STATE OF STORAGE IN NEW YORK

ANNUAL ENERGY STORAGE DEPLOYMENT REPORT
PURSUANT TO PUBLIC SERVICE LAW §74

April 1, 2022

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EXECUTIVE SUMMARY

Public Service Law (PSL) §74 directed the Public Service Commission (Commission) to establish a statewide energy storage target for 2030 and programs that will enable the State to meet such target. On December 13, 2018, the Commission established a statewide energy storage goal of installing up to 3,000 megawatts (MW) of qualified energy storage systems by 2030, with an interim objective of deploying 1,500 MW by 2025. The Commission also adopted a suite of energy storage deployment policies and initiatives to achieve these goals. Amongst other actions, PSL §74(4) requires annual reports on the achievements and effectiveness of the Commission's energy storage deployment policy be submitted annually to the Governor, the Temporary President of the Senate, and the Speaker of the Assembly. By the Energy Storage Order, the Commission further required that the Department of Public Service Staff (DPS Staff) file the first "State of Storage" annual report by April 1, 2020, for calendar year 2019, and by April 1 of each year thereafter. DPS Staff filed the first State of Storage report on April 1, 2020, and the subsequent year's report on April 1, 2021.

The Commission's energy storage deployment policy has effectively strengthened the market for developing and installing qualified energy storage systems in the State of New York. Total deployed and awarded or contracted projects at the end of 2021 equal 1,230 MW in capacity, or about 82 percent of the 2025 target of 1,500 MW and 41 percent of the 2030 target of 3,000 MW. The number of energy storage projects in various interconnection queues, which reflects some of the awarded or contracted projects noted above and potential projects in the pipeline, also indicates robust activity in the industry. Over 12,000 MW of energy storage projects are presently in New York utility interconnection queues and the New York Independent System Operator (NYISO) interconnection queue, although some of these projects may not be built due to unfavorable project-specific economics and for other reasons.

Examples of common energy storage use cases in the State include co-location with solar photovoltaic (PV) developments and other renewable energy resources. Energy storage systems sized up to 5 MW are eligible for Value of Distributed Energy Resource (VDER) compensation, which continues to be the most common compensation mechanism chosen by developers. Coupling energy storage with solar PV, for example, allows developers to maximize VDER compensation under many scenarios. The average total installed costs for non-residential, retail projects that were awarded incentives averaged $567 per kilowatt-hour (kWh) for installations

occurring in 2022 and 2023, up from $464 per kWh for installations in 2020 and 2021. For projects above 5 MW that received an incentive and will provide wholesale market services, the total projected installed costs should average $370 per kWh for installations in 2020 and 2021. Current market dynamics have likely increased installed costs for similar bulk storage projects by at least 20 percent, as experienced in the retail project costs. The average total installed costs for customer-sited projects configured behind the customer's utility meter and used for peak load reduction remains relatively high at $1,117 per kWh in 2021, up from $970 per kWh in 2020. For these customer-sited systems, the average hardware costs represented 57 percent of project costs in 2021, down from 64 percent in 2020. Cost increases were driven by supply chain issues, along with material price increases and increased competition for battery cells across the economy.

DPS Staff submits this State of Storage report in compliance with PSL §74 and the directives of the Commission and recommends that no corrective actions to the Commission's energy storage deployment policy are necessary at this time. We note that the next review of the energy storage program is scheduled to occur in 2023 and will present an opportunity to revisit policy issues and assess progress towards the goals of PSL §74. Moreover, on January 5, 2022, Governor Hochul announced in the State of the State an intention to double the State's energy storage target to at least 6 gigawatts (GW) by 2030. DPS Staff and the New York State Energy Research and Development Authority (NYSERDA) are in the process of updating the Energy Storage Roadmap (the Roadmap) to reflect the expanded goal. Future Commission action on the Roadmap is expected thereafter.

INTRODUCTION

On December 13, 2018, the Commission established a statewide energy storage goal of installing up to 3,000 MW of qualified energy storage systems by 2030, with an interim objective of deploying 1,500 MW by 2025.[1] The Commission also adopted a suite of energy storage deployment policies and actions intended to accelerate cost reductions, reduce barriers to realizing revenue streams for energy storage services that would otherwise go uncompensated, and improve project economics by sending appropriate price signals to the marketplace. These measures include financial incentives, competitive energy storage procurements, soft cost reduction efforts, and a host of other actions that are cost-effectively contributing to the accelerated deployment of energy storage in New York today. The resulting public benefits of deploying up to 3,000 MW of energy storage are expected to include over $3 billion in gross lifetime benefits to New York's utility customers, approximately 30,000 new jobs, the elimination of approximately 2 million metric tons of greenhouse gas (GHG) emissions, and the avoidance of criteria air pollutant emissions such as nitrogen oxides (NO_x), sulfur oxides (SO_x), and particulate matter.[2]

The Commission's actions were in response to the enactment of PSL §74, which directs the Commission to establish a statewide energy storage target for 2030 and programs to support that goal. PSL §74 complements a number of State policies intended to increase the use of renewable energy and reduce GHG emissions and criteria air pollutants. The 2019 Climate Leadership and Community Protection Act (CLCPA) requires, among other things, that at least 70 percent of New York's electricity come from renewable energy sources by 2030 and 100 percent be carbon neutral by 2040; the CLCPA further requires an economy-wide GHG emissions reduction target of 85 percent by 2050 compared to 1990 levels.[3] The CLCPA codified the Commission's goal established in the Energy Storage Order of deploying 3,000 MW

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[1] Case 18-E-0130, In the Matter of Energy Storage Deployment Program, Order Establishing Energy Storage Goal and Deployment Policy (issued December 18, 2018) (Energy Storage Order). The energy storage targets are in addition to 1,400 MW of traditional pumped hydroelectric storage that are already deployed.

[2] Case 18-E-0130, supra, New York State Energy Storage Roadmap and Department of Public Service / New York State Energy Research and Development Authority Staff Recommendations (filed June 21, 2018).

[3] See Chapter 106 of the Laws of 2019. The CLCPA is available at: https://legislation.nysenate.gov/pdf/bills/2019/S6599.

of energy storage by 2030.[4] Energy storage is a critical component in enabling renewable energy to be deployed in sufficient quantities to satisfy these targets, and may contribute to avoiding or deferring costs associated with electric transmission, distribution, or generation needs.

PSL §74(4) requires reports on the achievement and effectiveness of the energy storage deployment policy be submitted annually to the Governor, the Temporary President of the Senate, and the Speaker of the Assembly. The Commission further required in the Energy Storage Order that DPS Staff, in consultation with NYSERDA, the Long Island Power Authority (LIPA), and the NYISO, file the first State of Storage report by April 1, 2020, for calendar year 2019, and by April 1 of each year thereafter.[5] DPS Staff filed the first State of Storage report on April 1, 2020, and the subsequent year's report on April 1, 2021.

The Commission directed the State of Storage report to include: (1) progress towards achieving the energy storage targets, total MW deployed, locations of installations, projects in the queue, solutions deployed and the range of common use cases; (2) impediments and proposed solutions to these impediments that may slow deployment, including corrective paths for reallocating bridge incentive funds, and other measures as needed; (3) the status of and recommended adjustments to the utility procurement process, wholesale market design changes, utility rate design actions, data platform development, retail and wholesale market coordination, and any other relevant issues; and (4) average total installed cost of energy storage systems and major progress during the year in reducing soft costs.[6] DPS Staff submits this State of Storage report in compliance with PSL §74 and the directives of the Commission, reflecting the status of the industry in 2021.

