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Mainspring Energy Comments on Lead Commissioner Workshop on DEBA & DSGS

Additional submitted attachment is included below.

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February 17, 2023

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

Re: *Lead Commissioner Workshop on the Demand Side Grid Support Program and Distributed Electricity Backup Assets Program* (22-RENEW-01)

Mainspring Energy, Inc., ("Mainspring") files these comments in response to California Energy Commission's Lead Commissioner Workshop ("workshop") on the Demand Side Grid Support Program ("DSGS") and Distributed Electricity Backup Assets ("DEBA") programs held on January 27, 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.[1]

I. Executive Summary

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

- The Commission should not preclude Self-Generation Incentive Program ("SGIP")-eligible resources from participating in the DEBA program;

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

- The Commission should consider fuel and operational flexibility as evaluation criteria for the DEBA program;
- The Commission should provide additional weight to projects that can receive federal Inflation Reduction Act ("IRA") investment tax credits.

II. Questions Related to the Distributed Electricity Backup Assets Program

A. How Best can DEBA Invest in Assets for Emergency Load Reduction Without Interfering in the Resource Adequacy Program or Creating Clean Stranded Assets? How Can it Best Do Both?

The Commission can most effectively invest in assets for emergency load reduction by simultaneously creating programmatic rules that clearly separate the DEBA program from other capacity-focused programs such as Resource Adequacy, and designing incentives that provide material value to assets that reduce load during grid emergencies. The Commission should develop incentive structures that send clear signals to the market, prioritizing distributed assets capable of reducing load, while also providing other value streams when not directly participating in a load reduction event in order to maximize the value of state funds invested.

The Commission can most effectively avoid creating clean stranded assets by investing in flexible resources that will continue to provide meaningful benefits as policies, technology, and the grid evolve. In particular, the Commission should focus on technologies that offer operational flexibility (e.g. dispatchability, firming of variable renewables), as well as fuel flexibility. The ability of a single resource 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.

B. Are the Proposed Program Frameworks Reasonable? What Modifications Could Unlock Additional Resources for Emergency Events?

1. The Commission Should not Preclude SGIP-*Eligible* Resources From Participating in the DEBA Program

Mainspring appreciates the Commission's careful stewardship of state funds in endeavoring to avoid duplication of resources receiving multiple sources of incentive funds (sometimes called "double dipping"). However, it is essential that the Commission not be overly broad in precluding resources *eligible* for SGIP, as described in the workshop presentation, but rather bound the participation of resources in the Commission's own programs (as compared with programs from other agencies, e.g. SGIP). While resources, including linear generators, may be eligible for participation in SGIP, a particular project or deployment may not have received SGIP funds – and should therefore be eligible to participate in DEBA. Moreover, the Commission should not prevent resources from accessing other funding sources, e.g. federal Inflation Reduction Act ("IRA") investment tax credits.

C. Are there Additional Criteria that the CEC Should Consider When Evaluating Projects? How Should the CEC Rank or Weight the Evaluation Criteria?

1. The Commission Should Consider Fuel and Operational Flexibility as Evaluation Criteria

In addition to the criteria outlined in the workshop presentation, the Commission should explicitly value fuel and operational flexibility. The ability to use multiple fuel sources in the same technology

without the need for hardware changes (i.e. fuel flexibility) should be explicitly delineated in the Potential DEBA Project Evaluation Criteria (as applicable to fuel-based technologies). Particularly in light of the recent proliferation of diesel and gasoline-powered backup generators,[2] it is essential that the Commission appropriately value fuel-flexible technologies to prevent energy users from purchasing single-fuel resources that become stranded assets as technology, as well as energy, environmental, and air quality regulations advance. Fuel-flexible technologies –particularly those that are operationally flexible as well (i.e., dispatchable)– represent the most prudent investment of taxpayer and ratepayer dollars, enabling operators to continue utilizing resources as cleaner fuels become available and as resiliency issues require. This is especially true as production of clean hydrogen ramps up as a means to increase and store renewable energy production. It is critical that the Commission appropriately value technologies able to use these fuels to enable California's evolution toward a cleaner grid.

Similarly the Commission should explicitly value operationally flexible generation resources that are able to start and stop quickly, and vary power output (load follow) to meet demand and firm renewables. Operationally flexible resources are essential in providing emergency supply and/or load reduction available to the state, and maximize the hours available for dispatch during peak load events. Linear generators present one of the best options to complement onsite variable renewables with an option that can be available at any time to meet the needs of the customer, without a significant land use requirement. This is especially notable as linear generators drive value for the demand categories described in the workshop presentation for both the DSGS and DEBA programs, including emergency supply and load reduction.

