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May 1, 2015

VIA ELECTRONIC MAIL

Hon. Kathleen H. Burgess
Secretary to the Commission
New York State Public Service Commission
Three Empire State Plaza
Albany, New York 12223
secretary@dps.ny.gov

Re: New York State Public Service Commission Matter 14-00581/14-M-0101 – Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision

Dear Secretary Burgess:

This firm represents The Microgrid Resources Coalition ("MRC"). The MRC is pleased to submit its enclosed Comments in Response to the Commission's Order Adopting Regulatory Policy Framework and Implementation Plan and Notice Soliciting Comments on Microgrids.

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

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Very truly yours,

C. Baird Brown
Attorney for the MRC

CBB/BCP
Enclosures

Established 1849

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission
in Regard to Reforming the Energy Vision

Case 14-M-0101

COMMENTS BY THE MICROGRID RESOURCES COALITION IN RESPONSE TO THE COMMISSION'S ORDER ADOPTING REGULATORY POLICY FRAMEWORK AND IMPLEMENTATION PLAN AND NOTICE SOLICITING COMMENTS ON MICROGRIDS

Dated: May 1, 2015

1. Introduction

The Microgrid Resources Coalition ("MRC") is pleased to provide its comments in response to the Commission's February 26, 2015, Order Adopting Regulatory Policy Framework and Implementation Plan ("Order"). In particular, we offer these comments in response to the Order's invitation for parties to comment regarding the microgrid framework approach described in Section IV.E of the Order,[1] and to the questions raised by the commission's Notice Soliciting Comments on Microgrids issued March 17, 2015 (the "Notice").

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 currently engaged in a wide variety of Microgrid-related activities in New York.[2]

2. Microgrids Advance the Goals of the REV Proceeding

The Commission has adopted overarching goals for the REV proceeding that are articulated in the 2014 Draft State Energy Plan, which "calls for the use of markets and reformed regulatory techniques to achieve increased system efficiency, carbon reductions and customer empowerment.[3] The MRC remains enthusiastic about the Commission's REV Proposal and

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[1] *See* Order at 109-13 ("We invite comment from parties regarding the framework described above until May 1, 2015").

[2] MRC members Anbaric, Concord Engineering Group, and NRG Energy are all actively engaged in development of microgrids in New York State, as is Exelon Corporation, the parent company of MRC member Constellation Energy Resources. MRC member Icetec Energy Services is actively involved in advising New York microgrid clients on market interface. The International District Energy Association, also an MRC member entity, is an international association of owners and suppliers of distributed generation that includes a number of members owning microgrids in New York. MRC member Princeton University has no direct microgrid activities in New York, but is actively engaged in providing education on microgrids to potential microgrid owners and government official from around the country.

[3] Order at 3.

continues to support the Commission's approach to implementing its goals by promoting widespread distributed energy resources ("DER") deployment. Microgrids are advanced DER poised to lead this change by providing efficient, low-cost, clean energy; enhancing local resiliency; and improving the operation and stability of the regional electric grid by providing unprecedented dynamic response.

A. Customer Empowerment

First and foremost, microgrids empower customers. Customers have multiple energy needs, including high-quality, reliable, low-cost electricity, but also heating, cooling, hot water, and steam for specialized processes. They have choices of energy sources, including gas, electricity, geothermal, solar, and biomass, and through thermal and electric storage and equipment optionality (such as steam vs. electric chillers) can optimize among those sources. Customer decisions about usage of other utilities, such as water and sewer services, are often integrated in the decisions about energy use. Those uses may soon expand to include wide use of electric or plug-in hybrid vehicles. Customers also frequently have non-monetary goals, such as decreasing their carbon footprint or increasing resiliency. Customers generally are the only ones that can effectively make integrated choices between energy sources, between modes of operation, and between monetary and non-monetary goals for their energy usage. Microgrids, and the wide variety of potential configurations and services that they offer, provide energy flexibility to customers in a way that frees them from the constraints of the conventional utility power supply to pursue their energy goals.

B. System Efficiency

Through the same flexibility that provides benefits to their hosts, microgrids are uniquely suited to create efficiencies for the grid. Microgrids can make it economically feasible to place generating capacity in congested areas of the grid and, from a planning perspective, can reduce contingencies that threaten grid stability. Using electric and thermal storage capabilities, a microgrid can provide local management of variable renewable generation, particularly on-site solar. Through fine tuning its own generation and load, a microgrid can shape its system profile to not only provide traditional demand response or ancillary services, but a wide variety of load and generation modification services ("Profile Products") to the grid pursuant to long term

contracts with the DSP, a third party, or in response to real-time dispatch or market signals. As discussed below, 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. Microgrid resources make the operation of the grid more competitive and provide Distributed System Platform Providers ("DSPs") advanced capabilities to ensure distribution network reliability and service quality. They are uniquely positioned to meet the Commission's goal of enabling the DSP to "modernize its distribution system to create a flexible platform for new energy products and services to improve overall system efficiency and to better serve customer needs."[4]

C. Carbon Reduction

Microgrids achieve significant reductions in greenhouse gas emissions through energy efficiency levels far superior to conventional generation. Microgrid operators tracking their greenhouse gas emissions over time have been able to demonstrate significant and measurable emissions reduction benefits. For example, Princeton University, an MRC member organization, used its microgrid to help reduce on-campus CO_2 emissions levels by nearly 20% over a five year period, despite adding over 500,000 square feet of building space over the same time interval.[5]

A microgrid's efficiency advantage stems from its ability to employ sophisticated and flexible technology in response to specific load configurations. Using cogeneration to serve balanced electric and thermal loads, microgrids can achieve generation efficiencies above 80% compared to around 30% to 50% for conventional generation. In addition, including renewable energy allows microgrids to undertake flexible hybrid generation operations. By using thermal and electrical storage to manage time of use of imported electricity and fuel, microgrids help

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[4] Reforming the Energy Vision: NYS Department of Public Service Staff Report and Proposal, Case 14-M-0101, 4/24/2014, 11 ("Initial REV Report").

[5] Rachel Kaufman, U.S. Green Building Counsel, "How Green is Your Microgrid?" (available at (http://www.districtenergy.org/blog/2014/10/27/how-green-is-your-microgrid/)

moderate power prices and grid congestion by efficiently shifting load to times of lower demand and pricing and by locating generation closer to loads. Building temperatures generally move slowly due to their thermal mass. By "smart" management of thermal loads, microgrids can effectively use buildings themselves as thermal storage to manage load shape. These and similar efficiency and energy management strategies not only save money but also significantly reduce the environmental impact of providing energy services.

In addition, customers served by microgrids 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 and thermal generating systems. The microgrid context makes them economic.

3. Microgrids

The Order adopts the United States Department of Energy ("DOE") definition of a microgrid: "a group of interconnected loads and distributed energy resources (DER) with clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid [and can] connect and disconnect from the grid to enable it to operate in both grid connected or island mode." The Order also recognizes the ability of microgrids to provide resilience, integrate clean distributed resources, and offer grid services like demand response and ancillary services.[6] While we agree with the DOE definition to the extent that it focuses on the microgrid serving as a micro control area,[7] we believe that the discussion misses a critical characteristic of a microgrid – its ability to provide advanced services to the grid above and beyond most DER, which arises from the types and degree of control that it is possible to exercise. The discussion

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[6] Order at 109.

[7] The MRC defines a microgrid as a local electric system or combined electric and thermal system that: (1) 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; (2) is capable of operating either in parallel or in isolation from the electrical grid; and (3) when operating in parallel, can provide some combination of energy, capacity, ancillary or related services to the grid.

also gives limited emphasis to the potential for co-management of thermal loads and other resources inherent to microgrid functionality. This co-management is an important source of customer value and the ability of microgrids to meet environmental goals.

The Order discusses several types of microgrids based in part on the technical capabilities of the microgrid and the business/governmental motivations of the microgrid participants. The MRC believes that a somewhat simpler approach based principally on the relationship of the microgrid to the utility's distribution system helps to clarify the regulatory approach.

A. Single Customer Microgrids

As the name suggests, a single customer microgrid faces the DSP as a single point of billing. It may have multiple meters but one entity manages energy use behind the meter or meters and all power distribution behind the meter is over non-utility-owned wires. Such a microgrid may serve a university campus, a private research facility or an industrial complex. It may be a property owned by a single landlord with sub-metered tenants aggregated as the customer.[8] These microgrids have all the functions described above: they co-optimize energy and resource utilization; and they meet customer needs for cost efficiency, reliability, security, and environmental performance by integrating a host of technologies. They can provide community support in emergencies,[9] and they can export services to the DSP and/or NY ISO.

