Introduction to NYISO Onboarding

Intended for Energy Storage Resources (ESRs)

Market Training Team

Market Training, NYISO

Onboarding of New Resources – ESR Education Suite

January 2023

eLearning Module

Module Topics

INTRODUCTION TO NYISO ONBOARDING

ONBOARDING RESOURCE CHECKLIST

ONBOARDING OF NEW RESOURCES: ESR EDUCATION SUITE CONTENTS

USEFUL WEBSITE INFORMATION

COMMERCIAL PARTICIPATION INSIGHTS

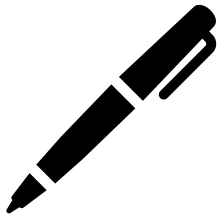
Introduction to NYISO Onboarding

- Energy Storage Resource applicants seeking to sell Energy, Capacity and/or Ancillary Services into the NYISO-Administered markets must complete the formal NYISO onboarding process
- The onboarding process consists of a series of steps to be taken by the applicant, in collaboration with multiple NYISO departments
- This ESR onboarding education suite has been designed to help guide new ESRs through that process

Onboarding Resource Checklist

New York ISO

- ☐ Interconnection Process
- ☐ Buyer-Side Mitigation
- ☐ Customer Registration Packet
- ☐ Operations Modeling Info
- ☐ Capitalization & Credit Forms
- ☐ Reference Levels Established
- ☐ Outage Scheduling Submitted
- ☐ ICAP Enrollment Complete
- ☐ Familiarize w/NYISO Invoicing



