

# Retail Energy Storage Incentive Program

## Program Manual

May 2020



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## Summary

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The New York State Energy Research and Development Authority's (NYSERDA) Retail Energy Storage Incentive Program provides financial support for new grid-connected energy storage systems:

- That are up to five megawatts (MW) of alternating current (AC) power
- Whose value is monetized under an Investor Owned Utility (IOU) or [Long Island Power Authority \(LIPA/PSEG LI\)](#) tariff in the form of bill savings or credits, including delivery charges or the Value of Distributed Energy Resources (VDER or Value Stack) tariffs
- That are either interconnected behind a customer's electric meter, or directly into the distribution system

Incentive funds will be deployed through a NYSERDA-administered declining megawatt hour (MWh) block model. The incentive structure is designed to provide certainty and transparency around incentive levels and enable a self-sustaining market in the 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 website will include a dashboard with the incentive levels for each block, 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 another distributed energy resource technology such as a solar photovoltaic (PV) system, fuel cell, or combined heat and power system. Eligibility requirements contained in this program manual are intended to cover each of these types. 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](mailto:energystorage@nyserda.ny.gov).

# 1 Project Eligibility

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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.

New projects that are neither installed nor interconnected prior to March 11, 2019 and that also meet the 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 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:

- Retail, demand metered customers that install energy storage alone, or storage paired with on-site generation such as solar PV behind the customer's electric meter (BTM)
- 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

Incentives for energy storage systems, except for single-family residential projects, are available through the Retail Energy Storage Incentive Program. If a project is pairing a solar system with an energy storage system, that contractor must be approved in both the NY-Sun Program and Retail Energy Storage Incentive Program. The contractor should submit the NY-Sun project application first and identify the accompanying 10-digit NY-Sun project application number when submitting the Retail Energy Storage project application. Single family residential incentives are currently available only on Long Island for storage paired with a solar PV system and applications are submitted through the [NY-Sun Program](#).

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. Participating 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 standalone energy storage systems only, 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 an IOU's Standby tariff, Con Edison's Rider Q, or LIPA's time of use/multiple rate period delivery tariff), or the VDER Value Stack tariff. NYSERDA will verify 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 may, with prior written approval from NYSERDA, be relocated; however, such approval will be granted at NYSERDA's sole discretion in extremely limited circumstances. Any relocation must conform to the program rules, including that the system remains in New York for its entire life.
- 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 negotiated between the participating contractor/manufacturer and customer.
- 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 the system enters commercial operation.
- The system must be designed to maintain a minimum round-trip efficiency defined in Section IX and installed in accordance with the design and system components submitted in the project application and approved by NYSERDA.
- Energy storage systems and components must comply with all manufacturers' installation requirements, applicable laws, regulations, codes, licensing, and permit requirements. This includes the New York State Environmental Quality Review Act (SEQRA) (or the City Environmental Quality Review Act (CEQR)); Article 10, if applicable; 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 Requirements; and all applicable State, city, town, or local ordinances or permit requirements, and any additional requirements of the local AHJ.

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 that have received permission to operate (PTO) from a utility prior to March 11, 2019.
- Projects previously selected under an IOU Non-Wires Alternative, and projects that submitted a proposal to an open NWA prior to March 11, 2019 and are 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 Certificate (REC) for a paired renewable and storage system.
- Projects that receive a NYSERDA Bulk Storage Incentive or are awarded an IOU Bulk Dispatch Rights contract.

## 2 Contractor Eligibility

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Energy storage systems will be incentivized for customers through a network of participating contractors who will contract directly with the customer. Participating contractors are fully responsible for all aspects of their energy storage projects funded under the Program and must demonstrate relevant prior experience. The participating 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 participating contractor may use subcontracted teams to fulfill these obligations. Regardless of the teaming arrangement, however, the participating 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 participating 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.

A participating contractor is responsible for the following:

- 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
- Installation and quality of the project, including compliance with local siting regulations
- Registering with the Department of Public Service as a Distributed Energy Resource Supplier (if required)

### Becoming a participating contractor

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

To become a participating contractor, a contractor must submit an application within Program Opportunity Notice 4112 at [nyserdera.ny.gov/retailstorage](https://nyserdera.ny.gov/retailstorage). Contractors will be evaluated based on their experience, customer references, and performance in this or other New York State or utility programs. Active, full status NY-Sun participating contractors may be eligible to opt-in to the Retail Storage Incentive Program without filing a separate contractor application.

