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CALSSA DEBA DSGS program design proposal

Additional submitted attachment is included below.



January 20, 2023

California Energy Commission
Docket Unit, MS-4
715 P Street
Sacramento, CA 95814

Re: Docket No. 22-RENEW-01—CALSSA DEBA/DSGS program design proposal

California Energy Commissioners and Staff:

This letter supplements CALSSA's prior submissions in this docket,¹ and presents a proposal for a California Energy Commission (CEC) program design specific to behind the meter (BTM) battery energy storage.

Recognizing that the Distributed Electricity Backup Assets (DEBA) program requires funding recipients to participate as emergency reliability resources, CALSSA proposes a program design that combines a deployment incentive through the DEBA program with a new option under the Demand Side Grid Support (DSGS) program that will optimize the reliability contribution of BTM energy storage resources, based on compensation for committed capacity, similar to the existing DSGS Incentive Option 3 (capacity payment and bid structure), but without requiring wholesale market participation. We cannot stress enough that requiring market participation would hinder the effectiveness of these programs because it fails to recognize energy exported past a customer meter, severely restricting battery operation and effectively negating most of the capacity value of the storage resource. That is contrary to the goals of the program and would render the state's emergency response activities far less effective. Customer-sited storage offers reliability benefits and eases strain on the grid both by meeting customer demand behind the meter and by providing energy past the meter.

This proposal is one pathway for DEBA-funded storage to provide emergency reliability services, which should be made available to customers of all load-serving entities in the state. CALSSA supports DEBA incentive recipients participating through other DSGS incentive options—with program modifications as proposed below—or through the Emergency Load Reduction Program (ELRP) and potentially other emergency reliability programs. Voluntary programs like DSGS Options 1 and 2 and ELRP effectively provide reliability resources, and they will be more attractive to some customers than programs requiring commitments. Providing alternative pathways will take the greatest advantage of different resources and customer preferences,

¹ CALSSA Comments on Lead Commissioner Workshop on Clean Energy Alternatives for Reliability, submitted Nov. 10, 2022; CALSSA Responses to Request for Information on Clean Energy Alternatives for Reliability, submitted Nov. 30, 2022 (CALSSA RFI Responses).

and will maximize the potential resources available to provide reliability during future emergency events.

The DSGS program should also remain available for participation by customers who do not receive an incentive through DEBA, including customers with existing batteries.

We present two scenarios for the DEBA incentive and DSGS compensation in this combined DEBA/DSGS proposal: (1) a base scenario based on funding levels in the Self-Generation Incentive Program (SGIP) and existing DSGS Option 3, and (2) an alternative scenario that provides greater funding certainty and would likely encourage greater participation and bring more capacity online more quickly to serve as reliability assets.

We also recommend modifications to the existing DSGS Options 1 and 2.

DEBA/DSGS Program Proposal—Base Scenario

The values proposed in this scenario assume that participants would commit to participating in DSGS for 5 years and that funding will be available to compensate participation over a 5-year term. DSGS is funded through state budget allocations, with total planned funding limited to \$295 million, \$95 million of which is not yet appropriated, so ensuring that funding is available would probably require funds to be set aside in advance for enrolled participants. When a resource enrolls in the program, 5 years of funding for that resource must be set aside to ensure the program can provide compensation for the resource's committed capacity.

In addition, the Legislature, Administration, and state energy agencies should work to identify additional funds to ensure continuation of the program with broad participation after the current budget is reserved for participating projects. One potential source of additional funding is the Clean Energy Reliability Investment Plan (CERIP), which the CEC will submit to the Joint Legislative Budget Committee by March 1, 2023. A combined DEBA/DSGS program that brings new storage resources online and enlists them as reliability assets would fit squarely within the legislative intent of the CERIP to “accelerate the deployment of clean energy resources, support demand response, assist ratepayers, and increase energy reliability.”²

In this proposed scenario, the funding amounts for DEBA and the DSGS participation option would be as shown below.

DEBA Incentive

Amount: \$250/kWh based on the manufacturer's specified energy capacity³

² SB 846, Sec. 12(a).

³ When available, specified usable energy capacity should be used.