Beginning in 2020 and each third year thereafter, the Commission will conduct a review of the progress towards achieving the energy storage deployment goals and the effectiveness of the deployment policies and actions in meeting those goals.[7] The triennial review will enable the Commission to determine whether and how such policies should be adjusted based on market conditions. If significant variances occur from anticipated progress, the Commission is expected

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4 The CLCPA also requires a minimum percentage of storage projects be deployed: (1) in disadvantaged communities; and (2) to reduce the usage of combustion-powered peaking facilities in those communities.

5 Energy Storage Order, Ordering Clause 13.

6 Energy Storage Order, p. 107.

7 Energy Storage Order, p. 12.

to consider taking corrective actions based on this review. The 2020 State of Storage Report served as the basis for the Commission's first triennial review in 2020. The next review is scheduled to occur in 2023 and will present an opportunity to revisit policy issues and assess progress towards the goals of PSL §74. Moreover, on January 5, 2022, Governor Hochul announced in the State of the State an intention to double the State's energy storage target to at least 6 GW by 2030. DPS Staff and NYSERDA are in the process of updating the Roadmap to reflect the expanded goal, and future Commission action is expected thereafter.

ENERGY STORAGE DEPLOYMENT PROGRESS

The portfolio of programs and actions approved by the Commission in the Energy Storage Order has effectively nurtured and expanded New York's energy storage market. Total deployed and awarded/contracted systems at the end of 2021 include projects equaling 1,230 MW in capacity, or about 82 percent of the 2025 target of 1,500 MW. The breakdown of these figures is described in Table 1.

Table 1: Total Energy Storage in New York

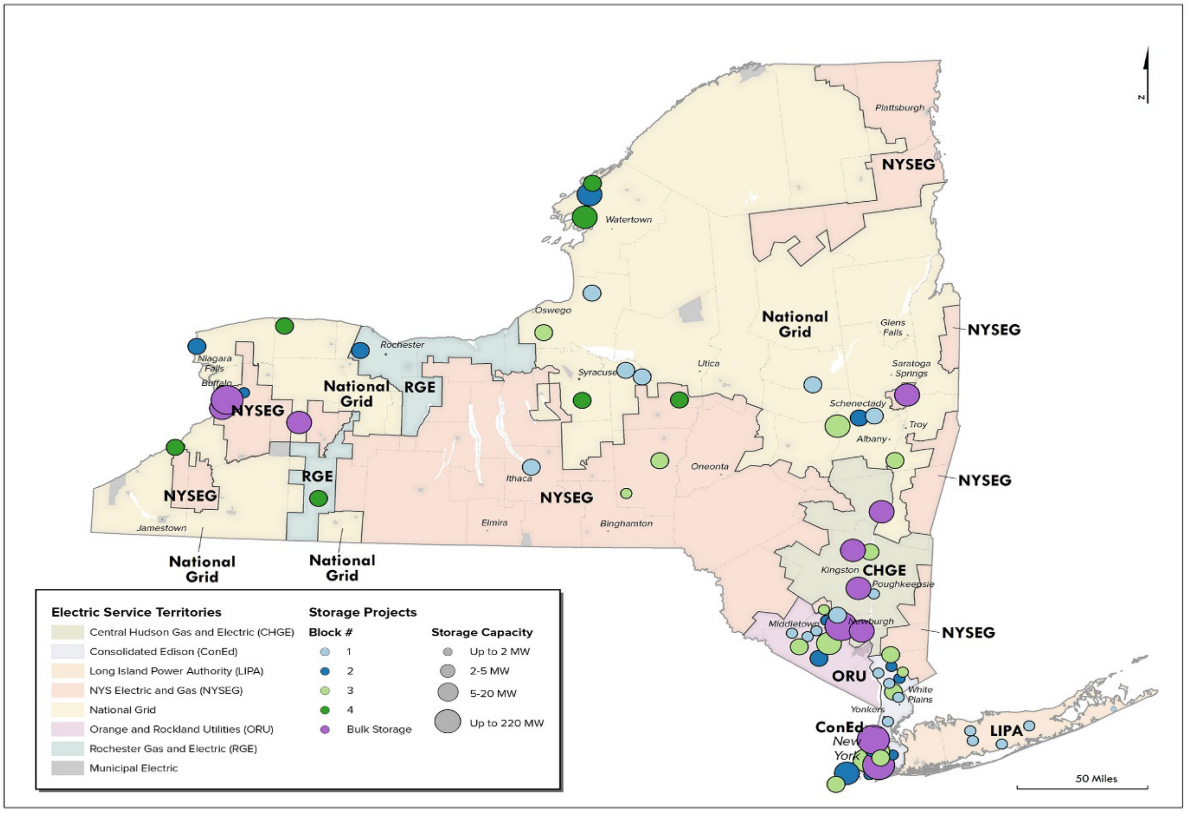
TOTAL ENERGY STORAGE IN NEW YORK (Deployed and Contracted/Awarded)	
NYSERDA Bridge Incentive Program	879 MW
Bulk 550 MW	
Commercial Retail 320 MW	
Long Island 9 MW	
Utility Bulk Storage Dispatch Rights Procurement	120 MW
Renewable Energy Standard	101 MW
NYPA North Country Project	20 MW
Utility Demonstration and NWA Projects	56 MW
Other Projects	54 MW
2021 TOTAL	**1,230 MW**
Percentage of 2025 Goal	82%
Percentage of 2030 Goal	41%

Source: NYSERDA and DPS Staff

Approximately 879 MW have been approved for funding under NYSERDA's Market Acceleration Bridge Incentive (Bridge Incentive) program, as authorized in the Energy Storage Order. The Bridge Incentive offers financial incentives to install energy storage systems for three categories of projects: (1) bulk energy storage projects larger than 5 MW providing

wholesale services, listed as "Bulk" in Table 1;[8] (2) commercial retail energy storage systems up to 5 MW, listed as "Commercial Retail" in Table 1;[9] and (3) single-family residential energy storage systems installed with solar PV on Long Island, listed as "Long Island" in Table 1. The locations of both Bulk and Commercial Retail projects awarded NYSERDA incentives under its Bridge Incentive program are illustrated in Figure 1 below.

Figure 1: Energy Storage Projects receiving Bridge Incentives



Source: NYSERDA

Of the 879 MW of projects receiving awards under the NYSERDA program, approximately 550 MW are interconnected with the bulk wholesale market and dispersed throughout the State, 9 MW are located on Long Island within the LIPA service territory, and the

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[8] Bulk projects are those interconnected with the transmission system through the NYISO Open Access Transmission Tariff.

[9] Retail projects are those interconnected with the distribution system through the New York State Standardized Interconnection Process.

rest is dispersed throughout electric investor-owned utility (IOU) service territories.[10] The Central Hudson service territory hosts eight projects, Con Edison hosts 18 projects in its Westchester County service territory and 31 in its New York City service territory, National Grid hosts 30 projects, NYSEG hosts eight projects, O&R hosts 11 projects, RG&E hosts one project, and LIPA hosts seven projects in its service territory. LIPA also has more than 500 small residential energy storage projects that have received funding under the program, which are not shown in Figure 1.

