTION III: ELIGIBLE TECHNOLOGIES

CSE agrees with several parties that technologies should be eligible for the SGIP if they meet program goals.¹⁷ CSE wholeheartedly agrees with Bloom that "a data driven

¹⁶ Stem at 4.

¹⁷ PG&E at 11, *Opening Comments of Southern California Gas Company (U 904 G) and San Diego Gas & Electric Company (U 902 M) on the Assigned Commissioner's Ruling (1) Issuing an Energy Division Proposal on Senate Bill 861 Modifications to the Self-Generation Incentive Program (2) Entering the Staff Proposal into the Record*, January 7, 2016, page 4; *Comments of California Clean DG Coalition regarding Energy Division Proposal on SB 861 Modifications to the Self-Generation Incentive Program*, January 7, 2016, page 8; *Opening Comments of Bloom Energy, Inc. to the Assigned Commissioner's Ruling Issuing an Energy Division Proposal on Senate Bill 861 Modifications to the Self-Generation Incentive Program*, January 7, 2016, pages 9-10.

approach...must be used to determine the impact of each technology against program goals.”¹⁸ However, Bloom goes on to state that “[r]ather than relying on invalid and irrelevant data, it would be more appropriate to *assume* that any future technologies operating under the program will at least be compliant with the program....”¹⁹ While CSE agrees with Bloom that the neither program reports nor the Commission or PAs should rely on invalid and irrelevant data in determining technology eligibility, we disagree that we should simply assume that new technologies meet program goals. Rather, the program should rely on valid and relevant data and documentation to determine technology eligibility, as recommended by PG&E.²⁰ CSE suggests that before the Commission issues a decision on technology eligibility, the manufacturers and developers of technologies under consideration for removal from the SGIP submit relevant data to the Commission showing that they meet all program requirements in question.

Additionally, CSE points out that the Staff Proposal did not review the merit of steam turbines as an eligible technology. Steam turbines were included in the program as a conventional topping cycle combined heat and power technology in 2014.²¹ To date, there have been no completed steam turbine installations incentivized through SGIP, and thus it is not a technology that was analyzed in Itron’s 2015 SGIP Cost Effectiveness Study. Hence, CSE respectfully requests that the Commission similarly review relevant data for steam turbines to determine whether they should remain an SGIP-eligible technology.

IV. SECTION IV: BIOGAS

CSE maintains that SGIP should continue to provide a biogas adder for onsite biogas projects. Onsite biogas projects take advantage of a stranded biogas resource, capturing

¹⁸ Bloom at 9-10.

¹⁹ *Id.* at 13, *emphasis added.*

²⁰ PG&E at 20.

²¹ Energy Division Disposition Letter approving CSE Advice Letter (AL) 47-A, PG&E AL 3474-G-A/4417-E-A, SCE AL 3038-E-A, and SoCalGas AL 4644-A, December 23, 2014.

methane, a potent GHG, which is otherwise vented or flared into the atmosphere. Furthermore, and as previously mentioned in our comments, certain customers continue to rely on the SGIP biogas adder for their renewable CHP projects.

While CSE agrees in principle with Energy Division Staff's recommendation and many other parties' endorsement that the incentive should be prorated to the percentage of fuel consumed based on the results of the annual Renewable Fuel Use Report (RFUR), there are other considerations and potential shortcomings that must first be addressed. For example, the Staff Proposal does not assign a specific incentive rate to the biogas adder, making it difficult to determine how to adjust the payment based on actual fuel consumed. Instead of offering a set rebate amount on technology and fuel combinations,²² CSE recommends that the biogas incentive remain a true "adder", i.e., be separate to reflect its own incentive rate per watt based on a *tiered percentage* of biogas in the blend.²³ CSE concurs with Energy Division Staff's observation that "because the range of biogas blend ratios over which incentives are present is increased (i.e., not just at the 75% threshold), the RFUR audits may engender more contention between participants and program administrators"²⁴. Therefore, CSE recommends that the biogas adder be adjusted by tiers rather than by strictly prorating payments based on audit results.²⁵

Finally, CSE maintains its assertion that SGIP should cease offering additional incentives to directed biogas projects. We agree with Bloom that there is "significant demand for directed biogas";²⁶ however biogas markets also exist outside of SGIP, such as cap and

²² *Energy Division Staff Proposal to Modify the Self-Generation Incentive Program Pursuant to SB 861 and the Commission's Own Motion* (Staff Proposal), November 23, 2015, page 25.

