

NYSERDA Retail Energy Storage Incentive Program Manual
Version 1, Revised March 11, 2019

Summary:

NYSERDA's Retail Energy Storage Incentive Program provides financial support for new grid-connected energy storage systems (1) up to five megawatts (MW) of alternating current (AC) power; (2) whose value is monetized under an Investor Owned Utility (IOU) tariff in the form of bill savings or credits, including delivery charges or the Value of Distributed Energy Resources (VDER or Value Stack) tariffs; and (3) that are either interconnected (a) behind a customer's electric meter, or (b) directly into the distribution system.

Incentive funds will be deployed through a NYSERDA-administered declining megawatt hour (MWh) block model—an incentive structure designed to provide certainty and transparency around incentive levels and to enable a self-sustaining market in New York State through the phase-out of cash incentives as costs decline and project economics improve. Incentives are offered on a first come, first served basis, and calculated based on the usable installed energy storage capacity in kilowatt hours (kWh) measured in AC power. This capacity will be verified through NYSERDA's Quality Assurance inspection process. Incentives will be awarded to approved applications based on the block in effect at the time of application submission. As each block is fully subscribed, the incentive level will step down in subsequent blocks.

The NYSERDA Energy Storage web site will include a dashboard with the incentive levels for each block, MW/MWh committed, and the remaining block sizes. Through this dashboard, the market can monitor block status, current incentive levels, and have real time access to information regarding likely timing for incentive changes.

Eligible energy storage systems are chemical, thermal, or mechanical storage systems that may be installed alone or paired with a solar photovoltaic (PV) system, fuel cell, or combined heat and power system. Requirements contained in this program manual are intended to cover each of these types of eligible energy storage systems. However, certain requirements, such as inverter sizing, will not be applicable to thermal storage systems. These exceptions are noted, and any questions should be directed to energystorage@nyserda.ny.gov.

This Program Manual is based on the March 11, 2019 Implementation Plan filed with the Department of Public Service and may be updated after its initial filing. A current version of this manual will be available at <https://www.nyserda.ny.gov/energystorage>.

I. Project Eligibility

In order to receive incentive funding in any of the Investor Owned Utility (IOU) service territories, the customer must contribute to the System Benefits Charge (SBC) as evidenced by a recent utility bill. Customers served by PSEG LI / Long Island Power Authority (LIPA) are also eligible and these projects will be funded from Regional Greenhouse Gas Initiative (RGGI) funds.

New projects submitted to the utility interconnection queue after March 11, 2019, and that also meet minimum project maturity requirements described in this Program Manual, are eligible to apply for incentives. Projects previously selected under an IOU Non-Wires Alternative, and projects that submitted

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a proposal to an open NWA before March 11, 2019 and pending decision or negotiation, are not eligible for incentive funding. New projects to an IOU's future NWA solicitation may seek incentive funding.

Eligible projects include: (1) retail, demand metered customers that install stand-alone energy storage, or storage paired with on-site generation such as solar PV behind the customer's electric meter (BTM); and (2) standalone energy storage or storage paired with an eligible generation source such as solar PV, connected directly into the distribution system and compensated under the VDER Value Stack tariff.

Projects that receive NYSERDA incentives under this Retail Storage Incentive Program may also receive payments under a utility or New York Independent System Operator (NYISO) program. Contractors seeking incentives or payment from a utility in addition to the Retail Storage Incentive Program will be responsible for ensuring that their projects comply with utility program rules on receiving incentives from outside the utility program.

For customer-sited energy storage systems, the customer must be enrolled and participate in one of the following: distribution utility demand response, an NWA contract, a more granular delivery rate (this is currently satisfied by service under a Standby tariff or Con Edison's Rider Q), or the VDER Value Stack tariff. NYSERDA will verify that the customer is enrolled in one of these programs or tariffs for five years. If it is identified during measurement and verification (M&V) that the customer failed to participate in one of these programs or tariffs for a minimum of five years, the Participating Contractor may be suspended or terminated from the NYSERDA Retail Storage Incentive Program.

Projects must also meet the following requirements:

- The energy storage system must be a new, permanent, stationary system designed and installed by a Participating Contractor. Incentives will be provided directly to the Participating Contractor of record for the project, or their payee assignee.
- The storage system must be electric grid-connected chemical, thermal, or mechanical storage and operated primarily for electric load management or shifting electric generation to more beneficial time periods while operating in parallel with the utility grid. The system may also provide other customer benefits such as backup power during a grid outage or power quality.
- The storage equipment must consist of commercial products carrying at least a 10-year manufacturer's warranty. The warranty must cover the entire energy storage system, including ancillary equipment, pumps, thermal management and power electronics. Experimental, beta, or prototype equipment is not eligible. The terms of the warranty are to be negotiated between the Participating Contractor/manufacturer and customer.
- The storage system may not be relocated without NYSERDA's written approval and must remain in New York for its entire life.
- The storage system must be certified to meet minimum safety requirements by a Nationally Recognized Testing Laboratory as evidenced by applicable UL listings described in Section IX. These UL listings must be received by the time that the system enters commercial operation.
- The system must be designed to maintain a minimum round-trip efficiency defined in Section IX defined and installed in accordance with the design and system components submitted in the project application and approved by NYSERDA.
- The system must be installed in compliance with all manufacturers' installation requirements, applicable laws, regulations, codes, licensing, and permit requirements including, but not limited to, the International Building Code Series as amended by the New York State Uniform Code Supplement; the National Electric Code; New York State's Standard Interconnection

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Requirements and the utility's interconnection agreement; and all applicable State, city, town, or local ordinances or permit requirements including the New York State Environmental Quality Review (SEQR); Article 10; and any additional requirements of the local Authority Having Jurisdiction (AHJ).

