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Tesla Comments on DSGS Guidelines, Second Edition

Additional submitted attachment is included below.



May 11, 2023

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

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

California Energy Commissioners and Staff:

Tesla greatly appreciates the hard work, creative thinking and public engagement exhibited by Energy Commission staff in the development of the Draft Demand Side Grid Support (DSGS) Program Guidelines, pursuant to Assembly Bill 205. In particular, we appreciate the inclusion of multiple options for customer and aggregator participation, which provides an opportunity to test various approaches to deploying Virtual Power Plants (VPPs) comprised of distributed energy storage and other types of behind-the-meter (BTM) resources.

In these comments, we provide suggestions and recommendations that we feel would boost participation and customer enrollment in DSGS.

I. Background on Tesla Virtual Power Plants

Virtual Power Plants (VPP) are an emerging technology that allows thousands of small, distributed batteries at homes and businesses to be aggregated together and dispatched from a central point of control to supply energy and capacity to the bulk power system as if they were a single, utility-scale battery operating in the wholesale market. Tesla has been deploying VPPs since 2015, when we partnered with Green Mountain Power (GMP) in Vermont to aggregate in-home Powerwall batteries to help GMP cut emissions and reduce wholesale power costs.

There are a number of different policies and programs that can convey wholesale market conditions to VPP aggregators and facilitate the efficient dispatch of VPPs in response to bulk system conditions. The most simple and direct of these is enrollment and participation of VPPs in wholesale markets. The California Independent System Operator (CAISO) and the California Public Utilities Commission (CPUC) have designed policies and programs to facilitate this type of direct participation by BTM resources, including CAISO's Proxy Demand Resource (PDR) tariff,

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and the CPUC's Demand Response Auction Mechanism (DRAM). While Tesla has previously attempted to establish VPP aggregations of BTM batteries using through these programs in CA, operating a VPP through PDR and DRAM proved unworkable – primarily because neither program allows for energy exported to the grid from behind the meter.

Following the heat wave and rolling blackouts of summer 2021, Tesla worked with our trade associations and the CPUC to establish the Emergency Load Reduction Program, which includes a sub-group (Group A.4 VPPs) specifically designed to facilitate dispatch of behind the meter batteries. Among the provisions that make ELRP Group A.4 workable for battery VPPs is the ability to count exported and measurement of performance directly at the battery inverter.

Following the establishment of agreements with Pacific Gas and Electric Co. (PG&E) and Southern California Edison (SCE) allowing easy, app-based enrollment of customers in summer 2022, Tesla was able to enroll more than 3,000 Powerwall customers in just 2 months and provide 577 MWh of energy from BTM batteries at residential sites during the critical hours of the heat wave.¹ Since then, Tesla has continued to expand our CA VPP, and currently have 6,691 Powerwall customers enrolled.

II. Comments on DSGS Draft Guidelines

A. General Comments

The revised DSGS Program Guidelines would create a program that is valuable in two ways. First, DSGS Option 1 provides an opportunity for VPPs based on the ELRP program to expand to municipal utility territories and areas outside of the Investor-Owned Utilities (IOUs). Second, DSGS Option 3 provides an alternative pathway for VPPs to be dispatched in response to wholesale market conditions without participating in the wholesale market, which circumvents the barriers that have inhibited VPPs to date, such as the inability to credit exported energy.

While Tesla sees great potential for DSGS Option 3 in future years, in the near-term, our focus would be on DSGS Option 1. Given that our California VPP, with thousands of customers already enrolled, is designed around the ELRP program, the quickest and easiest way to expand our VPP and provide additional clean MW of emergency response is to enroll customers in municipal utility territories using the same program rules and requirements as ELRP. DSGS Option 1 creates an opportunity to do that, with some minor modifications recommended below.