Onboarding of New Resources: ESR Education Suite Contents

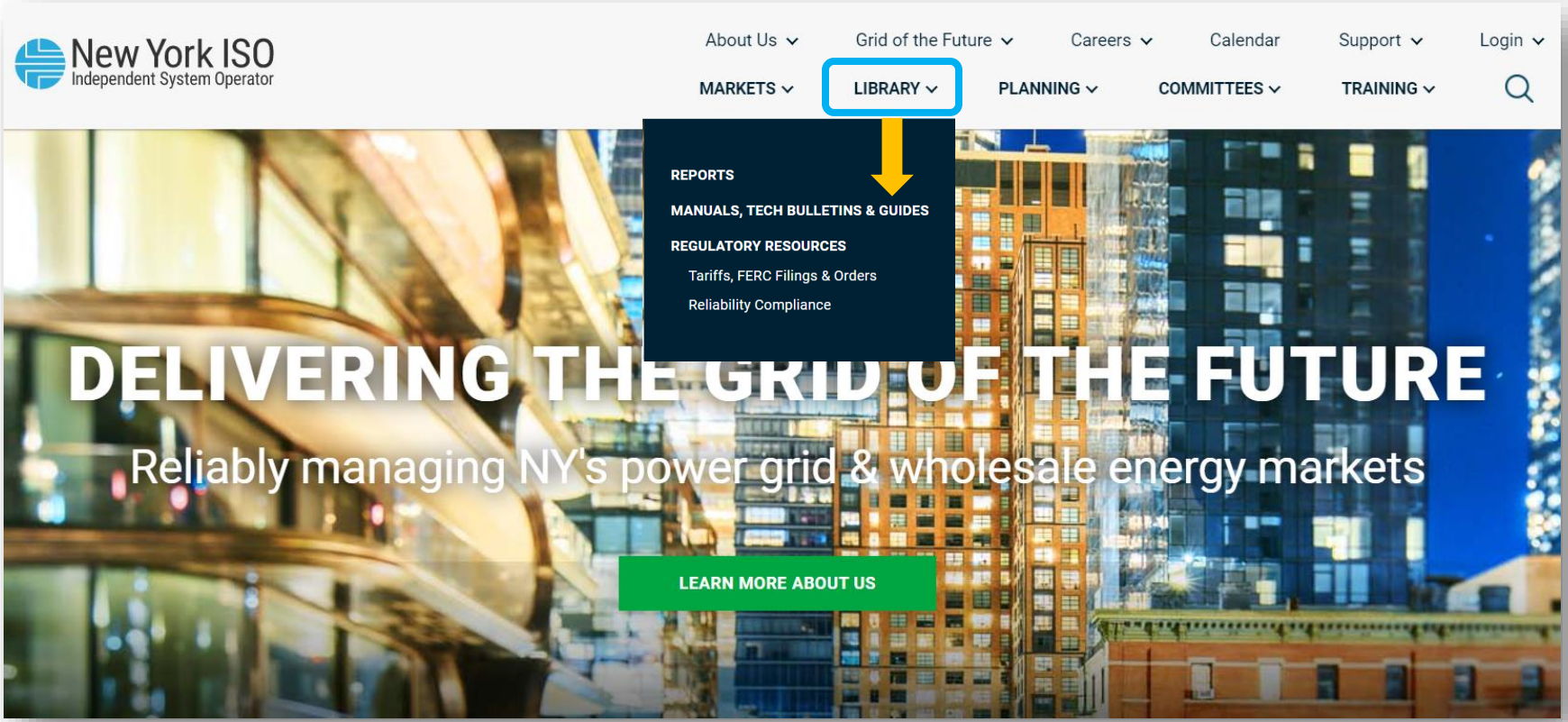
ESR Education Suite Table of Contents

New York ISO

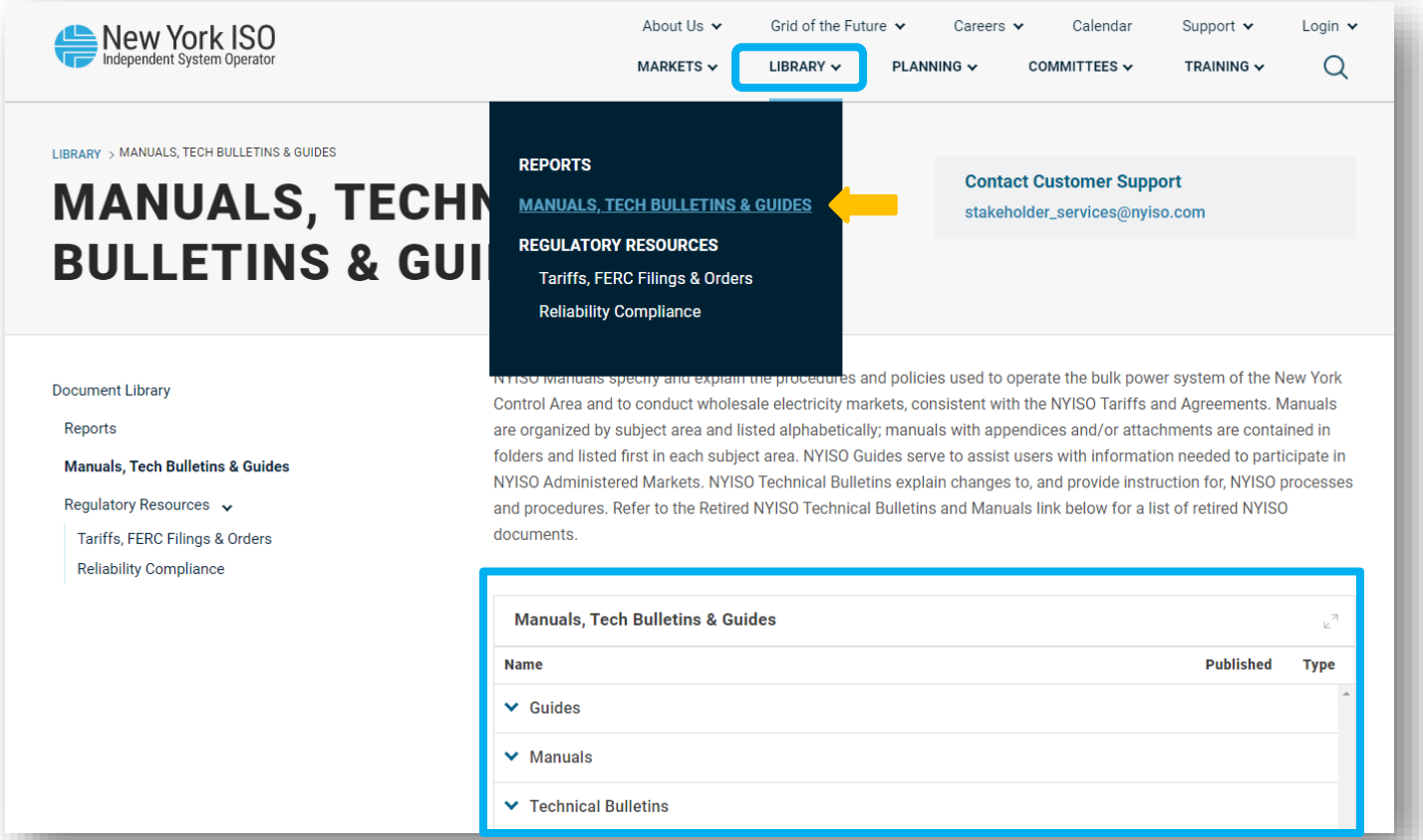
Topic	Resource Mode
Introduction to Onboarding	eLearning Module
1. Interconnection & Buyer-side Mitigation Exemption	FAQ (PDF)
2. NYISO's Customer Registration Process	eLearning Module
3. Operations Modeling & Communication	Fact Sheet (PDF)
4. Credit Requirements	Fact Sheet (PDF)
5. Market Mitigation & Analysis Reference Levels	Fact Sheet (PDF)
6. Outage Scheduling Submission	Info Graphic (PDF)
7. Installed Capacity (ICAP) Participation Enrollment	Fact Sheet (PDF)
8. Metering Configuration	Info Graphic (PDF)
9. Metering for Settlements	Info Graphic (PDF)
10. Financial Settlements	Quick Reference Sheet (PDF)
11. Resource Appendix: Onboarding of New ESR Resources	PDF

