COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF PUBLIC UTILITIES

Petition of NSTAR Electric Company and	**)**	
Western Massachusetts Electric Company	**)**	**D.P.U. 15-122/123**
d/b/a Eversource Energy for Approval of their	**)**	
Grid Modernization Plans	**)**	

DIRECT TESTIMONY OF

JORDAN R. GEROW

ON BEHALF OF

THE CAPE LIGHT COMPACT

MARCH 10, 2017

Q: Please state your name and business address.

A: My name is Jordan R. Gerow and my business address is 212 E-House, 78 North Broadway, White Plains NY 10603.

Q: By whom are you employed and in what capacity?

A: I am a Staff Attorney at the Pace Energy and Climate Center (the "Pace Center"), which is a project of the Elisabeth Haub School of Law at Pace University in White Plains, New York.

Q: Please describe your background, including relevant employment experience, education, and other professional qualifications.

A: I joined the Pace Center in 2013 as a Staff Attorney. I have taken the lead on developing regulatory analyses for several microgrid projects through the New York Prize microgrid competition, as well as articulating the Pace Center's positions in several proceedings related to the "Reforming the Energy Vision" proceeding at the New York Public Service Commission, Case No. 14-M-0101, including reform of state-level microgrid regulation, community distributed generation ("DG"), and evolving methods of developing tariffs for distributed energy resources. I helped produce the Pace Center's grid modernization guidance document for Maryland regulators in Maryland's Grid of the Future proceeding. I led the development of a legal analysis for New York's Microgrid Report, published December 2014, and served as an editor for the entire report.[1] Between 2013 and 2015, I provided legal, financial, and technical analysis for numerous communities throughout New York City and New England that are seeking to implement microgrids, as funded by the Pace Center grants from the John Merck Fund and the Mertz Gilmore Foundation. I also work to promote Combined Heat and Power ("CHP") systems through the U.S. Department of Energy's ("DOE") Northeast CHP Technical Assistance Partnership, which the Pace Center has housed for a decade. I was a Study Advisor to the Connecticut Academy of Science and Engineering's Shared Clean Energy Facilities study. I have a degree in Economics from the State University of New York at Buffalo and received my J.D. from Pace Law School, with certificates in Environmental and International Law. My resume is attached as Exhibit CLC-JRG-2.

My work at the Pace Center complements a staff consisting of lawyers, energy analysts, economists, and data experts, and the Pace Center is able to leverage that expertise to engage in numerous jurisdictions on issues surrounding clean energy and grid modernization. The Pace Center engages with state legislative and executive officials and participates in energy regulatory proceedings across the country in order to assist in developing and implementing policies that reduce greenhouse gas emissions. In these capacities, we have had the opportunity to

[1] NYSERDA, "Microgrids for Critical Facility Resiliency in New York State" (Report No. 14-36) (Dec. 2014).

form long-lasting partnerships within the energy non-governmental organization community, acting as a coordinator for input and comments from groups such as the Natural Resources Defense Council, Environmental Defense Fund, Sierra Club, Earthjustice, Environmental Advocates, Association for Energy Affordability, Northeast Energy Efficiency Partnerships, Center for Working Families, the Clean Coalition, the Nature Conservancy, the Alliance for Clean Energy New York, the American Wind Energy Association, Sunrun, Solar City, the Interstate Renewable Energy Council, the Adirondack Council, Physicists Scientists & Engineers Healthy Energy, Living City Block, Emerald Cities, BlocPower, the International District Energy Association, the Sabin Center for Climate Change Law at Columbia, and the Guarini Center at New York University. The Pace Center works on a variety of projects related to the development of microgrids throughout the Northeast region.

Q: Are you testifying in your capacity as an attorney?

A: No. Although my position is as a Staff Attorney, my involvement in this case is not as a legal advocate, but as a policy expert with experience in grid modernization.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of the Cape Light Compact (the “Compact”).

Q: Have you previously testified before the Massachusetts Department of Public Utilities (the "Department")?

