

DOCKETED

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Tesla Comment on DSGS Proposed Modifications

Additional submitted attachment is included below.



October 30, 2024

California Energy Commission

Docket Unit, MS-4

715 P Street

Sacramento, CA 95814

Re: Docket No. 22-RENEW-01—Comments on DSGS Potential Modifications

California Energy Commissioners and Staff:

Tesla respectfully submits the following comments on the Proposed Demand Side Grid Support (DSGS) Program Guidelines, Fourth Edition, issued on October 4, and the public workshop on those changes held on October 18.

I. Introduction and General Comments

Tesla greatly appreciates the work of Energy Commission staff in creating and improving the DSGS Program, which has allowed Tesla and other companies to rapidly scale up one of the world's largest Virtual Power Plants (VPPs) comprised of small batteries at residential sites anywhere in the world. As noted in the Oct. 18 workshop presentation, between 2023 and 2024 the DSGS Option 3 VPP grew from 3.4 MW to 240 MW of capacity, the equivalent of building a medium-sized power plant in 12 months.

The VPP capacity added through DSGS Option 3 is an economic win for the state, as leveraging the capacity from these in-home batteries is less expensive than building new grid-scale battery capacity,¹ and uses the built environment without using land or building new transmission facilities.

¹ DSGS Option 3 pays an average of \$13.80/kW-month for 4-hour batteries . According to a Brattle Group report, Cost of New Entry for 4-hour grid-scale batteries is between \$16/kW-month and \$20/kW-month. See <https://www.brattle.com/wp-content/uploads/2022/05/PJM-CONE-2026-27-Report.pdf>

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The Energy Commission should be proud of this accomplishment, as DSGS has created a successful and scalable battery-based VPP program that contributes to the state's reliability goals at less cost than alternative front-of-meter resources. Part of the reason for this success is the program's simplicity. The rules are simple and straightforward, making it easy for customers to understand the value and enroll in the program. Likewise, aggregators benefit from a relatively streamlined program design that minimizes unnecessary obstacles to participation.

While Tesla understands the need to make program adjustments and appreciates staff commencing the process well in advance of the 2025 season, we encourage the Commission to avoid making major changes that overly complicate the program, or that effect customer payments in a way that could make customers question the value of continued participation. Regular changes to program parameters increases business risk to aggregators who have sold the program to customers under one set of terms, and are subsequently required to change those terms after customers have already enrolled.

II. Move to Prescriptive Baseline for all Option 3 Customers

Tesla opposes the proposal in Chapter 5, Section E, to apply a prescriptive baseline to all stationary battery storage, including those not taking SGIP incentives and installed after July 1, 2023, which are currently exempt. Customers use batteries for a variety of reasons that change daily. Ensuring customers' batteries are available to ensure grid reliability should be of paramount importance, and the proposal to increase baseline "haircuts" for certain customers would reduce the economic incentive for those customers to participate in the program and make their batteries available when truly needed.

III. Option 3 Data Reporting

In Chapter 2 Section D.3 "Option 3 Performance Reports," staff proposes to add additional reporting requirements, including a requirement to report monthly data for all active sites at the end of the month, and a Performance Estimate Report upon request for any Option 3 event. Tesla notes that this requirement puts additional administrative burden onto aggregators.

Tesla understands that staff has a responsibility to monitor program implementation. However, we recommend that if staff includes the monthly reporting requirement in the final Guidelines, the Commission should also move to monthly program payments, instead of issuing payments

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at the end of the program season. Moving to monthly payments would give aggregators an incentive to ensure that data is reported accurately and on time each month.

IV. Adding Day-of Emergency Alert Triggers

In Chapter 5, Section D, staff proposes to add an “Emergency Alert Trigger” to Option 3 VPPs that would dispatch the VPP if the host balancing authority (BA) calls an Energy Emergency Alert (EEA) Watch or higher in the 4 – 9 pm window. In months where there is an hour that was triggered by the EEA event but not the price trigger, DSGS Option 3 participants would gain a 10% bonus payment.

It is understandable that during an emergency in which reliability is threatened, the state will reasonably expect taxpayer-funded resources to respond and contribute to maintaining reliability. At the same time, instituting a day-of trigger could put aggregators and customers in the position of having to respond to an event without having had sufficient time to charge their batteries.

Thus, Tesla recommends that if the Commission institutes this change, response to same-day triggers should not negatively impact the aggregators’ monthly performance and capacity payment. Rather, the Commission should make the proposed 10% incentive bonus contingent upon aggregators providing some level of response (i.e. 50% of committed capacity) to the same-day EEA event.

V. Statewide Test Events for Aug. – Oct.

In Chapter 5, Section D, staff proposes to move to statewide test events called by the Commission for August, September and October. Tesla does not oppose this change.

VI. DSGS Option 4: Emergency Load Flexibility VPP

In Chapter 6, staff proposes to create a new Incentive Option 4, called the “Emergency Load Flexibility Virtual Power Plant” for smart thermostats and heat pump water heaters. Tesla recommends the Commission include controllable electric vehicle (EV) charging load (known as V1G) in this category as well. While most EVs already charge during off-peak times in response to time-of-use rates, there may be enough EV load still charging on-peak in the state to make this program pathway workable for EV drivers.