The critical feature of single customer microgrids is that they make no retail sale of electricity. The single customer is either self-supplying or supplying via sub-metering to tenants. The microgrid still receives the balance of its power needs that are not self-generated over DSP wires, either from the DSP or an Energy Service Company ("ESCO"). The regulatory issues are correspondingly limited. All of the customer's meters (demand and non-demand) and sub-meters should be permitted to be aggregated by the microgrid for regulatory and market purposes. This allows the microgrid to fully optimize across its included load and to provide the

[8] 16 NYCRR 96.2.

[9] Princeton provided hot meals, hot showers and cell phone charging to emergency responders during Hurricane Sandy.

widest range of Profile Products to the DSP and ancillary service, capacity, and energy products to NY ISO. Further, barriers to the ability of the microgrid's internal distribution wires to cross streets or other public rights-of-way that intersect customer owned property should be minimized. Beyond the technical requirements for interconnection and technical and financial requirements for selling ISO and Profile Products, single-customer microgrids should not be subject to regulation.

B. Multi-customer Microgrids

Microgrids with more than one customer raise additional regulatory issues. We believe, however, that a few organizing principles can serve to cut through much of the confusion in the current public discussion. First we believe that each multi-customer microgrid should have a single point of regulatory contact.[10] The nature of the regulation will generally vary with whether the microgrid provides regulated services to retail customers from DER not located on the customer's property (or subject to another exception[11]). If the microgrid encompasses multiple customers already served by a DSP, the DSP will continue to own its wires and have a billing relationship with the customers. The microgrid provides an additional layer of services, and whether those services are regulated must be analyzed on a case by case basis.

We call the point of regulatory contact for each microgrid the "Organizer." The Organizer is the entity or institution that provides overall policy and operational direction for the microgrid. This could be (1) a government acting under community choice aggregation or as a convening customer, (2) a single institution or business that is a dominant user on the microgrid, or (3) a private developer that enters into contractual relationships with multiple customers. The

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[10] We would not rule out circumstances in the future in which there was more than one such point for different purposes, but believe that these will be rare for reasons discussed below.

[11] The New York Public Service Law provides two exemptions from the definition of electric corporation: "where electricity is generated by the producer solely from one or more co-generation, small hydro or alternate energy production facilities or distributed solely from one or more of such facilities to users located at or near a project site." (the "qualifying facility exemption"), and "where electricity is generated or distributed by the producer solely on or through private property … for its own use or the use of its tenants and not for sale to others" (the "landlord-tenant exemption"). PSL § 13.

Organizer may hire contractors to build and or operate or provide other services to the microgrid. The Organizer may, but need not be the owner of various elements of the microgrid, and may but need not be a utility customer. The customers and developers of the microgrid should generally be free to designate the Organizer rather than making the role the subject of rigid definitions. Depending on the degree of regulation incurred by the services provided by the microgrid, the Organizer may be required to meet to meet financial or other qualifications.

A microgrid that serves multiple DSP customers "sits on top of" the grid. The DSP generally owns and maintains the wires; and franchise rules raise hurdles to a microgrid adding new ones.[12] The DSP interconnects any included generation in the microgrid as it would any other generation, taking into account the overall controls provided by the microgrid. The DSP meters and bills its customers and retains the duty to serve as the provider of last resort. It serves its customers in ways that do not fundamentally change with the superposition of the microgrid except when the microgrid is in island mode. In grid-connected mode the load of the included customers may be met in part by unregulated services provided by the microgrid,[13] self-provided by individual customers within the microgrid, or met in whole by an ESCO which may or may not be the Organizer. This is essentially unchanged by the existence of the microgrid. It is also essentially unchanged in island mode in the sense the microgrid is only providing services that the DSP is unable to provide.[14]

Until the microgrid becomes involved in a sale of services to the DSP, the relationship between the microgrid and the DSP is essentially passive.[15] We suggest that the Commission (in consultation with NY ISO)[16] should adopt a tariff and regulatory structure for the installation and

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[12] Under N.Y. Gen. City Law § 20(10), the cities, towns and villages of New York State have specific statutory authority to grant franchises or rights to use the streets, waters, waterfront, public ways and public spaces of the city. The term "use" includes occupation of public rights-of-way for provision of public service.

[13] I.e. customers that are "near" to a cogeneration or renewable energy facility. PSL § 13.

[14] As discussed further below, a DSP may request that a microgrid go into island mode to support distribution system operations as a Profile Product. The voluntary nature of the islanding in this instance should not alter the regulatory posture.

[15] We anticipate that it can and will become active as discussed below.

[16] NY ISO has authority over interconnection.

operation of islanding switches and protective equipment for the microgrid point(s) of common coupling that are analogous to the tariff and processes for generator interconnection used by NY ISO. The microgrid should also pay an appropriate fee for use of the included distribution wires in island mode. It is crucial that this tariff and processes be nondiscriminatory, and that the Track 2 rate structure provides incentives to the DSP for prompt completion. As a general matter we believe that the microgrid should be in control of the islanding process in order to protect the included customers, but operating protocols or automated processes that are transparent to the DSP must clearly be developed.

The Organizer, directly or through its contractors and agents, provides an additional layer of services to the customers on the microgrid, which includes the resiliency service of islanding (and energy services while islanded), and may include thermal energy sales, collective sales of services to the grid, and other energy optimization services. The microgrid Organizer's relationship to the included single customer or customers is based on a set of contractual relationships. The Organizer may be subject to contractual damages for failure to perform, or to contractual incentives for performing well, but that is to be negotiated with the customers. The Organizer does not enjoy any statutory protection from liability to its customers such as a utility does.[17] An Organizer of a microgrid applying to be an ESCO should be prepared to show that it has appropriate contractual relationships with all the included customers.

We support the ability of a microgrid to own the wires it installs within the area served by the microgrid (subject only to DSP review and whether or not on private property) to permit (1) expanded service in island mode or (2) better ability to optimize services within the microgrid. Such configurations are currently subject to municipal franchise approvals. There should not be direct or indirect exclusivity to the DSP regarding the ability to install wires in rights of way. The Commission should consider limiting the ability of DSPs to intervene in such proceedings

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[17] "Under Sections 65 and 66 of the [PSL], utility companies file tariffs…which set forth the terms and conditions between the utility companies and their customers. *See* [PSL] §§ 65 -66 . 'Where . . . a public utility has a filed tariff" limiting its liability for ordinary negligence, 'no liability will attach to the public utility unless it is found to be grossly negligent.' *Allstate Ins. Co. v. Long Island Power Auth.*, No. 14-cv-0444(JS)(SIL), 2015 BL 52168, *3 (E.D.N.Y. Feb. 27, 2015) (quoting *Lockwood v. Niagara Mohawk Power Corp.*, 112 A.D.2d 495 , 496 , 491 N.Y.S.2d 211 , 213 (3d Dep't 1985)).

other than to report whether interconnection standards have been met. Alternatively, the Organizer could construct and dedicate such wires to the utility while retaining rights to use them under a special tariff. Localized conditions and microgrid development challenges might lead the Organizer to seek ownership or dedication. The Organizer should have both options.

To serve multiple customers in grid-connected mode, a microgrid Organizer must generally be licensed as (1) an ESCO, (2) a community choice aggregator, or (3) another form of entity established by the Commission. In these cases the Organizer would have to meet financial security and other requirements specified for such a regulated entity.[18] It would need to provide for the full power needs of the included customers through external purchases or contract with a licensed ESCO to do so. The MRC encourages the Commission to consider a special category of ESCO status for microgrid Organizers that recognizes their compact geography, limited number of customers, contractual service requirements, and local, physical supply base.[19]

Alternatively, an Organizer can operate (or contract for the operation of) one or more behind-the-meter generators within the controlled area none of which exports (other than permitted net metering) except when the microgrid is in island mode or making a required export of a DSP-contracted emergency product.[20] This microgrid is not making retail sales except in island mode. It is not serving as an ESCO. If it is using DSP wires and meters to serve those customers when islanded, it needs to compensate the DSP for those services and have a billing arrangement with the DSP or a third party ESCO.

However a microgrid operates in grid-connected mode, its operations in islanded mode are on the same order as companies that lease backup generators. They are simply not in the

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[18] We also note that a municipal utility can perform all of the microgrid functions, own the wires, and be the provider of last resort, but still function as a DER with respect to the larger grid.

[19] *See, e.g.*, Case 13-M-0028, RED-Rochester LLC and Eastman Kodak Company, Order Approving Transfer Subject to Conditions, Providing for Lightened Ratemaking Regulation, and Making Other Findings (May 30, 2013) (Lightened regulation was granted to Kodak and its successor, RED, for supply of utility services to the occupants of a commercial business park, from a facility located within the park, because the supplier operated in a competitive retail market where customers had access to other service options, and it provided services through a contractual relationship with its customers).

