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April 10, 2017

VIA ELECTRONIC DELIVERY

Betty Anne Kane
Chairman
Public Service Commission of the District of Columbia
1333 H St. NW, Suite 200, West Tower
Washington, DC, 20005

Re: Formal Case No. 1130, Modernizing the Energy Delivery System for Increased Sustainability ("MEDSIS") Staff Report

Dear Ms. Kane:

This firm represents The Microgrid Resources Coalition ("MRC"). The MRC is pleased to submit its enclosed Comments in Response to the Staff Report on DC Public Service Commission Formal Case No. 1130, Modernizing the Energy Delivery System for Increased Sustainability ("MEDSIS").

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

Very truly yours,

C. Baird Brown
Attorney for the MRC

Christopher B. Berendt
Attorney for the MRC

CBB/BCP
Enclosures

DISTRICT OF COLUMBIA
PUBLIC SERVICE COMMISSION

FC #1130

COMMENTS BY THE MICROGRID RESOURCES COALITION IN RESPONSE TO THE STAFF REPORT ON MODERNIZING THE ENERGY DELIVERY SYSTEM FOR INCREASED SUSTAINABILITY (MEDSIS)

Dated: April 10, 2017

The Microgrid Resources Coalition ("MRC") respectfully files its comments in connection with the DC Public Service Commission's Staff Report on Formal Case No. 1130, Modernizing the Energy Delivery System for Increased Sustainability ("Staff Report"). The MRC strongly supports the Staff and Commission's efforts to explore a modernized grid through a stake-holder process. With these comments, the MRC addresses general policy issues around microgrids, distributed generation, and the fostering of a modernized grid. Further, our comments respond in part to specific legislative proposals described in the Staff Report and highlight the need to protect microgrid development models supported by existing regulations while exploring new frameworks.

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. MRC members are currently engaged in a variety of microgrid-related activities with connection to PJM service territory generally, and the District of Columbia specifically.[1]

Preserving the Function of the Current Framework

The MRC applauds the Commission for engaging the difficult questions raised by the Staff Report. We encourage the Commission to explore regulatory frameworks that foster the development of microgrids, and other advanced Distributed Energy Resources ("DER"). This exploration should include examining the development of distribution grid sensory measurement and control infrastructure to enable distributional utilities to coordinate the procurement of services from flexible and dispatchable distribution level resources to provide ratepayers more

[1] The Microgrid Resources Coalition is actively engaged in advancing the understanding and implementation of microgrids across the country, including in the District of Columbia. MRC members hold significant energy assets connected to the PJM grid, provide energy generation and supply services, and are exploring the potential for microgrid construction and ownership in DC. Members of the MRC include: Anbaric Transmission, ICETEC Energy Services, Concord Engineering Group Inc., the Massachusetts Institute of Technology, NRG Energy, Inc., Princeton University, Thermo Systems, University of Texas at Austin and the University of Missouri.

reliable and dynamic services.[2] As the Commission undertakes this exploration, the MRC cautions that the proposed new framework proposals should protect the viability of microgrid development structures that operate under current regulations. The framework for energy generation and distribution currently set out in the D.C. Code is effective, particularly for the implementation of campus or contiguous microgrids and we encourage the Commission to preserve the ability to use those structures in the future.

As stated in our previous comments regarding the MEDSIS initiative, filed on April 15, 2016[3], several microgrid structures can be implemented within the District's existing regulatory framework. Two in particular are worth note.

First, single-customer microgrids engaging in a self-distribution including those operated by a designee of the owner(s), are not covered by the definition of Electric Company.[4] Additionally, a group of customers on contiguous parcels or a campus can form a common entity (e.g. owners association) with collective property rights that allow it to own or lease wires (and generation) and self-distribute (and self-generate) for its co-owners or members. The common entity or its designated operator may serve as an Aggregator and become the distributional utility's customer. The co-owners or members can buy power imported or generated onsite from a licensed Electricity Supplier which they distribute to themselves within the microgrid.

Second, a hybrid ownership structure for a microgrid can be implemented under the current framework. In this scenario, the distributional utility would own the wires and distribution equipment in a "partnership" arrangement with a third-party owner, host-owner or common

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[2] As discussed below, microgrids are resources capable of competitively providing standardized products to PJM and locally customized products and services to distributional utilities.
[3] Correction filed July 12, 2016.
[4] Electric Company definition in DC Code § 34-207 to require distribution from one entity to a separate customer and therefore does not include self-distribution by customers. The MRC believes this reading supported once microgrid generation is in place by the definition of Electric Generating Facility under DC Code § 34-205 including "all buildings, easements, real estate, mains, pipes, conduits, fixtures, meters, wires, poles, lamps, devices, and materials of any kind operated, owned, used, or to be used by a person for cogeneration of electricity." This is further supported by the self-supply and aggregation exemption for Electricity Suppliers in DC Code §34-1431(6).

ownership entity that controls the included generation and the Electricity Supplier making the sales to customers.