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. The quality assurance plan should describe the contractor's quality assurance process, including how the contractor will monitor the construction and installation of projects, and ensure projects will meet the fire safety and other requirements in the [Battery Energy Storage Guidebook](#).
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.
  - 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.
  - 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.
  - 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.

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 participating 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 at least three systems under the Retail Storage Incentive Program with successful QA inspections and successful post-commissioning M&V for performance. After establishing a successful track record 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.

## 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.

## Participating Contractor Status

### Provisional Status

Participating 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

Participating 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 participating contractors that fail to meet program requirements.

Probation is prescriptive in nature, in that NYSERDA defines specific results to be achieved in a designated timeframe. During probation, a participating contractor can still submit project applications.

A participating 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

The probation period will not be less than 30 days. While in probation status, the participating 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 participating contractor to full status, continue the probation period, or move to suspended or terminated status.

### **Suspended Status**

Participating contractors who fail to adequately respond to terms of the probation status action plan or commit serious violations of program rules will be placed in suspended status. A participating 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 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 participating 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 participating 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 participating contractor of

the responsibility to fulfill any outstanding obligations to the program or program customers as directed by NYSERDA.

### **Terminated Status**

Participating contractors who fail to respond to prescriptive action plans and disciplinary measures or commit serious violations of the program rules may be terminated. A participating contractor may be terminated from the program if they:

- Have a suspended status for more than 30 days and been unresponsive or failed to adequately fulfill the terms of their suspension action plan
- Have 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 work
- Fail to meet the terms of the provisional period

A participating contractor cannot represent themselves as a participating contractor except in the execution of remedial action. Participating 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 participating contractor from the program. Further, the officers and owners of the terminated participating contractor are prohibited from being or becoming officers or owners of any other program partner. Nothing in this process relieves the participating contractor of the responsibility to fulfill any remaining obligation to the program or its customers as required by NYSERDA's program rules.

### **Inactive Status**

Participating contractors may be declared inactive if they have not had an approved project in the program over a 24-month period. They will no longer receive email notifications or 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 participating 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 participating contractor
- Issue a notice of program violation or compliance resulting in participating contractor status change
- Reserves the right to take immediate action on program violation when warranted
- Participating contractor has five business days to dispute the program violation notification

### 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, siting and permitting guidance, 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 [nyserda.ny.gov/energystorage](http://nyserda.ny.gov/energystorage) or by contacting [energystorage@nyserda.ny.gov](mailto:energystorage@nyserda.ny.gov).

### 3 Incentive Structure

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The MWh block approach allocates megawatt hour blocks to specific regions of the State and assigns incentives per block. NYSERDA anticipates the project application portal will be updated with a Con Edison Westchester block in the next few months. Participating Contractors will receive a notice when this change takes effect.

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 will 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 based on the system's total MWh in the first four hours of duration and decline to 25% of the stated incentive level for hours five and six, with no incentive for any duration beyond six 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:

- $[\text{System capacity (ton-hours)}] / [\text{designed operating period (hours)}] = \text{average discharge rate (tons)}$
- $\text{Average discharge rate (tons)} \times \text{the baseline efficiency value provided in the current version of the [Utilities Technical Resource Manual](#) (TRM) and the current versions of the Energy Conservation Construction Code of New York State<sup>1</sup> and New York City Energy Conservation Code<sup>2</sup> (kW/ton)} = \text{Average discharge (kW)}$
- $\text{Incentive amount (\$)} = \text{Average discharge (kW)} \times (\text{Hours 1-4}) \times \text{Incentive (\$/kWh)} + 0.25 \times (\text{Average discharge (kW)} \times (\text{Hours 5-6}) \times (\text{Incentive \$/kWh}))$

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<sup>1</sup> Current version as of March 11, 2019: ECCCNY 2016 ([https://www.dos.ny.gov/dcea/laws\\_regs.html](https://www.dos.ny.gov/dcea/laws_regs.html)), incorporating by reference the 2015 IECC commercial provisions, Table C403.2.3(7).

<sup>2</sup> Current version as of March 11, 2019: NYCECC 2016; Table C403.2.3(7) (<https://www1.nyc.gov/site/buildings/codes/energy-conservation-code.page>).