[20] See discussion below.

utility business. If the microgrid Organizer is acting as an ESCO in grid-connected mode, it simply remains an ESCO in island mode; if it contracts on behalf of included customers with a third party ESCO in grid-connected mode, that arrangement continues in island mode; and if it does not provide retail power in grid-connected mode (and does not maintain its own metering), it needs a special arrangement with the DSP or a third party ESCO to manage billing in island mode.

D. Utility Involvement

Under the Commission's proposed REV market construct, regulated DSPs should have no role in ownership of microgrid assets other than wires and other distribution system components. While the competitive affiliate of a DSP may develop and own microgrids,[21] rate-based DSP ownership and investment will dampen competition and DER innovation. Beyond contracting with microgrids for services supporting the distribution system (designed for emergency and/or economic conditions and a vehicle for operational safety and reliability coordination), DSPs should generally have no role in microgrid management. The MRC is concerned by the Commission's statements in the Order that third-party distribution facilities might be managed and microgrid system management might be provided by "a utility on a fee basis."[22] These services seem to raise the same competitive concerns as DSP ownership of DER assets. Not only does the utility bring its socialized risk allocation and regulated rate recovery structure to the competition, but it also subjects its ratepayers to contractual risks from which it does not have statutory protection. This sounds like a job for the competitive market, or perhaps an unregulated utility affiliate, not a utility.

Utility-owned "microgrids" cast the DSP as the unambiguous, regulated provider of all services but raise different issues than privately organized microgrids. A DSP could, consistent with the Order, elect to serve its customers more reliably by creating "tiled," islandable subgrids

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[21] The MRC generally supports the ability of unregulated utility affiliates to engage in any of the microgrid-related activities described in this filing subject to the Commission's rules designed to avoid abuses relating to customer information or tied services.

[22] Order at 111.

within its distribution system and running RFPs for third party providers to supply DER generation, storage or other services to those subareas.[23] San Diego Gas and Electric Company has developed a microgrid in Borrego Springs that serves essentially this function.[24] The bidders in those RFP processes may be behind the meter generators or other DER providers. Such islandable grid segments (absent included DER) do not have the ability to optimize customer energy usage,[25] but once approved in the planning process can appropriately be funded though rate base (subject to the discussion in the next section). They are a part of the distribution system, not DER.

In these islandable grid segments, the DSP delivers all power to all customers both in grid connected and island mode pursuant to its regular tariffs. In grid connected mode some load may purchase power from ESCOs and some may self-supply, but in island mode the ESCO suppliers cannot deliver (and would bear no liability). If the DSP purchases power from internal DER to meet load in island mode, that is a wholesale sale by the DER to the DSP, and does not subject the included DER to regulation as a retail seller. If the DSP offers to provide microgrid services other than basic power in grid connected mode it is in the awkward position of offering differential services to different customers on the basis of ability to pay. This seems unwise independent of the competition issues it would raise. In any event, we do not think that the Commission will be well served by treating such distribution subareas in the same category as single or multi-customer microgrids for any regulatory purpose. Rather they should be viewed as an important outcome of the platform planning and system operation activities mandated for DSPs by the Order. They should expand the market opportunities for DER, not displace them.

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[23] However, owning the included DER would not be consistent with the Order. *See* Order at 67-68 ("As a practical matter, we are concerned that development, investment and maintenance of DER resources will prove a distraction for what should be the main focus and value proposition for utilities")

[24] San Diego Gas and Electric Company owns included storage systems but that is not consistent with the Order. *Id.*

[25] Providing such services from a monopoly platform would be inconsistent with the Order at 112.

4. Markets and Regulation

The REV proceeding, from its inception, has focused on the role of DSPs in operating markets for products useful to the grid. In the initial articulation the DSP sounded a bit like a mini-ISO running a variety of auction markets, but the Commission's focus has, appropriately we believe, shifted more toward RFPs, with load shaping tariffs and perhaps auction markets to follow. The MRC strongly supports this approach. NY ISO, not the DSPs, is the balancing authority for the entire state. As such, it procures short-term products used in balancing operations in daily or other short-term auctions, and to the extent it buys long-term products such as capacity that serves to assure a fungible forward supply of the short term products that it needs. The MRC is skeptical that the DSPs can play a useful or economically efficient role as an intermediary in supplying those products. Nor do DSPs typically need those products for their own operations – they are not balancing authorities. DSPs serve a long term planning function for the security and resilience of the distribution system, and the products that serve those needs will generally be long-term products that are specialized and local. As the Commission has articulated, "A basic tenet underlying REV is to use competitive markets and risk based capital as opposed to ratepayer funding as the source of asset development."[26] The MRC believes that this purpose will best be served by negotiated transactions between DSPs and DER providers.

A. Planning and DSP3 Markets

The Order requires each DSP to undertake an integrated planning process that goes beyond capital expenditure planning for the utility and integrates contributions that can be made by private capital through DERs. This process is required to provide sufficient transparency so that would-be DER providers can understand the opportunities and, we add, must provide opportunities for DER providers to educate the DSPs on the capabilities of DERs. The latter function can be served by including DER provider input in the planning process. The purpose is not to determine what technologies or services are best, or to conduct *a priori* benefit/cost analyses, but to ensure that the planning process and subsequent procurement processes do not

[26] Order at 67.

unduly narrow the range of possible solutions to be considered. The former function should result in a public identification of the forward capital needs of the system at a level that permits DER providers to make creative proposals for solutions.

The Commission should encourage proposals for creative solutions to come forward in two ways. One is through DSP RFPs that arise from the DSP's planning activity and are needed to meet urgent priorities. In its December 12, 2014 Guidance[27] the Commission seems to discourage RFP processes (notwithstanding their endorsement elsewhere in the Order[28]), but the MRC believes RFPs can be valuable if they identify problems and broad parameters for solutions, but do not seek to impose particular technology solutions. Private respondents to RFPs will often have more information about technical solutions than the DSP. In addition, because DER providers are themselves major customers or have long relationships with major customers, they may well have more information than the DSP about the economics of solutions that depend on optimizing one or more customers' systems to respond to the DSP's planning and operational needs while also serving the customer's needs. In particular, microgrids will be particularly valuable solution providers where customers have significant thermal loads that can be co-optimized with power loads.

The MRC also strongly suggests that the Commission consider a process for unsolicited proposals from DER providers to meet needs identified in a DSP's distribution system plan. In particular we suggest a model based on Virginia's Public Private Transportation Act,[29] which allows private developers to make unsolicited proposals to resolve transportation system issues identified in state and regional transportation plans. This statute permits, but does not require that unsolicited projects be bid out before they are awarded, in the discretion of the relevant public planning agency. In this context, we assume that the Commission would either directly approve or give policy guidance on when a DSP would be permitted to proceed with a non-

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[27] Order at Appendix D.

[28] Order at 71.

[29] Va. Code § 33.2-1800 *et seq.*

competitive procurement based on factors such as the quality of the proposal and the urgency of the need. This has been a successful model in Virginia for over 20 years.

Whether the DSP initiates an RFP or responds to an unsolicited proposal, the result will be negotiated contractual arrangements that form a "partnership" between the DSP and the Organizer. This "DSP/private partnership" ("DSP3") is analogous to public/private partnerships that are often used to provide crucial infrastructure for municipal services and transportation.[30] These contractual arrangements spell out not only the infrastructure to be constructed but also the terms of operation including the services to be provided by a microgrid or other DER and the compensation for those services – essentially a negotiated tariff. It will be important not to force such arrangements into a rigid set of service definitions. Microgrids in particular can provide "Profile Products" that are at least as varied as can be provided by a generator, including rapid response, steady state operation, timed ramping, and providing regulation around any agreed load and/or generation profile. These "Distribution Support Solutions" can be designed to meet the particular needs of the distribution system in emergencies or in daily operation.

As an example, a DSP could accept proposals from three microgrids to provide generation/load reduction to support a substation during critical periods as an alternative to distribution system reinforcement. The contract could call for response in a local crisis (not just peak system demand) and require that maintenance schedules between the three resources be coordinated. Such contracts can also specify specific liquidated damages for non-performance, which can provide a much finer tuned response than permanent adjustment of demand charges. As an overall observation, the grid pays demand response the cost of its inconvenience. It pays generators for meeting grid needs. A microgrid gets paid for sophisticated flexibility in simultaneously meeting grid and customer needs. More broadly, DSP3 contracts could allocate the risks and benefits of long term investment appropriately among the parties. While the contract may provide specific payments for services that are guaranteed for the financing term of the project, the investment will also be supported by value provided to microgrid customers, and ratepayers bear less risk of stranded assets. DSP3 projects would attract more risk-taking capital

[30] And where there is a governmental organization involved, there may appropriately be a DSP4 – a DSP/Public/Private Partnership.

from third parties and also more patient capital from certain customers than utilities can attract.[31] Under this construct, payments by the DSP for microgrid Distribution Support Solutions would be fully recoverable from ratepayers.