The rest of the approximately 1,230 MW of deployed and contracted or awarded projects includes: 120 MW procured under utility bulk dispatch rights request for proposals (RFP); 101 MW procured by NYSERDA under the Renewable Energy Standard (RES);[11] 20 MW from NYPA's North Country Energy Storage project; 56 MW through utility demonstration projects and "Non-Wires Alternatives" (NWAs), as directed by the Commission under the Reforming the Energy Vision (REV) initiative; and 54 MW of other energy storage projects.

Approximately 12,267 MW of proposed energy storage projects are presently in either distribution-level or wholesale-level interconnection queues in New York. Con Edison has 676 MW of energy storage projects in its interconnection queue, LIPA has 222 MW of projects in its interconnection queue, and an additional 691 MW are in interconnection queues administered by the other IOUs throughout the State. Approximately 10,678 MW of projects are presently in the NYISO queue. These interconnection queues reflect projects in the pipeline that are being considered but have not yet been built, including projects that have received State incentives as well as projects that have not been awarded any funding and are developing on a merchant-basis only.

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[10] New York's electric IOUs are Central Hudson Gas & Electric Corporation (Central Hudson), Consolidated Edison Company of New York, Inc. (Con Edison), New York State Electric & Gas Corporation (NYSEG), Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), Orange and Rockland Utilities, Inc. (O&R), and Rochester Gas and Electric Corporation (RG&E).

[11] On January 20, 2021, the Commission authorized NYSERDA to include in its future offshore wind procurements extra consideration in its scoring criteria for projects that include energy storage. See Case 20-E-0197 et al., Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act, Order on Power Grid Study Recommendations (issued January 20, 2022).

An indeterminate number of these projects may never be built, however, due to the expense of interconnection, permitting, financing, or for other reasons. Respondents to a NYSERDA survey of energy storage developers indicate that, in the developer's experience, about 30 percent of prospective distribution-level projects eventually become contracted and are therefore likely to be built, whereas only 26 percent of prospective customer-connected projects are eventually contracted. Total cycle time for storage projects, or period between proposal and contract date, averages 18 to 23 months for distribution-connected projects according to the survey.[12] The survey also highlights known challenges with the expense of interconnection upgrades and permitting requirements, particularly in New York City, which has been the focus of significant NYSERDA mitigation efforts.

Range of Use Cases

Driven by the Commission-approved VDER compensation methodology, the federal Investment Tax Credit (ITC), exemptions from certain distribution-level charges, and utility demand response programs, energy storage continues to be deployed to augment the existing pipeline of solar PV projects being developed. Out of the 77 projects approved for NYSERDA incentives in the commercial retail category in Table 1, 64 projects (or 83 percent) are paired with a solar PV CDG project to time shift the injection of renewable generation to times with a more valuable distribution grid value under VDER compensation. On Long Island, small storage systems are being paired with solar PV to help LIPA relieve grid demands during peak summer days under LIPA's Dynamic Load Tariff. During a grid outage, these systems can also be used to provide emergency backup power for critical loads

The VDER compensation methodology is the most common compensation mechanism chosen by developers for monetizing the value of energy storage today.[13] An observable trend in solar PV has been to divide larger projects into smaller components in order to qualify for VDER compensation, which is capped at projects no larger than 5 MW, instead of interconnecting as a larger project at the bulk wholesale level and receiving compensation in those markets. Project development in more rural areas is also being observed due to lower land costs, in contrast to

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[12] There is not yet adequate data to provide average cycle times for bulk storage projects.

[13] See Case 15-E-0751, In the Matter of the Value of Distributed Energy Resources, Order Regarding Value Stack Compensation (issued April 18, 2019).

areas downstate where land costs are very high but grid congestion is more prevalent and VDER compensation is therefore more valuable.

Under the Commission's REV initiative, 56 MW of energy storage systems have been installed, or are in the process of being installed, to defer costs associated with electric transmission, distribution, or generation needs, and to allow utilities to acquire valuable insight into how best the resource can contribute to providing various services. In 2018, for example, NYSEG was approved to aggregate up to eight customers in a battery storage demonstration project, with a total capacity of 1 MW and 4 MWhs. Customers participating in NYSEG's offering receive a guaranteed bill savings benefit from the installed energy storage system without having to pay any upfront costs for the installation. Utilities are also procuring batteries in projects using NWAs. For example, Con Edison's ongoing Brooklyn Queens Demand Management program avoided a $1.2 billion traditional substation upgrade by deploying over 59 MW of demand reductions from non-traditional customer-side and utility-side solutions, including battery installations. Separately, Con Edison is also contracting for a 10.3-MW battery installation with expected deployment in 2023. Two NWAs with major energy storage components are also underway in the Orange and Rockland service territory, including a 3-MW installation at Pomona that became operational in 2021.

Approximately 101 MW of energy storage projects have been procured under NYSERDA's RES procurements, which provide large-scale renewable projects the option to augment their generator with energy storage and receive additional consideration during the procurement evaluation process. If the project is selected, it will receive a 20-year contract for the sale of its Renewable Energy Credits (RECs) and a hedge on their wholesale market revenues. These projects will likely use batteries to prevent curtailments or to store renewable generation for sale at times when wholesale prices are higher.

A number of energy storage installations will provide wholesale services within the NYISO market. 14 bulk energy storage projects comprising 550 MW and 1,835 megawatt-hours (MWh) were awarded a total of $115 million in NYSERDA incentives for projects targeting downstate capacity or ancillary services revenues in the wholesale market. NYPA's North Country Energy Storage project is a 20-MW facility adjacent to an existing substation in Franklin County, New York, which is intended to provide frequency regulation service in the wholesale market and help reduce transmission constraints that can prevent renewable energy from being delivered downstate. An additional 54 MW of legacy energy storage projects are

also operational, including thermal batteries, NYSERDA's NY Prize smart grid recipients, residential batteries, and a 20-MW flywheel that provides frequency regulation service in the wholesale market.

Two NYPA-owned pumped-storage hydroelectric facilities participate in the NYISO wholesale markets the 1,160-MW Blenheim–Gilboa Pumped Storage Power Station in Schoharie County and the 240-MW Lewiston Pump-Generating Plant in Niagara County. These traditional pumped-storage hydroelectric storage projects, which preexisted the adoption of the Energy Storage Order and the enactment of PSL §74, are not being counted towards fulfilling the State's energy storage deployment goals.[14]

Progress in Reducing Installed Costs, including Soft Costs

While energy storage costs were consistently declining until 2021, the still relatively high cost of the resource today combined with uncertainties in monetizing its various value streams, has resulted in an uneven pace of deployment. The Commission recognized these challenges in the Energy Storage Order and approved initiatives to address these issues, including utility procurements and upfront incentives that can help achieve economies of scale and long-term revenue certainty, and efforts to reduce soft costs and other non-hardware costs that can hamper deployment by reducing the attractiveness of the investment's business case.