The approved incentive amount will not change assuming the energy storage system is installed as approved, within 1% of the installed energy storage capacity approved in the project application, 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.

Refer to the incentive dashboard on NYSERDA's web site for available incentive levels:

[nyserdera.ny.gov/All-Programs/Programs/Energy-Storage/Developers-Contractors-and-Vendors/Retail-Incentive-Offer/Incentive-Dashboard](https://nyserdera.ny.gov/All-Programs/Programs/Energy-Storage/Developers-Contractors-and-Vendors/Retail-Incentive-Offer/Incentive-Dashboard)

#### 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 goals. Redesign may include the reallocation of funds and capacity among sectors and regions.

NYSERDA will share program information with all stakeholders regarding 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 to the incentive level due to market factors will not reduce the incentive of an already awarded project that meets all requirements of this program. Any changes to this Program Manual will be posted at [nyserdera.ny.gov/energystorage](https://nyserdera.ny.gov/energystorage).

## 4 Submitting a Project Application

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The participating contractor must submit all project applications 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 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.

### Project Application Requirements

Projects must meet all technical requirements in Section IX. At a minimum, the energy storage system must meet the requirements set forth in [NYSERDA's Battery Energy Storage Guidebook](#), which adheres to the 2021 International Fire Code. Participating Contractors must 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 (all certifications must be received before payment is made)
- Proof of storage system 10-year warranty (provided prior to payment)
- Site plan
- Electrical drawing
- Estimate of total project cost (the hardware, engineering and construction, permitting, and interconnection costs up to and including system commissioning)
- 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 approval
- NYSERDA's Planning and Zoning Confirmation Form available under "Program Application Guidance" on the [Retail Storage Incentive webpage](#) identifying local land use approvals required for the project
- Approved special use permit from the local municipality (if required)

- A negative declaration under the State Environmental Quality Review Act (SEQRA) or City Environmental Quality Review Act (CEQR) as evidenced by meeting minutes or written approval from the local government/lead agency (if required by the lead agency)
- Participating contractor, payee (if applicable), and customer (if applicable) 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. For thermal storage projects, the usage data should also include information on the cooling load, in tons.

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. For thermal storage projects, the nameplate information of existing chiller plant (chillers, pumps, tanks, cooling towers, etc.) is required.

The Site Plan must include the following:

- Location and layout of all energy storage system components, including batteries, inverters/chargers, pumps, management system disconnects, point of interconnection, and utility meter
- For battery energy storage projects, the schematics of the storage system's containerization in enough detail to show compliance with NYSERDA's Battery Energy Storage Guidebook
- 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 enclosure.
- 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
- For thermal storage, the cooling system flow diagram
- Customer name and address

The customer agreement outlining the direct relationship between the participating 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
- 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 amount of the anticipated NYSERDA incentive
- 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
- If the customer agreement is for the purchase of the system: total system and itemized costs and the system warranty
- NYSERDA addendum to customer agreement: completed and signed by both the customer and the participating contractor



## 5 Project Application Design Review

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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 business model and storage system sizing for compliance with program rules, which includes performance requirements and that projects must be allowable and viable under current market rules in New York. The scope of review by NYSERDA of the installation of the storage systems is limited solely to determining whether such storage systems conform to the Retail Energy Storage Incentive Program terms, conditions, and requirements. NYSERDA does not make any representations of any kind regarding the results to be achieved by any storage system, or the adequacy or safety of such measures.

Approved projects will be funded at the incentive rate in effect at the time when the application was submitted. The participating 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. NYSERDA's approval of the project application does not guarantee that the project is accessing the most optimal or financially viable use case, nor does it guarantee any financial performance of the project. 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 participating contractor may not be eligible for incentive payments for the project and may be precluded from submitting project applications in the future. Contractors who proceed with projects that are not approved by NYSERDA do so at their own risk.

## 6 Demonstrating Continued Project Viability and Payment

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Upon project approval, the incentive amount will be encumbered for the project for 730 calendar days. NYSERDA, in its sole discretion, may grant up to two 180-day extensions 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, payee, site address, or customer are allowed with the exception of assignment requests. If such a change is requested, the application will be canceled, 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](mailto: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.**

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 approves these items.

