STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

In the Matter of Energy Storage Deployment Program	**)** **)**	**Case 18-E-0130**

COMMENTS OF GLIDEPATH DEVELOPMENT LLC IN RESPONSE TO THE JULY 17, 2018 NOTICE SOLICITING COMMENTS AND ANNOUNCING TECHNICAL CONFERENCES

GlidePath Development LLC ("GlidePath") commends the efforts and leadership of the New York Department of Public Service ("DPS") and the New York State Energy Research and Development Authority ("NYSERDA") staff and management in preparation of the Energy Storage Roadmap filed June 21, 2018 in New York Public Service Commission (the "Commission") Case 18-E-0130 including DPS and NYSERDA Staff Recommendations (collectively the "Roadmap") and subsequent stakeholder engagement efforts. As requested in the Roadmap and the subsequent Notice Soliciting Comments and Announcing Technical Conferences issued July 17, 2018, GlidePath hereby submits the following comments. Given the comprehensive and detailed nature of the Roadmap, GlidePath has chosen to limit its comments to what it views as the most substantive and relevant matters for which it thinks its comments will be the most useful to DPS and NYSERDA staff and the Commission. GlidePath reserves the right to file future comments on topics included in this filing as well as any other relevant topic related to the matter even if such topic is not included in this filing.

I. INTRODUCTION

GlidePath Power Solutions LLC ("GPS") is an Illinois-based Independent Power Producer that is in the business of developing, owning, and operating a variety of independent

power projects throughout the United States. GPS' portfolio includes 244 MW of operating wind generation located in Pennsylvania, West Virginia, and California as well as 60 MW of operating energy storage (battery) projects located in Illinois. An additional 20 MW of energy storage (battery) is currently under construction in Illinois. GlidePath is a wholly-owned subsidiary of GPS and is focused on the development of low-carbon grid-connected storage and generation projects typically with nameplate capacity between 20 and 100 MW. GlidePath's development portfolio includes numerous projects in various stages of development across the United States including multiple projects in New York. GPS has the capital resources to fund the development and construction with the general intention of owning and operating most projects it develops.

GlidePath's first energy storage projects, the 19.8 MW Jake Energy Storage Center and the 19.8 MW Elwood Energy Storage Center, both located outside of Chicago and currently owned and operated by Renewable Energy Systems Americas, Inc. ("RES") were completed in October 2015 and currently provide frequency regulation services to the PJM wholesale market. The long-term financing arranged by RES was one of the first non-recourse senior project financings completed for a utility-scale battery storage system in North America[1] and was made possible by an innovative revenue contracting structure developed by GlidePath.

II. DETAILED COMMENTS

As requested by DPS and NYSERDA staff, the following initial comments are organized based on the Roadmap's table of contents headings.

[1] http://www.res-group.com/en/news-events/#/pressreleases/res-announces-substantial-completion-and-project-financing-of-chicago-area-energy-storage-centers-1329180

A. Roadmap §4.2.2 – Investor-Owned Utility ("IOU") Business Model

GlidePath Comment A.1: GlidePath strongly agrees with staff and existing Commission decisions that utility ownership presents a significance risk to efficient market development[2] and should only be allowed when a project owned by a utility was selected as the most cost-effective project by means of a competitive solicitation overseen by an independent third-party to guarantee that any utility proposal is prepared without any information not available to all competitors in such solicitation.

B. Roadmap §4.2.3 – Facilitating NWA Projects on Utility-Owned Land

GlidePath Comment B.1: GlidePath agrees with staff that siting independently-owned non-wires alternative ("NWA") projects, including NWA+ projects described in the Roadmap, on utility-owned land could provide benefits to ratepayers. Allowing projects to be sited near existing infrastructure without the need to build new facilities to connect NWA projects on privately owned land to existing utility substations provides potential developers certainty over some of the project risks and could accelerate other development activities and development spending, resulting in more timely projects. Care must, however, be taken to ensure any lease or similar agreement between the utility and project owner is done on an arms-length basis with a market-based price and terms to ensure that all potential developers of an NWA has equal access to utility facilities (including land).

GlidePath Comment B.2: Use of utility-owned land should, generally, be provided as an option and not a requirement for most NWA projects. Developers should be allowed and encouraged to propose projects that meet the NWA requirements while making full or partial use of privately-owned land. Providing developers with such flexibility may result in more benefits to ratepayers though lower costs or more efficient project development.

[2] See Commission Case 14-M-0101, REV Track One Order.

