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August 16, 2017

**VIA ELECTRONIC DELIVERY**

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 16-EPIC-01  
1516 Ninth Street  
Sacramento, CA 95814-5512

Re: Docket 16-EPIC-01, Roadmap to Commercialize Microgrids in California

This firm represents The Microgrid Resources Coalition ("MRC"). The MRC is pleased to submit its enclosed Comments in Response to the California Energy Commission Docket 16-EPIC-01, Microgrid Roadmap for California.

Please feel free to contact me directly at the telephone number above.

Very truly yours,



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CBB/BCP  
Enclosures

**CALIFORNIA ENERGY SERVICE COMMISSION**

**Docket 16-EPIC-01**

**COMMENTS BY THE MICROGRID RESOURCES COALITION  
IN RESPONSE TO THE PROCEEDING ON A ROADMAP TO  
COMMERCIALIZE MICROGRIDS IN CALIFORNIA**

**Dated: August 16, 2017**

The Microgrid Resources Coalition (“MRC”) respectfully files its comments in connection with the California Energy Commission’s Roadmap to Commercialize Microgrids in California proceeding. The MRC applauds the Commission’s efforts to explore microgrid<sup>1</sup> barriers and encourage microgrid development through a stakeholder process. In response to the request for comments regarding the scope and aspects for consideration, the MRC has summarized a few high-level areas of potential focus in our comments below.

The MRC is a consortium of leading microgrid owners, operators, developers, suppliers, and investors formed to advance microgrids through advocacy for laws, regulations and tariffs that support their access to markets, compensate them for their services, and provide a level playing field for their deployment and operations. In pursuing this objective, the MRC intends to remain neutral as to the technology deployed in microgrids and the ownership of the assets that form a microgrid. The MRC’s members are actively engaged in developing and operating microgrids in many regions of the United States.<sup>2</sup>

## **I. Regulatory Definitions**

The MRC encourages the Commission to consider whether the applicable regulatory framework and definitions are sufficient to cover microgrids and the services microgrids can provide to the grid.

Where microgrids or microgrid services are defined too narrowly, such as limiting the size or aggregation

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<sup>1</sup> The MRC defines a microgrid as a local electric system or combined electric and thermal system that (i) includes retail load and the ability to provide energy and energy management services needed to meet a significant proportion of the included load on a non-emergency basis that (ii) is capable of operating either in parallel or in isolation from the electrical grid, and that (iii), when operating in parallel, can provide some combination of energy, capacity, ancillary or related services to the grid. Microgrids typically have advanced control systems that enable them to provide greater volumes of more responsive (higher performing) grid services than other distributed energy resources. Microgrids are unified aggregations of resources.

<sup>2</sup> The Microgrid Resources Coalition is actively engaged in advancing the understanding and implementation of microgrids across the country. Members of the MRC include: Anbaric, Concord Engineering, Eaton, ENGIE, Ictec, International District Energy Association, NRG, Princeton University, Thermo Systems, University of Missouri and the University of Texas at Austin. The MRC’s comments represent the perspective of the coalition and should not be construed as speaking for individual members.

potential, the definition may artificially constrain the ability of the microgrid to provide customized distribution grid support services<sup>3</sup> to local utilities, supply products to organized power markets or access programs aimed at fostering the penetration and networking of advanced distributed energy resources.

The MRC encourages the Commission to consider the full range of ancillary services and flexible load technology that microgrids can offer when framing the scope of the regulatory framework. By using cogeneration with natural gas or biofuels to serve balanced electric and thermal loads, microgrids achieve superior generation efficiencies. In addition, combining flexible generation or storage with variable renewable energy allows microgrids to undertake hybrid generation operations, permitting local management of renewable generation and "smart" management of thermal loads.<sup>4</sup> As an example, a microgrid can use excess solar generation at noon in electric chillers to store chilled water and deliver air conditioning in the late afternoon. These and similar efficiency and energy management strategies not only save money but also significantly reduce the environmental impact of providing energy services. An effective microgrid roadmap should consider how California can encourage the full range of microgrid capabilities to maximize their potential efficiency, economy and provision of services to the grid.

