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October 31, 2018

Honorable Kathleen H. Burgess
Secretary to the New York Public Service Commission
Empire State Plaza, Agency Building 3
Albany, New York 1223-1350

Subject: Case 18-E-0130 – In the Matter of Energy Storage Deployment Program

Dear Secretary Burgess:

On October 5, 2018, the New York Public Service Commission issued its second notice reiterating its call for comments on the New York State Energy Storage Roadmap and Department of Public Service (DPS)/ New York State Energy Research and Development Authority (NYSERDA) Staff Recommendations (Roadmap) filed in Case 18-E-0130 on June 21, 2018. GI Energy provided an initial round of comments on September 10, 2018 (appended here on pp. 4-12) and requests that they be incorporated by reference in the filed record of this proceeding. GI Energy respectfully submits the following additional comments.

GI Energy wishes to deploy its extensive experience in designing, installing and servicing innovative on-site energy and microgrid solutions across North America and Europe to New York State. GI Energy helps developers, campus owners and significant commercial and industrial building managers to navigate the latest sustainable technologies. GI Energy uses state-of-the-art solutions, world-class engineering and outstanding execution to deliver energy independence, energy security and energy savings to its customers. GI Energy builds long-term partnerships by delivering the highest standards and maximizing client returns throughout the project lifecycle.

GI Energy has a unique perspective as the developer of a front of the meter (FTM)[1], distribution-tied REV Demonstration energy storage project with Consolidated Edison Company of New York, Inc. (Con Ed)[2]. The project involves the deployment of four (4) one megawatt/one megawatt-hour (1 MW/1 MWh) Li-ion batteries in four different locations within New York City. The REV Demonstration is intended to refine the ability of Con Ed and the New York Independent System Operator (NYISO) to use Energy Storage Resources (ESRs) to support the reliable operation of the distribution and bulk power systems in Zone J network areas and to provide environmental and deferred investment benefits. When priority dispatch is not required for Con Ed local area grid services, the project calls for the batteries to participate in the NYISO wholesale electric markets, including the Energy, Ancillary Services and potentially Capacity markets. As DPS and NYSERDA Staff have appropriately recognized in initial Roadmap recommendations, ESRs are poised to provide unique and critically needed benefits to the system, particularly in light of the State's primary public policy initiatives to significantly expand the construction of

[1] GI Energy considers FTM ESRs to be interconnected directly to the Utility's distribution system or to the Transmission Owner's transmission system. Unlike BTM or Community DG accounts, they do not offset any host site or community retail accounts and are not intended to be behind a retail customer service themselves. This model is analogous to wholesale generators connecting to the bulk power system except the ESR is connected to the distribution system so as to maximize the overall benefits that such systems can provide.

[2] See Matter/Case 14-00581/14-M-0101

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intermittent resources, namely the REV Clean Energy Standard mandating 50% renewable electricity generation by 2030.

Unfortunately, FTM ESRs face a massive uncertainty in New York State (NYS): undefined delivery service rates. Transmission & distribution (T&D) billing represents potentially the single greatest operating expense in any FTM ESR project financial pro forma, yet it remains "to be determined" amongst most of the NYS Joint Utilities. This ambiguity leads to costly, protracted debate and negotiation on a case-by-case, territory-by-territory basis, inflating project delivery times, legal fees and related soft costs. It also means that there is no level playing field for competitive bids for FTM ESR projects in REV Demonstration or like NWA+ solicitations. Third parties are unable to price their service proposals properly—if they are even aware that there may be FTM ESR delivery bills at all. And for bidders who do ask, utilities are typically not precisely able to guide them based on today's tariffs. Perhaps most confounding of all, when comparing FTM ESR proposals to other alternatives, particularly conventional T&D upgrades, utilities can deem their own FTM ESR projects as "grid assets" (like transformers or switchgear) subject to no delivery bills whatsoever while 3rd party equivalents can be treated as new full-fledged retail accounts, billed for delivery as if they were any other commercial behind the meter (BTM) service.

This lack of clarity around FTM ESR T&D billing has reportedly already upended a major FTM ESR proposal for a storage-oriented NWA+ solicitation with at least one of the Joint Utilities. GI Energy is convinced it will continue to do so until the State, preferably through the Roadmap process, defines and harmonizes T&D billing for FTM ESRs across the Joint Utilities and, as needed, in conjunction with NYISO. Though FTM ESR electric accounts are fairly novel today, they are projected to represent 50% or more of the State's ESR deployment, according to the Roadmap itself, the Joint Utilities recommendations and leading industry analyses from Wood Mackenzie (formerly GTM Research) and Bloomberg New Energy Finance (BNEF). However, 3rd party developers will hesitate to invest in FTM distribution or bulk energy storage in the State as long as appropriate rate treatment for these facilities remains undefined.