NYISO Website Information

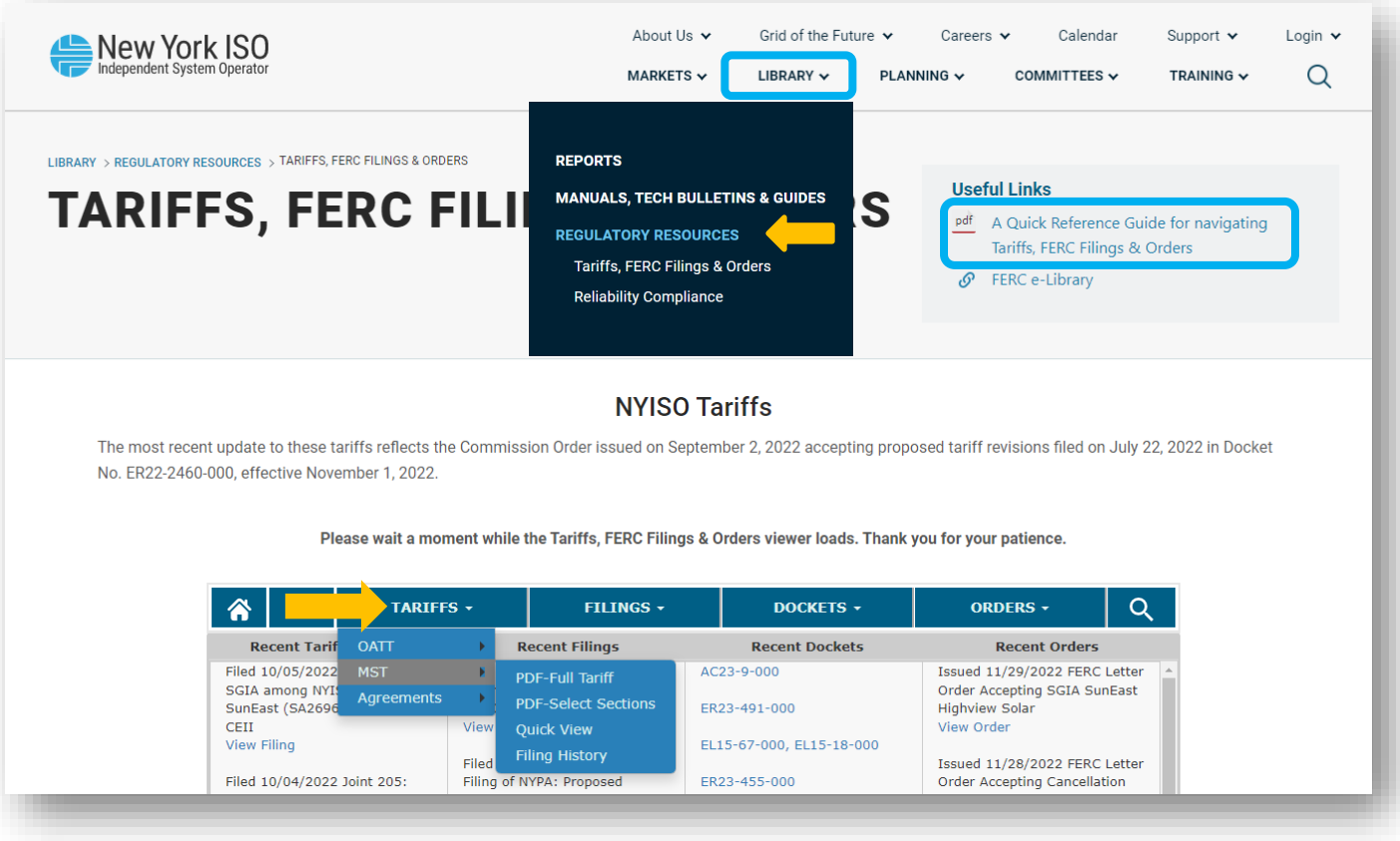
NYISO Document Library



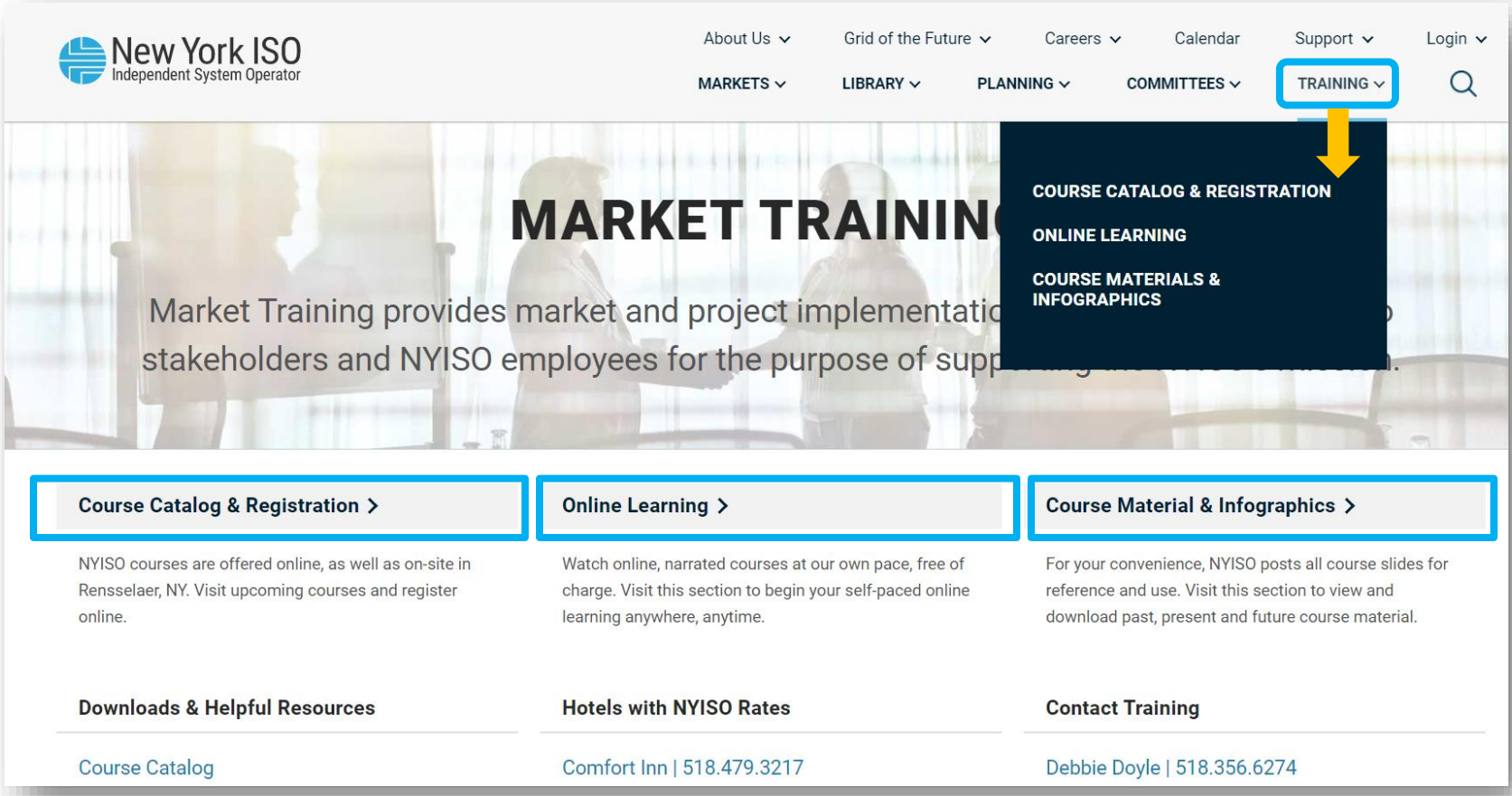
NYISO Manuals, Tech Bulletins & Guides



NYISO Regulatory Resources



NYISO Market Training Resources



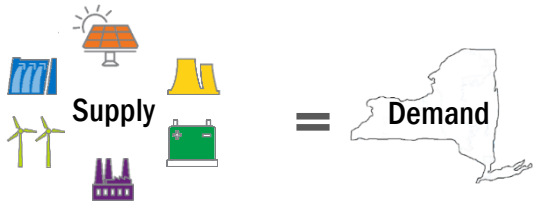
Commercial Participation Insights

ESR Participation Requirements

- **Qualifying for wholesale market participation requires that ESRs:**
  - Meet a minimum size requirement of 100 kw
  - Inject at a rate of at least 0.1 MW for a period of at least one hour
  - Comply with all metering requirements
  - Account for energy withdrawals that serve Station Power
  - Capability to operate 24 hours of each dispatch day for ESRs without an Energy Duration Limit (EDL)