A: No. However, I have testified before the New York State Public Service Commission on similar matters in Central Hudson Gas and Electric's rate case in November 2014 (Case No. 14-E-0318), Orange and Rockland's electric rate case in March 2015 (Case No. 14-E-0493), and Consolidated Edison's electric rate case in May 2016 (Case No. 16-E-0060). I have also testified before the Maryland Public Service Commission on behalf of Maryland Solar United Neighborhoods (or "MD SUN") on microgrid demonstration projects (Case No. ML#180913).

Q: What is the purpose of your testimony in this proceeding?

A: My testimony will review Eversource Energy's ("Eversource") Incremental Grid Modernization Plan (the "Revised IGMP") and make strategic recommendations with respect to demonstrations of distributed energy resources ("DER") deployment, specifically multiple DER targeting a specific area, including microgrids. I will list the benefits of targeted demonstrations to the larger grid modernization process and make specific recommendations of ways Eversource can target its research and development efforts. While multiple-DER combinations in a given area can provide significant benefits in many different configurations, microgrids specifically target all of the benefits at once of customers self-generating, balancing load, utilizing storage, and using advanced controls to disconnect and reconnect to the grid, and these combinations make for fruitful demonstration projects. Understanding how these technologies can be deployed to provide grid benefits from a customer's premises is fundamental to grid modernization.

Q. What are the central features needed for a successful transition to a modern electric grid?

A. Customers must be involved from the beginning and throughout the transition. The technical potential of a modern grid includes DER with the ability to conduct load shaping, provide permanent load reduction, supply generation that can respond to price signals, provide ancillary services, defer other utility capital investments, and more. Any grid modernization plan that doesn't begin from the premise that these customer-sited solutions must play an essential role in making the grid more dynamic, responsive, and efficient will miss a core area of technical and cost-saving, value-adding potential.

Q. What is a microgrid?

A. In its 2014 microgrid report, the Massachusetts Clean Energy Center defined a microgrid as "[a] power distribution network comprising multiple electric loads and distributed energy resources, characterized by all of the following: a) The ability to operate independently or in conjunction with a macrogrid; b) One or more points of common coupling to the macrogrid; c) The ability to operate all distributed energy resources, including load and energy storage components, in a controlled and coordinated fashion, either while connected to the macrogrid or operating independently; d) The ability to interact with the macrogrid in real time, and thereby optimize system performance and operational savings."[2] Other states have adopted the DOE's long-standing definition of a microgrid as "a group of interconnected loads and distributed energy resources within 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."[3] Both definitions are consistent in defining the key features of a microgrid.

Q. What do microgrids reveal?

A. Many types of DER are best utilized in tandem, providing complementary energy services both to the customer as well as to the grid. A suite of technologies that provide all of these benefits at once in a holistic system can be found in microgrids. Microgrids represent the most complete demonstration of customer engagement in energy management, self-generation, and responsiveness to grid conditions. My testimony will review key benefits of microgrid development, and

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[2] Microgrids – Benefits, Models, Barriers and Suggested Policy Initiatives for the Commonwealth of Massachusetts, Massachusetts Clean Energy Center at 1-1 (Feb. 3, 2014).
[3] *See, e.g.*, NYS PSC Case 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Adopting Regulatory Policy Framework and Implementation Plan at 109 (Feb. 26, 2015).

makes recommendations for actions Eversource should take to advance this market.

Q: Has the Pace Center considered other aspects of Eversource's testimony in greater detail?

A: Yes. My associate, Karl Rábago, has considered the extent to which the Revised IGMP responds to Department guidance and direction; whether the Revised IGMP will meaningfully modernize electric service in Eversource's territory; whether the Revised IGMP will establish or provide a foundation for enhanced customer choices and options to exercise control over their use of utility and third-party services; and whether the Revised IGMP comports with extant best practices in grid modernization. See Exhibit CLC-KRR-1. I have reviewed his testimony and join in the conclusions.

Q: What information did you review in preparing your testimony?

A: I have reviewed Eversouce's Revised IGMP, its responses to the interrogatories provided to the Pace Center, and other materials cited herein.

Q: What are your conclusions regarding Eversource's Revised IGMP?