Comments:

- The incentive should be set at a level that will ensure that new deployments accelerate, to achieve the program goal of providing on-call resources to serve California’s grid during extreme events.
- The incentive level in this scenario is based on SGIP incentive levels. SGIP incentive levels are currently at \$250/kWh for some large-scale storage customers, and that level is lower than needed to support the market segment, as shown by the slow pace of adoption.⁴ For small residential storage, CALSSA has recently proposed the general market storage incentive for residential projects be set at \$250/kWh to encourage broad participation.⁵ However, DEBA incentives should be set at a level that accounts for the differences between this program and SGIP, including that dispatch requirements in DSGS will reduce customer bill savings such as from demand charge management, and that there will be additional costs involved in managing participation in a program for providing grid emergency reliability services. Thus, the \$250/kWh level proposed here should be combined with ongoing compensation for participation in a grid services program, as proposed and discussed below.
- This incentive level is appropriate with certainty of compensation from DSGS over a 5-year program term.
- The incentive level should be set with recognition that there needs to be enough certainty about compensation to enable investments, and that there are presently many unknowns about how much compensation program participation will provide, including because the DSGS program guidelines are expected to be revised.⁶ The level of the DEBA incentive can be evaluated for potential future adjustment after more information is available.
- All DEBA-funded resources must enter into a participation agreement to participate in DSGS, ELRP, or other emergency reliability programs approved by the CEC.
- CALSSA estimates that if approximately one-half of the currently appropriated funding for DEBA incentives were applied to this proposal (\$250 million), the resulting total deployed capacity would be 1000 MWh.

⁴ See “Incentive Rates for Current Steps” at https://www.selfgenca.com/home/program_metrics/.

⁵ Comments of the California Solar & Storage Association on Assigned Commissioner’s Ruling Seeking Comments on Improving Self-Generation Incentive Program Equity Outcomes and Assembly Bill 209 Implementation, California Public Utilities Commission Rulemaking 20-05-012, Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the Self-Generation Incentive Program and Related Issues, Dec. 2, 2022, page 15, available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M499/K459/499459268.PDF>.

⁶ Demand Side Grid Support (DSGS) Program Guidelines, First Edition, August 2022, CEC-300-2022-008-REV (DSGS Guidelines).

- This capacity could be deployed more quickly than many other resource types and would be very reliable due to the storage technology and resource management software used by storage developers.⁷

New DSGS Option for DEBA-Incentivized Storage Resources

Amount: \$76.50 per kW-year for committed power capacity, at the following monthly rates:

- June: \$10.50/kW
- July: \$17.50/kW
- August: \$18.50/kW
- September: \$19.50/kW
- October: \$10.50/kW

Comments:

- This is proposed as a new DSGS program option providing compensation for committed capacity, without a requirement for CAISO wholesale market participation.
- The monthly and total program-year capacity payments are based on the existing DSGS Option 3.
- The program would require operation according to the requirements set out below under Operational Requirements, with compensation provided for committed capacity alone and without CEC funding sources providing additional compensation for energy discharged by participating batteries during events.
- Participants would be compensated the same amount regardless of the number of dispatch events, but they must respond to all events to receive the capacity-based performance payment.
- Many participants would participate through aggregations.
- DEBA-funded participants participating in DSGS through this program option must commit to participate in DSGS for the program term, and funds should be set aside for that participant's program-term participation at the time of enrollment. CALSSA recommends a 5-year program term, although the CEC may wish to establish a shorter (e.g., 4-year) term depending on available funding and other considerations.
- Energy exported to the grid is counted in the capacity committed and dispatched during program events.
- Compensation is based on committed capacity without a baseline calculation, to streamline and simplify the program, to provide certainty to participants and the CEC about compensation levels, and to encourage battery resources to cycle for the greatest grid benefit on non-event days, as described more fully below under "Reasons for Omitting a Baseline."

⁷ For example, CALSSA member Generac Power Systems submitted RFI responses describing the functionalities and reliability benefits of its aggregation software. See Comments of Generac Power Systems, Inc. to the Request for Information, submitted Nov. 30, 2022, p. 9.