As far as GI Energy understands, our REV Demonstration with Con Edison represents the only precedent for FTM ESR delivery service ratemaking in NYS to date. Con Ed Distributed Generation experts and Rate Engineers have explained that the rate case[3] now applied to our REV Demonstration, which imposes the SC 11 Buy-Back tariff for battery discharging and SC 9 Standby tariff for battery recharging, was initially designed for BTM: Net Generation (BTM:NG) storage projects where battery capacity exceeded local host loads during critical network demand reduction hours. These are conventional BTM standby and buy-back rates now being imposed on a FTM use case; in other words, our FTM ESRs have been turned back into standard retail BTM accounts, despite being deployed for a novel business model entirely at the direction of the utility and uniquely for grid benefit (unlike standard BTM accounts). At the retail $7.87/kW Contract Demand rate, simply keeping our four (4) 1 MW/1 MWh FTM ESRs plugged into Con Ed's distribution grid at nameplate capacity amounts to $2 million in delivery bills across the five-year project term. This is *after* all upfront interconnection fees and *before* any additional As-Used Daily Demand or other volumetric delivery charges. Stated plainly, this rate design is uneconomic for mass FTM ESR deployment.

If the State intends to facilitate FTM ESR development *at scale* in what the Roadmap deems its most optimal/critical region for storage (e.g. Zones J and K), NYSERDA bridge incentives and other capital cost reduction initiatives will likely not suffice alone. There must be a systematic regulatory framework introduced for appropriate allocation of costs—to utilities and 3rd parties alike—for integrating and maintaining delivery service to FTM ESRs serving the State's distribution and bulk power systems. In the February 22, 2018 PSC Order[4] that allowed Con Ed to impose retail standby and buy-back charges to FTM ESRs like our REV Demonstration batteries, the Commission recognized (in response to NY-BEST comments on the case) that such retail tariffs may ultimately <u>not</u> be appropriate for all use cases where ESRs can both export to and import from the grid. The Order concluded:

[3] See Matter/Case 17-01619/17-E-0458 "Tariff Filing by Consolidated Edison Company of New York, Inc. to Modify Its Electric Tariff Schedule, P.S.C. No. 10, Regarding Electric Energy Storage Systems."

[4] See http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={961157FC-641C-4700-AEE8-CD6A1CD9D4D9}

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> *Regarding NY-BEST's concern that standalone energy storage systems would be charged retail rates for charging and wholesale rates for discharging, these issues will be considered in the Value Stack and Rate Design working groups[5] as part of Phase Two of the VDER Proceeding. The Value Stack working group is tasked to examine the value of exported power to utility distribution systems and develop payment mechanisms based on the value of such exports. The Rate Design working group is tasked to examine the rates and charges utilities collect from customers for their use of the grid. The Commission expects Department of Public Service Staff and parties to the VDER Proceeding to work expeditiously to bring proposals on these issues forward for Commission consideration in accordance with the 2018 Working Group process and schedule.*

As of October 31, 2018, the Value Stacking and Rate Design Working Groups have taken up the concept of expanding VDER eligibility to "non-VDER prosumers," but to date this has been restricted to BTM ratemaking, not expanded to FTM storage use cases as had been hoped after the February 2018 PSC Order. GI Energy appreciates that DPS and NYSERDA Staff held three Roadmap technical conferences in New York City, Long Island and Albany in August 2018 and, in addition to soliciting written comments, also met in person with many stakeholders. However, the critical questions about FTM ESR ratemaking appear to be lost in the fray amongst the Roadmap's many other regulatory interests. Therefore, we respectfully request that the Commission direct the Joint Utilities to define and harmonize delivery ratemaking specific to FTM ESRs and institute an expedited schedule for the resolution of this issue. We recommend submission of FTM ESR tariff proposals by March 29, 2019, with an order adopting ratemaking treatment issued by July 1, 2019.

The failure to resolve FTM ESR rate design at this juncture essentially ensures it will impair the economics of projects like our REV Demonstration and like NWA+ projects. This in turn will make it nearly impossible to meet the aggressive timeline and MW targets for ESRs of this kind by 2025 or 2030.

Lastly, GI Energy applauds DPS and NYSERDA Staff engagement with NYISO's ESR Market Design and DER Roadmap teams. As described in our appended September 10, 2018 comments (p. 7 here), business models like our REV Demonstration and the NWA+ projects proposed in the Roadmap will rely on a fully integrated regulatory framework allowing FTM ESRs to sell not just dispatch rights to the local utility for grid services but energy, ancillary services and potentially capacity into the NYISO wholesale markets. The Roadmap highlighted the urgency to address this issue (preferably by year end 2018, along the FERC Order 841 compliance timeline), and NYISO appears to have heard and responded to[6] the impetus from the State and from lead industry groups like NY-BEST and ESA, as well as other stakeholders (including GI Energy). GI Energy and the storage industry nationwide will be watching how the State, through the Roadmap process, keeps up pursuit of this integrated regulatory design framework, which requires pioneering a nuanced balance across the state PSC/Joint Utilities and federal FERC/NYISO jurisdictions.