Depending on the type of system installed, incentives can be accessed by applying through one of the two submission mechanisms. The incentive level is the same under either mechanism.

1. Retail Storage Incentive Program.

- New energy storage being installed alone, or a completed distributed generation system being retrofitted to add energy storage. A completed distributed generation system can be a solar PV system, fuel cell, or a combined heat and power system. Separate NYSERDA funding may be available for new [combined heat and power](#) and/or [fuel cell](#) systems.

2. NY-Sun Incentive Program.

- New or approved, but not completed, solar PV installations in the [NY-Sun Program](#) that are paired with energy storage.

The following projects are not eligible for the Retail Energy Storage Incentive Program:

- Projects that have been installed prior to NYSERDA's approval of the project application.
- Projects submitted to the utility interconnection queue before March 11, 2019.
- Projects previously selected under an IOU Non-Wires Alternative, and projects that submitted a proposal to an open NWA before March 11, 2019 and pending decision or negotiation.
- Projects owned by IOUs, electric utilities, or the New York Power Authority.
- Projects in which the energy storage is compensated under the Clean Energy Standard through a NYSERDA-awarded Renewable Energy Credit for a paired renewable and storage system.
- Projects that receive a NYSERDA Bulk Storage Incentive or are awarded an IOU Bulk Dispatch Rights contract.

II. Contractor Eligibility

Energy storage systems will be incentivized for customers through a network of Eligible Contractors who will contract directly with the customer. Contractors are fully responsible for all aspects of their energy storage projects funded under the Program and must demonstrate relevant prior experience. The Contractor must provide a single point of responsibility for the installation, maintenance, and operation of the storage system for the life of the project. The Contractor may use subcontracted teams to fulfill these obligations. Regardless of the teaming arrangement, however, the Contractor remains fully responsible for all aspects of the project.

Contractors are prohibited from using NYSERDA's logo on their website or any marketing materials. NYSERDA reserves the right to deny project applications if the contractor is delinquent on other NYSERDA-funded projects. Any Contractor that moves forward with the installation of a project that does not yet have an approved status by NYSERDA does so at the Contractor's own financial risk. Incentives are not awarded until a project has achieved an approved status.

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A Participating Contractor is responsible for:

- meeting all program requirements, as set forth in the Retail Storage Incentive Participation Agreement and as defined in the version of the Program Manual in effect at the time;
- obtaining all necessary permits and approvals;
- adherence to its obligations under contract with NYSERDA;
- warranties; and
- installation and quality of the project, including compliance with local siting regulations.

a. Becoming an Eligible Contractor

A Contractor must be registered to do business in New York State. The Contractor must meet all program requirements, including required insurance coverage and have the capability to provide or ensure that warranty services are provided on all storage systems installed. A Contractor must comply with all local authority requirements for registration and licensing.

To become a Participating Contractor, a contractor must submit a contractor application to the Program at <https://www.nyserdera.ny.gov/Funding-Opportunities/Current-Funding-Opportunities>. Contractors will be evaluated based on their experience, their customer references, and performance in this or other New York State or utility programs.

1. Description of Experience: Contractors must provide a description of their prior experience with installation, load modeling, system engineering and design, tariff analysis, siting, and participation in load modification programs. Relevant skills, credentials, and other pertinent experiences will be considered. Contractors are also evaluated on past performance in other NYSERDA programs, if applicable. Contractors are required to submit a quality assurance plan, organizational chart, and resumes of up to five key personnel.
2. Project References: Contractors must provide three verifiable customer references (customer name, address, phone, and email) for completed, grid-connected installations. System size (kilowatts and kilowatt hours), interconnection date, and the contractor's role in the project must be specified. Construction photos for the projects listed as references are required. Project references can be from outside of New York State.
 - i. Contractors should submit evidence of three energy storage projects that are most representative of the magnitude and complexity of the projects the contractor intends to install in New York State.
 - ii. Contractors seeking Participating Contractor status that do not have three energy storage projects can partner with a Participating Contractor until sufficient experience demonstrated by three deployed energy storage projects has been accrued.
 - iii. Contractors may also submit, in lieu of energy storage projects, evidence of equipment, distributed energy resources, or software installations that enable peak load reduction and/or automated participation in demand response programs and demonstrate experience with installing systems having the equivalent complexity of an energy storage system.
3. NYSERDA Programs: An application will not be approved if the contractor has unresolved customer or performance issues in this or other New York State or utility programs.