## **II. Unbundling and Valuation**

The Commission should also consider how microgrid services will be valued in California's rate-making policies. The MRC supports consideration of a value for services approach rather than a single rate class or valuation of microgrids generally. The growth of technology and "smart" or "advanced" DERs means that all microgrids will not operate equally in terms of flexibility, performance and

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<sup>3</sup> Microgrids' ability to adjust their generation and load to shape their aggregate load profiles to provide more finely tuned services ("Profile Products") beyond traditional demand response or ancillary services. Profile products can be delivered in response to real-time dispatch or market signals but also pursuant to long-term contracts with utilities. Microgrid Profile Products can be unique, customizable solutions to localized planning and operational challenges. Microgrids employing multiple energy management technologies can simultaneously provide multiple services using multiple dynamic objective functions.

<sup>4</sup> Such concepts are explained in greater detail in prior MRC filings in state dockets concerning microgrids and distributed resources, all of which are available on the MRC website at <http://www.microgridresources.com/MRC-Action/State-Initiatives-Group.aspx>.

dispatchability. Modeling proxy microgrids with static resource valuations rather than the individual and suites of services provided to the grid will discriminate against microgrids.

Generally, the MRC encourages the Commission to evaluate unbundling of distributed resource services from each other and from power purchases by customers who deploy distributed resources such as microgrids. A functional unbundling of services should also distinguish customizable distribution-level services provided to local utilities from standardized products provided to Regional Transmission Organization/Independent System Operators (“RTO/ISO”). Rate designs that lump grid services with power purchases can only reduce competition in the RTO/ISO markets to the detriment of all customers.

### **III. Utility-Private Partnership**

The MRC encourages the Commission to consider the possibility of long term contracts allowing utilities to support microgrid deployment and procure advanced distribution system support solutions without incurring the full burden of the project. Utility-private partnership contracts can allocate the risks and benefits of long-term investment appropriately among the parties. While such contracts may provide specific payments for services that are guaranteed for the financing term of the project, the investment would also be supported by value provided to microgrid customers, and ratepayers that bear less risk of stranded assets and gain a community resource their local utility can use to deliver on the promise of a smart grid.

### **IV. Utility of the Future**

The MRC encourages the Commission to consider ratemaking in a manner that supports investment in advanced dispatchable distributed generation such as microgrids. Policies that identify where high-performing, dispatchable microgrids can help optimize grid operations, not simply address constraints, and support competitive solutions are a significant first step to open avenues for distributed generation investment, including utility-private partnerships. A well-structured tariff should make the

utility indifferent as to whether the solution to additional generation needs or system upgrades are DER distribution support services contracts or traditional “wires” solutions.

When considering microgrids in the context of the larger grid and California’s energy market, the MRC suggests the Commission give some consideration to the larger role of the utility in the modern energy grid. As distributed generation continues to proliferate and expand, the role of the modern utility increasingly becomes that of an integrator or an active manager of the distribution system. Utility commissions and industry executives are beginning to articulate a vision of utilities that act as a supportive platform for smart, flexible grid-edge resources. This vision imagines a grid physically converted from a hub and spoke configuration to a cellular mesh that supports and draws services from embedded microgrids and other grid edge resources. MRC envisions the distribution utility’s role in this new grid as the conductor of the DER concert, using distributed controls that allow mutual support by all resources in the ensemble. In this role, the utility can begin to shape distribution system operations with unprecedented sophistication in furtherance of delivering on the promise of a resilient, smart grid.

## **V. Conclusion**

The MRC thanks the Commission for the opportunity to provide comments on this initiative. We look forward to engaging further with the stakeholder process as the Commission moves forward.