    - ESRs unable to sustain injection to the grid for 24 hours, may participate in the ICAP Market as Resources with an EDL, electing annually an EDL consistent with ESR's capability

Commercial Participation

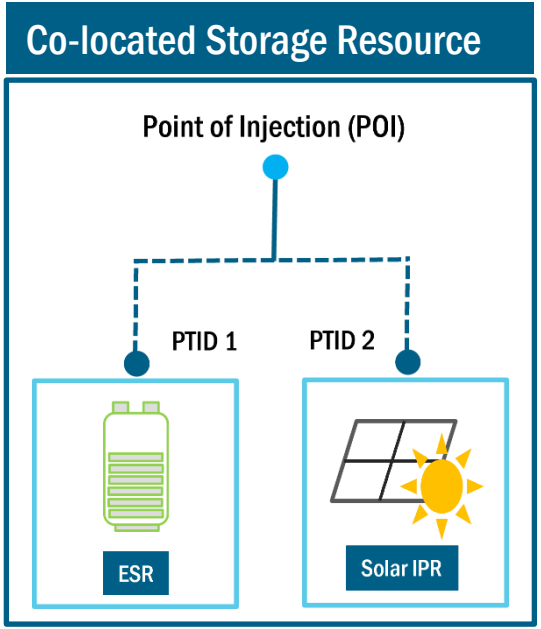
- **Wholesale Energy Markets**
  - Energy production from generators participating in the NYISO's energy markets are used to meet demand in New York
  - ESRs may enter supply offers into:
    - **Day Ahead Market: To procure supply to meet the forecasted load for the next operating day**
    - **Real Time Market: The Balancing Market to meet any differences between the energy scheduled in the Day-Ahead market and Real-Time demand**



Wholesale Energy Market Participation:

ESR as Co-located Storage Resources (CSR)