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Once a Participating Contractor is approved in the program, they will be given access to the NYSERDA Web Portal to begin submitting project applications. All contractors will begin in Provisional Status. Technical and financial design review, quality assurance (QA), and measurement and verification (M&V) of projects will occur for every project until the Participating Contractor has deployed three projects under the Retail Storage Incentive Program with successful QA inspections for health and safety and successful post-commissioning M&V for performance. After three successful projects under this program, Participating Contractors may move into Full Status, under which design review, QA, and M&V may not be required for every project. Costs associated with NYSERDA desktop design review, initial QA, and M&V will be borne by NYSERDA. Corrective actions to remedy deficiencies identified shall be the responsibility of the Participating Contractor. Participating Contractors may be moved into probation status or be suspended or terminated if projects funded under this program perform below expectations.

b. Project Allowance

If a Participating Contractor has not successfully deployed three energy storage projects, whether under this program or otherwise, including outside of New York State, the Participating Contractor will not be permitted to reserve payment for more than three projects at any given time under this program until three have been completed and have received an incentive payment under this program.

If a Participating Contractor's first energy storage projects deployed are under this program, NYSERDA may require that the first three projects utilize pre-engineered hardware systems that arrive ready for installation from the manufacturer.

c. Contractor Status

Provisional Status

Contractors in provisional status meet entry level program requirements for credentials and experience but have not met the minimum requirements to move to full status.

Full Status

Contractors who have met all program requirements for credentialing, experience, and installation quality will be placed in full status.

Probation Status

Probation status is reserved for Contractors that have failed to meet the requirements of the program. Probation is prescriptive in nature, in that NYSERDA defines specific results to be achieved in a designated timeframe. During probation, a contractor can still submit project applications. A contractor may be placed in probation status for any of the following reasons:

- Violation of program rules or ethical standards.
- Failure to consistently deliver completed projects that pass the NYSERDA QA inspection.
- Installed projects do not provide the customer or grid services as indicated in the project application and analyzed during the project application design review.
- Failure to take effective corrective actions on a critical or major deficiency or a repeated incidental or minor deficiency in work quality or performance.
- Corrective action requests remain unresolved for more than 30 days.
- A lapse in required credentials including insurance.

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The probation period will not be less than 30 days. While in probation status, the contractor:

- May continue to submit new project applications, subject to restrictions based on the reason for the probation status.
- Will be subject to higher QA inspection levels as outlined in the program manual.
- Must remediate all issues related to probation, as directed by NYSERDA.
- Must submit, in writing, an agreed-upon action plan designed to ensure future violations are avoided.
- Must demonstrate successful results through a specified number of completed projects.

Upon satisfactory completion of the action plan and all remediation and review of probation period QA results, NYSERDA will determine whether to return the contractor to full status, continue the probation period, or move to suspended or terminated status.

Suspended Status

Contractors who have failed to adequately respond to terms of the probation status action plan, or who have committed serious violations of program rules, will be placed in suspended status. A contractor may be suspended if they:

- Fail to adequately fulfill the terms of the probation action plan.
- Are placed on probation for a second time in 12 months.
- Are under investigation for or have been determined to have engaged in practices that have put the public or program at risk.
- Have one or more projects not completed by the deadline and no project extension is on file.
- Have outstanding and unresolved requests for return of incentive to NYSERDA due to failure to meet program requirements.
- Fail to provide backup documents when requested.
- Have submitted documentation with falsification of any required items, including but not limited to, permits, approvals, and customer signatures.
- Have a lapse in required credentials while on probation status.
- Fail to consistently deliver completed projects that pass the NYSERDA QA inspection and perform as intended.

While in suspended status, the contractor:

- Will not be allowed to submit new project applications to the program.
- May not represent themselves as a participating contractor, except in the execution of remedial action.
- May be directed by NYSERDA to remediate issues related to the suspension.
- May be required to submit, in writing, an agreed-upon action plan designed to ensure future violations are avoided.

Suspended contractors will either progress to probation or full status upon satisfactory completion of the specified remedial activities and resolution of issues related to the suspension or will be terminated from program participation. Nothing in this status relieves the contractor of the responsibility to fulfill any outstanding obligations to the program or program customers as directed by NYSERDA.

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Terminated Status

Contractors who have failed to respond to prescriptive action plans and disciplinary measures, or who have committed serious violations of the program rules may be terminated. A contractor may be terminated from the program if they:

- Have had a suspended status for more than 30 days and have been unresponsive or failed to adequately fulfill the terms of their suspension action plan.
- Have had their credentials lapse while suspended.
- Submit falsified documents or unauthorized signatures to the program.
- Commit illegal actions while participating in the program.
- Are convicted or have a principal who is convicted of a criminal charge that casts the program in a negative light or calls their integrity or workmanship into question.
- Are in gross violation of program installation standards.
- Submit deliverables and/or invoice for uninstalled upgrades.
- Fail to meet the terms of the provisional period.

A contractor cannot represent itself as a Participating Contractor except in the execution of remedial action. Contractors in terminated status are prohibited from participation in this or other NYSERDA programs. Customers with incomplete projects will be notified of the termination and may be offered such remedies as NYSERDA deems appropriate. NYSERDA may notify the New York State Attorney General, the New York State Department of Labor, the Better Business Bureau, or others including local Authorities Having Jurisdiction and electric utilities, of the decision to terminate the contractor from the program. Further, the officers and owners of the terminated contractor are prohibited from being or becoming officers or owners of any other program partner. Nothing in this process relieves the contractor of the responsibility to fulfill any remaining obligation to the program or its customers as required by NYSERDA's program rules.