¹ <https://www.lastbulb.com/virtual-power-plant>

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B. DSGS Option 1 Should Allow POUs Operating in CAISO the Opportunity to Dispatch Non-Combustion Resources for 20 Hours Per Year Outside of EEA Events

As mentioned in the section above, Tesla has been focused on building upon the success of our California VPP, which is based on the ELRP Program, and expanding that program for summer 2023. Based on our experience with ELRP in summer 2022, we've found that the program has a number of positive features, such a payment structure based on kWh dispatched that is simple and easy for customers to understand, and a "pay-for-performance" approach that directly ties customer compensation to their contribution during grid stress events. If a program similar to ELRP existed in the POU territories, we could fairly easily expand our VPP into those territories, possibly as soon as summer 2023. DSGS Option 1 provides that opportunity.

One element of the ELRP program that has allowed Tesla to quickly scale up participation and customer enrollment is the requirement for IOUs to dispatch the program a minimum of 20 hours per season.² The minimum dispatch hours are an important program element because they allow an aggregator to present potential customers with some minimum expectation of compensation for enrolling in the VPP. Absent the minimum dispatch hours, there would be no way to estimate potential earnings for customers, since ELRP is only dispatched during CAISO emergency events, which are unpredictable and do not always occur each year.

To make DSGS Option 1 more consistent with ELRP, we recommend allowing POUs operating in CAISO to dispatch the non-combustion resources enrolled in Option 1 at their own discretion outside of emergency events for a maximum of 20 hours per year. We propose a "maximum" rather than a "minimum" with the understanding that the Energy Commission does not directly regulate the POUs and may not be able to mandate that they dispatch the resource. Furthermore, making DSGS Option 1 a resource that is available for the POUs to deploy at their discretion would likely make it this program option more appealing and useful to POUs.

C. DSGS Options 1 and 3 Should be Modified to Give POUs Outside of the CAISO Territory Discretion on When to Dispatch Non-Combustion Resources

In their comments on the DSGS and DEBA Programs Workshop, Los Angeles Department of Water and Power (LADWP) request that LADWP remains the sole dispatcher of DSGS resources.³ As LADWP points out, it is not in the CAISO service territory, and thus dispatches in

² CPUC Decision 21-12-015, p. 33

³ "LADWP Comments on DSGS and DEBA Programs Workshop," submitted to Docket 22-RENEW-01 by LADWP on Feb. 17, 2023

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LADWP territory in response to CAISO emergency events might not benefit LADWP or the CAISO. Tesla sees validity in this concern and seeks to address it with the following modifications.

1. DSGS Option 1 in Non-CAISO POU Territories

For DSGS Option 1, POUs outside of the CAISO territory should be allowed to dispatch non-combustion resources at their discretion for a maximum of 30 hours per year. This would make DSGS Option 1 roughly equivalent to Option 3 in terms of payment to customers. For example, a 1 kW, 2-hour resource under Option 3 would earn \$62.10 for being dispatched 35 times. Under our proposal, a 1 kW resource under Option 1 would earn \$60 for being dispatched for 30 hours. While the Option 1 customer would earn a similar payment for fewer hours of dispatch, that customer would likely be dispatched during higher-value hours, and would have a greater incentive to full respond.

2. DSGS Option 3 in Non-CAISO POU Territories

DSGS Option 3 could be modified to accommodate POUs outside of the CAISO territory simply by removing the dispatch triggers based on CAISO wholesale market prices, and allowing POUs to dispatch the resource at their discretion for a maximum of 35 times per season. The minimum monthly dispatch of once per month could be maintained to ensure that a monthly capacity value is being provided, but POUs would have the discretion to dispatch during other times based on the conditions in their own territory.

III. Conclusion

Tesla greatly appreciates the opportunity to comment on the DSGS Program Guidelines, Second Edition, and we reiterate our thanks for the careful and intelligent program design exhibited by CAISO staff.

Sincerely,

/s/ Damon Franz

Damon Franz

Senior Managing Policy Advisor

Tesla