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Fermata Energy Comments on DEBA DER GFO Draft Solicitation Concept

Attached please find comments of Fermata Energy on the March 5, 2024 Workshop on the DER GFO Draft Solicitation Concept for the Distributed Energy Backup Assets Program (DEBA).

Additional submitted attachment is included below.

Fermata Energy

March 15, 2024

CEC Commissioners and Staff
California Energy Commission
Research and Development Division
1516 Ninth Street
Sacramento, CA 95814

Via: CEC Docket 22-RENEW-01

Re: Comments of Fermata Energy on March 5, 2024 Workshop on the DER GFO Draft Solicitation Concept for the Distributed Energy Backup Assets Program (DEBA)

Dear CEC staff:

Fermata Energy is pleased to provide comments in response to the March 5th CEC Workshop on potential revisions to the Distributed Energy Backup Assets (DEBA) Program.[1]

Background: Founded in 2010, Fermata Energy is a leading Vehicle-to-Everything ("V2X") bidirectional charging services provider. Fermata Energy designs, supplies, and operates the technologies required to integrate electric vehicles ("EVs") into homes, buildings, and the electric grid. Fermata Energy's V2X platform incorporates multiple connector types in a bidirectional charger and management software platform that connects the EV and electricity user to the grid. Fermata Energy's V2X platform extends the value of an EV and allows the vehicle to act as a dispatchable energy storage resource when the vehicle is not in use.

Fermata Energy's customers today are earning thousands of dollars per EV and EVSE pair through Vehicle-to-Grid ("V2G") and Vehicle-to-Building ("V2B") programs nationwide. The company's bidirectional EV charging system is the first to be certified by UL Solutions in North America to UL 9741, the Standard for Bidirectional EV Charging System Equipment and is the first to earn approval in the U.S. from a major OEM for battery warranty.

In addition to developing the hardware and software required to perform V2X activities, Fermata Energy has spent over 10 years studying how V2X can unlock additional value streams from EVs, including those that are commercially viable today without regulatory intervention and how to best monetize these value streams. Fermata Energy has extensive experience with analyzing use cases, monetization mechanisms, and business models to maximize the benefits of V2X technologies.

[1] See California Air Resources Board Notice Notice of Public Hearing to Consider Proposed Low Carbon Fuel Standard Amendments available at https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/lcfs_notice.pdf,

Vehicle Grid integration ("VGI") encompasses both V1G (smart and managed charging solutions) and V2X (bidirectional power transfer to the grid, building, home, microgrid, or any other external load source). While V1G enables EVs to participate in off-peak charging programs and provide automated load management, V2X unlocks additional value streams and benefits for ratepayers and the grid by enabling the discharge of power stored onboard an EV. The V2X services that Fermata Energy provides unlocks the value of EVs to provide all of the services that that V1G does, in addition to backup power/resilience, demand charge management, demand response, system-wide peak shaving, and ancillary services, among others. Several studies have demonstrated significant incremental value from bidirectional V2G capabilities relative to V1G.[2]

The interest in V2X commercialization is widespread and accelerating. In addition to the launch of the Ford Lightning (EV F150 pickup truck) V2H offering, 2023 saw several EV manufacturers announce plans to make their EVs bidirectional.[3] Furthermore, several electric vehicle supply equipment ("EVSE") manufacturers announced plans to bring bidirectional chargers to market, expanding the limited number of bidirectional chargers that are available today.[4]

Fermata Energy Recommendations on DEBA Program Design

1. **To enable the wide scale participation of V2G EVSE in DEBA, include a smart inverter exemption for non-SA and non-SBThe certified V2G DC EVSE.** Bidirectional charger manufacturers are working to complete certification processes to meet all safety and reliability standards required by California's Rule 21. There is a very limited availability of SA-certified V2G DC EVSE, and there are no SB-certified V2G DC EVSE currently available for at least the next 12-18 months. If the Commission does not extend the V2G DC EVSE smart inverter exemption to DEBA, California will likely see little-to-no V2G assets enrolling into the program in the near future. As a result, hundreds of megawatts of latent energy storage capacity could go untapped, undermining California's efforts to

[2] For example, Tarroja and Hittenger (2021) estimate that the value of smart charging only reaches $87 per vehicle-year while that for vehicle-to-grid can reach $2,850 per vehicle-year in California, see Energy, The value of consumer acceptance of controlled electric vehicle charging in a decarbonizing grid: The case of California available at https://www.sciencedirect.com/science/article/pii/S0360544221009397 and See The Electric Power Research Institute, Vehicle-to-Grid: $1 Billion in Annual Grid Benefits? available at https://eprijournal.com/vehicle-to-grid-1-billion-in-annual-grid-benefits/#:~:text=V2G%20technology%20can%20provide%20%241,peak%20shaving%20and%20ramping%20support.