While total installed costs for commercial energy storage projects that are used to offset load remain relatively high, the costs of projects providing grid or bulk-level services had been declining consistently until 2021. The average total installed costs for Commercial Retail projects that were awarded Bridge Incentives, mainly energy storage paired with a CDG-eligible solar PV system, averaged $567 per kWh for installations in 2022 and 2023, up from $464 per kWh for installations in 2020 and 2021. For Bulk projects above 5 MW that received a NYSERDA incentive and will provide wholesale market services, the total expected installed costs averaged $370 per kWh for installations in 2020 and 2021.[15] The costs for these types of

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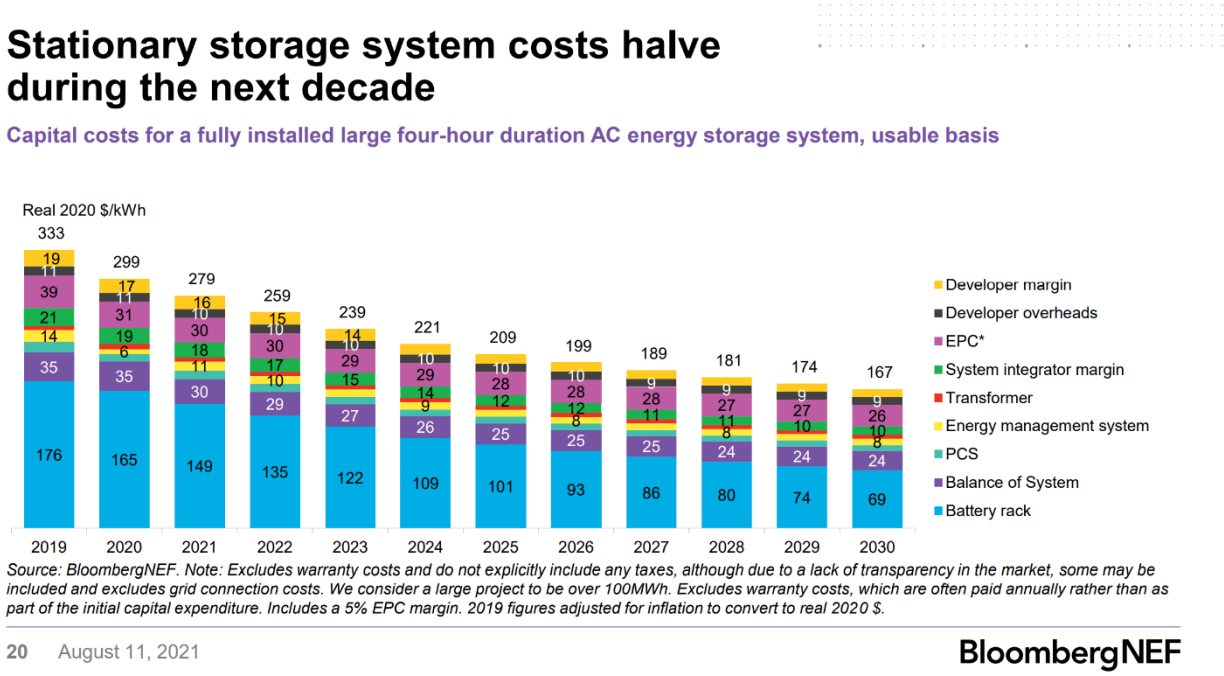
[14] Pumped-storage hydroelectric generation uses two water reservoirs at different elevations to generate and inject power to the system (or discharges) as water moves from the upper reservoir to the lower reservoir down through a turbine, and withdraws system power as it pumps water (or recharges) back to the upper reservoir.

[15] These figures represent contracted projects and estimated installation costs provided by the developer. Due to the very small number of systems contracted, these installed cost figures

projects are expected to decrease into the $150 to $200 per-kWh range by 2030, according to BloombergNEF as shown in Figure 2. However, supply chain issues, material cost increases, and increased competition for battery cells have led prices to increase more than 20 percent during the 2021-2022 period. It remains to be seen whether prices return to the declining trend in the near term or if the current inclining cost paradigm persists.

Figure 2: Installed Cost for a Large 100 MWh or Greater Energy Storage System[16]



The average total installed cost for customer-sited projects configured behind the customer's utility meter and used for peak load reduction remains relatively high at $1,117 per kWh in 2021, up from $970 per kWh in 2020, but a decline from $1,279 per kWh in 2019. For these customer-sited systems, the average hardware costs represented 57 percent of project costs in 2021, down from 64 percent in 2020 but up from 45 percent in 2019.[17]

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should be cautiously used since higher installation costs on one project quickly affect the average cost.

16 The costs are for an existing site and do not include land costs or interconnection costs.

17 Hardware costs include the battery module, inverter, and other costs such as fire controls, power electronics, communication system, containerization, insulation, meter, control system, and outdoor containerization when necessary.

Soft costs associated with engineering and construction, customer acquisition, siting and permitting, interconnection, and the higher cost of capital due to uncertain revenue streams are largely driven by factors that can be directly impacted by State efforts. While there is currently insufficient survey data to provide a breakout of soft costs for bulk storage projects, soft costs are averaging 14 percent for CDG-storage paired with solar PV systems, a decline from 20 percent last year, and 9 percent for customer-sited systems configured behind the customer's meter, consistent with the previous year.[18]

The Commission's approach to reducing soft costs, largely through NYSERDA initiatives, is a multiprong effort and includes: (1) technical assistance available to municipalities to assist permitting agencies when considering energy storage installations; (2) reducing the cost of site identification and customer acquisition; (3) educating developers on storage solutions, economics, and market rules; (4) improving interconnection rules; (5) increasing confidence in deployed systems and project economics; and (6) developing appropriate decommissioning and end-of-life processes. As deployments increase, more reliable data will allow for a better understanding of soft costs and more targeted strategies can be initiated.

SPECIFIC ENERGY STORAGE POLICIES

In the Energy Storage Order, the Commission directed DPS Staff to include in the annual State of Storage report the status of and recommended adjustments to: (1) the utility procurement process; (2) wholesale market design changes; (3) utility rate design actions; (4) data platform development; (5) retail and wholesale market coordination; and (6) other relevant issues. The Commission also directed DPS Staff to evaluate impediments and proposed solutions that may affect deployment of energy storage in the State, and any needed adjustments to the Bridge Incentive.[19]

Utility Procurement Process

In the Energy Storage Order, the Commission directed the electric IOUs to hold competitive procurements for energy storage dispatch rights in order to provide utility grid

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[18] Since these customer-sited systems currently represent a small number of projects, average soft cost figures can quickly increase or decrease because of a single project's characteristics.

[19] Energy Storage Order, p. 107.

operators and system planners real-world experience using qualified energy storage systems to meet system needs. Each utility is required to procure a minimum amount of storage to be operational by December 31, 2022, with Con Edison required to procure at least 300 MW and each of the other IOUs required to procure at least 10 MW each, provided that bids do not exceed a utility-specific defined ceiling.[20] NYSERDA's Bridge Incentive provides partial funding for these projects, if necessary, at or below the current rate of NYSERDA's incentives for bulk projects. Each of the IOUs held their initial procurement in 2019 and finalized selection and contracting for 120 MW of projects in 2020.

