



May 17, 2019

California Independent System Operator
250 Outcropping Way
Folsom, CA 95630

RE: Energy Storage and Distributed Energy Resources Phase 4 Straw Proposal

Electrify America, LLC (“Electrify America”) appreciates this opportunity to comment regarding the California Independent System Operator (“CAISO”) Energy Storage and Distributed Energy Resources (“ESDER”) Phase 4 Straw Proposal (the “Straw Proposal”). Electrify America commends the CAISO on its continued efforts to lower barriers and enhance the abilities of these resources to participate in CAISO markets and concurs with the CAISO that such resources will serve an important role in the future grid.

Electrify America is investing \$2 billion over the course of a decade - \$800 million of which will be in the State of California alone - in zero emission vehicle (“ZEV”) infrastructure, education and awareness, and access efforts to support the increased adoption of ZEV technology in the United States. In our first cycle of investment, we are building a national network of ultra-fast, DC fast chargers across 42 states, with over 600 such dispensers planned for deployment across California by the end of this year. Our state-of-the-art 350kW-capable dispensers will be at select locations nationwide. These systems can provide roughly 20 miles of range per minute to capable cars, allowing for a charging experience approaching gas station refueling speeds. Electrify America will also offer ‘no-money-down’ residential Level 2 chargers and installation as part of its Cycle 2 California ZEV Investment Plan. The plan will allow drivers with a home charger to potentially earn financial rewards for plugging in and supporting a demand response (“DR”) platform.

High-powered electric vehicle (“EV”) charging dispensers are expensive to operate in areas where demand charges are extremely high. A single charging session can cause an EV charging company to absorb a significant demand charge for a high-power, customer-friendly charging experience. This problem is exacerbated when coincident high-powered charging occurs at multi-dispenser locations. To help mitigate such costs, Electrify America is planning to install energy storage systems at over 100 of its locations in 2019, totaling over 25 MW of anticipated behind-the-meter storage.

However, in addition to the behind-the-meter use of such storage, Electrify America believes that behind-the-meter storage can serve a larger role in wholesale markets via enhanced multiple-use application (“MUA”) provisions under ESDER Phase 4 for Non-Generator Resources (“NGR”). This letter serves to reiterate our prior comments and provide input requested by the CAISO on such behind-the-meter technology applications.

Behind-the-Meter Technology Applications – Removal of 24x7 Participation requirement

As stated in the ESDER Phase 4 Issue Paper, Non-Generator Resources (“NGR”) in the CAISO market are 24x7 wholesale market resources irrespective of any dispatch instruction. For behind-the-meter electric storage resources in a NGR, this results in financial implications that can jeopardize the primary behind-the-



meter application for which they were initially procured, resulting in many resources electing not to partake in CAISO markets.

Electrify America in prior comment letters encouraged the CAISO to make removal of the 24x7 participation requirement for NGR a priority during ESDER Phase 4 given the increasing amount of energy storage being deployed in the State of California, and is pleased that the Straw Proposal addresses this request and poses clarifying questions to stakeholders.

The first such question was regarding how load serving entities (“LSE”) should account for real-time market participation of NGR resources in their load forecast if such resources only participate some of the time. LSEs already face this challenge for DR resources, and for NGR resources, the additional complexity would be accounting for grid injection in addition to behind-the-meter load reduction and consumption as for DR and proxy demand resource - load shift resource (“PDR-LSR”) under ESDER Phase 3. California Public Utilities Commission (“CPUC”) Decision 16-06-045 initially exempted DR resources from being evaluated using Load Impact Protocols (“LIPs”) via a time-based limitation to avoid pre-judging the impact of such programs. Electrify America believes a similar exemption would be merited in this case, with further stakeholder discussions when such participation becomes statistically relevant. This question should be addressed in conjunction with load forecasting impacts of DR and PDR-LSR to be comprehensive, uniform, and technology-agnostic.

The second question from CAISO was how a utility distribution company (“UDC”) would prevent settling a resource at a retail rate when a behind-the-meter NGR was participating in the wholesale market. Electrify America believes this concern can be addressed through data sharing. For example, during market intervals in which a CAISO dispatch were issued, the CAISO could relay the net consumption or export at the NGR sub-meter in the market interval to the UDC, and with this information the UDC could adjust its settlements accordingly. In effect, this would mean the UDC Wholesale Distribution Access Tariff (“WDAT”) and applicable costs would apply at the NGR sub-meter only in market intervals where a CAISO dispatch instruction were issued, with the retail tariff applying otherwise.

The final question from CAISO on behind-the-meter NGR posed how such a resource would be prevented from charging at a wholesale rate and then discharging to provide retail or non-wholesale services. An additional question to consider along the same lines would be how an NGR would be prevented from charging at a retail rate and then discharging to the wholesale market if a CAISO dispatch were issued. In both cases, the CAISO dispatch should only be issued when the bid of such a resource to provide behind-the-meter load reduction, grid injection, or load consumption adheres to well-established market mechanisms to prevent such ‘gaming’ in demand response participation models.

Specifically, Federal Energy Regulatory Commission (“FERC”) Order 745 created a net benefits test (“NBT”) threshold to establish a minimum price threshold at which DR was determined to be cost-effective. Energy storage resources participating in DR, for example, may charge at a lower retail rate before being paid DR market compensation for behind-the-meter discharge to reduce load under current rules. In Electrify America’s judgement, it would be consistent with this precedent to use the same NBT price threshold as a floor for MUA NGR bids to discharge from battery storage resources, whether that is done only behind-the-meter or beyond into the wholesale market. For MUA NGR bids for load consumption, this would result in capping bids to a value less than \$0. In effect, this is the same framework approved for PDR-LSR in ESDER



Phase 3, but extended such that the MUA NGR can also inject from behind the retail meter into the wholesale market when prices are at or above the net benefits test threshold, and without any symmetric dispatchability requirements. While such a framework without symmetric dispatchability requirements could result in an imbalance, the bid measures discussed would be sufficient to avoid the concerns the CAISO has expressed.

Demand Response Enhancements – Multiple Resource IDs under a Single Service Account

The Straw Proposal did not address the issue of multiple resource IDs under a single service account.

As stated previously, multiple DR assets cannot currently participate independently in DR programs from behind the same retail meter/location. This limits demand response participation in CAISO markets, especially as the penetration of such DR-capable resources grows at a location and even if the capabilities of such newer DR assets exceed the ‘first’ such DR registration. For example, a thermostat already registered in a DR program may preclude an electric vehicle charger in the same household from participating in the market. Electrify America reiterates its request for CAISO to facilitate assignment of multiple resource IDs under a single service account in ESDER Phase 4 to allow participation of an electric vehicle supply equipment (“EVSE”) embedded sub-meter in DR programs independent from the retail meter.

As stated during a previous workshop by multiple stakeholders, the CAISO is already technically introducing multiple resource IDs under a single service account for the approved PDR-LSR mechanism under ESDER Phase 3 as well as allowing for different baseline methodologies to be applied to sub-metered EVSE load. Thus, the CAISO should be able to assign multiple resource IDs for different behind-the-meter resources that are sub-metered without the measurement and verification concerns it expresses. The implementation of this under ESDER Phase 4 by the CAISO would encourage other relevant parties to move forward on reforms to allow such registration practices and thus facilitate greater participation in CAISO demand response markets.

Electrify America thanks the CAISO again for this opportunity to comment regarding the ESDER Phase 4 Straw Proposal, and would be happy to further discuss any of the requests raised in this letter.

Respectfully submitted,

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