- An ESR can participate in NYISO's wholesale markets under the CSR participation model if:
  - It is co-located with a Wind or Solar Intermittent Power Resource (IPR) behind a single Point of injection/withdrawal (POI)
- The ESR will share a set of Scheduling limits with its co-located IPR
  - CSR Injection Scheduling Limit
  - CSR Withdrawal Scheduling Limit
- The ESR will operate as a discrete Generator and will participate in the NYISO markets under the ESR generator type with a distinct PTID
- The ESR will submit bids independently from the IPR, and will be scheduled and settled as an independent Generator
  - The combined injections and withdrawals MWs of the ESR and its co-located IPR must adhere to the CSR Scheduling Limits



Commercial Participation

- **Installed Capacity Market**
  - ESRs participating in the NYISO's Installed Capacity market
    - **Contribute to procuring sufficient resource capability to meet expected maximum energy needs plus an added margin**
  - ESRs that participate in the Installed Capacity (ICAP) Market as suppliers offer to sell capacity:
    - **Through NYISO administered auctions and are awarded monthly capacity payments that go toward recovering a portion of their fixed costs, *or***
    - **Engage in Bilateral Capacity Transactions**

Commercial Participation

- **Ancillary Services**
  - ESRs providing Ancillary Services
    - Support transmission of energy from resources to loads
    - Maintain reliable operation of NY State power system
  - ESRs may provide:
    - Voltage Support Service
      - To ensure sufficient supply of Reactive Power to maintain desired voltage levels on the NYCA Transmission System in real time operations
    - Operating Reserves
      - Backup generation in the event of a Real time power system contingency
    - Regulation and Frequency Control
      - Provides 6 second balancing of load and generation to maintain the scheduled Interconnection frequency at 60 Hz

Next Steps

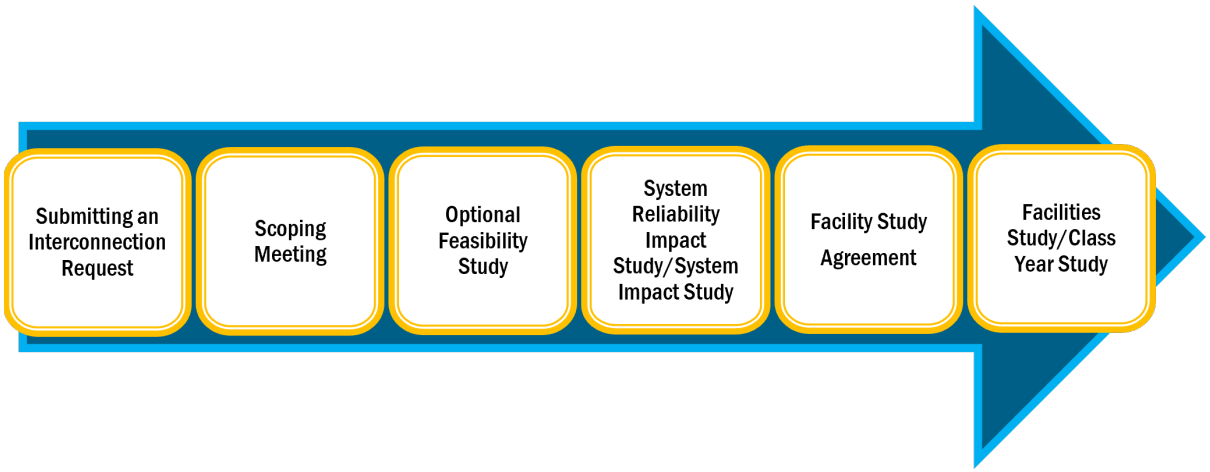
Post Onboarding Next Steps

- **Continued Education Opportunities**
  - Access Bid-to-Bill eLearning modules
    - Energy Storage Resources Participation Model
    - Co-located Storage Resources Participation Model
  - Register and Attend NYISO Instructor-Led Training
    - New York Market Orientation Course (NYMOC)
    - Accounting & Billing Workshop
    - Intermediate Installed Capacity Course
- **Customer Support**
  - Reach out to NYISO Stakeholder Services with your questions
    - stakeholder_services@nyiso.com
    - 518-356-6060
- **Member Relations Services**
  - Participate in NYISO Shared Governance
    - customer_registration@nyiso.com
      - Meeting Attendance only, ***or***
      - Membership with voting rights

Frequently Asked Questions (FAQs)

New York ISO

Interconnection for ESRs



Steps in NYISO's Interconnection Process

1. How does a new ESR connect to the NY Transmission System?

An ESR can connect to the NY Transmission System through the NYISO's interconnection process. ESRs along with other generation, transmission and load projects that have submitted an Interconnection Request to the NYISO form what is called the "Interconnection Queue." The steps in an ESR's interconnection process is the same as any other type of traditional generator submitting an Interconnection Request. An ESR's ERIS and CRIS values will be determined through the interconnection process.

2. What are ERIS and CRIS?

ERIS (Energy Resource Interconnection Service) is basic Interconnection service that allows a Developer to interconnect its ESR to the NYCA grid in accordance with the NYISO Minimum Interconnection Standard, to enable the wholesale grid to receive electric energy from the ESR.

CRIS (Capacity Resource Interconnection Service) is Interconnection service that allows a Developer to interconnect their ESR to the NYCA grid in accordance with the NYISO

Deliverability Interconnection Standard, allowing participation in the NYISO's ICAP market to the extent of the ESR's approved CRIS level.