GlidePath Comment B.3: GlidePath encourages the Commission to adopt a form lease for utilities to use when making utility-owned land available for NWA projects. Such form should, as closely as practical, mirror the structure and terms of leases for similar projects on private land. Key terms include, but are not limited to, the inclusion of a low-cost multi-year development period, lender protections, limitations on the review and approval of the facility layout, operational term equal to the design life of the longest-life component plus a reasonable extended life, and limitations on the landowner's ability to terminate the lease for its convenience or regulatory changes. GlidePath is willing to provide a sample form to the Commission and/or NYSERDA/DPS staff and suggest any standard form lease be made available for comment in draft form before being finalized.

GlidePath Comment B.4: GlidePath encourages the Commission to closely monitor any utility purporting to make its land available to NWA developers to ensure that the utility is offering its land on market terms and that the utility is not seeking to impose undue cost or other burdens on potential lessees in an effort to reduce or otherwise obscure the viability of an independently owned project in lieu of a utility owned project. See GlidePath Comment A.1 above.

C. Roadmap §4.3.1 – IOU Procurement Though NWAs

GlidePath Comment C.1: Long-term revenue is important to the success of any storage project. Any NWA or NWA+ contact awarded by an IOU should be structured to provide enough long-term revenue structure to meet the requirements of the project finance community. The Commission should closely monitor all NWA solicitations to ensure IOUs are not unnecessarily limiting the viability of an independently owned project. See GlidePath Comment A.1 above.

GlidePath Comment C.2: IOUs should always frame potential NWA projects as problems to be solved, rather than dictating a specific solution. IOUs may, and should when identified, provide recommended solutions to an identified problem; however, developers should not be prohibited from providing alternative solutions that provide improved reliability, reduced costs, or other material benefits to ratepayers. Such an approach may require IOUs to identify NWA projects earlier, and such early discussions with developers should be encouraged by the Commission. Utilities should be required to provide all relevant details to developers, so the market can determine the most cost effective solutions; the current practice of withholding certain details (such as the marginal cost of traditional solutions) provides an incomplete picture to offers and may result in a less than lowest cost solution. Given the strong interest in NWA projects the competitive marketplace should be relied upon to keep costs low.

GlidePath Comment C.3: In addition to comments to the term noted above in Comment B.3, GlidePath recommends that the Commission require IOUs to require all developers of NWA projects to post material amounts of development security, with such security tied to key development and construction milestones (interconnection, permitting, procurement, construction, etc.) to ensure that developers remain committed to contacts once they are executed and to prevent speculation. The appropriate use of security/deposit requirements and milestones will help assure developer performance and allow the utility to transition a contract to new developer before significant delays develop. Development security/deposit amounts should be reflective of the costs associated with such transition.

D. Roadmap §4.3.3 – Large Scale Renewable ("LSR") Procurement

GlidePath Comment D.1: NYSERDA should facilitate the coupling of specific intermittent generation projects bidding into its LSR procurement programs with specific new or

existing energy storage projects rather than only allowing developers to jointly bid project combinations. GlidePath does not agree that requiring developers to propose the coupling of specific energy storage projects with projects bid into NYSERDA's LSR programs is a cost-effective way to increase energy storage deployment in New York. While, as the Roadmap describes, the increasing penetration of intermittent generation in New York's electric system increases the need for services provided by energy storage projects (e.g., frequency regulation and reserve services), co-locating energy storage with an intermittent generator or tying a specific storage project to a specific intermittent generation project is likely to result in overly complicated contractual structures, under utilized storage assets, and reduced ratepayer value. Additionally, having developers collaborate to jointly bid paired projects may have anticompetitive implications for the market with a negative impact for ratepayers. As an alternative, NYSERDA should independently procure certain amounts of energy storage with each LSR procurement, with such procurement potentially structured as capacity payment to selected storage projects based on the number of RECs awarded in the LSR procurement process. Depending on the location, size, and operational capabilities of the participating storage projects, each storage project may be capable of providing the incremental ancillary services required by multiple successful bidders in a given LSR procurement process. For example, a storage project could provide the needed frequency regulation of a large wind project as well as multiple smaller solar projects due to the diurnal variations in generation profiles.