GI Energy believes the opportunity to economically integrate the emerging ESR technologies is before us. We look forward to continue our work with the Commission, DPS Staff and NYSERDA to make this vision a reality.

Sincerely,

Pete Falcier
VP, Analytics & Regulatory Affairs

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[5] See Matter 17-01276 (VDER Working Group) and Matter 17-01277 (Rate Design Working Group), along with Matter/Case 15-02703/15-E-0751 (VDER Expanded Eligibility).

[6] See DER Market Design Update: Wholesale Obligations for Dual Participation, NYISO, September 27, 2018

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September 10, 2018

Honorable Kathleen H. Burgess
Secretary to the New York Public Service Commission
Empire State Plaza, Agency Building 3
Albany, New York 1223-1350

Subject: Case 18-E-0130 – In the Matter of Energy Storage Deployment Program

Dear Secretary Burgess:

On June 26, 2018, the New York Public Service Commission issued a notice seeking comments on the New York State Energy Storage Roadmap and Department of Public Service (DPS)/ New York State Energy Research and Development Authority (NYSERDA) Staff Recommendations (Roadmap) filed in Case 18-E-0130 on June 21, 2018. GI Energy respectfully submits the follow comments.

GI Energy designs, installs and services innovative on-site energy and microgrid solutions across North America and Europe. GI Energy helps developers, campus owners and significant commercial and industrial building managers to navigate the latest sustainable technologies. GI Energy uses state-of-the-art solutions, world-class engineering and outstanding execution to deliver energy independence, energy security and energy savings to its customers. GI Energy builds long-term partnerships by delivering the highest standards and maximizing client returns throughout the project lifecycle.

For the purpose of this submission, GI Energy has limited its comments to front of the meter (FTM)[7] Energy Storage Resources (ESRs) like those under development through GI Energy's REV Demonstration project with Consolidated Edison Company of New York, Inc. (Con Ed)[8] or expanded Non-Wires Alternatives (NWA+) use cases, as identified in the Roadmap. GI Energy believes that if New York State wishes to encourage optimally beneficial ESRs it needs to put forth a regulatory framework that supports the sale of energy, capacity, and ancillary services into the NYISO wholesale markets while also providing the opportunity to sell priority dispatch rights to the local utility. These dispatch rights would afford the local utility the opportunity to maximize the value of distributed resources in distribution operations.

In accordance with the notice seeking comments and with instructions provided by DPS and NYSERDA staff at the August 2018 Roadmap technical conferences, the comments here follow the sequence, numbering and formatting of the Roadmap section titles.

[7] GI Energy considers FTM ESRs to be interconnected directly to the Utility's distribution system or to the Transmission Owner's transmission system. Unlike BTM or Community DG accounts, they do not offset any host site or community retail accounts and are not intended to be behind a retail customer service themselves. This model is analogous to wholesale generators connecting to the bulk power system except the ESR is connected to the distribution system so as to maximize the overall benefits that such systems can provide.

[8] See Matter/Case 14-00581/14-M-0101

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4. Recommended Actions

4.1. Retail Rate Actions and Utility Programs

4.1.1. Delivery Service Rate Design

While GI Energy agrees that standby rates and buy-back rates may be appropriate for behind the meter (BTM) distributed energy systems, we believe that provisions need to be made to recognize that such charges may not be appropriate for FTM distributed energy resources and in particular utility-directed distributed energy resources, including FTM ESRs such as GI Energy's REV Demonstration batteries or like NWA+ use cases.

More specifically, once FTM ESRs pay for the upfront interconnection facilities cost, they do not receive standby service from the local utility as conventional commercial and industrial retail customers do. Existing FTM generating resources (including pump storage generation), appropriately, do not pay transmission service charges (TSC, or in effect a "wires charge," either when they are pumping or injecting into the system), and distributed resources should not be treated differently just because they connect to the distribution system. Unlike large office towers and factories, utility-directed FTM ESRs are deployed uniquely at the direction of the local utility and are dispatched by priority for the benefit of the grid. By definition, these systems are providing grid services, not grid burdens. Utility-directed FTM ESRs are not prosumers participating optionally (if at all) in local utility or NYISO programs; they are 3rd party-owned grid assets deployed expressly for local utility (e.g. Distributed System Platform, or DSP) or NYISO grid services and optimization. Conventional retail standby or buy-back tariffs ignore the very purpose of this class of 3rd party-owned FTM ESRs which—unlike prosumers—are located, interconnected, dispatched and optimized uniquely at the direction of the local utility (DSP) for the benefit of the grid. As electric accounts, they therefore should not be subject to the same cost recovery metrics imposed on conventional standby and buy-back retail accounts.