VII. Response to Selected Workshop Questions

Question 1: What additional program modifications should be considered? Why?

Tesla proposes that DSGS move to monthly compensation, which would be enabled by the proposal in the draft guidelines to implement monthly data reporting. Moving to monthly compensation would provide a reward to customers that is more direct and immediately related to program participation than end-of-season reporting, which would better motivate and incentivize customer participation.

We further propose that if the Commission adds a same-day trigger for EEA events, response to those events should not count against customers and aggregators monthly performance, as batteries might not have had sufficient opportunity to charge in preparation for the event. Instead, we propose that the 10% bonus be contingent on response to the EEA event.

Question 2: This season's experience with Option 3 indicates VPPs appear to include a variety of storage use cases with different discharge patterns. Should we switch from prescriptive to measured baseline for a more accurate determination of demonstrated capacity?

Tesla strongly opposes moving from a prescriptive to a measured baseline.

First, Tesla does not agree that moving to a measured baseline would necessarily be more accurate. Many demand response programs that use a measured baseline do so in conjunction with complex econometric analysis (such as the CPUC's "Load Impact Protocols") to adjust for weather variations and other differences between event and non-event days that impact performance – indicating that using a baseline by itself doesn't necessarily yield an accurate measure of event-day response. These types of analyses are typically done by consultants at considerable cost in money, time and program complexity.

Second, moving from a prescriptive to a measured baseline would be a significant change in the program after just the first full year of DSGS Option 3 program operation. Most participants and aggregators have only had a few months experience with what for many is a novel concept – allowing one's home battery to be managed by external parties for grid support. It is important for the future of VPPs in California that these participants have a positive experience with the program, and making major changes to the program such a short time after it was first rolled out could be detrimental to that effort.

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Finally, moving to a measured baseline seems like it could result in customers seeking to boost their DSGS value by declining to discharge their batteries during peak hours on non-event days, which would deprive the state of value peaking capacity from behind-the-meter resources.

Question 3: In the context of leveraging existing resources, how could we better understand what is an appropriate level of compensation for Option 3 that corresponds to the reliability value provided and stacks on top of the bill savings realized under customer's retail tariff (such as, net billing tariff, demand charges), while avoiding double compensation concerns?

As a general matter and as mentioned in response to Question 2, Tesla feels it is important to maintain consistency in the program to foster customer acceptance of VPPs. Changing incentive levels on a yearly basis could lead to customer frustration and potential attrition.

As for the appropriate level of compensation for Option 3 that corresponds to the reliability value provided, there are two distinct markets that offer "price discovery" for the reliability value of generation capacity. The first is the CPUC's Integrated Resource Planning (IRP) process, in which new batteries and other clean resources execute long-term contracts for capacity to meet the state's clean energy and reliability goals. The second is the Resource Adequacy market, which offers short-term contracts for existing, mostly fossil, resources that have rolled off their original long-term contracts.

Since batteries enrolling in DSGS are new resources that they were not previously part of California's generating fleet, and they are clean resources that help the state meet its climate goals, we feel the appropriate benchmark for DSGS Option 3 is the cost capacity for grid-scale batteries built to meet the IRP requirements (sometimes referred to as "Cost of New Entry" or CONE). In other words, the capacity provided by DSGS Option 3 is new capacity that would otherwise be provided by new batteries executing IRP contracts, not existing fossil generators bidding into to RA markets.

While prices for IRP contracts are confidential, there are numerous studies that estimate CONE for lithium-ion batteries, including ones regularly done by consultants to the eastern RTOs, such as PJM. These reports show that CONE for 4-hour lithium-ion batteries is in the range of \$16/kW-month to \$20/kW-month, which is higher than the average of \$13.80/kW-month

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currently paid to DSGS customers.² It is our view that the cost of installing grid-scale batteries does not vary significantly by geography, so California-specific studies of CONE are not necessary.

Since DSGS monthly capacity payments are likely already less than the comparable cost of capacity from large-scale battery storage installed to meet the state's climate goals, we do not feel it is necessary to further "haircut" the capacity payment by the value of customer bill savings. Attempting to do so would layer on additional complexity (as it is impossible to know how and when DSGS events will overlap with net billing hours or demand charges), as well as change incentive levels in mid-stream, both of which would be to the detriment of the program.

VIII. Conclusion

Tesla greatly appreciates the opportunity to comment on the potential modification to the DSGS Guidelines presented at the January 23 workshop, and we reiterate our thanks for the careful and intelligent program design exhibited by Energy Commission staff.

Sincerely,

/s/ Damon Franz

Damon Franz

Senior Managing Policy Advisor

Tesla

² See PJM CONE 2026/2027 Report Prepared for PJM Interconnection by Brattle Group, p. 77: <https://www.brattle.com/wp-content/uploads/2022/05/PJM-CONE-2026-27-Report.pdf>