²³ For example, a biogas adder could be assigned to blends consisting of: (1) 0-25%; (2) 26-50%; (3) 51%-75%; and (4) above 75% renewable fuel.

²⁴ Staff Proposal at 18.

²⁵ There is strong precedent for the tiered approach. The SGIP currently relies on this method for PBI limitations based on GHG emissions as well as incentive adjustments based on project size up to 3 MW.

²⁶ Bloom at 15.

trade. Unlike onsite biogas projects, it is questionable whether the existence of SGIP incentives for directed biogas significantly contributes to the growth of the directed biogas market and statewide GHG emissions reductions. Moreover, the auditing process for directed biogas projects is complex and often produces vague results. According to the most recent RFUR, “[w]hen gas marketers procure directed biogas for SGIP projects, they do not purchase renewable fuel for each project Instead they pool SGIP projects into fleets and procure the amount of biogas required to meet the fleet’s monthly biogas requirements. The nature of these transactions requires that compliance determinations be made at the fleet level and not at the individual project level.”²⁷ Due to the nature of biogas procurement and auditing limitations, it may not be possible to determine the compliance of individual projects based on the percentage of fuel actually consumed. For these reasons, SGIP should cease offering additional incentives to directed biogas projects.

V. SECTION VI: ADDITIONAL TOPICS

A. Subsection A: Performance-based Incentives

CSE recommended changes for performance-based incentives (PBI) in our opening comments, and we maintain our support for those recommended changes here. We continue to contend that no projects whose cumulative emissions over the life of the project exceed the ten-year average GHG emissions factor should receive full payment. Furthermore, CSE recommends changing the current exceedance bands for PBI so that projects whose cumulative emissions are up to 5% greater than the GHG emissions factor receive half payment, and projects whose cumulative emissions are greater than 5% of the GHG emissions factor receive no PBI payment. The current PBI exceedance bands allow projects’ emissions to be up to 5% greater than the GHG emissions factor and still receive full payment; the 50% penalty kicks in only when projects emit between 5-10% greater than the GHG emissions factor, and no

²⁷ *Self Generation Incentive Program: Renewable Fuel Use Report No. 24.*

payment is received for emitting more than 10% greater than the GHG emissions factor. If the current rules remain, a 2016 project could emit 365 kg CO₂/MWh every year of operation, which is 15 kg CO₂/MWh over the GHG emissions factor, and still receive full payment.

Giving full payment to projects that can increase GHG emissions every year of their operation conflicts with the legislative mandate that SGIP should fund projects that decrease GHG emissions,²⁸ and it goes against the Commission's recent decision that GHG-emitting technologies must "emit GHG emissions at a rate lower than 350 kgCO₂/MWh averaged over the first ten years of operations."²⁹ Implementing an exceedance band of 50% payment for emitting up to 5% more than the GHG emissions factor would at least strike a balance between accounting for site-specific conditions and variables and not paying projects in full for increasing GHG emissions.

B. Subsection B: Operating Requirements for Energy Storage

PG&E and Sunverge both suggest that the 260 hours of discharge for AES systems must occur during peak hours.³⁰ While CSE supports using AES systems in ways and at times that provide benefits to the distribution system, we contend that the SGIP should not dictate when every AES system should discharge. Due to the mutable nature of the grid, "peak hours" are shifting, and the needs of the grid fluctuate with each season. The investor-owned utilities' (IOUs') recent proposed time-of-use (TOU) pilot rates illustrate this example; each IOU proposes different schedules for peak, part peak, off-peak, or super off-peak for each season. Thus, CSE contends that having well-defined hours in which each AES system must operate

²⁸ Public Utilities Code Section 379.6(a)(1).

²⁹ D.15-11-027, *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*, November 19, 2015, Ordering Paragraph 13.

³⁰ PG&E at 21, *Opening Comments of Sunverge Energy, Inc. on Assigned Commissioner's Ruling (1) Issuing an Energy Division Proposal on Senate Bill 861 Modifications to the Self-Generation Incentive Program (2) Entering the Staff Proposal into the Record*, January 8, 2016, page 8.

year round would be overly-prescriptive and would not necessarily allow AES systems to be used in ways that optimize onsite and system-wide benefits.