Applying conventional standby or buy-back rates to utility-directed FTM ESRs introduces numerous unintended consequences that are likely to suppress storage development in New York State if left as is. First of all, they turn FTM grid assets like NWA+ projects, for example, into BTM retail accounts. A significant proportion of the local utility payments will bounce right back to the utility just to keep such ESRs plugged into the grid (before any actual metered performance). In downstate Zones J (NYC) and K (Long Island), the high contract demand pricing makes it cost-prohibitive to grid inject under buy-back or grid withdraw under standby at full nameplate kW if needed for grid relief in any one hour. One the of key advantages of storage—rapid, flexible discharge or charge for optimal utility (DSP) or NYISO Energy, Capacity or Ancillary Services—will be limited not by any technical incapability but by the misapplication of legacy delivery tariffs.

4.1.2. Commodity and Delivery Costs for Storage Charging and Discharging

GI Energy recognizes that the local utilities in New York State have standby rates applicable to the station service of power plants selling into the NYISO that could be considered analogous to pumping or charging power used by FTM ESRs. However, pragmatically, generators on the bulk power system simply bypass these tariffs[9] and take station service under the NYISO tariff which in effect is sold at locational based marginal pricing (LBMP) plus administrative NYISO Schedule 1 fees. FTM ESRs should not be disadvantaged in favor of bulk power generation by having to pay distribution standby rates or buy-back demand charges when selling either to the local utility

[9] See order issued May 15, 2002 in Docket No. EL01-50-006. In that order the Federal Energy Regulatory Commission (FERC) held that “the NYISO must allow self-supplying merchant generators to net station power against gross output over some reasonable time period in order ‘to ensure that they do not bear a cost that has no relationship to any “service” purportedly being provided by another party.

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or to the NYISO.[10] GI Energy notes that requiring a costly delivery demand charge on FTM ESRs could simply encourage ESRs to connect directly to the bulk power system and thus deprive ratepayers of the significant benefits that can be captured through direct connection at the distribution system while encouraging potentially suboptimal investment in facilities that can only provide either bulk or distribution benefits but not both. The ability to "value stack" from the low-tension distribution system up to the wholesale Energy, Capacity and Ancillary Services markets is critical to the economics and the optimization of any FTM ESR use case.

Further, recharging for utility-directed FTM ESRs will likely be done during off peak times when no burden or costs are imposed on the local utilities' distribution systems. As previously noted, no such “wires charges” are imposed on pumping load for pump storage (analogous to charging load for FTM ESRs). GI Energy recognizes that it is possible that a FTM ESR could charge during an inopportune time (such as during a distribution system peak period) and potentially impose a burden/cost on the distribution system that was not anticipated at the time the interconnection study was undertaken. However, imposing a charge on all FTM ESR systems to address this potential is inappropriate, especially since these systems are dispatchable and, like all generating resources, can avoid production or charging when they impose constraints or cost on the system. This is especially true for utility-directed FTM ESRs, where a 3rd party asset owner has agreed to allow the local utility to dispatch the ESR resource to maximize the benefit to ratepayers. As a result, GI Energy believes that distribution charges should not be imposed on FTM ESRs (or for that matter any FTM distributed resource) unless there is a clear showing that the dispatch routine of the ESR is such that it will impose cost on the distribution system—and then only that cost should be assessed.

Also imposing a rate on FTM ESR discharging or charging based on embedded cost will lead to economic inefficiencies. For example, under conventional standby or buy-back tariffs, a FTM ESR may simply choose to limit its charging and discharging below its design capacity so that it avoids having to pay an annual demand charge that would otherwise be several times higher. This artificial constraint will deny customers of the benefit they may otherwise enjoy if the FTM ESR were otherwise faced with a marginal cost-based charge (which in this case is zero). Economic efficiency always dictates that decisions be made based on marginal cost. Including embedded cost in the ESR dispatch decisions will by definition lead to suboptimal use of the asset.