A: Eversource's Revised IGMP greatly reduces the scope of Eversource's initial grid modernization plan (the "Initial Filing") dated August 19, 2015, as revised on June 16, 2016, and the remaining items of focus do not substantially advance DER markets in the near-term, which is a significant missed opportunity. For example, I concur with my colleague, Karl Rábago, that more can be done under the guise of customer engagement to directly involve customers in the development of DER. However, other elements, such as Eversource's commitment to research, development, and demonstration, are left quite vague and open-ended. Eversource acknowledges that much can be done in the area of development and demonstration that might illuminate the value that DER can provide to the grid, without proposing anything specific to this effect. I call attention to these areas of the Revised IGMP and recommend that the Department order Eversource to more fully develop specific pilots and demonstration projects that employ combinations of DER in a specific location to provide grid benefits, particularly microgrids.

Q: What does Eversource propose regarding research, development, and demonstration that is relevant to DER and microgrids?

A: The Revised IGMP notes that Eversource will aim to support research into "the dynamic integration of DER … [and] the role new technologies and approaches can play in meeting the core characteristics identified for its investment plan." (Revised IGMP at 74.) Eversource notes the need to understand "deployments of multiple technologies targeted to a specific geographic area [and] how the interaction of multiple technologies impacts total benefits delivered to customers." (Revised IGMP at 76.) Finally, in its Revised IGMP (at 75), Eversource notes the need to specifically understand the functioning of microgrids in the future, noting that:

> …given that microgrids are still a nascent technology, R&D efforts are still needed to better understand their operation and impact to system safety and reliability [including] how a microgrid will connect and disconnect from the main electric distribution system and how it will transition from grid connect to island mode to ensure the safe and reliable operation of the main electric distribution system, as well as of the microgrid.

Q: How could these areas of research, development, and demonstration be improved?

A: Obviously, Eversource's research plan could be much more specific, as Eversource leaves entirely to be determined which of its research priorities will ultimately be pursued and how. However, even within the generalizations Eversource makes in describing its interests, there is much technical potential obscured or glossed over. When Eversource states it wishes to identify the benefits of multiple DER types together, it characterizes the benefits as accruing to the native customers, when many benefits of DER should accrue to the wider grid. Eversource should research how combinations of DER can provide grid benefits in order to inform a longer-term grid modernization process that will create incentives and market opportunities for DER customers and provide benefits to the grid.

In another instance, Eversource characterizes potential microgrid research as being limited to safety concerns when the microgrid switches in and out of island mode. A microgrid is a combination of DER, including advanced grid controls equipment that should enable it to carefully control the quality of the power it sends back out into the grid, or respond to a signal to adjust load. There might be no better testbed for the value that DER can provide to the wider grid than a well-targeted microgrid demonstration project. Eversource should be invested in advancing that research.

Q: What are some of the benefits that DER can provide to the grid?

A: Many types of customer-sited DER can provide benefits to the grid. Resources such as customer-sited DG (including solar, fuel cells, CHP systems, small wind, biomass, geothermal), smart inverters, batteries, intelligent energy management devices, smart grid technologies, energy efficiency investments, and more can provide a host of benefits that the grid of the future should seek to incentivize. Appropriately designed, configured, and strategically located DER can bolster the resiliency and reliability of the distribution system. DER can reduce dependence on centralized generation and the associated vulnerable elements of the utility's distribution system, including highly congested areas and areas connected to radial distribution. DG resources may be designed and operated so to provide sites with a source of power allowing continued operations through natural disasters, extreme weather events, and system-wide blackouts. Properly designed DER, such as CHP facilities, can permit essential facilities to operate as centers/facilities of refuge. These centers of refuge, typically high schools, university campuses, or community or senior centers are places where local residents can go in the event of an outage. These locations help mitigate the serious health and safety risks posed by extended power outages. DER installations can also help reduce the need to invest in transmission and distribution infrastructure.