[3] See Automotive News, GM to offer bidirectional charging on all EVs by 2026 available at https://www.autonews.com/mobility-report/gm-evs-have-bidirectional-charging-technology-2026 and CleanTechnica, Tesla Plans To Adopt Bi-Directional Charging By 2025 available at https://cleantechnica.com/2023/08/19/tesla-plans-to-adopt-bi-directional-charging-by-2025/.

[4] See electrek, Wallbox and Kia team up to try and bring bidirectional charging capabilities to EV9 owners available at https://electrek.co/2023/08/25/wallbox-kia-bidirectional-charging-capabilities-ev9-owners-home/ and

bolster grid reliability, support renewable energy integration, or achieve its affordability and resiliency goals. The Emergency Load Reduction Program and **PG&E and SCE Dynamic Rate Pilots** establish pathways to enable the interconnection of non-SA and non-SB certified V2G DC EVSE, setting a precedent for this exemption.[5][6][7] There is also consideration of a similar exemption for the Demand-Side Grid Support Program (DSGS). There is ample precedent for such an exemption, and as such, we urge the CEC to consider a similar exemption for the DEBA program to allow the currently available bidirectional chargers to participate, providing much needed emergency reserve capacity.

2. **Lower the Capacity Aggregation Requirements (MW minimums) for Group 1 and Group 2:** While Fermata Energy recognizes that the goal of DEBA is to incentivize MWs of new and existing capacity to come online and provide supply, load reduction, and load shift to support the state's Strategic Reliability Reserve, we recommend lowering the 6 MW minimum capacity requirement for Group 1 and the 15 MW minimum capacity requirement for Group 2 projects. Although aggregation of sites is allowed for Group 1, projects installing DERs may not be able to easily meet the 6 MW minimum capacity requirement. At the March 5th workshop, multiple stakeholders noted during the public comment session that the minimum capacity requirement was of potential concern. For example, there are some Group 1 projects that might meet the 10 MW rated capacity requirement, as per the guidelines' definition of rated capacity, but not the 15 MW aggregated capacity minimum. The minimum aggregation size sets a very high bar for emergent technologies and will limit installation of certain low-cost emergency resources. Fermata Energy recommends lowering the minimum aggregation size to 100 kW.
3. **Exemption for Bidirectional EVSE under 100 kW:** Group 1 requires DERs to have a capacity of 100 kW or greater. However, most of the bidirectional EVSE commercially

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[5] See **ELRP Final Decision, Attachment 1:** On page 20 of the PDF, under "A.5. Vehicle-Grid-Integration Aggregators Eligibility," you will find the interconnection exemption for bidirectional EV chargers: *"In recognition of a nascent market, any direct current (DC) V2G electric vehicle supply equipment (EVSE) that has UL 1741 certification - but not UL 1741 SA certification, any subsequent UL 1741 supplement certification required in Rule 21, or Smart Inverter Working Group-recommended smart inverter functions - may interconnect initially for the purpose of participating in the ELRP, subject to all other Rule 21 interconnection requirements."*

[6] "See DECISION TO EXPAND SYSTEM RELIABILITY PILOTS OF PACIFIC GAS AND ELECTRIC COMPANY AND SOUTHERN CALIFORNIA EDISON COMPANY Attachment B, Page B-1: *"Any direct current (DC) vehicle-to-grid (V2G) EVSE that has UL 1741 certification (but not UL 1741 SA certification), any subsequent UL 1741 supplement certification required in Rule 21, or Smart Inverter Working Group-recommended smart inverter functions may interconnect initially for the purpose of participating in the expanded pilots, subject to all other Rule 21 interconnection requirements.."*

[7]

available today are rated for less than 100 kW.[8] We recommend that an exemption for lower power DC EVSE be created so as not to prohibit the participation of low to medium-power bidirectional chargers, which tend to be easier to interconnect and install due to reduced installation costs, reduced customer and utility-side upgrades, and shorter interconnection timelines. Group 1 also allows the installation of these DERs BTM or FTM, and it is much more difficult to install and interconnect ultra-high power bidirectional EVSE BTM due to the risk of backfeeding, the need for significant panel upgrades, and the requirement of utility Make Ready rebate programs that these chargers be installed FTM on a separate service drop to be eligible for rebates.