One important corollary is that to the extent that a microgrid is not providing specific grid support services pursuant to a contract (or offering them in other RTO or DSP markets) it must be free to optimize value for its customer or customers. That value is supporting the capital investment. It is not the job of the microgrid to optimize the grid – rather it is the job of the microgrid to provide contracted services when called upon by the RTO or the DSP.

While services from microgrids procured in DSP processes should be left flexible, the Commission may well wish to move toward tariff standardization with respect to DSP services to microgrids. As discussed above, the Commission should consider standardized tariffs and processes for providing islanding capability to a multi-customer microgrid or use of microgrid constructed distribution equipment intended for use only in island mode or to provide internal services. Just as with interconnection, negotiating these arrangements can serve as chokepoints that discourage innovative projects.

Finally, transparent markets or DSP procurement processes can discover costs far more effectively and efficiently than any benefit/cost analysis. If a procurement process has a well-defined objective based on the identified planning needs, a comparison of bid costs with DSP costs of alternative solutions is fairly straightforward. If a DSP elects to self-construct a wires solution after rejecting DER bids, its rate base recovery should be limited to the lowest technically-feasible bid.

B. Tariff and Auction Markets

In our filing with respect to the Track One straw proposal we expressed skepticism about whether there were products for which DSPs could develop robust markets.[32] While the RFP /

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[31] As a general matter, long-term contracts for Distribution Support Solutions will support financing of microgrid assets in a way that RTO auction markets and short-term DSP product markets cannot. A long-term contract allows the DSP to take responsibility for a portion of the invested capital, but only to the extent that the microgrid actually delivers the services.

contract markets for Distribution Support Solutions discussed in the previous section are a natural outgrowth of the DSP planning process and relate to local conditions on the distribution system, there is no current obligation of the DSPs which would give rise to a need for bulk ancillary service products, and NY ISO has robust markets for the products it needs. The DSPs do not act as the balancing authority within their own distribution systems and notwithstanding requirements for acquisition of ancillary service products from NY ISO as an aggregator for customers taking basic service from the DSP, they do not have a direct need to control reserves, demand response, regulation or other ancillary services outside of certain emergency conditions. Their role in the day to day management of the distribution system does not generally give rise to a need for products that are sufficiently generic or sufficiently widely needed to support load-modifying tariffs or auction markets.

In our filing in response to the Straw Proposal we considered the possibility of short term markets for local services. Local voltage/VAR support may be an example, but it seems unlikely to have a significant revenue impact. There may also be a basis for a market in short-term substation relief (in contrast to the long-term Distribution Support Solutions contemplated in Section 2.a. above). Markets for emergency services in which microgrids assist in the restoration of the grid under agreements to make agreed exports or to assume prescribed load shapes under Profile Product contracts with the DSPs (described in Section 2.a above) may also make sense. If a DSP proposes to develop a local market, it should engage potential customers and suppliers for input on the purpose and design of the proposed market and file a plan with the Commission, showing the need for the market, demonstrating appropriate scale and scope, and showing that the new market would not overlap or conflict with an existing wholesale market or product.

C. Integration of Wholesale and DSP Markets

The Order follows the Straw Proposal in suggesting that the DSPs can acquire demand response and other products for resale to NY ISO, or to modify the DSP's load bids to NY ISO. We have significant concerns with DSPs acting as the sole or principal intermediaries between

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[32] *Track One Comments of the Microgrid Resource Coalition*, Docket No. 14-00581/14-M-0101, initially filed September 22, 2014; refiled April 21, 2015, (hereafter, "Straw Proposal Comments").

customers and NY ISO, and believe that customers or their DER providers / microgrid Organizers should continue to be able to access NY ISO markets, including demand response. The MRC strongly believes that microgrids should have unfettered access to the wholesale markets in addition to access to Distribution Support Solution contracts. Microgrids should be able to co-optimize all product opportunities at the DSP and RTO levels. Notwithstanding the current uncertainty raised by *EPSA*[33] regarding demand response, those product opportunities are *not* mutually exclusive. While the *EPSA* case challenges how demand response products are jurisdictionally authorized, the MRC believes the regulatory and market structures proposed in this filing are viable regardless of how *EPSA* is ultimately decided.

From a technical perspective, this is because the transmission system is not indifferent to whether demand response appears as reduced demand or as a demand response product that is bid into the supply side of the market. NY ISO has no visibility into demand side activity. From the point of view of balancing the system, the demand side reduction is just a part of overall system load variability that NY ISO must manage – part of the problem. Resources that are bid in on the supply side in the day-ahead energy market are subject to dispatch and they allow NY ISO to manage the system. The Order cites NY ISO as saying that it needs visibility into DER market participants.[34] Further, ISO-New England and PJM are also noting the growth of distributed generation resources and the need for visibility.[35] Where possible, DER should be in direct communication with NY ISO. As an example, Princeton University's microgrid provides regulation services to PJM with a two-second delay from PJM's signal. Supply side resources are part of the solution.

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[33] *Electric Power Supply Ass'n v. FERC*, 753 F.3d 216 (D.C. Cir. 2014).

[34] Order at 40.

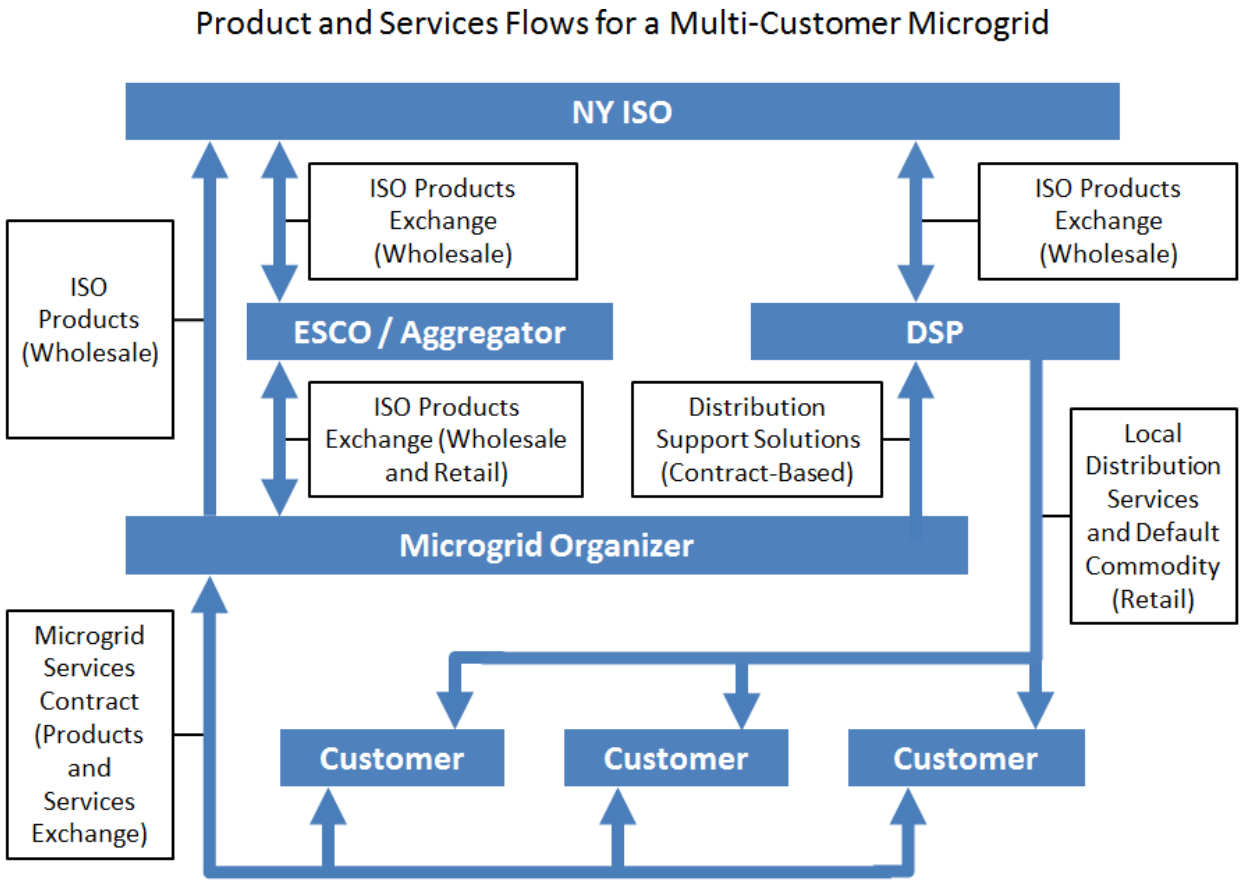
[35] As to ISO-New England, *see* Section 1.3.1.3 Distributed Energy Forecast in ISO-New England, *2014 Regional System Plan*, Nov. 6, 2014, 10-11 (available at http://www.iso-ne.com/static-assets/documents/2014/11/rsp14_110614_final_read_only.docx). As to PJM, *see* General Electric International, Inc., *PJM Renewable Integration Study: Executive Summary Report*, Rev. 3, Feb. 28, 2014, 6-8 (available at http://www.pjm.com/~/media/committees-groups/subcommittees/irs/postings/pris-executive-summary.ashx)