In response to a petition by the Joint Utilities seeking modifications to the energy storage dispatch rights procurement, the Commission adopted in 2021 a three-year extension of the required in-service date for projects (from December 31, 2022 to December 31, 2025) and a ten-year contract length which should allow greater cost amortization and generate lower annual costs for both utilities and ratepayers.[21] The Commission also upheld its preference for competitive ownership of energy storage assets and rejected a proposed utility ownership model. The Commission explained that ongoing refinements of NYISO market participation rules and additional regulatory efforts will continue to reduce barriers to energy storage deployment and obviate any need for utility ownership of these resources.

In response to a petition by National Grid to dispatch and market output from a utility-owned energy storage facility into the wholesale markets, the Commission determined in 2021 that such use will provide utilities and third parties with improved information and resources to enhance decision-making and identify requisite collaborations between utilities and third-parties necessary to facilitate successful wholesale market integration.[22] The Commission noted that in addition to core local reliability functions, energy storage can support the optimal deployment of other resources and integration of intermittent renewable generation output. Furthermore, the Commission recognized that participation by utility-owned energy storage assets in the wholesale market will likely provide financial benefits to ratepayers who funded these projects.

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[20] Energy Storage Order, pp. 113-114.

[21] Case 18-E-0130, Order Directing Modifications to Energy Storage Solicitations (issued April 16, 2021).

[22] Case 18-E-0130, Order Approving Utility-Owned Asset Participation in Wholesale Markets (issued September 9, 2021).

LIPA intends to meet its share of the State's energy storage deployment goals through a combination of existing energy storage contracts, a bulk energy storage solicitation for at least 175 MW that was issued in 2021, and distribution-level storage projects proposed in LIPA's Utility 2.0 Long Range Plan. There are presently two utility-scale battery storage projects, each with a 5 MW capacity and an eight-hour discharge duration, and over 1,153 small, residential energy storage projects totaling over 10 MW on Long Island as of January 31, 2022, with 726 of those projects receiving NYSERDA incentives.

Wholesale Market Design Changes

In 2021, NYISO and its stakeholders made significant progress toward expanding the participation models available to energy storage resources, and such efforts are expected to continue throughout 2022. NYISO market rules were historically structured for generators that can follow dispatch signals, run regularly and for long periods, are interconnected to the transmission system, and participate only in the wholesale market. As more dispatchable fossil fuel resources are replaced by intermittent renewable resources, energy storage is becoming a more important part of the resource mix. Energy storage systems such as electrochemical batteries are highly responsive and accurately dispatchable for electric grid functions, and New York's wholesale market has made significant efforts to accommodate these resources. The Commission evaluated these issues in the Energy Storage Order and directed DPS Staff to continue its efforts to work with NYISO and its stakeholders to appropriately compensate energy storage for the benefits it provides to the grid.

In September 2020, the Federal Energy Regulatory Commission (FERC) issued Order 2222 which requires Independent System Operators (ISO) to expand eligibility and improve participation rules for DER.[23] This order defines DER very broadly and includes energy storage resources, intermittent generation, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles. ISOs must allow aggregations of a minimum size of no greater than 100 kW and must allow them to sell into the market all services that they are technically capable of providing. NYISO filed its Order 2222 compliance filing on July 19, 2021 and responded to a FERC deficiency letter to its filing on November 19, 2021. The compliance filing is still pending before FERC. In the meantime, NYISO plans to move forward

[23] FERC Docket No. RM18-9.

by focusing on the elements that were already approved in their previous DER participation model, as well as by coordinating with utilities to work on issues such as dual participation compatibility.

In December 2021, NYISO implemented its co-located storage model which allows energy storage to co-locate behind a single point of interconnection with a solar or wind intermittent power resource where each unit will still operate individually. NYISO also plans to develop a hybrid aggregation model that will allow energy storage to co-locate with any other resource and operate as if it were a single unit. NYISO currently has two significant tariff modifications pending at the FERC that, if approved, will alleviate restrictions on energy storage by Buyer-Side Mitigation (BSM) restrictions and greatly expand opportunities for energy storage aggregation opportunities.

Most of the expanded capacity eligibility rules, which allow for partial capacity payments based on duration limitations, were submitted to FERC as part of NYISO's Distributed Energy Resources (DER) participation model filing in 2019 and were accepted by FERC in January 2020 and became effective on March 1, 2021. The DER participation model is expected to go into effect at the end of 2022. Between now and then, NYISO will continue to work with stakeholders to implement operation coordination protocols to ensure both distribution and bulk system reliability.

NYISO's Co-located Storage Resources (CSR) market design was accepted by FERC on March 30, 2021 and implemented in December 2021.[24] The proposal allows for wind and solar resources collocated with energy storage that are both located behind a single point of injection to participate in the wholesale markets as distinct resources under their respective participation models (i.e., energy storage resources follow the energy storage resources participation model and solar and wind resources follow the Intermittent Power Resource model). Each unit of the CSR has its own point identifier (PTID), bid, schedule, and settlement process. However, new projects that want to become a CSR can submit a single interconnection request that can reduce interconnection delays and costs. In 2022, NYISO plans to further develop a Hybrid Storage Resource (HSR) participation model that would allow energy storage and other resources to share one PTID, one bid, and one schedule for the combined resources within the HSR. The DER energy market rules will help inform the HSR model, although under the HSR model there

[24] FERC Docket No. ER21-1001.

would not be a 20-MW maximum size limit for individual resources as there is under the DER participation model. The HSR model, once approved by the appropriate NYISO stakeholder committees, is targeted to be filed with FERC in late 2022.

BSM is a capacity market measure applied in certain capacity zones that was originally implemented to prevent large purchasers of capacity from artificially suppressing capacity prices and distorting competitive market outcomes. FERC's decisions on wholesale market design related to BSM have historically created barriers for energy storage resources that wish to participate in NYISO's capacity market. The NYISO currently applies BSM in Load Zones G, H, I, and J, which comprise the Lower Hudson Valley and New York City, the state's most densely populated areas where clean energy resources and energy storage are most valuable. All new resources in those zones are subject to a BSM offer floor regardless of their intent or ability to suppress capacity prices or distort competitive markets, unless they qualify for an existing exemption, including a competitive entry exemption, renewables exemption, or an economic exemption.

In July 2019, NYSERDA and the Commission filed a complaint with FERC under Section 206 of the Federal Power Act (FPA) to exempt all energy storage resources from BSM. In a series of decisions on February 20, 2020, FERC denied the complaint which leaves energy storage resources larger than 2 MW subject to an offer floor unless they are determined to be exempt by the NYISO under one of their current economic or renewable exemptions. At the same time, FERC also directed NYISO to reapply BSM to new special case resources (SCRs), a form of wholesale-level demand response.[25] On October 7, 2020, FERC ruled that Distribution Load Relief Programs (DLRP) were meant to address distribution-level needs only, and therefore should not be included in wholesale SCR offer floors. FERC did not agree, however, that Commercial System Load Relief Programs (CSRP) solely addressed distribution-level reliability needs and therefore payments should be included in SCR offer floor calculations. In response to rehearing requests, FERC later ruled that payments received for CSRP should not be included in offer floors, stating that CSRP was designed for distribution-level reliability needs and the fact that it may also aid wholesale-level reliability needs is merely incidental.

[25] FERC Docket No. EL16-92.