GI Energy also notes that, as currently administered, such tariffs will for all practical purposes negate any near-term chance for FTM ESR project development in the most critical grid areas identified by the Roadmap, notably downstate Zones J (NYC) and K (Long Island). Using the Roadmap classification terms, a "Distribution System" FTM ESR in Zone J (at low tension injection capacity) would be required to pay $7.87 per kilowatt (kW) of contract demand each month to inject into the system under the buy-back rate or to charge the batteries under the standby rate, in addition to numerous other as-used charges (such as potential $1 per kW-day as-used weekday on-peak demand charges, ranging up to $1.44 per kW-day June-September, Systems Benefits Charge, Reactive Power Charge, and other surcharges).[11] The net effect of this amounts to almost $95,000 per megawatt of contract demand each year, which represents the single largest operating expense of such projects. Viewed another way, this one fixed demand charge represents a capital cost equivalent of approximately $145 per kWh nameplate (i.e. the Net Present Value of total contract demand charges, based on all the assumptions provided for the "Distribution System Standalone VDER" use case in the Roadmap). This is all *after* full upfront payment for local utility and any NYISO interconnection fees.

[10] GI Energy would support paying a distribution demand charge for injections in the special case where the electricity being injected is being sold as a bilateral transaction serving a load out of state.

[11] See Matter/Case 17-01619/17-E-0458 "Tariff Filing by Consolidated Edison Company of New York, Inc. to Modify Its Electric Tariff Schedule, P.S.C. No. 10, Regarding Electric Energy Storage Systems."

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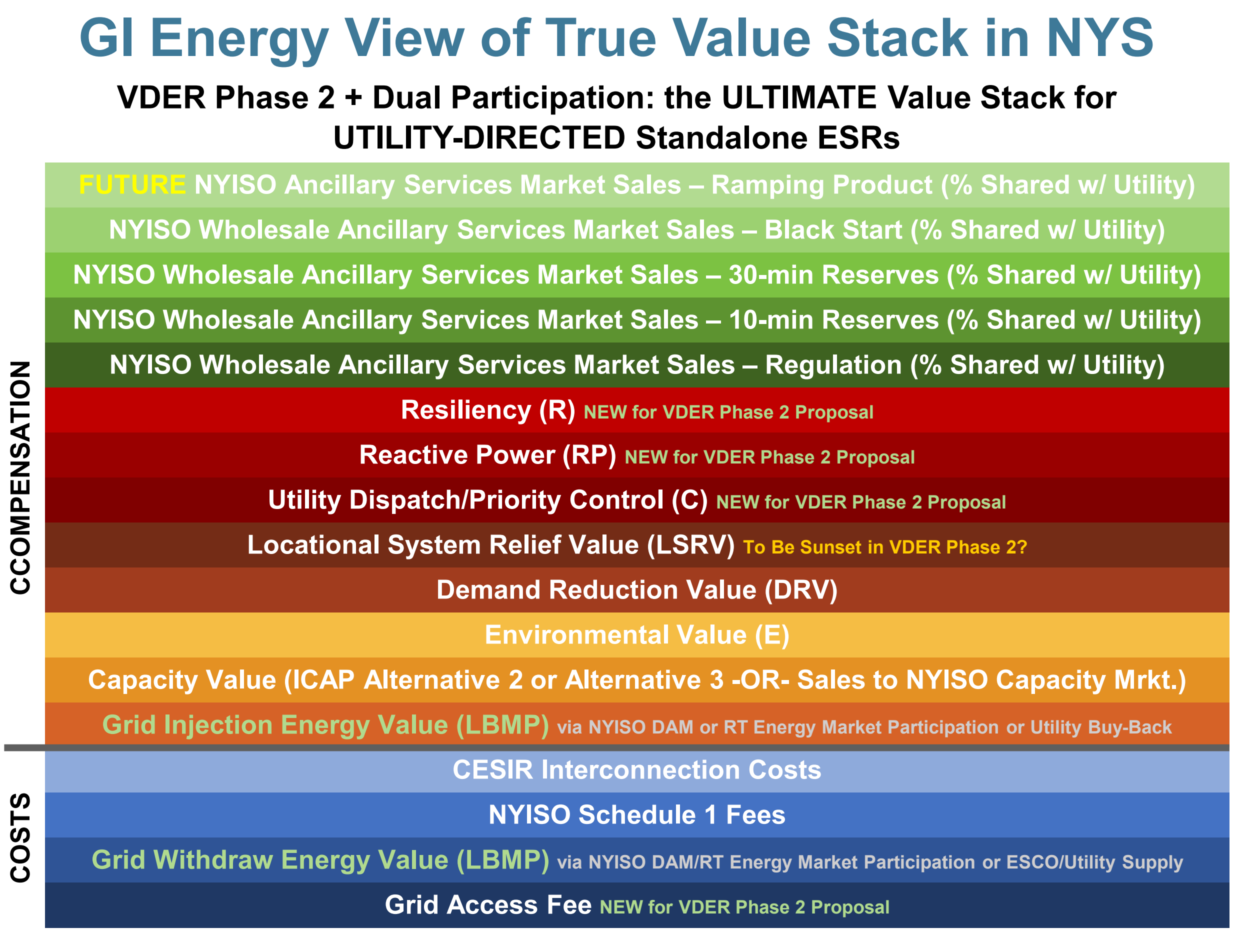
Lastly, GI Energy believes that as part of any redesign or expansion of the "value stack" under New York State's Value of Distributed Energy Resources (VDER) tariff reform, review of the application of full retail buy-back and standby delivery billing is required as, in the case of FTM ESR, such rates are fundamentally inconsistent with the compensation provided under the DRV and LSRV components of the Value Stack. GI Energy understands that such delivery service rate design is to be addressed for use cases like FTM ESR (e.g. Distribution System "Standalone VDER" or "NWA+") in a forthcoming DPS whitepaper via the VDER and Rate Design Working Groups.[12]