From a regulatory perspective, this is because the technical solution can be achieved with state licensed entities (ESCO, CCA, DSP, or other authorized aggregator)[36] acquiring demand response resources and setting their own market-based price as authorized by state law. In these circumstances, neither NY ISO nor FERC is setting the price paid to the retail customer. We have referred to this result elsewhere as a "pass-through market".[37] Should the *EPSA* decision stand, we encourage the Commission to establish tariffs enabling a pass-through market structure so New York can capture the benefits of demand response participating on the supply-side of the wholesale market. If *EPSA* is overturned, NY ISO can authorize its own aggregators, but we anticipate that the same entities will be the likely candidates.

The following diagram illustrates the various possible flows of products and services to and from NY ISO, the DSP, the microgrid, and the included customers in a multi-customer microgrid.

36 We concur with the concerns of the FTC expressed in its comments on the Straw Proposal that giving the DSPs a monopoly on serving as the aggregator for NY ISO would be detrimental to an effective wholesale market. The MRC believes that the Staff is too sanguine about the unmediated results of such a monopoly. A utility acting as a market intermediary for the RTO market and a utility managing its load bid may well face substantially different incentives. Load is typically bid day ahead and would reduce the system-wide, day-ahead price. Demand response is typically bid as generation in the real-time market (and paid as such). One must be cautious in assuming that both should be encouraged. The results for customers and the strength of the price signal would be substantially different.

[37] *Comments of the Microgrid Resources Coalition in Response to Revisions to the RPM and Related Rules in the PJM Open Access Transmission Tariff and Reliability Assurance Agreement Among Load Serving Entities*, Docket No. ER15-852, February 13, 2015.



D. Regulation of Microgrid Organizers

In our comments in response to the Straw Proposal we described the "DER Equipment and Services Markets" as broad, largely unregulated markets for the sale of DER equipment to customers or the installation and operation of such equipment on customers' behalf.[38] These include markets for DER equipment such as building controls; lighting and HVAC improvements; and geothermal, solar, storage or CHP equipment (the "DER Infrastructure Markets"). While installation of some of this equipment is appropriately regulated as to interconnection standards, and its use may be further regulated if electricity sales beyond the meter are involved, the relationship between the customer and the DER provider behind the meter is appropriately unregulated.

[38] Straw proposal comments at 4.

The Order leaves us concerned that the Commission proposes to extend its jurisdiction in ways that will substantially interfere with the hoped-for widespread implementation of DER. We generally agree with the Commission's analysis of its jurisdiction over "electric companies" that "furnish electricity" and are "obligated under law to provide service." However, the Commission has drawn the broad conclusion that it will regulate DER activity based on "acquisition of customer data by any means established under Commission authority" and "sale of DER services into DSP markets," which could result from "customer solicitations outside the platform."[39] Acquisition of customer data alone is not sufficient for qualification as an electric corporation, ESCO, or any other regulated entity under the Public Service Law.[40]

Additionally, we remain very skeptical of any program to provide customer data to DER providers that is not directly at the request of the customer.[41] This is likely to subject unsuspecting customers to a barrage of advertising and hard sell tactics. We view the data as the customer's data, not the DSP's, and we doubt that the dissemination of customer information without direct customer authorization serves the REV goal of customer empowerment. However, we strongly believe that supplying customer data to DER equipment and service providers by or at the customer's request should not subject a DER equipment or service provider to regulation even if it is delivered though DSP systems that are mandated by the Commission. We are also concerned that the Commission has not attempted to explain what it means by "sale of DER services into DSP markets," which could result from "customer solicitations outside the platform." We are at a loss to understand how a solicitation outside the platform could result in a sale into a DSP market.

As the Commission observes, it has jurisdictional authority under the PSL to regulate "electric corporations," which are entities that own, operate, or manage "electric plants" subject

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[39] Order at 105.

[40] PSL § 2.

[41] By contrast, delivery of data about the aggregate energy usage of its individual and corporate citizens to a municipality or other government agency to serve its planning and programmatic purposes should be encouraged.

to certain important exceptions.[42] Two such exceptions are where electricity is generated or distributed by the producer solely (1) on or through private property for its own use or the use of its tenants and not for sale to others; and (2) from one or more co-generation, small hydro or alternate energy production facilities or distributed solely from one or more of such facilities to users located at or near a project site.[43] For the following discussion, we adopt NYSERDA's

[42] PSL § 2(12) provides that the term "electric plant" includes "all real estate, fixtures and personal property operated, owned, used or to be used for or in connection with or to facilitate the generation, transmission, distribution, sale or furnishing of electricity for light, heat or power; and any conduits, ducts or other devices, materials, apparatus or property for containing, holding or carrying conductors used or to be used for the transmission of electricity for light, heat or power.

PSL § 2(12) provides that the term "electric corporation" includes every corporation, company, association, joint-stock association, partnership and person, their lessees, trustees or receivers appointed by any court whatsoever …owning, operating or managing any electric plant except where electricity is generated or distributed by the producer solely on or through private property for railroad or street railroad purposes or for its own use or the use of its tenants and not for sale to others; or except where electricity is generated by the producer solely from one or more co-generation, small hydro or alternate energy production facilities or distributed solely from one or more of such facilities to users located at or near a project site.

[43] PSL §2. Relevant case law establishes that while the size of the distribution network is an element in interpreting the "at or near" requirement, there are other factors as well, including whether the project site is in a densely or sparsely developed location, types of technologies used, and whether the facilities remain on private property or cross public rights of way. *See, e.g.,* Case 11-M-0396, *Project Orange Associates LLC,* (October 17, 2011) (a 9.5-mile gas line delivering gas to a cogeneration plant was not at or near the project site. The Commission distinguished between distribution facilities that delivery energy to the end user and those that deliver to generating facilities, holding that the latter should be held to a higher standard.); Case 09-M-0776, *Griffiss Utility Service Corporation,* (February 17, 2010) (the Commission withheld decision as to whether the distribution facilities on a 3,500 acre campus were at or near the project site, requesting additional fact-finding due to the large size of the property; additional evidence was never offered); Case 07-E-0802, *Burrstone LLC,* (August 27, 2007) (distribution lines that crossed property lines and a public highway to connect several cogeneration facilities on one property to buildings on separate properties was deemed at or near the project site.); Case 07-E-0674, *Advocates for Prattsburgh,* (August 24, 2007); (electric distribution lines 4.2 miles long were determined to be at or near a 2,500-acre wind farm.); Case 06-E-1203, *Steel Winds Project, LLC,* (December 13, 2006) (distribution facilities connecting a wind installation to a substation about 4,500 feet away and then to users up to a mile from the substation were at or near the project site.); Case 93-M-0564, *Nissoquogue Cogen Partners – Petition for a Declaratory Ruling,* (November 19, 1993) (a 1.5-mile steam line that crossed a public thoroughfare to connect a cogeneration facility to a college campus was a related facility at or near the source.); Case 92-G-0049, *Seneca Power,* (May 19, 1992) (a gas line 11.2 miles long providing gas to a cogeneration plant was not at or near the project site); and Case 89-F-148, *Nassau District Energy Corporation,* (September 27, 1989) (a 1.7-mile electric distribution line was determined to be a related facility at or near the qualifying generation source, primarily because the line remained almost entirely on the builder's property).

terminology for these two exemptions: "landlord-tenant" and "qualifying facility" exemption, respectively.[44]

In light of this regulatory framework, below is our analysis of Commission jurisdiction in some of the microgrid and market configurations described above. However, in each of these cases, the voluntary furnishing of customer information to an Organizer, third party owner, developer, operator, or any DER equipment or service provider is not a basis for regulation.

Single Customer Microgrid. In the case of the single customer microgrid, where the microgrid owner is either the customer or the landlord with sub-metered tenants aggregated as the customer, the generation and consumption of power behind the meter by the customer on the owner's private property clearly falls within the landlord-tenant exception and should not be subject to regulation.