The MRC agrees with Staff's consensus that structures such as aggregated distributed generation or non-contiguous microgrids are more complex and would run into complications under the current code. The majority of microgrids take the form of campus or contiguous local systems that can function within the current regulatory framework. Again, the MRC stresses the importance of maintaining what works under the current framework as the Commission explores its evolution. In this regard, we respond to some of the Staff Report's suggestions below.

MRC Comments on the Legislative Proposal Development Process

Overall, the individual suggested amendments must necessarily be integrated with the overall regulatory framework. The MRC suggests the Commission develop a core proceeding for the overall framework. Once a comprehensive structure and understanding of the new framework is established by the Commission, the MRC encourages its presentation as a single, comprehensive legislative proposal. Creating the new framework will likely drive the definitional structure, starting with the broadest definitions, working down to more narrow ones, and integrating with exceptions. It is impractical to promulgate the definitions across multiple separate proceedings. We recommend a unified proceeding to identify and structure stakeholder activities, roles and restrictions.

MRC Comments on Specific Recommendations for the D.C. Code

The MRC has specific concerns about the changes to the treatment of non-utility Electricity Suppliers in the D.C. Code. Staff suggests the definition be amended to clarify that it "shall be interpreted to expressly exclude any person or entity distributing electricity from a behind-the-meter generator to a single retail customer behind the same meter."[5] Under the two microgrid development structures that are supported by the existing regulations (described above) the Electricity Supplier would not be distributing within a microgrid– rather, a self-distributing

[5] MEDSIS Staff Report at 64. Noting in fn. 249 that "Although a supplier transmitting electricity over Pepco's distribution system is clearly subject to Commission regulation, there is no clear intent for the Commission to regulate a supplier who transmits electricity over its own distribution system on the customer side of the meter."

entity or distributional utility would be doing so. However, if the Commission seeks greater development flexibility for microgrids by enabling Electricity Suppliers to own and operate microgrid distribution wires, the MRC suggests a change to the proposed amendment to "excluding any person or entity distributing electricity from a behind-the-meter generator to ~~a single~~ retail customers behind the same meter." Microgrids are frequently structured to serve multiple customers.

Similarly, the MRC agrees with the Staff Report that "other changes [to the definition of "Electric Supplier"]… may be appropriate to exempt any generation that does not use Pepco's lines from the definition of "retail sale" so as to ensure that distributed generation ("DG") and microgrids are not over regulated"[6] would benefit microgrids by providing development flexibility. However, the MRC notes that self-distribution and retail sales are not mutually exclusive in the existing regulatory framework.

Microgrid Capabilities and Staff Report Assumptions

Microgrids provide a range of services to the grid that help to advance the stated goals of MEDSIS. The MRC strongly supports Staff and Commission's ongoing consideration of microgrids as resources for their hosts, local utilities, surrounding communities, and regional grids. However, the MRC is concerned that the Staff Report takes a limited view of the potential benefits of microgrids and should offer more recognition of the value microgrids are able to provide to the broader grid.[7]

The Staff acknowledges the value microgrids can provide by remaining operational in island mode during an event that negatively impacts the wider grid. However, the Staff focuses almost exclusively on the ability of a microgrid to extend islanding capabilities to included critical facilities. Microgrids are able to offer that and far more.

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[6] Id. at 70.
[7] Id. at 50.

The MRC encourages Staff and the Commission to recognize that the same operational flexibility that provides benefits to their hosts makes microgrids uniquely suited to create efficiencies for the grid. Microgrids moderate power prices and grid congestion by efficiently shifting load to times of lower demand and prices as well as by locating generation closer to loads. Microgrids can make it economically feasible to place generating capacity in congested areas of the grid and can reduce contingencies that threaten grid stability. They aid more than the host, but also support the surrounding community.