- Measurement of performance is based on average metered battery output during events over all events in a program year, and compensation is adjusted for performance above or below the committed capacity as described below under “Operational Requirements.”
- This proposal provides for commitments and compensation in kW terms rather than kWh terms, again based on existing DSGS Option 3. There are reasons the CEC may prefer to have resources make commitments and be compensated in terms of kWh instead, and CALSSA is open to developing an alternative approach that does so. Basing the commitment on kW prioritizes maximizing capacity (power) that will be available at the critical peak moment during emergency conditions. Basing the commitment on kWh prioritizes maximizing energy capacity and is more agnostic to battery resource and event duration.
- Customers and aggregators will be incentivized to commit a large amount of capacity to the program because doing so will provide greater compensation, but the program cannot require the entire battery capacity to be committed. Customers must be able to reserve some capacity for their own use, such as a small amount for backup. Without that flexibility, enrollment will lag substantially.
- The program should include a minimum required committed capacity. The capacity commitment must take into account amounts reserved for customer use and required for battery operation, and expected degradation over the program term. Decisions regarding storage capacity commitments must consider both power and energy. For example, with a 3-hour maximum event length (as proposed here), energy output will be a more important factor for batteries below a 3-hour duration, and power output will be more important for batteries above a 3-hour duration. Calculation of the minimum capacity commitment will differ for shorter-duration and longer-duration resources. Details of the calculation can be determined later in the program development process.
- Existing valuation for capacity resources is largely not publicly available, but likely exceeds this \$76.50 value by a substantial margin. DSGS provides a direct benefit to all ratepayers to the extent that the DSGS capacity payment is lower than the market valuation for capacity resources.

DEBA/DSGS Program Proposal—Alternative Scenario

The base scenario above includes a lower DEBA incentive value than CALSSA’s responses to the CEC’s Request for Information (RFI) identified as needed to accelerate deployment of customer-sited storage. The lower value could work if there is assurance that funding recipients will also receive compensation over a 5-year program term through the DSGS option proposed in this scenario.

In the event that the DSGS program cannot provide assurance of ongoing compensation, the level of the deployment incentive through DEBA would need to be higher. This alternative scenario presents more appropriate funding levels in that circumstance.

Amount of DEBA Incentive: \$300/kWh

Amount of New DSGS Option Capacity Payment: \$55/kW-year at monthly rates such as the following, which are based on the proportions in existing DSGS Option 3:

- June: \$7.50/kW
- July: \$12.50/kW
- August: \$13.50/kW
- September: \$14.00/kW
- October: \$7.50/kW

Comments:

- This DEBA incentive level would be higher than current SGIP Step 5 commercial incentive rate and CALSSA's proposed AB 209 SGIP residential incentive rate. With a commitment to provide capacity and perform during grid emergency events, it is appropriate to provide a higher level of incentive than through SGIP.
- This alternative scenario is preferable for this DEBA/DSGS program proposal in terms of simplicity and providing sufficient incentive to ensure strong participation and bring substantial capacity online to serve as reliability resources.
- Other than the differences in incentive levels set forth here, this scenario is the same as the base scenario described above, and the same operational requirements apply, set forth below.
- As noted above for the base scenario, the CEC can and should re-evaluate the incentive levels on a going-forward basis based on the program's early experience and adjust levels as appropriate.
- The proposed capacity compensation is appropriate in a combined DEBA/DSGS program. For resources that do not receive a DEBA incentive, compensation for committed capacity should be higher.

Operational Requirements

CALSSA proposes that the new DSGS participation option use wholesale market-informed dispatch triggers. Using energy market price-based triggers will address emergencies because prices can be expected to be high during grid emergency conditions. This approach has the advantage that it not only addresses emergencies when they arise, but also can help avert emergencies by providing energy to the grid before an emergency alert has been called, potentially avoiding the need for an alert. This approach is similar to that in the existing DSGS Option 3 but does not require CAISO wholesale market participation.

- Program hours are 4:00-9:00 pm, June 1 through October 31, 7 days a week.⁸

⁸ DSGS Guidelines, p. 11.