4.1.3. Value Stack

GI Energy understands from direct discussion with DPS and NYSERDA staff that the ongoing VDER Phase 2 tariff reform, which began as an initiative to supersede net energy metering (NEM) primarily for BTM solar (and certain BTM solar + storage), was not necessarily intended to expand to the full "value stack," from delivery bill offset credits up through comprehensive NYISO wholesale market participation, as it is often portrayed in storage industry literature.[13] GI Energy believes that, as the industry analyses indicate, it may very well be possible for New York State to pioneer a "value stack" that includes an expanded VDER tariff and NYISO market participation. The two Distribution System use cases identified in the Roadmap—"Standalone VDER" and "NWA+"—would be very capable of taking advantage of this tariff scheme. The figure below illustrates GI Energy's vision of an ultimate "value stack" for FTM ESRs in New York State.



[12] See Matter 17-01276 (VDER Working Group) and Matter 17-01277 (Rate Design Working Group), along with Matter/Case 15-02703/15-E-0751 (VDER Expanded Eligibility).

[13] See http://files.brattle.com/files/7208_stacked_benefits_-_final_report.pdf

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GI Energy supports the Roadmap's proposed extension of the DRV to seven (7) years and agrees such an action can help reduce project risk and thus overall project cost while being neutral to ratepayers.

With regard to number of hours of notice for a DRV call signal, GI Energy recommends that the utility signal go out at least an hour prior to the 5 am NYISO Day-Ahead Market (DAM) bid close the day ahead of utility need. This will facilitate NYISO DAM scheduling for any DER or ESR doing utility and NYISO value stacking (a.k.a. "dual participation"). With the proposed 21-hour notice, a utility call may interfere with committed NYISO DAM offers or force an ESR to recharge during on-peak hours (i.e. Primary Demand or As-Used Daily Demand periods).

GI Energy also believes that the Roadmap should consider additional VDER components[14] to reflect the unique nature of ESRs, in particular battery storage technologies. The smart inverters intrinsic to many FTM ESRs, notably battery systems like in GI Energy's REV Demonstration project with Con Ed, represent a massive opportunity for local utilities to integrate feeder-level reactive power control and power factor correction. As seen in the case of Sterling Municipal Light Department in Sterling, MA, NEC Energy Solutions (the same vendor for our REV Demonstration project) was able to design and deploy a FTM ESR that could island and backup critical municipal facilities. As NY-BEST and Strategen have documented[15], FTM ESRs can also provide the equivalent of spinning reserve or load following services to the NYISO at ramp rates and response times several orders of magnitude faster than existing load following resources—and without the emissions. FTM ESRs can provide Vernier control of feeder loading by offering local utilities operational dispatch rights to the FTM ESR.

For the FTM ESR use case in particular, GI Energy believes it is vital that the "value stack" should be described and visually depicted not only by compensation components but by all applicable delivery bill cost components. Unlike BTM or BTM:Net Generation (BTM:NG) "value stack" accounts, FTM ESR accounts have no host account to credit against. It is very difficult to get clarity today on the delivery bill cost structure FTM ESR accounts will face in the various NYS utility territories. Clearly defining the cost structure against the Value Stack for these accounts and aligning cost components with compensation components will help all stakeholders comprehend the true value proposition of such investments.

GI Energy would also find it useful for DPS staff and New York State utilities to spell out the mechanics of payment and billing for the FTM ESR use case under such proposed VDER Expansion. We presume, for example, that utilities will pay the ESR project directly for full compensation of distribution services as opposed to netting credits from a host site or community DG retail account (since there is no host site offset customer for FTM projects beyond the NYISO or the local utility). If a FTM ESR does not get compensated directly from the utility then realistically there will be no way for a FTM ESR to be compensated under this "ultimate" expanded VDER tariff.