Inactive Status

Contractors may be declared inactive if they have not had an approved project in the program over a 24-month period of time. They will no longer receive email notifications, nor be eligible for incentives. Should they wish to participate in the future, they may reapply under the rules in place at that time.

Status Review Process

NYSERDA continually reviews all contractors' performance in the program to determine if a change in status is necessary. NYSERDA administers change in program status in the following ways:

- Request a meeting with the contractor.
- Issue a notice of program violation or compliance resulting in contractor status change.
- Reserves the right to take immediate action on program violation when warranted.
- Contractor has 5 business days to dispute the program violation notification.

d. Participating Contractor Resources

Local permitting authorities, electric utilities, developers, and integrators in New York State will have access to [technical assistance resources](#) through NYSERDA. Services include market information and guidance, technical assistance, trainings, project technical and economic screenings, permitting and interconnection guidance, and site visits by expert consultants that have been retained by NYSERDA. Participating Contractors can also access fact sheets, guides, webinars, and workshops or conferences online at www.nyserda.ny.gov/energystorage or by contacting energystorage@nyserda.ny.gov.

III. Incentive Structure

The MWh block approach allocates megawatt hour blocks to specific regions of the State and assigns incentives per block. Incentives are available on a first-come, first-served basis, and are reserved and awarded at the incentive level in effect at time of application submission. Once the block is fully subscribed, the incentive rate is no longer available. NYSERDA will monitor market conditions and incentive subscription and adjust accordingly. NYSERDA will notify stakeholders in advance of any planned changes. NYSERDA will only accept applications for storage projects located at one meter, on one site.

Incentives will be offered at a fixed amount per usable kWh of installed energy storage capacity measured in AC at Commercial Operation Date (COD). During NYSERDA's QA inspection, the usable capacity will be verified based upon the total capacity measured during a complete discharge from a 100% usable state of charge, performed in accordance with the storage manufacturer's specifications. These specifications shall include C rates, resting state, maximum depth of discharge, and ambient temperature ranges.

Once the project is approved, the Participating Contractor will be notified of the approved incentive amount. The incentive will be provided at the stated incentive level for up to the first 4 hours of a system's installed energy capacity and decline to 50% for hours 5 and 6, with no incentive for any duration beyond 6 hours. The maximum incentive payment a project may receive is 15 MWh.

For thermal storage systems, the capacity will be verified during the inspection by witnessing a full system cycle. The incentive for thermal storage systems offsetting electric chiller load will be calculated as follows:

- $[\text{System capacity (ton-hours)}] / [\text{designed operating period (hours)}] = \text{average discharge rate (tons)}$
- $\text{Average discharge rate (tons)} \times \text{the baseline efficiency value provided in the current version of the [Utilities Technical Resource Manual](#) (TRM) and the current versions of the Energy Conservation Construction Code of New York State¹ and New York City Energy Conservation Code² (kW/ton)} = \text{Average discharge (kW)}$
- $\text{Incentive amount (\$)} = \text{Average discharge (kW)} \times (\text{Hours 1-4}) \times \text{Incentive (\$/kWh)} + 0.5 \times (\text{Average discharge (kW)} \times (\text{Hours 5-6}) \times (\text{Incentive \$/kWh}))$

The approved incentive amount will not change assuming the energy storage system is installed as approved and within the terms and conditions of the program, including the completion deadline. The total incentive payment will be up to, and will not exceed, the approved incentive level.

Additional incentives for the expansion of a project previously completed in this program may be requested in a new application at the incentive rate available at the time the new application is submitted. The initial application must be completed in its entirety, and the new application must indicate that it is an expansion system.

¹ ECCCNY 2016, Table C403.2.3(7) ADD HYPERLINK

² NYCECC 2016; Table C403.2.3(7) ADD HYPERLINK

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Table 1. Blocks and Incentive Levels for Commercial Retail Incentives ³

Block 1 at \$350/kWh will draw from a common budget for all IOU territories whether the energy storage is paired with PV solar or standalone storage. Beginning with Block 2, New York City will have its own blocks. The block size and budget will be managed based on the total MWh; MWs indicated are the anticipated MWs that will be built under the block. The first blocks are included below. Additional blocks will be informed by market conditions and experience with deploying these retail and bulk incentives and will consider use cases and sectors that can reach sustainability without incentives.