On April 30, 2020, NYISO filed with FERC a proposal to change the BSM evaluation process.[26] Historically, resources are tested in order of ascending net cost of new entry (CONE) regardless of technology type. This proposal would place all public policy resources, including energy storage, before other resources in the mitigation test, thus increasing their likelihood of receiving an exemption. In addition, it would create two separate mitigation study periods that would group resources based on the timeframe in which they are expected to enter the market. In September 2020, FERC rejected this proposal on the grounds that it is unduly discriminatory to treat state policy resources differently than others in terms of the mitigation test. However, on February 17, 2022, FERC reversed its decision stating that it is appropriate to recognize the increased likelihood of a public policy resource entering the market.

On January 5, 2022, NYISO sought permission by FERC to remove BSM from resources that help meet CLCPA goals, including energy storage resources.[27] As part of this filing, NYISO also proposed a new marginal capacity accreditation methodology that would determine a resource's capacity value based on the net impact of all resources of that type that are in the market on an annual basis. This new approach to valuing a resource's capacity would replace the values for energy-limited resources proposed in the DER participation model. The Commission, along with NYSERDA, filed supportive comments with FERC arguing that removing BSM from state police resources correctly recognizes the State's jurisdiction over its resource mix under the Federal Power Act. On February 9, 2022, FERC issued a deficiency letter asking NYISO to explain its accreditation proposal in more detail. NYISO filed their response to this deficiency on March 11, 2022. If approved by FERC, this change to the BSM rules would eliminate the risk of mitigation for resources like energy storage and thus would be a significant achievement in facilitating the use of bulk-level energy storage resources onto the grid.

Retail and Wholesale Market Coordination

In the Energy Storage Order, the Commission noted that energy storage in the distribution system should be allowed to provide separate and distinct services to both utilities and the NYISO if technically capable of doing so. This "dual-participation" model would allow

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[26] FERC Docket No. ER20-1718.

[27] FERC Docket No. ER22-772.

resources capable of participating in both wholesale and retail markets to earn additional revenue for these resources and bolster the reliability and resilience of the transmission and distribution systems. The FERC-accepted NYISO DER filing allows for dual participation in wholesale and retail markets. Resources were allowed dual participation on May 1, 2020. NYISO will coordinate with transmission owners for scheduling and dispatch of dual-participating resources, retain the authority to schedule and dispatch all wholesale resources, and require those resources to bid in a manner that ensures they can meet wholesale obligations. DPS Staff and the IOUs are currently participating in the NYISO working group meetings to develop protocols and procedures for DER operation and coordination between the retail and wholesale markets.

The Commission also directed DPS Staff and NYSERDA, with appropriate contributions from the electric IOUs, NYISO, and stakeholders, to convene and prepare a work plan and schedule for a Market Design and Integration Working Group (MDIWG) by March 1, 2019.[28] The MDIWG's purpose is: (1) to establish market coordination between utilities, DER operators, and the NYISO; (2) to determine technical and economic requirements for efficient planning, dispatch, measurement, and compensation of DER; and (3) to identify necessary industry roles, responsibilities, and interactions to achieve the State's energy deployment goals. The MDIWG is also to consider the effects of actions at the federal level and was tasked with identifying and evaluating possible alternative approaches to energy resource integration, cost allocation, and compensation methods. Throughout 2021, the MDIWG continued meeting regularly to develop an Entity Relationship Matrix, Entity Category Profiles, and a Grid Products & Services Inventory which together identify and characterize the operational, market, and regulatory relationships between the utilities, DER operators, NYISO, the State government and the Commission, and other entities. A Staff report to the Commission planned for the third quarter of 2022 will document the MDIWG's work to date, describe the existing structure of the State's electric power industry, and present the MDIWG's recommendations for a future modified industry structure that will efficiently and effectively accommodate large-scale deployment, integration, and use of DER.

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[28] Energy Storage Order, p. 103.

Utility Rate Design Actions

Incentivizing energy storage deployment at the distribution level is highly contingent on the level of compensation and grid charges that a project would be subject to under existing utility tariffs. Most energy storage applications receive VDER compensation for projects under 5 MW. Improvements to the VDER methodology have created a highly financeable compensation mechanism for energy storage installations. Larger projects can either be compensated through utility rates that are linked to avoided wholesale costs or sell directly into the NYISO markets. Due to various exemptions that have been applied over the years, most renewable energy applications like solar PV with co-located energy storage have generally not been required to pay certain charges designed to compensate the utility for grid availability, known as Standby Rates, although stand-alone energy storage systems do not qualify for these exemptions.

The Energy Storage Order addressed a number of rate design issues that are applicable to certain non-exempt energy storage applications like stand-alone energy storage, energy storage systems paired with consumption load, and regenerative braking systems. The Commission determined that these non-exempt applications are subject to Standby Rates and noted that continued work to refine cost allocations between shared (i.e., costs incurred to serve all ratepayers) and local costs (i.e., costs incurred to serve only that particular customer) that comprise various utility charges would be ongoing.

In May 2019, the Commission adopted the Standby Rate Order, which required the electric IOUs to file revised Standby Rates based on a more granular cost allocation approach to more accurately reflect the impacts on the system associated with a customer's usage, considering the different operating characteristics of technologies such as energy storage.[29] These filings were submitted by the IOUs by September 24, 2019 and comprised draft tariff revisions based on an Allocated Embedded Cost of Service (ACOS) Study, including optional demand-based rates for mass market customers designed using the new standby rate design principles. Following a comment period and two stakeholder forums, DPS Staff and NYSERDA

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[29] Case 15-E-0751, In the Matter of the Value of Distributed Energy Resources, Order on Standby and Buyback Service Rate Design and Establishing Optional Demand-Based Rates (issued May 16, 2019) (Standby Rate Order).

issued the "Whitepaper on Allocated Cost of Service Methods Used to Develop Standby and Buyback Service Rates" (ACOS Whitepaper) on November 25, 2020.[30]

In the ACOS Whitepaper, DPS Staff recommended that the Commission approve a standardized methodology for performing ACOS studies which would allocate costs to the Customer, Shared, and Local categories which would then be used to develop the customer charge, daily as-used demand charges, and contract demand charges that Standby Rates and Buyback Rates customers pay, if applicable. DPS Staff also recommended that the Commission implement a limited exemption from buyback service contract demand charges for stand-alone energy storage systems that export electricity to the grid. [31] During 2021, Staff convened three technical conferences to continue stakeholder discussion on the proposed ACOS methodology and to allow interested parties to present and discuss alternatives to Staff's proposals.

In the ACOS Order,[32] the Commission approved modified versions of Staff's recommended ACOS study methodology and the limited exemption from Buyback Service contract demand charges for stand-alone energy storage systems. The modified ACOS study methodology allows for careful and thorough consideration of which utility costs should be collected through each Standby and Buyback Service distribution charge, and will improve the economic efficiency of the updated Standby and Buyback Service rates by closely aligning the charges customers pay with how customers' use of the system affects grid costs. The Commission approved a 15-year exemption from paying applicable Buyback Service contract demand charges for most stand-alone energy storage projects which have paid a 25 percent interconnection deposit or signed an interconnection agreement by December 31, 2025.[33]

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[30] Case 15-E-0751, In the Matter of the Value of Distributed Energy Resources, Whitepaper on Allocated Cost of Service Methods Used to Develop Standby and Buyback Service Rates (filed November 11, 2020) (ACOS Whitepaper).