4.1.4. Carbon Reduction Benefits and Shaping the E Value in the VDER Value Stack

GI Energy supports the Roadmap proposal to shape the value of E so that it more appropriately reflects the amount of carbon being displaced during on-peak and off-peak periods.

Ultimately, GI Energy expects NYISO will reflect the value of carbon in its dispatch and thus negate the need for a carbon offset in the VDER "value stack". GI Energy also believes that work should continue to identify the value of other avoided pollutants and add those costs to the value of E.

[14] See cases for the Resilience credit (R) and Reactive Power (RP) credit.

[15] See New York City's Aging Power Plants: Risks, Replacement Options, and the Role of Energy Storage, NY-BEST/Strategen, September 20, 2017.

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4.1.5. Dynamic Load Management (DLM) Program Improvement

No comment.

4.2. Utility Roles

4.2.1. Earnings Adjustment Mechanisms

No comment.

4.2.2. IOU Business Model

On the whole, GI Energy supports the Roadmap recommendations. It must be emphasized, however, that under the current scenario in New York State delivery tariff treatment for utility-owned FTM ESRs is not at all equal to 3rd party-owned FTM ESR delivery tariff treatment. As of September 2018, most local utilities across New York State (apart from Con Ed) have not been able to provide a standard answer to key logistical investor questions: 1) “what delivery bill will our 3rd party-owned FTM battery be charged?” or 2) "can you provide a sample FTM ESR delivery bill, even if given billing-grade interval data?" When asked how any of the utilities will bill their own utility-owned FTM ESRs, the answer has uniformly been: “they will be treated as T&D assets; there will be no delivery bill.” In other words, utility-owned FTM ESRs are currently treated as true FTM “grid assets” while 3rd party-owned FTM ESRs are being turned back into retail BTM accounts under conventional standby and buy-back rates. Or worse, the entire question of delivery billing remains wholly undefined.

At present, there is not a level playing field for FTM ESR development in New York State. Third party-owned FTM ESRs are subjected to delivery bills summing to millions of dollars over project terms when serving the exact same purposes as utility-owned FTM ESRs subjected to none. Utilities are in a position to take advantage of undefined tariffs, and currently there is no cap on utility-owned FTM ESRs in New York State, nor does the Roadmap propose one. Many (we suspect most) REV Demo & NWA bidders are either not aware of FTM ESR delivery tariffs or, if they are, may be overpricing bids. As GI Energy's REV Demonstration project shows, delivery bills are potentially the single largest operating expense for such a project. There is currently no way for utilities to properly levelize bids, and there is no way for bidders to properly gauge competitiveness. GI Energy suspects FTM ESR projects may be better long-term solutions for many of these NWA projects but are losing out to competing bids based around natural gas-fired generation, given that tariffs for these more conventional projects are well defined and risks easier for investors to price or hedge. New York State will find it challenging to achieve its 1,500 MW storage target by 2025 (or 3,000 MW by 2030) if this persists—and may instead be embedding a new fleet of fossil fuel-based generators across its grid for at least another decade.

4.2.3. Facilitating NWA Projects on Utility-Owned Land

GI Energy supports the Roadmap recommendation.

4.2.4. Optionality in the IOU Benefit-Cost Analysis (BCA)

GI Energy supports the Roadmap recommendation.

4.3. Direct Procurement

4.3.1. IOU Procurement Through NWAs

GI Energy supports the Roadmap recommendation.

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4.3.2. NWA Term Extension

GI Energy supports the Roadmap recommendation.

4.3.3. Large Scale Renewables Procurement

GI Energy supports the Roadmap recommendation.

4.3.4. NYS Leading by Example

On the whole, GI Energy supports the Roadmap recommendations. GI Energy also believes the Roadmap represents an opportunity to define a coherent “ESR” classification across New York State. Today the classification of FTM ESR projects in the Distribution System and Bulk System use cases is all in the eye of the beholder. Four different authorities can look at the same FTM ESR project and deem it a “generating unit” or a “load serving entity” or a “T&D asset” or a full-fledged “commercial retail account”. The Roadmap presents a rare chance to define a coherent “ESR” service classification amongst New York State utilities for the Distribution & Bulk System use cases.

NYISO is responding to FERC Order 841, which requires a set of comprehensive, coherent rules for integrating storage into the wholesale markets, by creating a new ESR asset class. The Roadmap could extend NYISO's work to the Joint Utilities to create a coherent set of definitions for FTM ESR use cases across New York State. This would eliminate ambiguity (and debate) about how to classify a given Distribution or Bulk Storage asset. It would clarify and harmonize definition and treatment of Distribution or Bulk System ESRs for the purposes of 1) delivery tariffs across all Joint Utilities, 2) NYISO wholesale market participation, 3) New York State and Local Sales and Use Tax treatment, and 4) New York State and local permitting.

