| DOCKETED | |
|---|---|
| **Docket Number:** | 23-ERDD-01 |
| **Project Title:** | Electric Program Investment Charge (EPIC) |
| **TN #:** | 254082 |
| **Document Title:** | Ted Ko Comments - ElectricFish - Energy Storage Innovations to Support Grid Reliability Concept |
| **Description:** | N/A |
| **Filer:** | System |
| **Organization:** | ElectricFish Energy, Inc./Ted Ko |
| **Submitter Role:** | Public |
| **Submission Date:** | 1/22/2024 4:47:04 PM |
| **Docketed Date:** | 1/22/2024 |

*Comment Received From: Ted Ko*
*Submitted On: 1/22/2024*
*Docket Number: 23-ERDD-01*

## ElectricFish - Energy Storage Innovations to Support Grid Reliability Concept

File attached

*Additional submitted attachment is included below.*

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

Re: Docket No. 22-ERDD-01—Comments on Draft Solicitation Concept for Energy Storage Innovations to Support Grid Reliability

California Energy Commissioners and Staff:

ElectricFish Energy, Inc. ("ElectricFish" or "EF") is a California-based manufacturer that is pioneering the grid edge infrastructure of the future, starting with a battery-integrated DC fast-charging system that maximizes grid support and future-proofs energy investments as the grid evolves. EF has discussed its technology with CEC staff in the context of the DEBA program and intends to submit a project into Group 2 of the solicitation for Energy Storage Innovations to Support Grid Reliability.

While EF is a relatively young company, it is well experienced in CEC programs, having secured a RAMP grant in May 2023 and CalSEED award in June 2022. Also, the company's Acting VP of Policy, Ted Ko, has over a decade of experience in California energy policy, project solicitations, and grant opportunities.

**EF Answers to Questions posed in the Draft Solicitation Concept**

General

1. Do the Project Groups described in Section IV.A address the primary objectives of the solicitation to enable more strategic and high-value implementation of energy storage to support grid reliability?

> Yes. Basically, the deployment of energy storage depends on project revenues exceeding project costs. Group 1 addresses the "hard costs" that can be reduced with innovative R&D. Group 2 addresses the need and opportunity for "value stacking" to produce enough revenue.

2. In addition to the target performance metrics outlined in Section IV.A regarding LCOS, calendar life, and roundtrip efficiency, what other metrics should be reported?

> EF recommends that LCOS, roundtrip efficiency (RTE) and calendar life **not** be used as target performance metrics for Group 2 projects. Each of these metrics is relevant to the hard costs of energy storage technologies and thus is useful for comparing innovations in Group 1 projects.

None of these metrics account for the value/benefits provided by storage installations and so are not useful in comparing the net benefit or cost effectiveness of multi-use applications of storage. Thus, while it is appropriate for Group 2 projects to be required to report these metrics, setting target numbers for each metric for Group 2 projects does not advance the goals of the program.

As described in the draft solicitation, projects will be required to "describe how the project will (1) benefit California investor-owned utility ratepayers by improving safety, increasing reliability, increasing affordability, improving environmental sustainability, and improving equity, all as related to California's electric system".

To the extent that these benefits are quantifiable, a comparison of the benefits to these performance metrics would provide insight into whether a Group 2 project would be a meaningful innovation in the ability for energy storage to deliver grid reliability in California.

3. CEC is considering releasing this funding opportunity as a two-phase solicitation that includes a Pre-Application Abstract phase and Full Application phase. Projects that are successful in the Abstract phase will have two months to prepare a Full Application. Is this approach preferable to applicants or should the CEC consider a one-phase solicitation without the Pre-Application Abstract phase?

EF supports the two-phase approach. Since the current Group 2 budget will support a maximum of 5 projects, it's important for applicants to receive feedback on their concept before a significant amount of resources have been spent on the application.

4. Are the draft funding levels and match requirements appropriate to achieve the desired outcomes of each Group?

EF would support a lower Minimum Award Amount in Group 2 so that the program can support more projects.

An example rough calculation: 100KW - 4hr battery system = 400kWh at an all-in cost of $500/kWh. Total installation cost is $200,000 of which 25% is covered by the applicant. Including overhead costs for the applicant, it would be reasonable to set the Minimum Award Amount in Group 2 to $200,000

<u>Group 2</u>

1. Is a four-year project timeline feasible for Group 2 projects to meet the objectives of the solicitation? Are there any potential barriers or challenges in implementing these types of projects over four years?

EF would in fact recommend a shorter project timeline for Group 2 projects in order for the projects to provide useful information on value stacking. The four-year timeline assumes it may take up to three years to deploy the project before the one-year demonstration period. Energy storage technology that is pre-commercial but ready to deploy in small numbers should not take three years to become operational.

Furthermore, product lifecycles are such that the product that a demonstration project is designed for will be quite a bit different than the product that company would deploy in four years. Thus, the data from the demonstration will be outdated soon after the final report on the project is delivered.

2. Are there any use cases missing from Table 1 that should be included?

Table 1 appears to be missing grid services programs that have typically been categorized as demand response programs. Both the Emergency Load Response Program (ELRP) and Demand Side Grid Support (DSGS) programs are services to the grid that do not seem to fit in a Table 1 category.

Also, Table 1 has an error that has been repeated many times in consideration of the services energy storage can provide to a California customer. "Increased Use of Self-Generation" is not a service in and of itself. It's an operating mode by which a customer can save money on their retail bill but is not a "service" that the customer values apart from bill savings.

3. What are some examples of innovative use cases for commercial Li-ion batteries that are worth exploring in this solicitation?

EF intends to submit a proposal to demonstrate the full multi-use potential of DC Fast Charging of electric vehicles integrated with commercial Li-ion batteries in a combined asset. This project would demonstrate not only peak-managed EV fast-charging, but also provision of grid services with full export capacity (not just "demand response"), as well as both EV charging resilience and backup power to the host site. This full multi-use scenario has not been implemented to date in California.

4. Is the minimum scale of demonstration (>100 kW capacity) reasonable?

Yes. From the perspective of the grid operator, smaller resources are not meaningful.

5. Do the Group 2 requirements sufficiently encourage projects to be in and benefitting disadvantaged communities, low-income communities, or Native American tribes?

While the Group 2 requirements likely sufficiently encourage the demonstration of projects in disadvantaged communities, low-income communities, or Native

American tribes, they do not incentivize the continuity or upscaling of such projects within these communities. EF suggests an additional tier with either 0% match funding requirement or a reimbursement of the 10% match funding requirement at end of project term for projects which successfully demonstrate continuity beyond the term of the demonstration.

9. Is the 12-month minimum demonstration period requirement reasonable for Group 2 projects?

> Yes. Both the needs of customers and the grid tend to exhibit seasonal patterns, so projects should at a minimum, demonstrate a full year of operations.

ElectricFish appreciates the opportunity to provide comments on the Draft Solicitation Concept and is looking forward to submitting an innovative application.

Signed,

Ted Ko
Acting VP of Policy
ElectricFish Energy, Inc.