Multi-Customer Microgrid. A multi-customer microgrid Organizer that sells energy services, including power, to customers that is (1) not produced behind the purchasing customer's meter and (2) delivered in grid-connected mode, will be furnishing electricity within the Commission's jurisdiction unless it is exempt from regulation under the qualifying facility exemption.[45] We suggested above that such an Organizer might be required to register as an ESCO, could also be a community choice aggregator, or could be given a new lightly-regulated status. Alternatively, an existing ESCO can act as an agent for such an Organizer or purchase power from the Organizer and become the ESCO for all the customers of the microgrid. As discussed above, in this scenario the DSP still has the underlying *regulatory* obligation to provide service in the same way that it does with any ESCO customer. In contrast, the Organizer has a *contractual* service obligation to the microgrid's customers.

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[44] *See Microgrids for Critical Facility Resiliency in New York State*, Report No. 14-36, NYSERDA (December 2014) (hereafter, "NYSERDA report") at 28-30. As the NYSERDA report observes, the qualifying facility exemption includes an 80 MW limit on aggregate generating capacity among all sources within the facility.

[45] As discussed above, for this exemption to apply the energy must be generated from a qualifying facility (either co-generation, small hydro, or alternate energy production facilities) and must fall within the 80 MW aggregate generation cap. In addition, the receiving customers must be located "at or near" the project site.

A functional multi-customer microgrid can also be organized so that it encompasses multiple behind-the-meter generation sources, none of which sell power beyond the individual customer's meter (except for permitted net metering). Such a microgrid can provide thermal energy services from behind-the-meter cogeneration, or from steam or electric chillers (regardless of location), to all of its customers, and it can potentially provide improved power quality from such generating sources and behind-the-meter electric storage installations to all customers within its reliability perimeter. When configured in this way, a microgrid should be exempt from regulation.

Finally, when the grid is down, the Organizer of a multi-customer microgrid should be able to use the DSP's wires (via controls paid for by the microgrid and for an appropriate fee paid to the DSP) to serve its customers in island mode. In this instance, the microgrid is energizing wires on lines that would not otherwise be operating, and other ratepayers do not face opportunity costs. The Organizer is essentially continuing to act as an ESCO with localized generation and infrastructure to support the provision of services to customers. Services are provided pursuant to contracts (as they are in grid-connected mode), and the Organizer's obligations are defined by those contracts. Imposing statutory, utility-like obligations, such as the duty to serve, on microgrids imposes restrictions on customers' contractual terms of service from the microgrid. This will limit the ability of customers to purchase the level of services that meets their energy and financial needs and will frustrate rather than empowers customers.[46]

DSP-Owned and RFP Respondent Microgrids. A microgrid undertaken by a DSP as a component of its distribution system will be regulated as such. We support the Commission's conclusion that DSP's should not own DER, and do not believe that the location of DER within a DSP-owned microgrid should provide an exception to this policy unless the DSP conducts an RFP and cannot obtain responsive proposals. DSPs that conduct RFPs for Distribution Support

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[46] The NYSERDA Report suggests: "The PSC is unlikely to impose an 'obligation to serve' on microgrids in the near future. In a 2004 'Statement of Policy on Further Steps Toward Competition in Retail Energy Markets,' the PSC rejected a proposal that would have imposed the obligation to serve on all energy service companies (ESCOs which, for these purposes, may be analogized to microgrids) within the geographic area and with respect to the customer classes they elect to serve. The PSC held that 'such an obligation could unduly constrain ESCOs and thereby impede development of the market." (See the NYSERDA Report at 36.)

Solutions (as discussed above under Planning and DSP3 Markets) are subject to regulation on the prudence of their request for services. In approving system plans submitted by DSP's the Commission should mandate RFP processes wherever warranted, and should approve proposals for RFP processes that are submitted if prudent. The acceptance of a proposal from a microgrid Organizer or other DER (or rejection of all proposals), including the terms of contracts that are tailored to specific distribution system circumstances as contemplated in the discussion above should be subject to Commission approval as a part of the regulation of the DSP.

Whether a microgrid respondent to an RFP is subject to further regulation should depend entirely on the factors discussed above in this section. That they will provide specific services pursuant to a contract entered into with a DSP should not subject them to regulation. Absent any specific contractual arrangements with microgrid customers to the contrary, any net export of electricity from behind-the-meter generators within a microgrid in response to DSP dispatch will be a wholesale sale of power subject to federal regulation, not Commission regulation. DSPs will need to consult with and work out arrangements with NY ISO before entering into RFP-based contracts that call for such sales.

Ancillary Services and Capacity Sales. Sales of other energy related services, such as ancillary services or capacity, that are intended for NY ISO markets are generally not sales of power, and even if they are, are wholesale sales. That a DSP may act as an intermediary does not change the character of the service or the sale. Even if a DSP were to purchase local services such as VAR support from a microgrid or other DER, that is still a wholesale transaction. The microgrid must meet the technical and reliability requirements of making such a sale, but it is not "furnishing electricity" within the Commission's jurisdictional boundaries.

DER Equipment and Services Market. The most important market for the Commission to encourage is not any particular DSP market but the DER equipment and services market. Regulating DER equipment and service providers except in the limited circumstances described above is both counterproductive and generally outside of the Commission's jurisdiction. The articulated goal of the REV proceeding is that services needed by the grid be provided by DER wherever that is cost effective or otherwise provides a better result for the grid. That goal can only be achieved by assuring that the DSP markets are properly designed to be competitive and transparent and that they adequately recognize and compensate all the services that microgrids

provide. Imposing the kind of regulation designed to insure just and reasonable rates from monopoly providers on a vast competitive universe of DER equipment and service providers will only be counterproductive.

E. Energy Efficiency

The MRC welcomes the Commission's direction that DSPs move away from special surcharges. We do not take a position on continued subsidies as such, but we believe that energy efficiency improvements often pay for themselves, and that while there are barriers to adoption, those barriers are more institutional and informational than economic. Utilities can assist lower income residential and small business customers by providing on-bill repayment of third party finance in addition to or instead of subsidies, and by providing unbiased customer assistance (assuming the DSPs are not competing with third parties and the rate structure supports the right DSP incentives). Most importantly, DSPs should receive equal credit toward meeting their energy efficiency goals for compensation purposes for customer-directed solutions. We are encouraged by the Commission's direction toward allowing large customers to self-direct energy efficiency funds towards the customers' energy management investments, and also allowing the customers' energy savings to count towards the utilities' goals.

Energy efficiency is a major focus of microgrids, not just in the form of individual conservation measures (ranging from cogeneration – often more than twice as efficient as generation on the bulk power system – to sophisticated building controls) but also the integration of the overall thermal and electrical energy use across multiple fuels and multiple uses for an entire campus, installation or group of buildings. Encouraging customer owned and customer focused microgrids (as opposed to distribution system microgrids) can dramatically improve progress on energy efficiency goals.

Sophisticated microgrid-wide control systems simultaneously permit customers or their contract operators to optimize behind-the-meter energy use and to provide services to the grid. Properly pricing services to the DSP and avoiding DSP interference with NY ISO price signals are critical to supporting the overall efficiency improvements achieved by microgrids.

5. DSP Services

A. Interconnection

The MRC strongly agrees with and supports the Commission's conclusions on interconnection. It is critical that the Commission not only eliminate the DSPs' financial disincentive for interconnection of DER but also provide financial incentives for prompt response and require the infrastructure and organizational structure to speed interconnection. DSPs should be assured of compensation for the organizational effort and for outstanding customer service in the form of prompt interconnections.

Despite its positive overall thrust, the Order contains echoes of old arguments against DER and microgrids that need to be put to rest. The Order raises the suggestion that interconnection applications may be affected by DER penetration levels.[47] This statement is not amplified in any way so it is hard to determine the focus, and it may simply allude to concerns about large quantities of unbuffered solar and wind resources. The MRC believes that Microgrids are generally part of the solution, not part of the problem. Microgrids will frequently include storage or other mechanisms to manage variability of included variable resources. In addition, microgrids typically rely on co-generation to efficiently manage combined thermal and electric loads. The attached analysis by Edward Borer, Energy Plant Manager at MRC member Princeton University, demonstrates how smaller distributed resources can provide greater system resiliency than large central station generation with less installed capacity.[48] When these resources are supplied to the system by private capital supported in part by the thermal output of the co-generation, greater penetration of DER becomes a benefit to the system at every level.

The MRC is also concerned by the comment from the Joint Utilities that the complexity of some microgrids may warrant a distinct interconnection process.[49] This sounds like a new excuse for delay. MRC believes, to the contrary, that the enhanced internal controls of

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[47]Order at 92.

[48] *See* Appendix A.

[49]Order at 90.

microgrids serve as protective systems that should be taken into account in assessing system risk.[50] Where microgrids are being developed as DSP3 projects to deliver Distribution Support Products they should be given interconnection credit for grid enhancements. MRC members and advisory board members have extensive experience with microgrid integration and would be happy to support the Commission in this regard.