3. What is the objective of a scoping meeting?

Once a new ESR Developer (Large Facility over 20 MW) or an Interconnection Customer (Small Facility 20 MW or less) submits an Interconnection Request in NYISO's automated Interconnection Portal, they are invited to an initial scoping meeting with NYISO and their respective Transmission Owner. This meeting typically includes review and discussion of the following: the full project description, the Interconnection portal, and steps for accessing information, potential issues surrounding the proposed Interconnection point, consideration of alternate Interconnection points, a review of the coming studies and next steps, and questions the developer has regarding the process. The scoping meeting therefore provides developers the initial insight on the Interconnection process to help them decide if, and how they want to proceed with the subsequent studies in the Interconnection process.

4. What are the three studies that take place in NYISO's Interconnection Process?

The NYISO's Interconnection Process includes three successive studies:

Optional Feasibility Study – This evaluates the configuration and local system impacts and provides the developer with a design on how the facility can interconnect to the system.

System Reliability Impact Study or Small Generator System Impact Study – This evaluates the impact of the facility interconnecting on system reliability and provides any upgrades that must be made for reliable Interconnection. If a project elects to forego the Optional Feasibility Study, this study also evaluates the physical feasibility and local system impacts.

Class Year Study or Small Generator Facilities Study – The Class Year Study is a clustered evaluation of a group of projects. It is comprised of two primary components. The System Upgrade Facilities evaluation identifies the Interconnection facilities upgrades required for the reliable Interconnection of the Class Year projects. The Deliverability study determines the extent to which each project is deliverable at the requested CRIS MW level, for projects that request to participate in the NYISO's Installed Capacity Market. Small Generating Facilities are only subject to a Class Year Study if their SISs identify the need for non-Local System Upgrades. If a Small Generating Facility only requires Local System Upgrades, it proceeds through a facilities study under the Small Generator Interconnection Procedures. The Small

Generator Facilities Study identifies the Interconnection facilities and upgrades required for the reliable Interconnection of the individual project – not a group of projects.

5. What are the Large Facility Interconnection Procedures and Small Facility Interconnection Procedures?

An ESR that is larger than 20 MW in size is considered a Large Facility and is evaluated in NYISO's Large Facility Interconnection Procedures (LFIP), while an ESR that is 20 MW or less is considered a Small Generating Facility and is evaluated in the NYISO's Small Generator Interconnection Procedures (SGIP) if it is connecting to transmission or portion of the distribution system subject to the NYISO's interconnection process. The Large Facility Interconnection Procedures are described in the Open Access Transmission Tariff (OATT) Attachment X. The Small Generator Interconnection Procedures are described in the OATT Attachment Z.
The scope of the System Reliability Impact Study (SRIS) performed for Large Facilities is more extensive than the System Impact Study (SIS) conducted for Small Generating Facilities. Studies performed under the under the Small Generator Interconnection Procedures also do not involve NYISO Working groups or the NYISO Operating Committee.

6. At what stage of the Interconnection process is meter configuration of an ESR studied, and determined?

The metering configuration of an ESR, its location, the cost of meter installation and the Meter Authority involved is typically determined as part of the facilities study. Typically, the respective Transmission Owner will function as the Meter Authority for an ESR.

7. Can an ESR connect to the Distribution system through their TO's Interconnection process and still participate in NYISO's markets?

An ESR connecting to the distribution system is subject to the Transmission Owner's Interconnection process vs. the NYISO's Interconnection process unless the portion of the distribution system is "FERC jurisdictional" for Interconnection purposes (e.g., if there is a wholesale generator already connected to that distribution line/facility). Please refer to Attachment A of the Transmission Expansion and Interconnection Manual for the "Jurisdictional Flow Chart." If the resource would like to participate in NYISO's wholesale markets, then it must proceed through the NYISO's Registration process and demonstrate that it has an effective interconnection agreement, as well as other relevant

documents. To participate in the Installed Capacity market, an ESR larger than 2 MW will have to obtain CRIS though a Deliverability study as part of a Class Year Study or Expedited Deliverability Study. ESRs smaller than 2 MW do not need to participate in a Deliverability study to obtain CRIS.

8. How is NYISO's Interconnection Process handled for an ESR that proposes to connect as a Co-located Storage Resource (CSR), rather than a stand-alone ESR?

For facilities proposing to interconnect as a CSR, both the participating ESR and the Wind/Solar Intermittent Power Resource (IPR) must be included in a single Interconnection Request (IR). The CSR will be studied in the Interconnection process as a single facility evaluated at a single total ERIS value and a single total CRIS value; however, the Developer will specify ERIS and CRIS for the ESR and IPR such that each generator will have its own ERIS and CRIS values.

9. What are some important considerations for an ESR developer before going through the NYISO's Interconnection process?

It is important that ESR developers familiarize themselves with NYISO Interconnection procedures before beginning the Interconnection process. This will aid in avoiding any unnecessary potential delays. For example, providing required data on a timely basis, satisfying required deadlines, and understanding when and how project modifications can be accommodated are critical elements of the interconnection process.

10. How long does NYISO's Interconnection process take?

The estimated time frames for NYISO to meet its obligations are outlined in Attachments S, X and Z to the NYISO OATT, and summarized in the tables in Attachments D and E of the Transmission Expansion and Interconnection manual. These time frames are subject to the parties using Reasonable Efforts to meet the applicable milestones.