Beyond resilience, specific categories of DER benefits include:

- Time-dependent values
- Locational values, including for deferred investment, and feeder-level congestion relief
- Reduction in line loss
- Market price response
- Reduction in fuel price risk
- Avoided energy costs
- Avoided cost of resource adequacy
- Avoided transmission and distribution capacity costs
- Reducing pollution, and the social costs of pollution, from power generation

- Ancillary services including reactive power, blackstart, frequency and voltage regulation

These values can be studied, captured, and used to inform markets and utility-sponsored programs that help bring DER onto the grid in evaluating the type of DER and the location that brings the most benefit to other customers and the grid itself. DER can often be combined to provide additional value in a specific location. Perhaps the most inclusive demonstrations of high-value DER integrated together at a single site can be found in microgrids.

Q: What are some non-distribution system benefits that microgrids provide?

A: In addition to strengthening the resiliency of the distribution system, DER integrated into microgrid configurations can benefit the communities they serve primarily by: (1) reducing energy usage and costs, (2) reducing emissions, and (3) promoting local economic development. Each of these benefits should be considered in a comprehensive microgrid valuation process, and when determining how best to target microgrid pilots.

Q: How do microgrids reduce energy costs?

A: Microgrids can significantly reduce energy costs by increasing incentives for whole-building energy efficiency retrofits, optimized energy management and demand response, and CHP systems. While these assets can be deployed absent a microgrid, typically a microgrid will require them in some combination in order to meet economic benchmarks. For example, a microgrid will typically require some form of on-site generation in order to serve its loads while not receiving power from or contributing power to the larger distribution system (often referred to as “islanding”). Project economics will tend to favor highly efficient generation in this case, such as CHP systems. Whole-building energy efficiency retrofits are often undertaken prior to microgrid installation to permit use of the smallest viable generator (generation is a comparatively expensive microgrid asset). Use of energy management systems capable of adjusting load to suit the on-site capacity available may further reduce necessary generator size. Intelligent energy management can spur further energy cost savings by using market price signals to shift electricity consumption and generation patterns to track the optimal level and mix of microgrid-generated electricity and grid-sourced electricity. Real-time control of electricity consumption allows microgrid operators to respond to calls from the main grid operator to reduce consumption of electricity from the main grid in exchange for payment as part of a demand response program, or to provide balancing or a fast acting reserves function in ancillary services markets.

Because of the comparative value of efficiency to incremental generation, there are often deeper efficiency incentives in the microgrid market. This level of efficiency can lower operating costs for microgrid customers while also suppressing peak demand and energy prices for customers across the territory. While the capital assets required to self-power and island the microgrid may be costly up front, these long-run operating savings can create reasonable payback periods that cost justify these projects for the individual customers even before grid benefits are captured.

Understanding how to capture and monetize grid benefits for services, beyond mere peak reduction, provided by microgrid DER would only improve the viability of these projects. Several microgrid demonstration projects targeted to help meet utility needs would be a valuable opportunity that would inform that effort. Therefore, Eversource should identify circuits where power quality, congestion, and other grid conditions could make for viable test sites.

Of course, not every hypothetical microgrid project will have a favorable financial profile, and I offer some guidance further on in this testimony on what attributes will help Eversource select optimal sites and DER configurations to serve them. The right combinations of grid and customer attributes can allow microgrid to provide cost savings to both.

Q: How do microgrids reduce emissions?

A: Microgrids can reduce building carbon emissions through combined energy efficiency, renewable and clean local generation, and smarter energy management. Intelligent energy management can shift demand to maximize utilization of carbon-free generation like solar and wind or curtail demand at critical peak hours when the least efficient and highest emitting units are typically producing power for the grid. Energy efficiency and CHP can likewise deliver significant carbon emissions reductions. Zero emissions energy systems such as photovoltaic or small wind, fuel cells, and CHP systems can also reduce or eliminate local criteria pollutants, such as sulfur dioxide (“SO_2”) and NO_x. For example, the U.S. Environmental Protection Agency estimates that use of a typical 5 megawatts natural gas combustion turbine and heat recovery boiler to displace centralized power and a conventional onsite boiler can reduce NO_x emissions by 50% and eliminate SO_2 emissions altogether.[4]

Q: How do microgrids promote local economic development?