B. Track II Issues

At several points in the Order the Commission refers to matters to be deferred to the Track Two process. From the various comments of utility groups in the record, it is clear that in certain respects some incumbent utilities are at odds with their customers – trying to prevent those customers from reducing and optimizing their energy usage. Because we strongly support the continuing role of utilities as DSPs and believe it is valuable for the grid that the role of microgrids in the system be expanded, we strongly support a compensation scheme for utilities that supports their critical role while providing incentives that align their interests with those of their customers. While we recognize that these issues are being addressed in Track Two, we note that the Track Two proposal has been deferred once again,[51] and we are concerned that decisions on issues important to microgrids will be made without integration. Accordingly we offer a thumbnail sketch of a utility revenue requirement approach that we believe is consistent with the Commission's direction:

- Debt service should be included as a direct pass through to rate payers.
- Operating costs (including administrative overhead but not profit) should also be treated as a direct pass through, subject to prudence review. There should be some incentives for reduced costs but also incentives for meeting NERC standards and overall reliability performance.

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[50] *See* Appendix A.

[51] *See*, NY DPS Ruling Granting Extension of Time for Staff Benefit Cost framework proposal and the Track Two Straw Proposal, Case 14-M-0101, April 20, 2015.

- Purchased power costs should be passed through subject to Commission supervision of procurement. It may be appropriate to pass these costs through with a small discount (especially where levels of usage exceed prior years' or other appropriate targets) as an incentive to reduce provider of last resort load.

- A base return on equity should be provided at a level that isn't significantly higher than interest on debt.

- Significant incentives should be given for reducing aggregate peak demand, aggregate load, increasing load factor, signing up flexible load, and reliable performance. Equal credit should be given for reliable performance and energy efficiency achieved through embedded microgrids as for new distribution assets. There should be incentives for prompt action on interconnection and islanding capability requests. Consider incentives for optimizing the capital requirement (including generating equipment) per MW served. Consider appropriate incentives for reducing the carbon emissions.

- Do not permit any assets in rate base that can be effectively made subject to competition such as by eliminating barriers to competitive investment, or through RFPs.[52]

Adoption of this type of approach to the DSP revenue requirement should be accompanied by adoption of a decoupling mechanism so that DSPs actually receive their revenue requirement rather than aggregate revenues from collections, and MWh of sales do not drive profits. The result will be that a utility cannot substantially increase its equity returns by adding capital in rate base unless that capital allows it to meet performance goals. The value of utility stock will not depend on expectations of growth in either rate base as such or MWh sold or distributed. Instead shareholder value will depend largely on creating customer value – which in many cases will consist of enabling customers to create their own value through DER and

[52] In this connection we strongly support the concerns raised by various community-based environmental advocates in their request for rehearing or clarification. *See* Petition for Rehearing of Alliance for a Green Economy, Binghamton Regional Sustainability Coalition, Citizens Environmental Coalition and Citizens for Local Power, Case 14-00581/14-M-0101, Mar. 31, 2015. The Commission should not adopt, or permit DSPs to adopt a presumption of market failure without attempting a procurement process. As we point out below, environmental justice areas may be locations where existing smokestack industries can benefit from clean co-generation and support microgrids.

microgrids. Creating value by creating satisfied customers through resilient, low-cost, efficient energy supply is the essence of achieving REV goals.

6. Policy Issues

A. Consumer Regulation

The Order raises the issue as to how the Home Energy Fair Practices Act ("HEFPA")[53] should be applied to microgrids that serve residential customers. HEFPA provides numerous consumer safeguards with regard to requesting, terminating, and suspending service, as well as the handling of customer complaints.[54] The Energy Consumer Protection Act of 2002 expanded the scope of HEFPA to include contracts between ESCOs and residential customers.[55] HEFPA's consumer protections apply whenever an electric corporation or other entity "in any manner, sells or facilitates the sale or furnishing of gas or electricity to residential customers."[56] To the extent that a microgrid's furnishing of electricity to a residential customer falls within Commission jurisdiction under the analysis provided above,[57] we expect that HEFPA would apply in the same way that it would against an ESCO.

B. Low Income Customers

Expansion of DER will generally reduce system energy costs. Packaging DER in microgrids allows for greater reductions to system costs that directly benefit low-income ratepayers. Currently, certain products are screened to ensure they provide benefits to all load, not simply the load that is able to provide them directly. For instance, the FERC mandated supply side demand response program under Order 745 (currently under challenge in *EPSA*) includes a "Net Benefits Test" to assure that the reduction in price from demand response

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[53] Order at 111-12. *See* PSL Article 2, 16 NYCRR § 11.1 *et seq.*

[54] 16 NYCRR § 11.1 *et seq.*

[55] *Energy Consumer Protection Act of 2002* (L. 2002, ch. 686).

[56] 16 NYCRR § 11.2.

[57] *See infra* at Part 4.d.

resource activation is larger than the increase in prices borne by the remaining load. In general, microgrids' participation in wholesale markets and Distribution Support Solutions[58] will necessarily increase product supply and reduce costs for all customers, including low income customers.

However, commodity cost decreases are only part of the picture. The ability of microgrids to alter their load and generation profiles enables them to optimize against demand charges linked to peak capacity and usage. Again, this lowers overall capacity requirements for the system and charges to load generally, and is one of the largest potential sources of efficiency and savings from the REV initiative.

Through Distribution Support Solutions, microgrids can provide grid restoration services that are more flexible than typical black start capabilities. DSPs can acquire Distribution Support Solutions to ensure resiliency in low-income communities. Ensuring local reliability, circuit-by-circuit, is an appropriate goal of the DSP. Indeed, DSPs should focus (and their rate incentives should focus them) on assuring equal levels of resiliency across the grid. However, we strongly concur with the concerns expressed by community-based environmental advocates in their Request for Rehearing or Clarification[59] that the Commission not assume in advance that low income communities will spawn market failures.

The MRC endorses the Commission's suggestion that partnering with community-based organizations should be encouraged. For instance, DSPs could collaborate with community-based organizations in determining the criticality and priority among and within a community's circuits. Such identification of sections of the grid with high demand for resiliency or other services that a microgrid can provide may be sufficient to elicit a market-based response. In the event it is not, a DSP solicitation for Distribution Support Solutions may be appropriate with community input.

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[58] Microgrid provided Distribution Support Solutions regardless of how they are contracted (e.g. RFP, Market etc.) can only reduce costs for all customers, as the benchmark is the DSP cost to provide.

[59] Petition for Rehearing of Alliance for a Green Economy, Beinhamton Retional Sustainability Coalition, Citizens Environmental Coalition and Citizens for Local Power, Case 14-00581/14-M-0101, March 31, 2015.

C. Environmental Justice

The Environmental Protection Agency defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Environmental justice efforts focus on improving the environment in communities, specifically minority and low income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities. In NY, the Department of Environmental Conservation has promulgated regulations for incorporating environmental justice issues into proceedings before the Commission on whether to site a major electric power plant. Microgrids are not utility scale, major electric power plants. Rather, they are community scale, advanced DER.

Microgrids incorporate cleaner, more efficient and flexible forms of generation. The efficiency drives both economics and environmental performance. Further, the flexible efficiency allows microgrids to displace a range of existing generation resources from baseload coal to oil fired peakers. This positively impacts air sheds that are disproportionately populated with minority and low income communities. To the extent that an environmental justice area results from the presence of industrial processes using fossil fuel for thermal load, replacing the existing single purpose power source with a modern single or multi-customer microgrid is a major opportunity that will substantially reduce pollution.

7. Commission Questions

The Commission observes that a microgrid may qualify as an "electric corporation" under the Public Service Law where the microgrid "serves electricity to separate customer accounts and is not otherwise exempt under law."[60] In light of this potential regulatory classification, the Commission posed three questions regarding the relationship between microgrids and the Commission's interest in (a) ensuring just and reasonable rates; (b) advancing the objectives of REV; and (c) understanding a possible relationship "between outcomes

[60] Order at 111. *See also,* PSL § 2(13).

produced by the microgrid and system-wide outcomes for which DSP/utilities may be held accountable." We address each of the Commission's questions in turn.

A. Question 1: How can the Commission ensure that microgrid customers receive reliable service at just and reasonable rates?

In the context of single customer microgrids, this question is of little concern as it falls outside Commission jurisdiction. As the Commission observes, single customer and other such microgrids serving tenants located at or near a generation sources are entitled to do what they do behind their meter, so to speak, as they are exempt by law from most aspects of Commission regulation.[61] If single residential customer nanogrids become more widespread, consumer protection issues related to the system marketing, sale, and installation could become a concern, but such concerns would not pose issues any different from those already raised by other forms of DER.