	<u>Rest of State IOUs</u>			<u>New York City</u>		
	Incentive	MWh / MW	\$ Budget	Incentive	MW / MWh	\$ Budget
Block 1	\$350/kWh	100 MWh/25 MW	\$35,000,000	\$350/kWh	Included in ROS budget	
Block 2	\$250/kWh	125 MWh/30 MW	\$31,250,000	\$300/kWh	60 MWh / 15 MW	\$18,000,000
Block 3	\$200/kWh	150 MWh/40 MW	\$30,000,000	\$240/kWh	65 MWh / 16 MW	\$15,600,000

	<u>Long Island</u>		
	Incentive	MWh / MW	\$ Budget
Block 1	\$250/kWh	40 MWh/10 MW	\$10,000,000
Block 2	\$200/kWh	50 MWh/13 MW	\$10,000,000

Changes to the Incentive Level:

Initial incentive levels and block sizes may be adjusted based on market factors, and NYSERDA will monitor uptake in each region and sector. Market conditions are expected to change, and adoption in individual regions and sectors may exceed or fall below projections. Cost data, project economics and adoption trends will be obtained from a NYSERDA storage cost components survey conducted in the first quarter of each calendar year, storage incentive applications, aggregated data from IOU procurements, market research studies, and developers. NYSERDA will re-examine the incentive levels and structure as necessary to optimize the Program’s ability to achieve overall program goals. Redesign may include the reallocation of funds and capacity among sectors and regions.

NYSERDA will share information with all stakeholders regarding program progress and market conditions by making data and analysis publicly available. If changes are necessary, NYSERDA will provide sufficient notice to enable a smooth transition after gathering market data, consulting with stakeholders, and guidance from DPS staff. Changes will not reduce the size of an already awarded project that meets all requirements of this Program.

IV. Submitting a Project Application

The Participating Contractor must submit all project applications, signed by the customer, electronically through the NYSERDA Web Portal. Electronic signatures may be obtained through NYSERDA’s DocuSign account, which is available in the NYSERDA Web Portal. Under no circumstances is a Participating

³ Represents the total incentive budget for retail use cases which includes funds authorized by the Storage Order and \$40 million already approved in Clean Energy Funds for PV + energy storage projects.

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Contractor permitted to sign on behalf of the customer. Participating Contractors can monitor the status of applications and perform other program-related activities via the NYSERDA Web Portal.

Payment Assignments:

Energy storage projects may request for payment to be made to another entity. The Participating Contractor must identify the payee at the time of project application submission. Payment assignments will only be made to another approved entity in the amount of the entire incentive. The Participating Contractor, customer, and payee must sign the project application agreeing to the payee assignment. All rights and responsibilities will remain with the contractor. Payees will not have access to the NYSERDA Web Portal. Incomplete applications will not be reviewed.

Full Assignments:

The Participating Contractor may request a full assignment for an approved project to another Participating Contractor. This request must be made before the incentive payment is requested. NYSERDA reserves the right to deny a full assignment request and may ask for additional documentation before approving the request.

The following is required for a Participating Contractor to submit a request:

- New Contractor must be a Participating Contractor in the Retail Storage Incentive Program and be in good standing.
- Email confirmation from utility of 100% interconnection upgrade payments made.
- Assignment Document signed by the old contractor and new contractor.
- New Project Application signed by old contractor, new contractor, customer, and payee.

The Participating Contractor must also identify the payee at the time of full assignment request. If the contractor does not identify a new payee, no payee assignments will be allowed after the full assignment has been executed by NYSERDA. Payment assignments will only be made to another entity in the amount of the entire incentive. The current contractor will be responsible for the project until the assignment has been executed.

Project Application Requirements:

Projects must meet all Technical Requirements in Section IX and submit the following as part of the Project Application:

- a copy of a recent customer electric utility bill (if located with customer load);
- one year of electrical usage data (if located with customer load);
- the type of energy storage system and product description, which includes the storage technology type, manufacturer, kW and kWh capacity, and roundtrip efficiency;
- the intended uses of the energy storage system;
- proof of UL safety certifications currently obtained, as detailed in the Technical Requirements;
- proof of storage system 10-year warranty;
- site plan;
- electrical drawing;
- realistic estimated installation and interconnection schedule taking into account timeline requirements of permitting agencies and commissioning;
- estimate of total project costs through commercial operation including development, equipment, construction, and commissioning;

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- if the utility requires a Coordinated Electric System Interconnection Review (CESIR): a copy of the final CESIR with email confirmation from the utility that a 25% interconnection upgrade payment has been made;
- if the utility does not require a CESIR for the project: a copy of the signed and executed interconnection agreement;
- Planning and Zoning Board meeting minutes and approvals (if applicable);
- Approved Special Use Permit from the local municipality (if required);
- Draft Environmental Impact Study completion with a negative declaration as evidenced by meeting minutes of the local government or written approval (if required); and
- Participating Contractor and customer certifications.

One year of electrical usage data can be in the form of 12 months of utility bills, and if available, the usage data should be a customer's 15-minute interval data. For new construction or projects with future load growth, a Participating Contractor will submit, in lieu of historical load data, the building electrical load as designed, including a copy of the utility service request form if available.

The energy storage product description must include manufacturer equipment specifications for all major components of the storage system, such as the storage component (e.g., battery), inverter, converter, controller and additional system components when applicable. Product development, or business models that are not allowable, viable, or accessible in New York, will not be eligible for funding.

The Site Plan must include:

- Location and layout of all energy storage system components, including batteries, inverters/chargers, pumps, management system disconnects, point of interconnection, and utility meter.
- Customer name and address.