A: Microgrids can also facilitate local economic development. Businesses increasingly are expressing demand for clean and green energy to help reduce their environmental impact. In addition to reductions in environmental impacts, many businesses and industries require reliable, high quality electricity in order to operate profitably. Even momentary power outages or deviations can result in large financial losses or damage to equipment. A case study of Sun Microsystems

[4] Bruce Hedman, Fuel and CO2 Emissions Savings Calculation Methodology for Combined Heat and Power, ICF International 31 (Jul. 2, 2012), available at https://www.epa.gov/sites/production/files/2015-07/documents/fuel_and_co2_emissions_savings_calculation_methodology_for_chp.pdf.

"estimated interruption costs at up to $1 million per minute."[5] For example, on a city-wide scale, PlaNYC reports that a single day without electricity could mean more than $1 billion in lost economic output for New York City.[6]

Q: Do you have recommendations for including microgrids in the Revised IGMP?

A: Yes. Targeted demonstrations of microgrid technologies can help inform the effort to derive values for DER in high value locations, while providing proof of concept to the development community in Massachusetts. I recommend Eversource leverage or expand its research and development budget to target microgrid demonstrations across its territory.

Cape Cod and Martha's Vineyard may be particularly valuable locations for microgrid demonstrations. Martha's Vineyard is an island connected to the distribution system by underwater lines, and both Cape Cod and Martha's Vineyard face significant transmission and other locational constraints. These areas already have a relatively high level of installed solar photovoltaic ("PV") systems and DG. In addition to a significant amount of residential solar, there are more than 28 megawatts worth of larger-scale solar facilities on town-owned

[5] P.J. Balducci et al., Pac. Nw. Nat'l Lab., Electrical Power Interruption Cost Estimates for Individual Industries, Sectors and US Economy 10 (Feb. 2002), available at http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.540.5548&rep=rep1&type=pdf.
[6] PlaNYC, "A Stronger, More Resilient New York" 128 (June 2013), available at http://s-media.nyc.gov/agencies/sirr/SIRR_singles_Lo_res.pdf.

properties across Cape Cod and Martha's Vineyard. A critical element of any microgrid is a generation source; as such, these PV installations would play an important role in a microgrid in this area. As coastal communities, Cape Cod and Martha's Vineyard are also frequently affected by outages caused by storms, which would magnify the impact of enhanced reliability from microgrid deployment on Cape Cod or Martha's Vineyard.

These demonstrations should be targeted to not only encourage microgrid development, or (as Eversource has noted in its Revised IGMP) to understand disconnect and reconnect conditions on a microgrid, but to encourage microgrid development in the type of locations and utilizing the types of DER that would tend to provide grid benefits, as outlined above. These proof of concept demonstrations may then serve as a technical basis for how to capture the grid benefits that customer-sited DER can provide. These efforts might therefore help inform longer-term grid modernization efforts that capture the value of DER to the grid and use it to help enable a more cost effective distribution system. I recommend below parameters that may help identify optimal demonstration targets.

Q: What value does Eversource provide as a sponsor for microgrid pilots compared to the private development community?

A: Eversource's depth of knowledge of its service territory, grid design, system load conditions, and individual customer load profiles uniquely situates it to proactively identify ideal microgrid sites. By identifying high-value locations and the value proposition it hopes to create, Eversource will also be in a better position to learn from these pilots in a way that informs future rate reform. I recommend that Eversource identify promising utility-sponsored microgrid demonstration projects and sites as part of its Revised IGMP. Thus, Eversource is in a better position to sponsor microgrid projects than private developers.

Q: How can potential microgrid sites be best identified for this purpose?

A: I recommend a set of selection criteria aimed at identifying opportunities for renewable energy, customer energy management, energy efficiency, energy storage, thermal load, and complementary load. These would include:

Critical infrastructure: Critical infrastructure has been variously defined in different jurisdictions to include hospitals, emergency services such as fire and police, municipal buildings, emergency staging areas, as well as longer term critical sites such as groceries, gas stations, and large commercial centers. Identifying critical infrastructure not only ensures the widest community benefit from a microgrid, but critical infrastructure customers are often those that place the highest premium on reliable power, and will be most likely to provide stable financial support for a project.