[31] The ACOS Whitepaper defines stand-alone storage as "energy storage systems which are not connected to other customer load beyond equipment necessary for operation and control of the energy storage system itself. Stand-alone energy storage systems typically draw power directly from the electric system for charging purposes, and discharge or export power directly back to the electric system."

[32] Case 15-E-0751, Order Establishing an Allocated Cost of Service Methodology for Standby and Buyback Service Rates and Energy Storage Contract Demand Charge Exemptions (issued March 16, 2022) (ACOS Order).

[33] This excludes stand-alone energy storage participating in a Non-Wire Alternative project which did not receive funding through NYSERDA's Market Acceleration Bridge Incentive.

The Commission directed electric IOUs to file draft tariff language to implement the new ACOS study methodology, provide updated Standby and Buyback Service rates, and implement the modified limited exemption from Buyback Service contract demand charges for stand-alone energy storage systems for Commission review and stakeholder comment.[34] The Commission acknowledged that the application of Standby and Buyback Service rates to energy storage system use is appropriate, noting that their ability to align cost causation with cost recovery is particularly valuable as storage systems grant operators the advantageous flexibility of shifting their own energy use outside of conventional patterns established by most customers within a service class. However, the Commission agreed with DPS Staff that short-term policies should be implemented to facilitate the expedient deployment of energy storage systems in New York, particularly in view of critical role that energy storage will play in meeting CLCPA mandates.

In the ACOS Order, the Commission also directed DPS Staff to initiate a review of whether to extend or modify the limited exemption from Buyback Service contract demand charges for stand-alone energy storage systems, and recommend additional support for stand-alone energy storage systems, if needed, beginning in 2024. Staff may then bring other topics to the Commission for consideration if needed to help meet New York's energy and environmental policy goals.

In the Energy Storage Order, the Commission directed the electric IOUs to hold competitive procurements for dynamic load management (DLM) resources for a minimum three-year term for the 2020 Summer capability period and thereafter, referred to as the "Term-DLM" program. Within this procurement, the Commission also directed the IOUs to establish a premium "Auto-DLM" resource category that requires higher performance factors than is currently required. DLM resources, including energy storage, can provide grid relief services to utilities in these programs, avoiding the need to deploy more equipment to serve peak loads. The Term-DLM and Auto-DLM programs are expected to provide more revenue certainty for energy storage and other resources that participate and provide the utilities with greater confidence that these contracted load relief solutions will be available when needed. On January 29, 2020, each utility separately filed proposals for their respective Term-DLM and Auto-DLM programs in

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[34] LIPA has indicated that its service provider, PSEG Long Island, will develop Standby Rates consistent with the methodology in the ACOS Order, for consideration by the LIPA Board of Trustees in December 2022. If approved, such rates would be available to LIPA customers beginning January 1, 2023.

accordance with the Storage Deployment Order. Subsequently, the Commission considered each of the proposals and established a consistent statewide framework for Term-DLM and Auto-DLM programs.[35] In 2020, each of the Joint Utilities issued RFPs to competitively procure these Term- and Auto- DLM resources for the 2021 and 2022 Vintage Years.[36] As a result, 12.4 MW of load relief was enrolled in the programs during 2021, and 102.7 MW of load relief has been procured to begin participation in the programs during 2022. The Joint Utilities have each filed RFPs to procure Term- and Auto-DLM Program resources for Vintage Year 2023.[37]

Data Platform Development

New York's IOUs have continued their efforts to provide needed data to DER developers as described in their Distributed System Implementation Plan (DSIP) filings.[38] Nevertheless, developers and other stakeholders need more and better access to both customer and distribution system data to better target locations on the electric grid where grid needs are the greatest and sufficient hosting capacity is available. In the Energy Storage Order, the Commission noted that IOUs should increase and improve the customer and distribution system data provided to DER developers and operators, and directed Staff and NYSERDA to lead efforts to develop a Pilot DER Data Platform for a third-party to develop and implement.[39] Per the Commission's directives, the Pilot DER Data Platform was to provide both anonymized customer and system

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[35] See Case 18-E-1030, supra, Order Establishing Term-Dynamic Load Management and Auto-Dynamic Load Management Program Procurements and Associated Cost-Recovery (issued September 17, 2020); Case 18-E-0130, supra, Order Approving Negative Performance Factors (issued March 18, 2021).

[36] "Vintage Year" refers to the first year in a three-year participation period in the Term-DLM and Auto-DLM programs. For example, resources participating in Vintage Year 2021 contracted to provide a specified amount of load relief during the 2021, 2022, and 2023 summer demand response capability periods.

[37] See Case 18-E-0130, supra, O&R 2023 Vintage Year Term- and Auto-DLM RFP (filed November 19, 2021); Con Edison Updated DR DLM RFP (filed November 30, 2021); National Grid RFP for Resource Enrollment in Term- and Auto-DLM Programs (filed October 10, 2021); CHG&E Auto- and Term-DLM RFP – Vintage Year 2023 (filed December 6, 2021); RG&E Term and Auto – DLM Request for Proposal (filed November 30, 2021); and NYSEG Term and Auto – DLM Request for Proposal (filed November 30, 2021).

[38] See Case 16-M-0411, In the Matter of Distributed System Implementation Plans.

[39] Energy Storage Order, p. 84.

data useful to developers for planning and developing energy storage and other types of DER. The Commission anticipated that the Pilot DER Data Platform would allow DER developers to query the anonymized data to identify potential candidates for energy storage and other DER. The effort to develop the Pilot DER Data Platform was helpful in determining the extent of system data that is already available to developers.

The Pilot DER Data Platform, a proof-of-concept information resource for DER developers and others, was activated and made accessible via the web on December 31, 2019. The data held in the platform, provided and regularly updated by the utility partner O&R, comprised several types of account, usage, and related grid data for all of O&R's residential and small commercial customers. The key concept proven by the platform is that users can employ a set of platform-provided query and access control tools to securely identify and obtain useful information without having direct access to the platform's underlying data. A platform user gains access to a customer's data only after the customer has approved the user's request for access. Almost 20 DER developers and stakeholders established access and used the platform. User reactions were positive and several suggestions for expansion and enhancements were offered. The lessons learned through successful development, implementation, and operation of the platform materially informed the development of further Commission action, as discussed below. Opportunities for productive use of the pilot platform continued through 2021.

On May 29, 2020, DPS Staff filed the "Department of Public Service Staff Whitepaper Recommendation to Implement an Integrated Energy Data Resource (IEDR)," which described the current state of access to energy-related data for New York State and recommended an approach for the creation of an IEDR that would provide a platform for access to customer and system data. The Whitepaper also included an analysis of energy data initiatives in other jurisdictions and specific recommendations for stakeholder engagement, data resource design, data resource use cases, implementation, and operation. In February 2021, the Commission issued an Order requiring the implementation of an IEDR, which is intended to provide New York's energy stakeholders with a platform that enables effective access and use of integrated energy customer and system data.[40] This resource will help attract investment, enable energy

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[40] Case 20-M-0082, Proceeding on Motion of the Commission Regarding Strategic Use of Energy Related Data, Order Implementing an Integrated Energy Data Resource (issued February 11, 2021).

analytics, help identify operational efficiencies, promote innovation, encourage new business models, and create value for customers and the State's energy system. In addition, the inclusion of analytic tools that would enable DER providers, utilities, government agencies, and others to develop valuable technical and business insights more readily will, in turn, lead to faster and better policy, investment, and operational decisions that will accelerate realization of New York State's clean energy goals. This initiative should further advance the deployment of energy storage in New York by providing developers with valuable technical and business insights to enable faster and better investment decisions.