A legible electrical diagram is required, using standard symbols to clearly describe the energy storage system. Either a one- or three-line drawing is acceptable and must indicate:

- Quantity, conductor size, and insulation type of all energized (hot) conductors, neutral/grounded conductors, and ground conductors.
- Type and characteristics of all raceways, conduit, and enclosures.
- The voltage and amperage ratings of all switches, inverters/chargers, batteries, electrical panels, and other relevant equipment as applicable. The rating of the main service panel and its main breaker must be given.
- The quantity, manufacturer, and model of the inverters/chargers, and electrical storage system components.
- Customer name and address.

The customer agreement outlining the direct relationship between the contractor and the customer must be on file with the Participating Contractor and made available upon request to NYSERDA. All customer agreements must include:

- Installation location: town, street, and lot or building number.
- Installation schedule: realistic installation and interconnection schedule taking into account timeline requirements of NYSERDA, permitting agencies, and utility review requirements.

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- System description: description of the storage system and an outline of system specifications, the make and model of major system components, identification and location of easy-to-read meter, references to UL listings, and other relevant information.
- Applicable incentives: customer agreement must reflect the entire installed cost and the amount of the anticipated NYSERDA incentive. The customer agreement must pass on incentives and warranties directly to the customer.
- Explanation and estimate of additional customer-incurred costs: for development; installation; and commissioning of the system and a payment schedule, if applicable.
- Assignment of responsibilities: for scheduling or obtaining and paying for permits, inspections, or other regulatory requirements.
- NYSERDA addendum to customer agreement: completed and signed by both the customer and the contractor.

V. Project Application Design Review

Once an application has been received by NYSERDA, the project may undergo a technical and financial review (design review). NYSERDA will review technical specifications, including the site plan and drawing, for compliance with program rules. NYSERDA will review the system sizing for feasibility. Projects that are approved will be approved at the incentive rate that existed at the time when the application was submitted. The Contractor is responsible for ensuring the energy storage system is installed in accordance with the design and system components submitted in the application and approved by NYSERDA. However, NYSERDA's approval of the project application does not guarantee the system design, engineering, construction and/or installation of the energy storage system is proper or in compliance with any particular laws (including patent laws), regulations, codes, or industry standards. Energy storage systems not installed according to the NYSERDA-approved design must have a project modification submission on file. The project modification must be approved before the incentive payment is made. Upon inspection, if it is determined the system is not installed as approved, the contractor may not be eligible for incentive payments.

VI. Demonstrating Continued Project Viability and Payment

Upon project approval, the incentive amount will be encumbered for the project for 365 days. NYSERDA, in its sole discretion, may grant a 90-day extension as needed for circumstances outside the Participating Contractor's discretion, such as permitting, as determined at NYSERDA's sole discretion. Once a project application has been submitted in the NYSERDA Web Portal, no changes to the Participating Contractor, site address, or customer are allowed. If such a change is requested, the application will be cancelled, and an updated application will need to be submitted. The incentive level and all rules in effect at the time the new application is submitted will apply. Projects must be completed to receive the incentive. If the project is removed from the utility interconnection queue after approval, the project will be canceled by NYSERDA. Other requested changes to approved projects may be sent to energystorage@nyserda.ny.gov.

All required deliverables and the final invoice for payment must be submitted via the NYSERDA Web Portal. Once all deliverables have been approved, NYSERDA's QA requirements have been completed with resolution of any issues identified, and the invoice has been received, NYSERDA will authorize payment of 100% of the storage incentive.

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The following major project development milestones must be demonstrated to NYSERDA as they are achieved in order to continue reserving incentive funds. Failure to provide evidence of these milestones may result in award termination, and no payment will be made until NYSERDA approval of these items. A brief project update must be provided at least every 90 days.

Milestone 1:

Within 90 days of project approval, the following must be submitted to NYSERDA. Projects that have not submitted these documents within 90 days may be canceled unless a request for extension has been submitted to NYSERDA:

1. completed building permit and electrical permit application;
2. completed fire permit application (if applicable);
3. payment of 75% of the remaining cost of interconnection cost upgrades; and
4. completed SEQRA Form (if required for the project)

Developers must keep approved permits current and not expired.

Milestone 2:

To continue reserving incentive funds and receive the incentive payment, the following required deliverables for the project must be submitted via the NYSERDA Web Portal as the deliverables are achieved and before payment of the incentive funds.

1. local building department approval and electrical permit approval;
2. fire department approval (if applicable);
3. Negative Declaration for SEQRA (if required for the project);
4. local utilities' interconnect permission to operate (PTO) letter;
5. submission of the final as-built 3-line drawing stamped by a New York State Professional Engineer (PE) and electrical inspection certificate;
6. for roof mounted projects, structural/mounting details stamped by a PE or registered architect (RA) as required by New York State law. A stamped engineer's roof letter also meets this requirement;
7. the total installed project cost;
8. the decommissioning plan;
9. all safety certifications detailed in Section IX must be received by the time that the system is entering commercial operation; and
10. a commissioning report must be provided to NYSERDA documenting the results of commissioning in accordance with manufacturer specifications.

The decommissioning plan provided to NYSERDA addresses the manner in which the energy storage system and its components will be recycled or safely disposed of at the end of life or following system damage or failure, including the methods and tools necessary to indicate how the system and its components will be decommissioned and removed from the site, and how the site will be restored to its original state, if necessary. The decommissioning plan must include disposal options that comply with applicable New York State Environmental Conservation Law requirements, transportation requirements from the New York State Department of Transportation, and any other applicable laws or regulations, including State and Federal environmental laws and requirements of the local AHJ.