Mainspring strongly recommends the Commission consider value stacking on both the supply and demand side when evaluating incentive mechanisms by incenting technologies that simultaneously enable multiple use cases on both sides of the utility meter. Resilient behind-the-meter applications include primary power, onsite solar firming, peak load reduction, microgrids, and demand response; and resilient front-of-the-meter applications include peaker plant and diesel displacement, as well as T&D resilience and non-wires alternatives. California has established aggressive targets to combat the climate crisis, and clean firm power resources are essential to ensuring that greenhouse gas emissions reductions can be achieved without sacrificing affordability, year-round reliability, and multi-day resilience.

2. The Commission Should Provide Additional Weight to Projects that can Receive Federal Inflation Reduction Act Investment Tax Credits

In addition to the criteria outlined in the previous section, the Commission should provide additional weight to resources that are able to access IRA investment tax credits in order to accelerate the deployment of cost-effective capacity in California. The unprecedented incentives available are a unique opportunity to defray project costs, leveraging multiple sources of funding to meet California's rapidly-growing capacity needs.

D. What are Reasonable Exceptions to Non-Performance in an Emergency Event?

Given the reliability issues clearly articulated in the workshop, as well as the Joint Agency Reliability Planning Assessment issued on February 9th,[3] the Commission should incentivize maximum deployment of resources to meet the state's needs. The Commission's incentives to deploy resources and projects should

[2] Steven Moss and Andy Bilich, M.Cubed, "Diesel Back-Up Generator Population Grows Rapidly in the Bay Area and Southern California" (2020). https://bit.ly/34qOr0b. Backup generators have reached 7,360 MW of capacity in the South Coast AQMD and 4,840 MW of capacity in the Bay Area AQMD based on information for BAAQMD and SCAQMD. The report estimates an average capacity of 0.543 MW for units in SCAQMD and 0.628-0.642 MW for units in BAAQMD.

[3] California Energy Commission, "Joint Agency Reliability Planning Assessment - SB 846 Quarterly Report and AB 205 Report". TN #248714 filed in Docket 21-ESR-01. February 9, 2023.

be designed to explicitly encourage resources to perform the needed reliability and load reduction functions to receive incentives. Any non-performance assessment should be based on performance across all events in a year or season, with a requirement of availability or similar mechanism above a certain threshold (e.g. participation in >80% of events in a year or season).

E. What Level of Funding is Needed to Spur the Development of a Project?

The Commission should develop programs that provide clear signals to the market to ensure deployment of a diverse set of resources that increase capacity to meet the state's ongoing reliability challenges. This includes not only sufficient funding for individual projects, but also a diversity of resources – especially firm capacity resources to ensure reliability during statewide or even regional events. As such, the Commission should ensure incentives, whether using $/MW, percentage of equipment cost, or other basis, are sufficient to spur a strong market response.

III. Mainspring Comments on the Demand Side Grid Support Program

Mainspring applauds the Commission for endeavoring to incentivize the development of additive capacity to California's grid via the DSGS program. Moreover, Mainspring appreciates the Commission recognizing the value linear generators can provide in adding incremental capacity as part of the DSGS program. In addition to the hourly temporal value delineated in the workshop presentation, linear generators are also capable of driving value across the daily, seasonal, and extreme time periods shown. By virtue of utilizing a range of fuels that can be stored for long duration operation, and then dispatched as needed, linear generators can offer a wide range of temporal values from immediate dispatch and black start capability in the case of grid emergencies, through to seasonal, long-duration storage.

IV. Mainspring Responses to Questions Related to the Demand Side Grid Support Program

A. What Structure or Provisions Would Best Support Cost-Effective Resource Adequacy Procurement While also Enabling the Development and Growth of the Strategic Reliability Reserve to Respond to Extreme Events?

The Commission should clarify whether the payments for DSGS participation shown in the workshop materials are for capacity rather than energy. It appears that, for example, the standby payment as written is proposed to be $250 per Megawatt-*hour* alongside an energy payment of $2000/MWh. In procuring capacity, it would appear that this should be amended to denote $250 per Megawatt

The Commission should incentivize cost-effective procurement of reliability-focused resources with a two-stage payment: a fixed payment ($/kW-mo) and a variable ($/kWh) payment. This will enable the market to respond affirmatively to the need to *both* deploy additional capacity to the grid and ensure those resources continue to provide value – including during extreme events.

B. How Best can the Program Unlock Untapped DR or Other Stranded Resources Under its Statutory Constraints?

As above, it is essential that the Commission creates incentive structures that provide clear signals to the market for both the deployment of capacity resources and their performance during extreme events.

V. Conclusion

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

Sincerely,

/s/ Serj Berelson

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