Additionally, CSE contends that SGIP rules should not contradict what customers' tariffs incent them to do. Customers invest in SGIP technologies in direct response to their tariff structure and in efforts to minimize onsite energy costs. If customers are using SGIP-incentivized equipment in direct response to their existing tariff, and consequently in ways that do not benefit the grid, then the IOUs and the Commission should work to reform these tariffs so that customers respond in ways that benefit both the customer and the grid. The expansion of demand response (DR) programs and dynamic tariffs are the best opportunities to address this concern, not the SGIP.

C. Subsection C: Dual Participation in Demand Response Programs

PG&E suggests that customers applying for AES incentives should be on a TOU or demand charge rate or enrolled in a DR program in order to be eligible for SGIP incentives.³¹ CSE supports participation in these types of tariffs or programs, but participation should not be a requirement for SGIP eligibility at this time. Given that the Commission and the IOUs are currently piloting several TOU rate structures and DR programs, many of these tariffs and programs are not available or practical for all SGIP customers. Allowing dual enrollment in SGIP and DR programs will encourage customers' participation in these programs, but the market for TOU rates and DR programs is not yet developed enough to require customers to be enrolled or participate in these tariffs or programs.

D. Subsection D: Individual Manufacturer and Installer Caps

In their opening comments, Tesla and SolarCity provide examples illustrating why the SGIP should have an installer/developer cap rather than a manufacturer cap.³² In one example, an applicant listed Tesla as the manufacturer for roughly \$8 million worth of applications

³¹ PG&E at 21.

³² Tesla at 5-6; SolarCity at 9.

without ever contacting Tesla. After Tesla reached its manufacturer cap and no other projects could apply with Tesla equipment, the applicant changed the technology to that of another manufacturer. In this case, Tesla was simply listed as the manufacturer on the applications, but it was never the recipient of SGIP funds. Moreover, even if the applicant had used Tesla equipment, the applicant, not Tesla, would have received the SGIP incentives. This example illustrates how the manufacturer cap does not prevent SGIP incentive funds from going to a single entity, and instead it creates a barrier to customers choosing the manufacturer or technology that best meets their needs.

CSE maintains that the cap should apply only to the installer/developer, rather than the manufacturer. This adjustment will make no difference for companies that manufacture and develop their own projects. However, for developers that do not manufacture their own equipment and for manufacturers that do not develop their own projects, this change will end the unintended consequences of limiting customer choice while staying true to the original intention of the cap, i.e., to maintain a healthy diversity of projects in SGIP and to ensure no one entity receives an excessive amount of SGIP incentives.

E. Subsection H: DC Micro-grids

CSE supports Bosch's recommendations to allow electrical DC meters for SGIP-eligible equipment located in DC micro-grids.³³ CSE finds Bosch's proposed solution reasonable and supports modifying the SGIP Handbook to allow DC metering for PBI projects.

F. Second-Life Batteries

Nissan recommends allowing second-life batteries to participate in the SGIP as AES.³⁴ CSE strongly supports this recommendation. During a three-year research project with the National Renewable Energy Laboratory (NREL) on the benefits and barriers to second-life

³³ Bosch at 15-17.

³⁴ *Comments of Nissan North America, Inc. on the Energy Division Staff Proposal to Modify the Self-Generation Incentive Program*, January 6, 2016, pages 2-4.

battery deployment, CSE gained considerable insight into the potential economic and environmental benefits of this market as well as barriers to adoption. Second-life batteries offer an innovative means of repurposing used electric vehicle (EV) batteries into valuable stationary grid assets that can provide the same technical and operational capabilities as other batteries. However, due to the emerging nature of this technology and high recurring engineering costs to incorporate new power electronics, there is virtually no market for these types of systems. CSE encourages the participation of second-life batteries in the SGIP as AES as long as the batteries meet all necessary SGIP requirements. Given that these systems can meet the technical, safety, and operational requirements of AES, and the fact that their usage can result in additional environmental and societal benefits compared to new batteries, they should be encouraged to participate in the SGIP.

VI. CONCLUSION

CSE appreciates the opportunity to provide these reply comments regarding the Staff Proposal.

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