GlidePath Comment D.2: The Roadmap should describe the risks involved in coupling storage projects to renewable energy projects that take advantage of the Federal Investment Tax Credit ("ITC") and/or the Modified Accelerated Cost Recovery System ("MACRS") and limitations imposed on storage systems integrated with such projects. In summary, GlidePath

thinks that it is unlikely that storage projects integrated with photovoltaic ("PV") systems owned by the same taxpayer can simultaneously claim the ITC and provide ancillary services (e.g., frequency regulation) to the NYISO market[3]. The tax complexities and risk of integrating a storage facility into a wind or solar facility that is dependent on Federal tax incentives is likely to increase the risk on a project's tax equity investor and increase the costs of tax equity to the project (with such costs being passed on to NYSERDA).

GlidePath Comment D.3: The Roadmap is unclear what specific NYISO services a coupled project would provide and how a coupled project would compete with a standalone project providing those services to the market. The coupling could limit ratepayer value rather than increasing value. Alternatively, the NYSERDA should look to NYISO to procure any increased requirements for ancillary services or capacity from the existing NYSIO markets, which would subsequently incentivize additional participants to enter the market. Rather than artificially creating a separate market, for what amount to the same services, based on coupling storage projects with intermittent generators, the existing NYISO market should be relied upon to procure the services needed to maintain reliably, while the amount of intermittent generation on the grid increases.

GlidePath Comment D.4: Similar to the Renewable Energy Credit ("REC") incentive developed by NYSERDA for the LSR that supplements the energy revenue from certain renewable projects, NYSERDA could develop a similar capacity credit mechanism that supplements the capacity revenue earned by storage projects. Like with the REC program, NYSERDA should be the centralized procurer of these storage credits via an NYSERDA administered procurement program based on the successful LSR program model.

[3] See NREL circular, Federal Tax Incentives for Energy Storage Systems (https://www.nrel.gov/docs/fy18osti/70384.pdf).

E. Roadmap §4.4 – Market Acceleration Incentive

GlidePath Comment E.1: Any market acceleration incentive must provide enough revenue certainty to allow a given project to obtain requisite financing either solely based on the incentive or based on a combination of the incentive and existing market products. Incentives that are not appropriately matched to a project's economic life and to existing market contact structures are unlikely to incentivize sustainable development, but, rather, will result in a false market of energy storage projects that is unable to be transitioned away from such incentives.

NYSERDA has been a leader in programs with proven successes such as its REC procurement program and, more recently its Zero-Emissions Credit ("ZEC") and Offshore Renewable Energy Credit ("OREC") programs. All these programs seek to fill the revenue gap between what a project is able to earn from the traditional NYISO wholesale market and the revenue required to allow the project to meet its economic requirements. Market incentives for distribution and bulk sited projects are well suited to be modeled after the REC, ZEC, and OREC programs given the familiarity with the programs by the project finance community and the ability for the programs to operate separately from the NYISO wholesale market, which minimizes undue influence on and maintains equal access to the existing markets.

GlidePath Comment E.2: GlidePath regards the OREC program as particularly well suited to serve as a potential model due to its use of a market-based approach rather than a long-term fixed price structure. The Market, Index, Forward, Fixed/Index, and Capped approaches put forth in Notice of Proposed Rule Making preceding the Commission Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement are all viable options for proving an incentive to storage projects that also participate in one or more NYISO markets[4]. In

[4] See Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement, Commission Case No. 18-E-0071 (July 12, 2018).

a potential storage application, the market-based incentive payment would be indexed or tied to a combination of ancillary services pricing, capacity pricing, and energy costs with the project owner receiving payments from the market for the services provided by the project and NYSERDA providing any remaining revenue required to meet the project's requirement in the form of a credit. Since the credits would be tied to actual market prices, ratepayers would be protected against over-payment of credits if the market pricing is sufficient to meet the project's revenue requirements and developers would be protected against uncertainty in future market pricing. GlidePath suggests that NYSERDA conduct a study to determine how to structure a REC-like mechanism that could be used to supplement revenue received by storage projects from the market and, once such a mechanism is defined, study which of the market tied incentive pricing structures would be the most applicable, considering stakeholder comments and the Commission's recent review of the OREC structures.

F. Roadmap §4.5.1 – Continue to Reduce Soft Costs

GlidePath Comment F.1: GlidePath suggests that NYSERDA provide guidance to county, town, and other local agencies on how to best address the development of storage projects within their jurisdictions. This guidance should include details for environmental review under the New York State Environmental Quality Review Act ("SEQRA") that would minimize the need for time consuming and costly Environmental Impact Statements when a project is unlikely to have significant impacts. For example, New Jersey recently provided clarifications to its land use law by specifically expanding the definition of Inherently Beneficial Use to include a wind, solar or photovoltaic energy facility or structure[5]. These Inherently Beneficial Uses were defined to mean "a use which is universally considered of value to the community because it fundamentally serves the public good and promotes the general welfare.