Microgrids can provide customized products to distributional utilities to support the distribution grid and the local community. Through fine tuning its own generation and load, a microgrid can shape its system profile to create a wide variety of customizable load and generation modification products and services ("Profile Products"). Profile Products can be tailored to solve specific distribution grid problems, providing local distribution utilities with tools to achieve reliable and self-healing operations. High performance microgrids that employ multiple energy management technologies can simultaneously provide multiple products and services using multiple dynamic objective functions. Microgrid resources make the operation of the grid more competitive through delivery of a broad range of services to RTOs in addition to local distribution utilities. Microgrids regularly provide standardized products such as energy (including demand response), capacity and ancillary services such as regulation or reserves to organized power markets. The Supreme Court decision in *FERC v. EPSA* effectively cemented unfettered access for behind-the-meter DER to the wholesale market.[8]

Staff correctly notes that microgrid designs frequently include energy storage components, which may be used to deliver ancillary services to the grid in non-islanded mode. However, Staff also assumes that "the storage capacity required to provide such ancillary services is likely to be larger than what is required to support islanding of the microgrid."[9] We see no basis for this conclusion. In the experience of MRC member, batteries are rarely used to support islanded operation in full and nevertheless are capable of providing ancillary services. Moreover,

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[8] *See*, *Federal Energy Regulatory Commission v. Electric Power Supply Association (EPSA*) 136 S. Ct. 760 (2016).
[9] Staff Report at 50.

ancillary service provision is not reliant on storage and the MRC notes that cogeneration turbines used by microgrids have demonstrated better response times for certain services than batteries.[10] By "smart" management of thermal loads, microgrids can effectively use buildings themselves as thermal storage to manage load shape. Using electric and thermal storage capabilities, a microgrid can locally manage variable renewable generation, particularly on-site solar. These and similar efficiency and energy management strategies not only save money but also significantly reduce the environmental impact of providing energy services, including ancillary services to the grid. Microgrids often competitively provide ancillary services with a variety of onsite load and generation resources, even when their energy storage capacity is not large enough to exclusively support a significant portion of native load when islanded. Thus, it is not accurate to link ancillary service provision directly to microgrid's energy storage capacity.

The Staff Report conflates the environmental benefits of the microgrid with that of CHP or "cogeneration" systems but argues "the environmental benefits of CHP can be had without the added expense of microgrid functionality."[11] It is true that microgrids frequently make use of CHP systems and that CHP has environmental benefits when installed as DER outside the microgrid context. However, the MRC would like to stress that the environmental, efficiency and resiliency benefits of microgrids are not synonymous with or limited to those of CHP. As an example, the Princeton University microgrid includes a thermal storage system that imports low carbon (predominately nuclear) energy at night to make and store chilled water, which is used during the day to displace high carbon peak energy.

As discussed above, the ability of the microgrid to adapt to load configurations allows for increased efficiency. Microgrids can include renewable energy generation in hybrid operations with CHP or other generation technologies in situations where renewable resources might otherwise be insufficient and not economic. In addition, customers served by microgrids

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[10] For example, one of the Princeton microgrid's generators is an aero-derivative turbine capable of a +/- 1.5 MW response in seconds to both Reg. A and Reg. D signals in PJM. Additionally, the turbine can ramp 7 to 15 MWs in one minute. Further, the Princeton microgrid is capable of shedding substantial electrical and thermal load and ramping multiple generators in well under ten minutes.

[11]

typically make substantial investments in energy efficiency. They adopt passive measures that reduce energy consumption, and more efficient HVAC and other systems that, when coupled with sophisticated controls, allow them to manage their load shape as well as further reduce load. These investments are made to operate in tandem with their generating systems. The microgrid context makes them economic.

The Staff Report raises a question of microgrid cost recovery and seems to ask whether microgrids are economically feasible in a retail choice state.[12] The MRC notes that the economic feasibility of a particular project is not necessarily jurisdictional to the Commission. However, generally, microgrids are economically feasible given that a microgrid will allow for far more monetizable value than simply supplying less expensive commodity power. Retail choice is actually critical to the economic viability of many microgrids, as they can find a supplier that passes through real-time wholesale pricing[13] and allows them to arbitrage using their load shaping flexibility.

The Staff Report also raised concerns regarding permissible ownership of microgrids.[14] As stated in our previous filing and summarized above herein, the MRC believes that several effective microgrid ownership structures can be implemented within the District's existing regulatory framework. Again, the MRC cautions the Commission to protect the microgrid development structures enabled by the current framework when considering its evolution.

Conclusion

The MRC thanks the Commission for the opportunity to comment on the Staff Report and looks forward to future stakeholder proceedings.

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[12] Staff Report at 52.
[13] In these "market-marked" pass-through situations there is an added fee paid to the supplier for arranging the supply.
[14] Id. at 61-63.