### Milestone 1

Within 170 calendar days of project approval, the following documents must be submitted to NYSERDA. NYSERDA, at its sole discretion, may grant an extension as needed for circumstances the participating contractor demonstrates are outside of their control. Extension requests may be sent to [energystorage@nyserda.ny.gov](mailto:energystorage@nyserda.ny.gov); requests must include a status update on all required Milestone 1 deliverables. Projects that have not submitted these documents within 170 calendar days may be canceled:

1. Copies of all filed local building permits, meeting the respective requirements stated in the [Battery Energy Storage Guidebook](#) published by NYSERDA, or the local AHJ's requirements, if greater. Developers must keep approved permits current and not expired. If applicable, include updated product description, site plan, and electrical drawings to reflect final designs submitted to local permitting agencies. These documents must demonstrate compliance with the Battery Energy Storage Guidebook (such as spacing, fire extinguishing, ventilation, deflagration venting, and monitoring as applicable).
2. Written confirmation from the distribution utility that the 75% remaining cost of interconnection upgrades has been paid (if required).

## 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. Approvals received from all AHJs.
2. Local utilities' interconnect permission to operate (PTO) letter.
3. Submission of the final as-built three-line drawing stamped by a New York State professional engineer (PE) and electrical inspection certificate and site plan, demonstrating compliance with the [Battery Energy Storage Guidebook](#) published by NYSERDA, or the local AHJ requirements if greater.
4. 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.
5. The total installed project cost (the hardware, engineering and construction, and soft costs up to and including system commissioning).
6. The decommissioning plan.
7. Proof of storage system 10-year warranty if not included with project application.
8. All safety certifications detailed in section IX must be received by the time that the system is entering commercial operation.
9. Confirmation that project data is transferring to NYSERDA.

The total installed cost will be reported as a single total installed cost value. Participating contractors will also be required to report what percent of the total installed cost is comprised of each of the following line items:

1. Hardware: Battery modules, inverter, containerization, controller, power control, HVAC system, meter, insulation and other hardware costs. Excludes upgrades required for permitting or interconnection approval.
2. Engineering and construction: Design, site preparation/survey, transportation, PE approval, testing, electrician and installation labor, wiring, fencing, testing, commissioning, and enrollment in energy markets. Excludes upgrades required for permitting or interconnection approval.
3. Permitting: Application fees, responding to requests for additional information, studies, and unique safety protections required from the AHJ.
4. Interconnection: Application and required upgrades or studies cost.

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 Modification

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 or to the system design. Such changes may be requested of NYSERDA by contacting [energystorage@nyserda.ny.gov](mailto:energystorage@nyserda.ny.gov). After an award notification email has been sent to the Contractor, projects may not request an increased incentive payment due to the project increasing 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.

### Payment Assignments

The participating contractor may request approval from NYSERDA to assign the incentive payment to another entity. The participating contractor must identify the payee at the time of project application or before the incentive payment is requested. Payment assignments will only be made to another approved entity in the amount of the entire incentive. Once a payee has been identified, no additional payee assignments will be allowed. The participating contractor will be responsible for completing a Payment Assignment Form, to be provided by NYSERDA upon request. The participating contractor, customer, and payee must sign the payment assignment form agreeing to the payee assignment. All rights and responsibilities will remain with the participating contractor. Payees will not have access to the NYSERDA Web Portal.

### Full Assignments

The participating contractor may request a full assignment of 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 Energy Storage Incentive Program and be in good standing
- Email confirmation from utility of 100% interconnection upgrade payments made
- Contract assignment form signed by the new contractor

- Payment Assignment Form, to be provided by NYSERDA upon request, if requesting a new payee, signed by the contractor, customer, and as applicable, old payee and new payee
- Full Assignment Form, to be provided by NYSERDA upon request, signed by the contractor and assignee

The participating contractor must also identify the payee at the time of full assignment request. If the participating 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 and will require a payment assignment form. The current contractor will be responsible for all aspects of the project until the full assignment has been executed and approved by NYSERDA.

### Project Cancellation

Requests to cancel a project must be done by submitting a request for cancellation to [energystorage@nyserda.ny.gov](mailto: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, the incentive level and all rules in effect at the time the new application is submitted will apply.

## 7 Quality Assurance

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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, and demonstrating compliance with the requirements in the [Battery Energy Storage Guidebook](#) published by NYSERDA. NYSERDA's Battery Energy Storage Guidebook adheres to the 2021 International Fire Code.