4. **Allow Participation of V2G in Group 3, which is Currently Ambiguous:** Based on the draft DEBA program guidelines, bidirectional EVSE are only eligible for participation in Group 1 and Group 2. It is stated that EVSE that can provide managed charging are eligible for Group 3. However, most EVSE capable of managed charging can also provide smart charging/V1G services. We request the CEC clarify whether EVSE that can provide both bidirectional charging and managed charging can qualify for Group 3. We recommend that any EVSE capable of providing both V1G and V2G services be allowed to qualify for Group 3 participation.
5. **Allow Dual Participation for all Pathways, not just Pathway 4 (Daily Dispatch):** We recommend the CEC allow dual participation for all five pathways, not just Pathway 4 (Daily Dispatch), to enable DERs to value stack. Dual participation with emergency DR programs like DSGS and ELRP, and dynamic rate pilots and export credits, such as the CalFUSE pilots, can help improve project economics and incentivize projects to deploy and deliver greater incremental emergency load reduction and export capacity. During the Public Comment of the March 5th Workshop, Fermata Energy asked "*Why is dual participation only allowed under Pathway 4 and not allowed for the other pathways?" The response provided was that: "ELRP/DSGS are focused on existing equipment. DEBA is intended for new equipment.*" We respectfully request the CEC to elaborate on this response, as it is unclear why newly installed equipment cannot be eligible for dual participation and why Group 4 is best suited for dual participation.
6. **For Groups 1 and 2, allow Costs Related to software development and software services to be eligible for funding.** During the Q&A and public comment portion of the workshop, multiple stakeholders noted that software costs are not eligible for funding under the DEBA GFO. For VPP projects and VGI technologies in particular, software costs

[8] See BorgWarner 60 kW bidirectional DC charger available at https://borgwarner.canto.global/direct/document/f0reoaccrp3ur21j9rk9d41622/a5PdLC-xTVyhoPaVa0QjFgut9yk/original?content-type=application%2Fpdf&name=Product+Sheet+Rhombus+RES-DCVC60-480+PCS.pdf and Fermata Energy's FE 20 DC bidirectional charger available at https://fermataenergy.com/article/fermata-energys-newest-v2x-bidirectional-charger-.

for software development work (e.g. DERMS integration) and ongoing software services to enable DER interoperability and optimization make up a significant amount of overall project costs and direct labor. Projects should be eligible to receive funding under DEBA for software-related costs, provided they are not currently receiving CEC funding for software services under other GFOs (such as REDWDS).

7. **DEBA Program Should Be Structured As a Standard Incentive Program Offering Rather than a Competitive, Grant-Funded Opportunity (GFO):** As VGIC stated in their comments from August 2023, we recommend that CEC staff consider:

> "structuring the DEBA project selection and fund distribution components to enable a wide range of VGI technologies at a low administrative cost for applicants…Instead of a competitive solicitation approach, the CEC should offer a transparent, accessible incentive program to support constructing these critical distributed grid resources. GFOs are administratively burdensome for project developers and site hosts and are a risky endeavor due to the uncertainty of a given GFO application being awarded CEC funding. In contrast, an open incentive program administered by a third-party would offer a streamlined, accessible funding source for DEBA projects."[9]

8. **In summary, we recommend DEBA remain a truly fuel and technology neutral, performance-based program.** The rules for the DEBA program should not be so restrictive that the program effectively makes it not fuel and technology neutral, which is not the best approach to incentivizing V2X and VGI technology participation and is not in keeping with the spirit behind SB 676.[10] Unfortunately, existing programs such as the Self-Generation Incentive Program (SGIP) are not technology neutral. The DEBA program should compensate for this unlevel playing field by not allowing applicants to DEBA to claim double compensation from DEBA projects and from SGIP or programs similar to SGIP.

Fermata Energy appreciates the opportunity to provide these comments in response to the March 5, 2024 Workshop on the DER GFO Draft Solicitation Concept for the Distributed Energy Backup Assets Program (DEBA). We look forward to collaborating with CEC staff as they

[9] August 13, 2023 Comments of the Vehicle Grid Integration Council on the Proposed Draft Distributed Electricity Backup Assets Program Guidelines.

[10] Per SB 676 by Senator Bradgord (PU Code 740.16), California should allow all types of vehicle-grid (VGI) integration technology and ensure that all types of VGI technology can be eligible for VGI program funding, pilots, rates, and incentives. PUC Section 740.16 at (b)2.https://casetext.com/statute/california-codes/california-public-utilities-code/division-1-regulation-of-public-utilities/part-1-public-utilities-act/chapter-4-regulation-of-public-utilities/article-2-rates/section-74016-strategies-and-quantifiable-metrics-to-maximize-the-use-of-feasible-and-cost-effective-electric-vehicle-grid-integration

finalize the DEBA program guidelines.

Respectfully submitted,

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