Existing DER: Identifying existing DER can increase the customer value of microgrids and help identify customers with demonstrated engagement in managing their energy source. Customers with a high density of on-site solar generation, for example, coupled with load that peaks concurrently with solar generation, may be able to meet a high proportion of their total load in island-mode with minimal additional generation investment. Existing on-site, clean generation will enhance the environmental benefits of a microgrid, and these customers may also be well-versed in the interconnection process, export tariffs, and energy management practices to maximize the value of on-site generation under a given tariff structure.

Capacity limitations in the zone or network area of the microgrid, or the requirement for distribution capital expenditures that can be deferred or avoided by the microgrid: Areas with existing load constraints or substantial load growth will often face costly distribution infrastructure upgrades that can be deferred or obviated by DG or responsive demand. The value of this capital deferral can provide financial benefits to ratepayers across the region, or be returned to microgrid customers.

Customers with large concurrent electric and thermal demands: One cost-effective microgrid generation asset is a large CHP system serving a group of customers with large concurrent electric and thermal demands. By sizing base load generation to cater to customers with around-the-clock thermal demands, a microgrid can take advantage of fuel efficiencies provided by CHP to greatly enhance its value proposition. For example, hospitals provide a great class of critical infrastructure customers with large, constant, and concurrent electric and thermal demands that are ideally suited for CHP.

Potential for underground distribution (e.g., available distribution corridors): Consulting local records of existing underground utilities may reveal if the site is capable of incorporating additional underground distribution infrastructure, whether for electric or thermal energy.

Customers with complementary loads: "Complementary loads" refers to electric demand that is staggered between customers to produce a collectively higher, more stable load curve than any individual customer exhibits on its own. This higher, more stable load can help larger, more efficient generation assets run at higher capacity for more hours of the day.

Anchor tenants with superior access to capital or financing, as well as long-term commitment to the site: An anchor energy user at the heart of a microgrid can help drive its long-term success. Because microgrids can require fairly significant up-front investments in infrastructure with a long service life, it is helpful to have an anchor user such as a hospital or other critical infrastructure site who is likely to be at the location for many years in the future. The anchor energy user may take the lead in negotiating financing for the system and use its access to capital to procure advantageous borrowing terms.

Substantial load management potential, including the ability to drop non-critical load in response to outages, and the ability to adjust load in response to price signals: Typically, on-site generation will be the highest-cost resource in the microgrid. It will be more cost-effective wherever possible to explore energy efficiency and load curtailment options, which can minimize the size of the generation required to run the microgrid in island mode. Customers such as manufacturing facilities and other sites with active load management capability may also be capable of participating in demand response markets, which may further enhance the value proposition of the microgrid.

Existing building energy management systems: Existing building energy management systems may provide some of the technical infrastructure to maximize energy efficiency and enable load management, as discussed above.

Age or unreliability of existing backup generation: While existing backup generation will not impede the microgrid's operations, it may diminish the value proposition of the microgrid. Customers with existing ample backup generation will typically have less incentive to invest in microgrid service. However, diesel backup generators are often limited (by environmental regulations or otherwise) in the number of hours that they may run throughout the year, are not notably reliable in settings where they are seldom tested under islanding conditions, and can become even riskier the older their vintage and the longer they go without testing. Identifying sites with no existing backup, or outdated, severely time-limited, or potentially unreliable backup, may prove beneficial.

Planned capital or construction projects that can coincide with microgrid development: When ground is already broken for a related piece of construction, hot water pipes and other energy infrastructure can often be added at a lower cost, either in terms of literal construction cost or fixed financing or transactional costs.

Simpler grid interconnection schemes (e.g., radial or spot as opposed to network): As a general rule, the more sophisticated the local distribution system, the more sophisticated (and potentially costly) the protection schemes that will be required to operate the microgrid safely.[7]

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[7] *See* NYSERDA, "Microgrids for Critical Infrastructure Resiliency" at 69-70 (2014). "Microgrids in urban environments usually conform to the requirements of spot networks and grid networks. Both of these types of networks are most easily distinguished from radial systems in that each customer is connected to multiple sources of power, each of which can supply their load. Therefore, urban distribution systems tend to be highly redundant – which provides good continuity of service – but also require more sophisticated protection…. The network system adds complications beyond that of a non-network microgrid. Having multiple interconnection points complicates many interconnection issues, including IEEE 1547 compliance, synchronization, overcurrent protection, monitoring, and control. There can be a variety of serious overvoltage, power quality, and reliability issues created if the microgrid does not properly coordinate with the upstream protection timing and tripping levels at both the network unit level and the primary feeder level."