The QA program has several components, including a review of qualifications and credentials, paperwork audits, establishment of program standards, and comprehensive field and photo inspections for purposes of inspecting for conformance with program requirements. 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, 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 QA inspection does not include specific compliance with any codes, standards, laws, regulations, or industry accepted practices; the Contractor is responsible for ensuring the system is installed in compliance with all applicable codes, standards, laws, regulations, and industry accepted practices. The storage system must be commissioned in accordance with manufacturer specifications, and a commissioning report must be available upon request to NYSERDA. The commissioning report should document the specific parameters in which the system was fully charged and discharged to determine its usable energy in accordance with manufacturer requirements.

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 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 will 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.

## 8 Measurement and Verification

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All projects funded under this program must install a revenue grade meter to directly record the net energy charged and discharged (kWh) from the energy storage system. If a utility owned meter is installed and provides the required net energy charged and discharged (kWh) from the energy storage system, this shall be used for data reporting. Otherwise, the contractor'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 at least three projects have been successfully installed by a participating contractor under this program, all projects will be required to undergo 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 previously stated, throughout the project development timeline and during this M&V phase, resources will be made available for all participating contractors.

A NYSERDA QA contractor will 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 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.nysERDA.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.



## 9 Technical and Other Requirements

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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. The specific terms of the warranty (such as number of cycles warranted) are between the manufacturer and contractor/customer.

### **Grid Connected**

Financial support is only 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. The energy storage system must be connected to the local electric utility's distribution system and 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.

### **Round Trip Efficiency**

All energy storage systems must be designed to maintain a minimum 70% round-trip efficiency during the system life. Roundtrip efficiency is the difference between kWh used to charge the system and kWh discharged from the system, including any parasitic losses and all forms of usable energy and measured using the design procedures indicated in Pacific Northwest National Lab / Sandia National Lab's Protocol for Uniformly Measuring and Expressing Performance of Energy Storage Systems (SAND 2016-3078 R).

### **Approved System Design**

The participating 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 participating contractor may not be eligible for incentive payments as per NYSERDA's QA requirements.

### **Interconnection**

The participating contractor is required to ensure all approved energy storage systems have an appropriate interconnection agreement that meets New York State Standard Interconnection Requirements. Participating 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 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 participating 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**

Energy storage systems and components must comply with all manufacturers' installation requirements, applicable laws, regulations, codes, licensing, and permit requirements. This includes the New York State Environmental Quality Review Act (SEQRA) (or the City Environmental Quality Review Act [CEQR]); any applicable provisions of the New York State Environmental Conservation Law (ECL) and Department of Environmental Conservation (DEC) regulations pertaining to disposal; Article 10, if applicable; 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 Requirements; and all applicable State, city, town, or local ordinances or permit requirements, and any additional requirements of the local AHJ. It is the participating contractor's responsibility to ensure compliance with all such laws; NYSERDA will inspect to ensure such compliance and may terminate the agreement at any time upon a finding that any applicable law or code has not been complied with.

## 10 Addendum to Program Manual – COVID-19

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Version 1.1, adopted May 22, 2020

In response to the COVID-19 emergency and New York State on PAUSE Executive Order, NYSERDA is making the following changes to the NYSERDA Retail Energy Storage Incentive Program:

- **COVID-19 Construction Activities Policy**

Contractors must affirm and implement the *NYS Department of Health Interim Guidance for Construction Activities during the COVID-19 Public Health Emergency* for all work undertaken after the restrictions put in place by the NY on PAUSE Executive Order are lifted for the applicable region and sector. Failure to follow these requirements may result in program penalties, up to and including termination from the program.

- **Project Completion Deadline Extension**

NYSERDA has extended all project completion deadlines by six (6) months. This includes all projects submitted prior to March 30, 2020 and will extend to projects submitted through the end of the effective date of the NY on PAUSE Executive Order and any subsequent amendments for the applicable region and sector. Where applicable, continued project maturity milestones including submission of proof of full interconnection payment to the utility is also extended. Notwithstanding the extension of these deadlines, projects must still meet the New York State Standard Interconnection Requirements (SIR) as temporarily adjusted by the April 6, 2020 [Order Suspending Certain Interconnection Payment Deadlines](#).





**State of New York**

Andrew M. Cuomo, Governor

**New York State Energy Research and Development Authority**

Richard L. Kauffman, Chair | Alicia Barton, President and CEO