On the other hand, a DSP-sponsored microgrid that has met the test to be undertaken as a part of the distribution system will likely not be charged directly to the local customers. Rates charged in such a scenario would be subject to the same Commission supervision as any other rates of the DSP.

A multi-customer microgrid Organizer that provides power to its included customers (other than behind the meter) will be regulated as an ESCO, community choice aggregator, or similar entity. If such a microgrid only provides electricity behind the meter and provides other services to its customers it would generally not be subject to Commission regulation. As discussed above, a multi-customer microgrid "sits on top of the grid."[62] The DSP retains the obligation to provide service in the same way that it does with any ESCO. Other services will be provided by the Organizer to customers on a contractual basis, and the contracts will specify their own penalties for failure to perform. Unlike a utility, the microgrid does not have immunity from suit for its failure to perform (unless it is a municipal utility).

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[61] Order at 109 (citing to PSL § 2(13)).

[62] *See infra* at Part 3.b.

B. *Question 2: How can the Commission ensure that the microgrid/utility is advancing the objectives of REV?*

We are concerned with the Commission's formulation of this question, and in particular its use of the term "microgrid/utility." We do not believe that a microgrid (other than a DSP sponsored microgrid) is ever a utility. A microgrid selling services to the DSP or NY ISO is serving the purposes of the grid whenever it clears in the market or performs a contractually obligated function at the direction of the DSP. Improving the efficiency of the grid is one of the principal goals of REV, and presumably markets and RFPs will be designed to do just that. Otherwise the microgrid is serving the purposes of its customers, and customer empowerment is also one of the principal goals of REV.

If the term "utility" as used in this question is intended to indicate a mutually exclusive category from microgrid, then, as discussed above, the Commission will have oversight of the DSP planning process, any RFP process, and any other tariff or market design. The Commission has ample power to assure that utility actions are consistent with the goals of the REV proceeding.

As discussed above, the third goal of REV – environmental improvements – is typically served by microgrids. Many customers have environmental goals in mind when pursuing microgrids. However, in the absence of markets for carbon reduction, explicit carbon pricing, or other measurement and verification procedures with related incentives it will continue to be difficult to determine if these goals are met.

C. *Question 3: What is the relationship, if any, between the outcomes produced by the microgrid and system-wide outcomes for which the DSP/utilities may be held accountable?*

There is a direct relationship between microgrid and system-wide outcomes as to (1) the design of DSP markets and RFP processes to produce contracted services outcomes or products that directly serve the needs of the grid, (2) the definition of the requirements for providers of products or services so that they reliably and effectively provide services and products of value to the grid, (3) the promulgation of interconnection standards and conduct of interconnection processes that assure the safe, reliable and expeditious interconnection of microgrids, and (4), for

multi-customer microgrids, the arrangements for installation, ownership and operation of islanding switchgear and protective gear and Organizer-installed internal distribution wires used for specific microgrid purposes. Each of these assures the delivery of customer or grid desired outcomes in a manner consistent with the needs of overall grid operation. The DSP can be held accountable for both the appropriateness and the prompt execution of these processes, for the performance of the system when utilizing microgrid products and services, and for the performance of the system when operating in parallel with microgrids based on the microgrid, interconnection, and performance requirements it promulgates. For DSP sponsored microgrids, the DSP can be held fully responsible.

8. Conclusion

The Microgrid Resources Coalition is pleased to submit the foregoing comments in response to the Order and the Notice.

Respectfully submitted,

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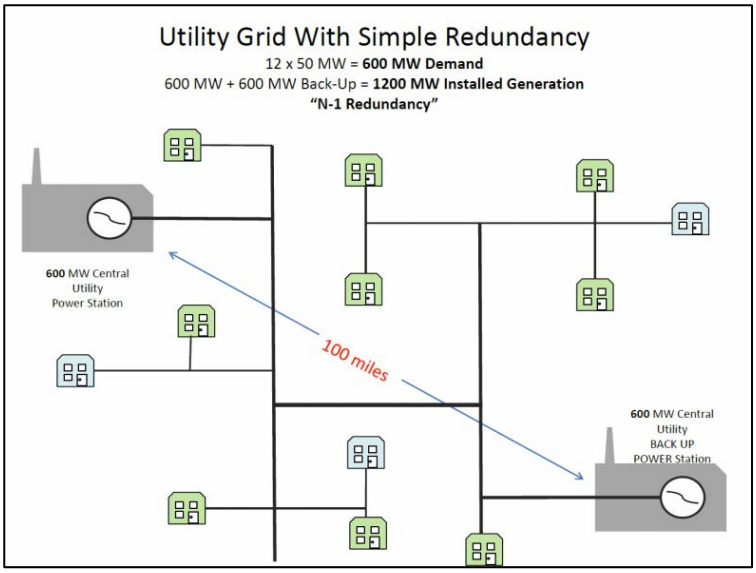
Appendix A: Microgrids Add Reliability to The Macro-grid

Ted Borer, PE

4/16/15

Microgrids reflect the local community priorities

Microgrid operators often choose not to own enough behind-the-meter power generation to meet peak electric demands. Most don't find it cost-effective to generate all their own power at all times. But they own enough generating capability to meet *mission-critical* demands and they can decide in advance which power uses are deferrable in an emergency. They have re-claimed the ability to decide what lamps get lit in a crisis. One can imagine that in a regional emergency, municipal services such as police, fire, hospital, water, sewer, railroads, and sources of a community's food and fuel should get highest priority. Similarly, when health and safety are at risk, some electric demands could be deferred such as: a sports arena, furniture store, clothing factory, theater, skating rink, or a shoe repair. If power is only supplied and controlled from distant locations outside a community, these choices are not always available.



How could a power grid be arranged to improve reliability without excess cost?

In simple terms we want to reduce the scale of failures and diversify risk while operating at high efficiency. Let us look at a ***highly simplified*** example.

Figure _1_ shows a regional power grid with 600 megawatts peak demand, represented as twelve 50 MW loads. There is one main 600 megawatt generator to meet the demand and one 600 megawatt generator available as back-up for any time the main generator is unavailable. The two utility plants are located far from each other to minimize the risk of common-mode failure. Each green building represents one or more critical loads. Dark lines represent the high-voltage transmission system. Lighter lines represent a medium voltage distribution system. Each blue building represents one or more deferrable loads. With 100% back-up, the system has "N-1" redundant generation. But there is no cost-effective means to use the waste heat since the generating stations are far from the thermal users. This represents much of today's grid.

Figure _2_ shows two different vulnerable points where the loss of a transmission node or substation could interrupt power to several critical and non-critical loads, even when both generators are available. This was the most common type of failure during Hurricane Sandy.

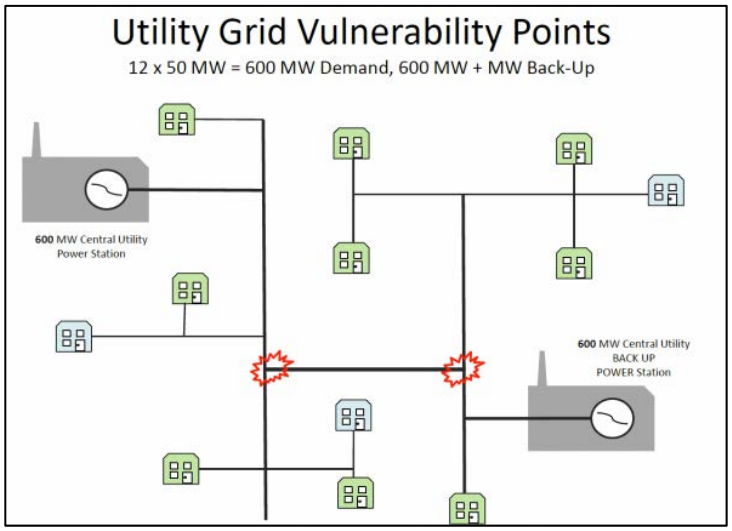


Figure _3_ shows a hybrid grid made of central utility plants with distributed microgrids. By localizing some power generation, the transmission and distribution inefficiencies are reduced. There is the possibility of improved reliability and efficiency without building additional high voltage distribution systems. The opportunity for CHP exists, while non-critical loads can still be fed by larger, relatively efficient generators. Either one of the two central utility plants can fail, but all loads get service. Both of the 200 MW utility plants or a few of the microgrid plants could fail and all critical loads would still get service. Similarly we have reduced the risk of transmission system failures with more distributed generation. The spinning reserve requirement has dropped from 600 MW to just 200 MW. Note that in this example, 800 MW of distributed power generation is providing a much higher level of reliability and efficiency than 1200 MW of utility-only generators shown in Figure _1_.