Project Cancellation or Modification:

Requests to cancel a project must be done by submitting a request for cancellation to energystorage@nysERDA.ny.gov. Should a project wish to move forward after cancellation, the Participating Contractor must submit a new project application in the NYSERDA Web Portal. In this case,

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the incentive level and all rules in effect at the time the new application is submitted will apply. After an award has been encumbered, changes may be made to lower the number of kW and kWh based on the results of a utility interconnection study. Such changes may be requested of NYSERDA by contacting energystorage@nyserda.ny.gov. Projects may not be increased in size without applying for a new incentive at the incentive level then in place. The site location, customer, and contractor may not change.

NYSERDA reserves the right to seek reimbursement of incentives paid if, at any time, it learns that an approved energy storage system was not actually installed, was not installed as required under the Retail Energy Storage Incentive Program or the Retail Energy Storage Participation Agreement, was not installed according to the approved system design, was installed prior to NYSERDA's approval of the project application, or is no longer operating in accordance with the rules of the Retail Energy Storage Incentive Program or the Retail Energy Storage Participation Agreement.

VII. Quality Assurance

NYSERDA maintains the integrity of its program through an independent Standards and Quality Assurance (SQA) team, which manages the QA system for the program. The Participating Contractor is responsible for ensuring compliance of the system with all applicable laws, regulations, rules and standards, including requirements of the local AHJ.

The QA program has several components, including, but not limited to: a review of qualifications and credentials, paperwork audits, establishment of program standards, and comprehensive field and photo inspections. QA field and photo inspections include verification of the contracted scope of work, accuracy of the site analysis, comparison of installation to submitted design drawings, National Electric Code, International Building Codes with New York State Uniform Code Supplement compliance, and the overall delivered quality of the energy storage installation. The NYSERDA SQA team, or its representatives, may make a reasonable number of visits to the installation site before, during, and after installation of an energy storage system to assess overall compliance.

The purpose of the QA inspection is to provide NYSERDA with an opportunity to evaluate the accuracy of the site analysis and design paperwork and verify the system was installed according to all program requirements. The QA inspection also includes selected health, safety, and performance items, and specific compliance items per applicable code.

Pre-commissioning field or photo inspections as well as post-commissioning QA field or photo inspections will initially be conducted on each project funded under this Program. The Energy Storage project inspections will confirm that the installed storage equipment (kW/kWh AC) is as approved by the program, ensure general quality of the storage installation complies with codes, standards and industry accepted practices and inspect that appropriate metering and data logging are in place. The storage system must be commissioned in accordance with manufacturer specifications, and a commissioning report must be available upon request to NYSERDA.

QA field and photo inspections are conducted by a qualified independent third party, using comprehensive field inspection QA checklists that will be made available to Participating Contractors and inspection processes approved by NYSERDA. These inspections will be scheduled at the customer or site operator's convenience. Customers are encouraged to allow the Participating Contractor to attend the

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inspection, so questions can be answered and minor fixes made on-site. If the customer agrees, the Participating Contractor will be notified ahead of the upcoming inspection. Every effort will be made to accommodate the schedule of the Participating Contractor, but the customer or site operator's schedule and efficient scheduling of inspections shall take precedence. Customers have the right to request the Participating Contractor not attend the QA field inspection. In these situations, the Participating Contractor will not be notified of the scheduled inspection but will receive the results.

Following an inspection, either field or photo, NYSERDA will produce a detailed report and determine whether the project fully complies with all program requirements and meets acceptable standards of workmanship. The QA inspection report will provide details of all evaluated elements of the project and list any nonconformances identified. The inspection report will provide an overall score of the project and identify a pass or fail. Projects that have nonconformances related to critical (health and safety) or major (system performance) attributes will automatically fail. Projects that have only nonconformances to minor or incidental attributes may pass or fail based on the number and type of nonconformance observed. Participating Contractors are required to respond to NYSERDA with proof of corrective action for those projects that received a failed inspection report. The Participating Contractor is responsible for correcting all nonconformances identified in the time required by NYSERDA, determined by NYSERDA at its sole discretion based on the degree of nonconformance.

NYSERDA has the right to provide a copy of the QA report or specific information from the field or photo inspection directly to the customer, AHJ, or the interconnecting utility based on health, safety, and compliance concerns. In an emergency, NYSERDA or its representatives may shut down the system and will notify the contractor of such action as soon as is possible.

NYSERDA may communicate with any program customer on any matter relevant to a project. Such communications may be in reply to an inquiry from a customer or at NYSERDA's initiation.

VIII. Measurement and Verification

All projects funded under this program must install a revenue grade meter to record the net energy charged and discharged (kWh) from the energy storage system. If a utility owned meter is installed, this shall be used for data reporting. Otherwise, the developer's revenue grade meter must be accurate to within $\pm 2\%$ according to all applicable ANSI C-12 testing protocols and certified for accuracy by a Nationally Recognized Testing Laboratory (NRTL).