- Participants must participate in all program months.
- Event days are days in which the day-ahead CAISO wholesale market prices (LMP) include prices above \$200/MWh. CALSSA recommends using the applicable DLAP day-ahead price for participants located within each investor-owned utility's territory. Each publicly owned utility and other load-serving entity outside IOU territories should recommend one pricing node or other appropriate price value to use as a trigger, and may recommend a different reference price if more appropriate than \$200/MWh.
- Dispatch hours on an event day are up to the 3 highest-priced hours above \$200/MWh during the program hours of 4:00-9:00 pm, for a maximum event duration of 3 hours.
- The maximum annual required dispatch hours in the existing DSGS Option 3 apply: 60 hours per year.⁹ CALSSA recommends not including a maximum number of required dispatch hours per month, as discussed in the comments below.
- The CEC determines event days and hours and sends a dispatch signal on the prior day. This is primarily an administrative task, not a complex engineering determination. The CEC program manager reviews the day-ahead pricing when it is released and issues a signal. Additionally, it may be appropriate for the CEC program manager to exercise some discretion in issuing signals based on future weather and energy demand forecasts and other considerations. For example, if the program is nearing its monthly maximum required dispatch hours and more challenging conditions are predicted for a future day, the manager may choose not to call events in some hours above the \$200/MWh threshold.
- Dispatch signals can be sent by email and web posting, while ultimately this may be a good use case for the Market-Informed Demand Automation Server (MIDAS).
- Performance is based on average metered battery output over program events. The guidelines for adjustments to compensation in the DSGS Guidelines for the existing Option 3 apply to participant payments under this proposal:¹⁰ If the participant delivered less than the committed capacity, the payment is reduced by 2 times the amount of the shortfall; this payment adjustment may be modified for good cause shown by the participant for the shortfall. If the participant delivers more than the committed capacity, the CEC will increase the capacity payment up to 10% greater than the committed capacity. The guidelines should clarify that the payment would be reduced to zero when performance is 50% or less of the commitment, but that the participant will not be required to pay a penalty for a shortfall, and that the payment for delivering more than the committed capacity is directly proportional to performance, up to 110% of the committed capacity. For aggregations of smaller resources, it would be appropriate to apply compensation adjustments to the aggregator payment, with the aggregator deciding any adjustments to customer payments. Some resources within an aggregation may be able to overperform to balance out underperforming systems, and

⁹ DSGS Guidelines, p. 13.

¹⁰ DSGS Guidelines, p. 10.

balancing the aggregated capacity to deliver on the committed capacity is within the role of the aggregator.

Comments:

- With more active program dispatch management, the CEC can focus dispatch on the most critical hours, taking advantage of battery storage's ability to provide targeted discharge over a shorter duration than the current DSGS Option 3's demand-response-focused 4-hour dispatch window.
- This proposal seeks to balance an interest in delivering maximum capacity during the moments of most critical need with providing capacity over a period of time. Some energy storage resources have a higher ratio of power to energy, and discharge at high power happens over a shorter period, often about 2 hours. This is particularly true of residential battery systems, most of which are modular, with integrated inverters and batteries, meaning that adding kWh capacity necessarily adds kW power. Meeting a commitment to dispatch over a longer duration means these systems will not be able to dispatch at maximum capacity. Program development should consider whether to prioritize maximum capacity or longer dispatch. If the CEC prefers to have dispatch over a longer period at lower power, it should consider an alternative compensation structure based on kWh rather than on kW, to avoid penalizing customers that have a high ratio of power capacity to storage capacity.
- We support the program year maximum required dispatch hours in the existing DSGS Option 3, 60 hours per year. Existing Option 3 also includes a maximum required dispatch per month of 24 hours.¹¹ CALSSA recommends omitting that guideline or increasing the number of hours to 30 hours per month for this program proposal, as the 24-hour maximum may mean resources contribute less than is optimal during high-need months.

Reasons for Omitting a Baseline

CALSSA recommends that the program design presented in this proposal for DEBA and DSGS not include baselines, and instead measure committed capacity and performance without reference to performance on non-event days.¹² There are many reasons for taking this approach, as discussed here and in CALSSA's responses to the CEC RFI.¹³

- Omitting baselines will greatly simplify the program, streamlining both program development and program participation. This will better enable resources to deploy quickly and be available to provide grid support during emergency events. The state needs resources to be deployed quickly and should seek to eliminate barriers.