[5] New Jersey Public Law 2009, c.146.

Such a use includes, but is not limited to, a hospital, school, child care center, group home, or a wind, solar or photovoltaic energy facility or structure."[6] NYSERDA should work to communicate the benefits of energy storage for achieving New York State's energy goals and encourage local jurisdictions to expediate review of such projects. NYSERDA should also provide resources for developers to use when communicating with agencies, non-governmental organizations, and the public about their projects and the benefits that such often complex projects bring to the state's electric system.

G. Roadmap §4.6 – "Clean Peak" Actions

GlidePath Comment G.1: GlidePath agrees that additional study needs to be completed on the benefits that the addition of energy storage may bring to existing peaking resources. Such study should include analysis of the likely remaining life of each unit under consideration to ensure that the addition of energy storage will, in fact, have a net reduction of emissions and not prolong the lives of facilities that are likely to retire in the near term. Peaking units in Group 1, less than 4 hours of operation, are likely some of the most uneconomical units in the system and, as additional new peaking capacity is added will, most likely, be the first units to be retired. Adding storage to these units may have the unintended effect of delaying their retirements and the net result of additional operation of what are likely very high emission plants. In addition, the study should include discussions with owners of these facilities to determine their interest in committing to operate these aging generators for the life of newly installed energy storage systems and the costs associated with maintaining the host peaking facility for such time.

GlidePath Comment G.2: GlidePath also requests that any study also include the analysis of new construction hybrid plants using current generation gas turbine or engine technologies including state-of-the-art emissions control systems. In the near term, the combination of gas

[6] *Id.*

generation with batteries is likely a much more cost-effective approach to the deployment of storage within current NYISO market rules than a stand-alone storage system. In addition, the costs and risks associated with financing a project that uses existing gas technology are likely lower than the same project that uses an all battery arrangement. New build hybrid plants may represent a meaningful step forward towards New York's climate and storage goals while still economically meeting the grid's reliability requirements in the near team. Such projects could also be designed to transition over time to provide more service from the battery system as technology improves and costs are reduced by adding additional battery capacity in the future.

H. Roadmap §4.7.1 – Bulk System Focus

GlidePath Comment H.1: GlidePath strongly encourages the continued engagement by NYSERDA and DPS staff in the NYISO stakeholder process and believes that significant effort is required by NYSERDA, DPS, and NYISO to align the market rules under development by NYISO for various energy storage market participation modes with the State's goals and the programs developed from the Roadmap. GlidePath believes that the focus should be on the development of sustainable NYISO markets that allow owners of storage projects to derive enough value from the wholesale markets while the programs implemented by NYSERDA should focus on supplementing the revenue of early-mover storage projects during this market development and transition period. NYSERDA should look to play a role like the role it serves supporting the market derived revenue of renewable generators that are supported via REC contracts rather than the creation of a program or programs that are not aligned with NYISO market structures.

I. Roadmap §4.7.3 – Distribution and Wholesale Market Coordination

GlidePath Comment I.1: GlidePath disagrees with the statement that "most [energy storage resources] are likely to be smaller, often well below 1MW". GlidePath has had a great deal of success developing energy storage of up to 20 MW on distribution systems and typically sees larger projects providing substantially more value to ratepayers due to the economies of scale offered by larger projects and the ability to obtain lower cost financing due to the scale of the investment required for the project.

GlidePath Comment I.2: The NYISO should also clarify that projects connected to the distribution system but participating in the NYISO market would not be charged distribution facilities charges (e.g., wires or demand charges) and would transact energy (buy and sell while charging or discharging) in the wholesale market and not at the retail level.

III. CONCLUSION

GlidePath appreciates the PSC and NYSERDA staffs' consideration of the comments contained herein and looks forward to continued refinement of the Roadmap and subsequent development and implementation of mechanisms to achieve the Governor's energy storage installation goals that maintain system reliability and a reasonable cost to the ratepayers of New York.

Dated: September 10, 2018

Chris McKissack
Chief Operating Officer
GlidePath Power Solutions LLC
(847) 840-3784
cmckissack@glidepath.net

Peter Rood
Chief Development Officer
GlidePath Power Solutions LLC
(651) 494-4939
prood@glidepath.net