The overall time to complete the Interconnection studies and execute an Interconnection Agreement can vary significantly based on the unique circumstances of individual projects.

The NYISO posts quarterly study metrics on its publicly accessible website under "Interconnection Process" > "Quarterly Reports" consistent with the requirements under Order No. 845 and Order No. 845-A and Section 30.3.4.4 of Attachment X to the NYISO OATT. Developers and Interconnection Customers can review those postings to

inform their expectations about how long an Interconnection study may take based on the NYISO's completion of past studies.

Buyer Side Mitigation for ESRs in the Mitigated Capacity Zones

1. When does the Buyer Side Mitigation evaluation take place?

The purpose of Buyer Side Mitigation is to prevent uneconomic entry from artificially suppressing Installed Capacity prices. Buyer Side Mitigation rules only apply for the Mitigated Capacity Zones (New York City and Zones G-J). BSM evaluation process occurs concurrently with the NYISO Class Year process, where CRIS request is evaluated.

2. How are ESRs evaluated for Buyer Side Mitigation?

An ESR is considered an Excluded Facility as it is qualified to satisfy the goals specified in the New York State Climate Leadership and Community Protection Act (CLCPA). Therefore, ESRs will not be subject to review by the NYISO under BSM rules or otherwise be subject to an Offer floor.

NYISO Customer Registration and Resource Registration

Intended for Energy Storage Resources (ESRs)

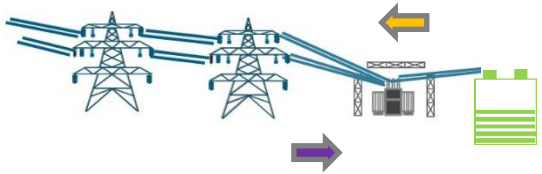
Market Training Team

Market Training, NYISO

Onboarding of New Resources – ESR Education Suite

January 2023

eLearning Module



Overview of NYISO's Registration Process

- The NYISO's registration process for a new applicant entity/organization that owns or operates an Energy Storage Resource (ESR) and wishes to participate as a supplier of Energy, Capacity and/or Ancillary Services consists of two streams:
  - NYISO Customer Registration Process
  - Resource Registration Process
- An entity/organization that is already a NYISO customer, and would like to register an ESR for NYISO market participation needs to only go through the Resource Registration Process

NYISO Customer Registration

- Must be completed by any new applicant that wishes to become a NYISO customer
- Applicant must comply with the terms and conditions set forth in the NYISO tariffs and is qualified to take the services provided for in the NYISO tariffs
  - Open Access Transmission Tariff (OATT)
  - Market Administration and Control Area Services Tariff (MST)
- Applicant must complete all Registration requirements to qualify

NYISO Customer Registration

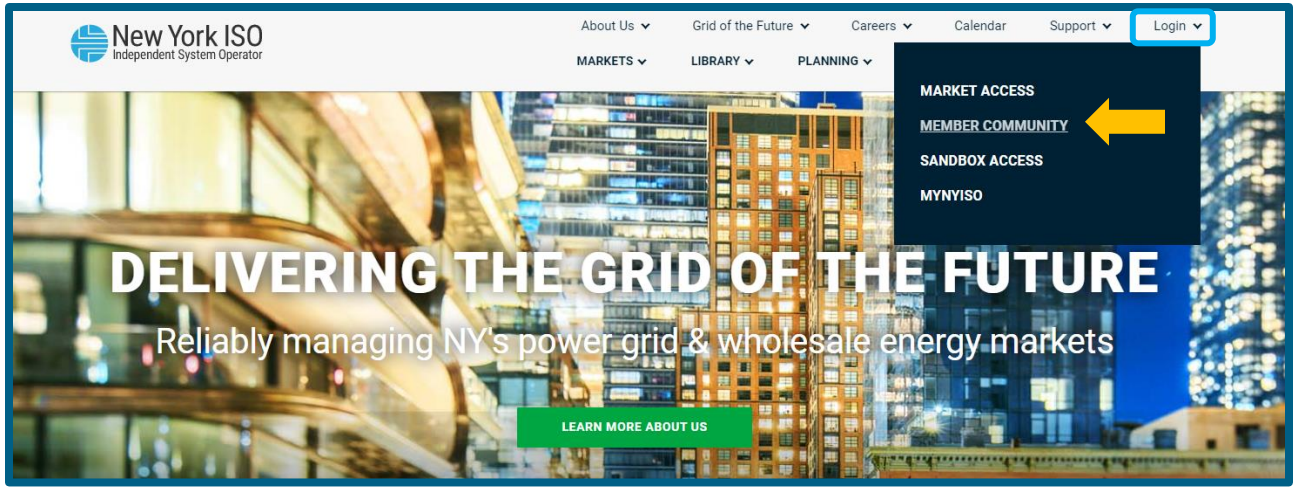
- No Registration, membership, or other fee for a new applicant registering to be a NYISO Customer
  - Please note that applicants will have specific credit requirements*
- Once approved as a NYISO Customer, the applicant will incur a share of:
  - NYISO's Operational Costs
  - Other financial obligations pertaining to their role of participation in NYISO's Energy, Ancillary Services and Installed Capacity Markets
- Calculations of Rate share and other financial obligations determined according to Tariffs