¹¹ DSGS Guidelines, p. 13.

¹² We do not propose eliminating baselines from existing DSGS program options.

¹³ CALSSA RFI Responses, pp. 17-18.

- Baselines push participants to modify their use of storage resources on non-event days in ways that often will run counter to grid needs. For example, participants may opt to discharge less during the 4:00-9:00 pm window on non-event days in the days and months before an event to create a lower baseline, contributing less energy during the net peak period than otherwise. Baselines create a perverse signal that encourages customers to avoid grid support activity on non-event days.
- The need to consider and modify behavior on non-event days adds further complexity for battery management, increasing operational costs.
- Baselines add complexity and uncertainty regarding compensation, making it more difficult for developers and customers to assess the value of participation, and hampering the ability to obtain financing.
- The foregoing issues create barriers to entry for potential participants. By contrast, omitting baselines will encourage participation in the program by making both deployment and participation easier and less costly.
- Omitting baselines will also better enable customers to optimize battery use for bill savings on non-event days. This will improve project economics and make projects more viable with less funding through CEC programs, reducing the needed level of DEBA incentives and DSGS compensation. With baselines, the ability to use batteries for time-of-use rate arbitrage and demand charge reduction is greatly reduced, so much more of battery economics will rely on government funding.
- When a new storage resource is deployed through the DEBA program and committed to provide reliability services as a condition of receiving DEBA funding, that resource is incremental as a new reliability resource, and not applying a baseline best reflects that incrementality.

DSGS Option 1 and 2 Proposed Program Modifications

CALSSA supports the CEC continuing the existing DSGS Options 1 and 2 as an alternative pathway for providing grid resources during extreme events. Flexibility and alternative pathways will lead to greater success in addressing grid emergencies by bringing a greater breadth of potential resources to bear, as different customers will be attracted to different program offerings.

We recommend the following modifications to DSGS Options 1 and 2 to increase their effectiveness.

Minimum Dispatch Hours

Add minimum dispatch hours to create a needed level of certainty of compensation for potential participants.

Comments:

- The need for some level of certain compensation is heightened for new resources to be deployed through the DEBA program: Program participation is a key ingredient in the decision to install grid resources such as batteries. If the compensation and consequences of that participation are unknown, the DEBA incentive will need to be higher than otherwise necessary to encourage customers to install resources and participate in grid service programs.
- ELRP includes minimum dispatch hours, such as the 20 hours minimum for Group A.4, Virtual Power Plant Aggregators, and 30 hours minimum for Group A.5, Electric Vehicle and Vehicle to Grid Integration Aggregators. The Public Utilities Commission observed that minimum dispatch hours create an incentive for participation because without them potential participants would not have any assurance that they would receive compensation for participating.¹⁴
- As for ELRP Group A.4, 20 hours is an appropriate level for minimum dispatch hours in DSGS Options 1 and 2.

Aggregators as DSGS Providers

Aggregators of customers should be authorized to participate in DSGS as DSGS providers, regardless of whether a retail supplier has enrolled as a DSGS provider in territory where aggregated resources are located.

Comments:

- The original DSGS Guidelines limited DSGS provider eligibility to retail suppliers as defined in Public Utilities Code section 398.2, except for investor-owned utilities and community choice aggregators.¹⁵ In a Guideline Advisory issued on September 3, 2022, the CEC expanded eligibility to aggregators of customers during the August–September extreme heat event and the state of emergency proclaimed by Governor Newsom.¹⁶
- Expanding eligibility to aggregators for future program years is a sensible measure that will enable more customers to participate in DSGS. Through their existing and future relationships, aggregators will expand the reach of DSGS to new customers and increase the potential capacity available during emergency conditions.
- Aggregators serving as DSGS providers can aggregate resources across retail supplier territories, bringing economies of scale and again increasing the capacity that can be offered as emergency grid resources.

¹⁴ California Public Utilities Commission Decision 21-12-015 (Rulemaking 20-11-003), pp. 33-34, 40.

¹⁵ DSGS Guidelines, p. 26.

¹⁶ Guideline Advisory, Demand Side Grid Support Program Provisions During the State of Emergency, September 3, 2022, p. 2.