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**Mainspring Energy Comments on Industrial Decarbonization and  
Improvements to Grid Operations Workshop (23-ERDD-04)**

*Additional submitted attachment is included below.*

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April 14, 2023

California Energy Commission  
Docket Unit, MS-4  
Docket No. 22-RENEW-01  
715 P Street  
Sacramento, California 95814

***Re: Staff Workshop on Potential Solicitation for Medium- and Heavy-Duty Charging and Refueling Infrastructure Projects on Designated Corridors (19-TRAN-02)***

Mainspring Energy, Inc., (“Mainspring”) files these comments in response to the California Energy Commission’s Staff Workshop on Potential Solicitation for Medium- and Heavy-Duty Charging and Refueling Infrastructure Projects on Designated Corridors (“workshop”) held on March 28, 2023.

About Mainspring

Driven by its vision of the affordable, reliable, net-zero carbon grid of the future, Mainspring has developed and commercialized a new power generation technology —the linear generator— delivering local power that is dispatchable and can be powered using a range of fuels. Mainspring’s linear generator offers a unique and highly flexible capacity and energy solution that simultaneously addresses the critical need of reducing greenhouse gas and criteria pollutant emissions, while also enhancing grid reliability and resilience.

Modular and scalable, Mainspring’s linear generators can be deployed near load, either customer- or grid-sited. Full dispatchability and virtually no limits on daily starts/stops also allows linear generators to consistently follow load while also firming renewables, thereby facilitating the continued rapid adoption of renewable energy. Our local linear generators add resilience and real capacity to the grid while also providing enhanced flexibility to help avoid renewable curtailment.<sup>1</sup>

**I. Executive Summary**

Mainspring thanks the Commission for the opportunity to provide comments on the workshop. Through these comments we recommend:

- Electric vehicle (“EV”) charging infrastructure should be able to operate as an “islanded” microgrid;

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<sup>1</sup> For additional information on technical specifications and performance benefits, visit <https://www.mainspringenergy.com/technology/>.

- Charging facilities should be backstopped to enable functionality during resilience events;
- In the case of EV charging infrastructure powered by fuels, charging should require assets that can run on zero emission fuels.

## **II. Comments on the Potential Solicitation**

### **A. Electric Vehicle Charging Infrastructure Should be Able to Operate as an “Islanded” Microgrid**

As the Commission considers broad deployment of EV charging infrastructure, including for this solicitation, it is imperative that charging infrastructure is able to function as microgrids that are capable of –but not required to– operate “islanded” from the grid. This functionality is central to weathering increasingly frequent grid outages, during which EV charging infrastructure will necessarily have to remain online to enable EVs to perform essential functions (e.g. delivering essential goods like food and medicine, unloading ships, picking up refuse, etc.). It can take years for utility infrastructure to meet the significant capacity expansion necessary to deploy the appropriate level of charging stations; enabling grid-interconnected microgrids from the start accelerates EV infrastructure to rapidly decarbonize the transportation sector. Requiring islanding functionality will ensure the Commission avoids creating clean stranded assets by investing in flexible resources that will continue to provide meaningful benefits even in spite of extreme weather events and grid outages.

However, requiring the *ability* to island is not tantamount to the creation of off-grid EV charging infrastructure. Rather, this functionality facilitates broader EV adoption –especially for the purposes of this proposed solicitation– by enabling continued operation of essential services. Adding islanding functionality to the proposed solicitation enables EV charging infrastructure to operate as assets to both the grid and local communities, even during outages and extreme weather events.

### **B. MDHD Charging Facilities Should be Backstopped by Clean Firm Power to Enable Functionality During Resilience Events**

The deployment of MDHD charging infrastructure is essential to the broad electrification of California’s transportation systems; as part of this effort the Commission must ensure that MDHD EVs are able to charge even during resilience events. Grid outages, severe weather, and other disruptions are becoming more frequent and volatile. Yet, even during multi-day outages, essential services like the delivery of goods and services, garbage pickup, and public transportation as provided by MDHD EVs must continue. Backstopping essential charging infrastructure by utilizing clean firm power (i.e. “zero-carbon power that can be relied on whenever it is needed for as long as it is needed”)<sup>2</sup> to supplement variable renewables, rather than resorting to further deployment of diesel backup generators, avoids forcing communities to choose between keeping services running and enjoying clean air. As part of any potential MDHD (and broader EV) solicitation, the Commission should require the deployment of clean resilience technologies as part of project requirements.

### **C. In the Case of EV Charging Infrastructure Powered by Fuels, the Commission Should Fund Deployment of Assets that can Run on Zero-Carbon Fuels**

The Commission should explicitly value fuel flexibility for technologies able to power EV chargers. The ability to use multiple fuel sources in the same technology without the need for hardware changes (i.e.

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<sup>2</sup> Environmental Defense Fund, Stanford University, Princeton University, Energy & Environmental Economics, Clean Air Task Force, UC San Diego, The Brookings Institution, “California Needs Clean Firm Power, and so Does the Rest of the World”. September 2021. Available at: <https://www.edf.org/sites/default/files/documents/SB100%20clean%20firm%20power%20report%20plus%20SI.pdf>

fuel flexibility) should be explicitly delineated in the potential solicitation evaluation criteria – as applicable to fuel-based technologies. Having a single resource able to operate on multiple fuels provides both reliability benefits during grid events, as well as a clear path to the utilization of zero- and low-carbon fuels (e.g. hydrogen, ammonia, biogas) necessary to meeting California’s resilience and climate goals. Fuel-flexible technologies represent a prudent investment of state funds, enabling EV charging infrastructure operators to continue utilizing resources as cleaner fuels become available and as resiliency issues require. This is especially true as production of clean hydrogen (which the Commission is actively incenting) ramps up as a means to increase and store renewable energy production. It is critical that the Commission appropriately value technologies able to use zero-carbon fuels to enable California’s evolution toward a cleaner transportation grid.

### **III. Conclusion**

Mainspring appreciates the opportunity to comment on this important workshop, and looks forward to continuing to collaborate in the future.

Sincerely,

/s/ Serj Berelson

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