New York State could be a real leader by finally defining this new breed of electric account. Aligning “ESR” definitions from low tension distribution-tied ESRs in Buffalo to high tension transmission-tied ESRs in Montauk would provide a regulatory precedent that would benefit the storage industry nationwide or even globally.

4.4. Market Acceleration Incentive

GI Energy supports the Roadmap recommendation.

4.5. Address Soft Costs Including Barriers in Data and Finance

4.5.1. Continue to Reduce Soft Costs

GI Energy supports the Roadmap recommendation to create an Energy Storage Market Acceleration bridge incentive. Such incentive should be focused on reducing upfront cost while minimizing the amount of administrative effort needed to accomplish this. As such, GI Energy recommends that staff consider offsetting 100% of the state and local sales and use tax on ESR investments[16]. This should be easy to administer as all that should be required is proof of payment and existing ST-121 forms.

Should the New York State Department of Taxation and Finance (NYS DoT&F) decide that ESR equipment and development services are exempt from state and local sales and use tax, then GI Energy would recommend that an upfront "bridge incentive" payment be made based on FTM

[16] The NYS DoT&F has ruled that certain ESRs (e.g. flyhweels participating in NYISO LESR regulation-only markets—see TSB-A-09(36)S) may not qualify as electricity production and as such the exemption on sales and use tax for equipment and services used in the development of ESRs is subject to review. This decision can add more than 12% to the construction cost of an ESR and is being challenged administratively by GI Energy, with the support of NY-BEST. For reference, please see NYS DoT&F Form ST-121 and Publication 852. (It seems odd that fossil fuel generators qualify for this exemption and somehow storage may not.)

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ESR project kWh nameplate (i.e. rated energy capacity). Again, the intent is to minimize the amount of administration required and provide for an upfront payment to maximize the economic effect of the incentive. An up-front offset to capital cost would reduce project risk and therefore the project cost of capital.

Based on GI Energy's experience with both the NYSERDA CHP Performance and CHP Catalog Programs and related measurement and verification (M&V), optimal FTM ESR incentive structure would be $/kWh nameplate buy-down (into the range shown for "Breakeven Installed Costs" in the Roadmap analysis). All bridge incentive funds should be paid out in Year 1 based on proof of pre-approved specifications and a single site inspection. M&V data collection should be specified in an incentives manual and automated where possible.

4.5.2. Reducing the Cost of Capital

As the Roadmap notes, a critical component of reducing capital cost is the reduction of risk and reducing project complexity. The Commission should encourage a regulatory framework that achieves this outcome. GI Energy believes a regulatory framework that supports the sale of energy, capacity and ancillary services into the NYISO wholesale markets while also providing the opportunity to sell dispatch rights to the local utility that would afford the local utility the opportunity to maximize the value of distributed resources in distribution operations would achieve that outcome.

4.5.3. Workforce Development

GI Energy supports the Roadmap recommendations.

4.5.4. Data Access

GI Energy will address this in comments to the Distributed System Implementation Plan (DSIP) proceeding.

4.6. Clean Peak Actions

GI Energy supports the Roadmap recommendations.

4.7. Wholesale Market Actions

4.7.1. Bulk System Focus

GI Energy supports the Roadmap recommendations.

4.7.2. Dual Market Participation

As explained in the VDER section above, GI Energy believes that the idea of dual participation should not be an issue for FTM ESR development. If NYISO receives 100% of the energy and capacity of a FTM ESR and the utility receives priority dispatch rights, then there should be no conflict between value received by each entity nor complexity of operation. GI Energy notes that today there are several examples in the Con Ed service territory where Con Ed has priority dispatch rights to alter the dispatch of bulk power generating units participating in the NYISO market to resolve constraints on non-NYISO controlled facilities. FTM ESRs should not be treated differently simply because they are connected to the distribution system.

4.7.3. Distribution and Wholesale Market Coordination

GI Energy supports the Roadmap recommendations.

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4.8. Accountability

GI Energy supports the Roadmap recommendations.

Conclusion

GI Energy is committed to achieving New York State's energy storage deployment target of 1,500 MW by 2025 and has committed many thousands of hours to pioneering a novel business case for FTM ESRs through the REV Demonstration project with Con Ed in Zone J (NYC). The Roadmap represents a rare opportunity to define and harmonize the numerous ratemaking and regulatory structures that are unique to this novel type of electric account. GI Energy agrees with NY-BEST, as described in our comments above, that the New York State Public Service Commission should adopt bold and transformative actions to achieve the Roadmap's vision. GI Energy values the opportunity to provide comments and looks forward to furthering the goals of the Roadmap through FTM ESR development across New York State, especially in the critical Zones J (NYC) and K (Long Island).

Sincerely,

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