Until three projects have been successfully installed by a Participating Contractor under this program, all projects will be required to undergo ninety (90) days of M&V to verify that the system is operating as intended and within the expectations established during the design review phase of the project application. As stated above, throughout the project development timeline, and during this M&V phase, resources will be made available for all Participating Contractors.

A NYSERDA QA contractor shall be given access to the customer's load data and establish an automated data transfer prior to the QA inspection to collect 15-minute data for demand charge installations or hourly interval data for VDER Value Stack tariff compensation installations, depending on the use case, for the charge and discharge of the energy storage system for up to five years. For example, 15-minute interval data may be required to verify system performance for reducing demand delivery charges

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whereas hourly data may be sufficient for a front-of-meter installation compensated under the VDER Value Stack tariff. The project location, energy storage type, use case, kW and kWh size will be displayed on NYSERDA's DER Integrated Data System at <https://der.nyserderda.ny.gov/>. Net cumulative kWh discharged may also be displayed on the DER Integrated Data System, in no more granular data than cumulative quarterly totals.

NYSERDA may also generate a third-party case study at a future date, with permission from the host site and the Participating Contractor. If a project is selected for case study analysis, NYSERDA or NYSERDA's QA contractor may request the energy storage Participating Contractor to provide additional data.

IX. Technical and Other Requirements

The following additional technical requirements apply to all projects funded under this Program.

Permanently Installed

NYSERDA requires the energy storage system to be permanently installed and remain in New York for the life of the system. Physical permanence is determined by physical and electrical connections in accordance with industry practice for permanently installed equipment and securing the system to a permanent surface.

Energy Storage System Warranty

The storage equipment must consist of commercial products carrying at least a 10-year manufacturer warranty. The warranty must cover the entire energy storage system including ancillary equipment and power electronics. Experimental, beta, or prototype equipment is not eligible.

Grid Connected

The energy storage system must be connected to the local electric utility's distribution system and must be operated primarily for load management or shifting electric generation to more beneficial time periods while operating in parallel with the utility grid. Energy storage systems may also be used for back-up, uninterruptible power supply (UPS), resiliency, or power quality but this use case must be secondary.

Safety Certifications: Listed to UL or CAN Standards

All eligible energy storage systems must be certified for safety by a Nationally Recognized Testing Laboratory (NRTL) as evidenced by listing to UL 9540 or CAN 9540 (Standard for Energy Storage Systems and Equipment) with subcomponents meeting each of the following standards that are applicable based on the storage type (chemical, thermal, mechanical): UL 1973 (Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail Applications), UL 1642 (Standard for Lithium Batteries), UL 1741 or UL 62109 (inverters and power converters). These listings must be received by the time that the system is entering commercial operation and before payment of the NYSERDA incentive. In all cases energy storage systems must satisfy the requirements of the local AHJ. A field evaluation may also be conducted by an NRTL to the applicable product safety standard(s).

Inverter Requirements

All inverters must be certified as meeting all applicable standards of IEEE and UL and approved by the electric distribution utility that the system will be interconnected within.

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Round Trip Efficiency

All energy storage systems must be designed to maintain a minimum 80% round-trip efficiency during the system life, with the exception of thermal storage. Roundtrip efficiency is the difference between kWh used to charge the system and kWh discharged from the system during a single cycle (i.e., alternating current in kWh used to fully charge the system from 0% usable state of charge vs. the alternative current in kWh withdrawn or displaced by the system when discharging from a 100% usable state of charge to a 0% usable state of charge in normal operations).

Approved System Design

The Contractor is responsible for ensuring that energy storage systems are installed in accordance with the design and system components submitted in the application and approved by NYSERDA. However, NYSERDA's approval of the project application does not guarantee the system design, engineering, construction and/or installation of the energy storage system is proper or in compliance with any particular laws (including patent laws), regulations, codes, or industry standards.

Energy storage systems not installed according to the NYSERDA-approved design must have a project modification submission on file. The project modification must be approved before the incentive payment is made. Upon inspection, if it is determined the system is not installed as approved, the contractor may not be eligible for incentive payments as per NYSERDA's QA requirements.

Interconnection

The contractor is required to ensure all approved energy storage systems have an appropriate interconnection agreement that meets New York State Standard Interconnection Requirements. Contractors must also ensure all approved systems are installed in compliance with that interconnection agreement.

Other Components

All components of each energy storage system including, but not limited to, charge controllers, wiring, and metering equipment must be new equipment and certified as meeting the requirements of all relevant national, New York State, local codes and standards, and any additional requirements of the local AHJ.

Structural Requirements

The contractor is responsible for determining that a building is structurally able to support the addition of an energy storage system without overstressing the structure or increasing the load beyond the limits indicated in the applicable Building Code.

Compliance with Laws and Codes

All approved energy storage systems and system components must comply with all manufacturers' installation requirements, applicable laws, regulations, codes, licensing, and permit requirements. This includes, but is not limited to, the New York State Environmental Quality Review (SEQR) if applicable; the International Building Code Series as amended by the New York State Uniform Code Supplement; the National Electric Code (NEC); New York State's Standard Interconnection Requirements; and all applicable State, city, town, or local ordinances or permit requirements, and any additional requirements of the local AHJ.