Other Relevant Issues

Per the Commission's directive in the Energy Storage Order, the State of Storage report also addresses other relevant issues affecting energy storage policy in New York, including adjustments to the Bridge Incentive and any other impediments and proposed solutions that may slow deployment.

DPS Staff and NYSERDA continually monitor market developments and deployment progress to ensure that the Bridge Incentive and other policies are fulfilling their purpose. The total budget for the Bridge Incentive is $405 million, with $348 million committed thus far. On Long Island, $2.2 million of funds is currently committed out of $7 million allocated for single-family residential energy storage projects collocated with a renewable resource. Any new programs or funding will be evaluated as part of the ongoing Energy Storage Roadmap update, and no changes are recommended at this time.

Several factors contribute to the delayed development of retail energy storage projects in New York City, including siting barriers such as uncertain permitting schedules, regulatory impediments such as the prohibition against indoor battery systems, and the physical constraints imposed on outdoor commercial systems. Other regulatory impediments include high interconnection costs and network characteristics put in place for reliability purposes that can limit the ability to export electricity (known as high-load density secondary spot networks). One significant opportunity that exists largely in New York City is the ability to use energy storage and other DER to help meet shorter-duration peak electric demand needs as the grid becomes less carbon intensive, and as existing fossil peaking power plants determine how they will

comply with the new Department of Environmental Conservation NO_x and SO_x emissions regulations designed to reduce smog.[41]

Under New York State's Real Property Tax law, as amended in December 2018, New York City residents who install solar generating systems or electric energy storage systems in their homes or buildings are eligible for a real property tax abatement to recoup some of their project-related costs until March 15, 2021.[42] This property tax abatement can also help limit the impact of higher development costs there, but this abatement is currently limited to $62,500. Efforts are underway by developers and stakeholders to extend and increase the abatement and also to seek a statewide sales tax exemption on energy storage systems. Impediments to the energy storage market in New York City can be overcome with a citywide focus on permitting and siting changes and solutions for reducing interconnections costs.

In March 2020, NYSERDA filed the Energy Storage Workforce Development Report, which summarizes workforce development needs and available resources for the energy storage industry in New York.[43] By the Energy Storage Order, the Commission required NYSERDA to "facilitate an industry partnership to develop an inventory of workforce development needs and a blueprint for addressing potential skilled talent shortages."[44] NYSERDA worked with the Department of Labor, Empire State Development Corporation, and other stakeholders to: (1) inventory specific worker skills that will be required by businesses throughout the energy storage supply chain; (2) map required skills to existing training resources and the labor pool to identify gaps and shortages; (3) work with stakeholders to develop a blueprint that will ensure a talent pipeline of workers with the necessary skills; (4) identify gaps in training infrastructure and capacity in areas such as curriculum, trained trainers, training equipment, job placement initiatives, on-the-job training, internships, apprenticeships, career pathway training,

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41 6 NYCRR Subpart 227-3, Ozone Season NOx Emission Limits for Simple Cycle and Regenerative Combustion Turbines, available at: http://www.dec.ny.gov/regulations/116185.html.

42 2018 amendment to Title 4-C of New York's Real Property Tax Law. See, New York State Real Property Tax Law Exemptions at: https://www.nysenate.gov/legislation/laws/RPT/A4T4-C

43 See, Case 18-E-0130, ES Workforce Development Report (filed March 13, 2020).

44 Energy Storage Order, p. 80.

certifications, etc.; and (5) identify plans to support disadvantaged workers, including youth (18- to 24-year-olds), displaced and dislocated workers, women, minorities, and veterans.

NYSERDA concludes that it has the resources necessary to serve anticipated training needs for the energy storage workforce over the next three to five years. A significant number of energy storage training opportunities are currently available in the State, and several programs are in place to provide funding to expand existing training, develop new training offerings, content, curriculums, and support the hiring of interns and new workers to support the energy storage industry. At this time, NYSERDA anticipates that market demand for energy storage training will increase in 2022, particularly for design, installation and operation, and maintenance practitioners. NYSERDA will continue to engage with stakeholders to access skills gaps and training needs over time; facilitate partnerships between training providers and businesses throughout the supply chain, including manufacturers; continue to promote relevant funding opportunities; and assess gaps that may require new funding opportunities.

As mandated in the Accelerated Renewable Energy Growth and Community Benefit Act (the Act), DPS Staff, in consultation with NYSERDA, LIPA, NYPA, NYISO, and the IOUs, undertook a study "for the purpose of identifying distribution upgrades, local transmission upgrades, and bulk transmission investments that are necessary or appropriate" to the timely achievement of the climate targets established in the CLCPA.[45] The results of that study, referred to in the Act as "the Power Grid Study," are summarized and discussed in the Initial Report prepared by DPS Staff and NYSERDA.[46] The report concludes that location-optimized battery storage will be necessary to address renewable generation integration cost effectively and to avoid more substantial transmission upgrades. To achieve the CLCPA's goal of an emissions-free grid by 2040, approximately 15,000 MW of battery storage statewide is estimated to be needed by 2040, with 7,300 MW of that total located in New York City and Long Island. The report also notes that storage deployment may need to be adjusted to accommodate projected injections of offshore wind generation, whose anticipated deployment may be subject to variations in timing and location. Offshore wind generation coming online ahead of schedule will require expedited storage procurement.

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[45] Chapter 58 of the laws of 2020, Section 2.

[46] Case 20-E-0197, Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act, Initial Report on the New York Power Grid Study (January 19, 2021).

During the required consultations for this report, LIPA identified a barrier to energy storage deployment on Long Island: that locations where storage may be of the greatest value do not have adequate hosting capacity or available physical space. LIPA continues to conduct system studies to identify cost-effective upgrades to increase hosting capacity.

CONCLUSION

The portfolio of programs and actions approved by the Commission in the Energy Storage Order, pursuant to PSL §74, have been effective in building the foundations of a competitive market for qualified energy storage systems in New York. Total deployed and awarded/contracted projects at the end of 2021 total 1,230 MW in capacity, or about 82 percent of the 2025 target of 1,500 MW and 41 percent of the 2030 target of 3,000 MW. The number of energy storage projects in the various interconnection queues also indicates robust growth in the industry. DPS Staff recommends that no corrective actions to the Commission's energy storage deployment policy are necessary at this time. The next review of the energy storage program is scheduled to occur in 2023 and will present an opportunity to revisit policy issues and assess progress towards the goals of PSL §74. Moreover, on January 5, 2022, Governor Hochul announced in the State of the State an intention to double the State's energy storage target to at least 6 GW by 2030. DPS Staff and NYSERDA are in the process of updating the Roadmap to reflect the expanded goal, and Commission action is expected thereafter.