Simpler isolation schemes enabling economic islanding: Many microgrid developers, once they have identified an optimal microgrid site based on all of the above criteria, may be surprised to discover that proximate customers cannot be easily islanded together due to the nature of the surrounding grid. For example, two customers who are located just across the street from one another may nevertheless be electrically connected to different utility feeders that make it far more costly to island together. Finding sites with relatively simple, economic, electrically-connected, isolation schemes is likely to be essential to the cost-benefit profile of a project.

Best practices for microgrid site selection involve consideration of all of these factors in order to identify sites with the strongest potential to achieve a suite of microgrid benefits, in addition to mere reliability. These include long-term cost savings, environmental benefits, and maximal customer energy use management.

Q: Can you please summarize your recommendations?

A: I recommend that Eversource develop a plan to proactively identify potential high-value microgrid sites, considering the criteria outlined above, throughout its service territory. I recommend that Eversource then propose demonstration projects as appropriate to capture one or more combinations of high-value locations and customer load profiles revealed through this change.

Demonstrations should be targeted to provide grid benefits as described above.

Q: Does this conclude your testimony?

A: Yes, it does.

Jordan R. Gerow

Staff Attorney

Pace Energy and Climate Center

SUMMARY

Jordan Gerow conducts legal and policy analysis on community energy and grid modernization efforts across the Northeast. He has significant experience analyzing the breadth of local, State, and regional regulatory regimes that impact the viability and value proposition of microgrids deploying a variety of distributed energy resources, including combined heat and power, renewable generation, storage, controllers, and other smart grid assets. He has leveraged this experience to inform policy proceedings considering questions of promoting grid modernization and community energy regionally. In particular, Mr. Gerow has:

- Performed legal and regulatory analysis for nine (9) communities funded to perform microgrid feasibility studies through the NY Prize competition, and offered assistance to a half dozen other communities throughout New England embarking on similar inquiries
- Drafted the legal analysis and provided final full draft editing for "Microgrids for Critical Facility Resiliency in New York," a 2014 NYSERDA report addressing how to value, plan, operate, and legally structure microgrids through several case studies
- Served as a study advisor for the Connecticut Academy of Science and Engineering's report on "Shared Clean Energy Facilities"
- Submitted expert testimony into utility rate cases on microgrid deployment and evaluated utility plans to facilitate clean, resilient energy systems
- As a party to the Reforming the Energy Vision proceeding in New York, has reviewed and commented on numerous aspects of the proceeding, particularly relating to community energy

EDUCATION

Pace University School of Law	White Plains, NY
Environmental And International Law J.D., Magna Cum Laude	May 2013
State University of New York at Buffalo	Buffalo, NY
English and Economics	May 2009

PROFESSIONAL EXPERIENCE

Pace Energy and Climate Center	White Plains, NY
Energy and Climate Law Advisor	August 2013 – Present
Pace Environmental Litigation Clinic	White Plains, NY
Legal Intern	January 2013 – May 2013
Mission to the United Nations of Sri Lanka	New York, NY
Legal Intern	December 2011 – May 2012

SELECTED PUBLICATIONS

Community Microgrids: Smarter, Cleaner, Greener. 2013. Pace Energy and Climate Center.

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AFFIDAVIT OF JORDAN R. GEROW

Jordan R. Gerow does hereby depose and say as follows:

I, Jordan R. Gerow, certify that the direct testimony and exhibits submitted on behalf of the Cape Light Compact in the above-captioned proceeding, which bear my name, were prepared by me or under my supervision and are true and accurate to the best of my knowledge and belief.

Signed under the pains and penalties of perjury.

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Jordan R. Gerow
Staff Attorney, Pace Energy and Climate Center

Dated: March 10, 2017