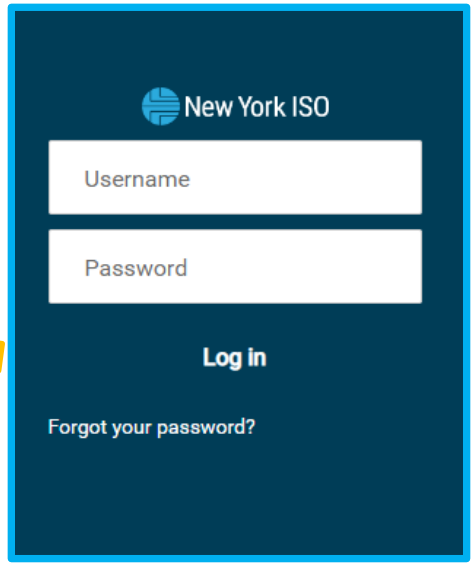
* Refer to the Credit infographic for details

NYISO Customer Registration

- Registration package is submitted through the NYISO's Member Community Online Portal
- Initial Steps:
  1. Applicant's Initial Email inquiry to customer_registration@nyiso.com
  2. Assignment of login credentials for the Member Community Portal for main Administrator and other appropriate users in Organization
  3. Completion of:
     - NYISO Customer Registration Application
     - Service Agreement OATT Attachment A
     - Service Agreement MST Attachment A
     - Satisfy Minimum Participation Criteria
     - Provide Credit Support, as applicable

NYISO Customer Registration

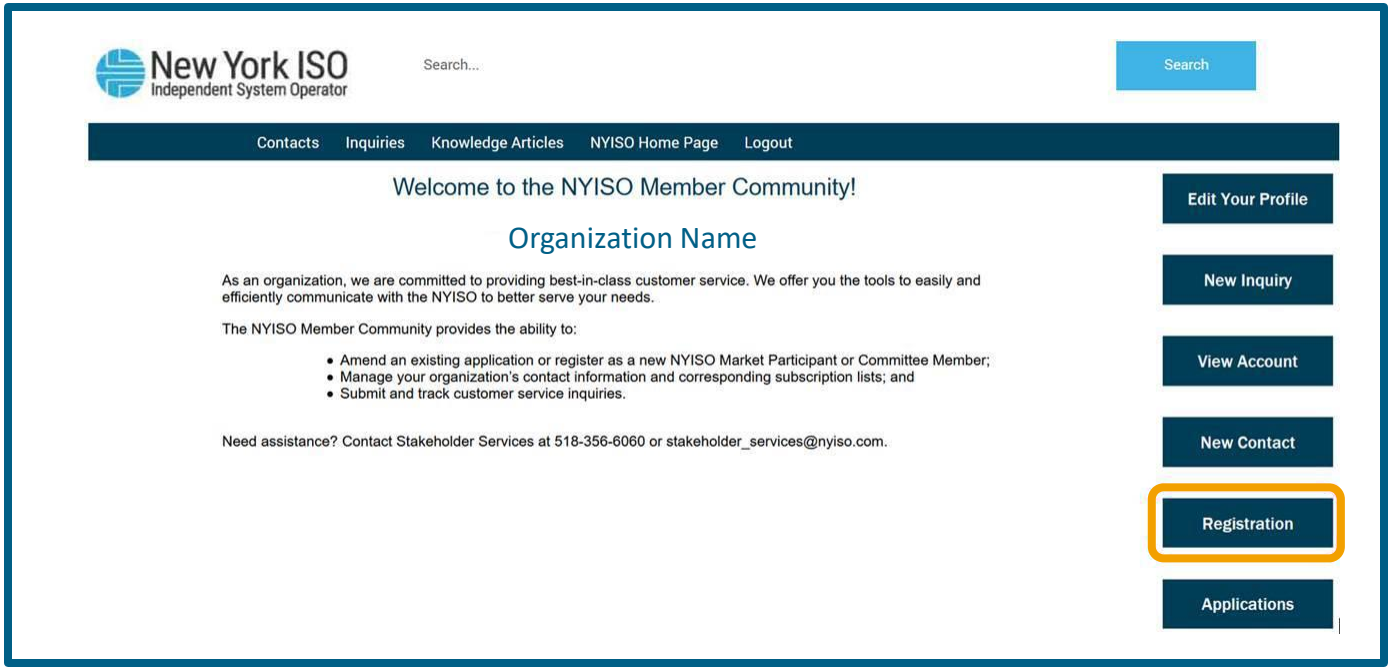




Accessing the NYISO's Member Community Portal

NYISO Customer Registration

NYISO Member Community Portal



NYISO Customer Registration

- Minimum Participation Criteria:
  - Customer specific eligibility requirements set forth in Tariffs
  - List of parent company and any Affiliates
  - Risk management: Approved risk management policies and procedures
  - Training: Appropriate training to bid/schedule and participate in NYISO administered market areas as an ESR supplier
  - Operational capabilities: Personnel resources and technical abilities to respond to NYISO communications and directions
  - Financial capabilities: Appropriate experience and resources to satisfy obligations to NYISO
  - Capitalization: Minimum capitalization requirement

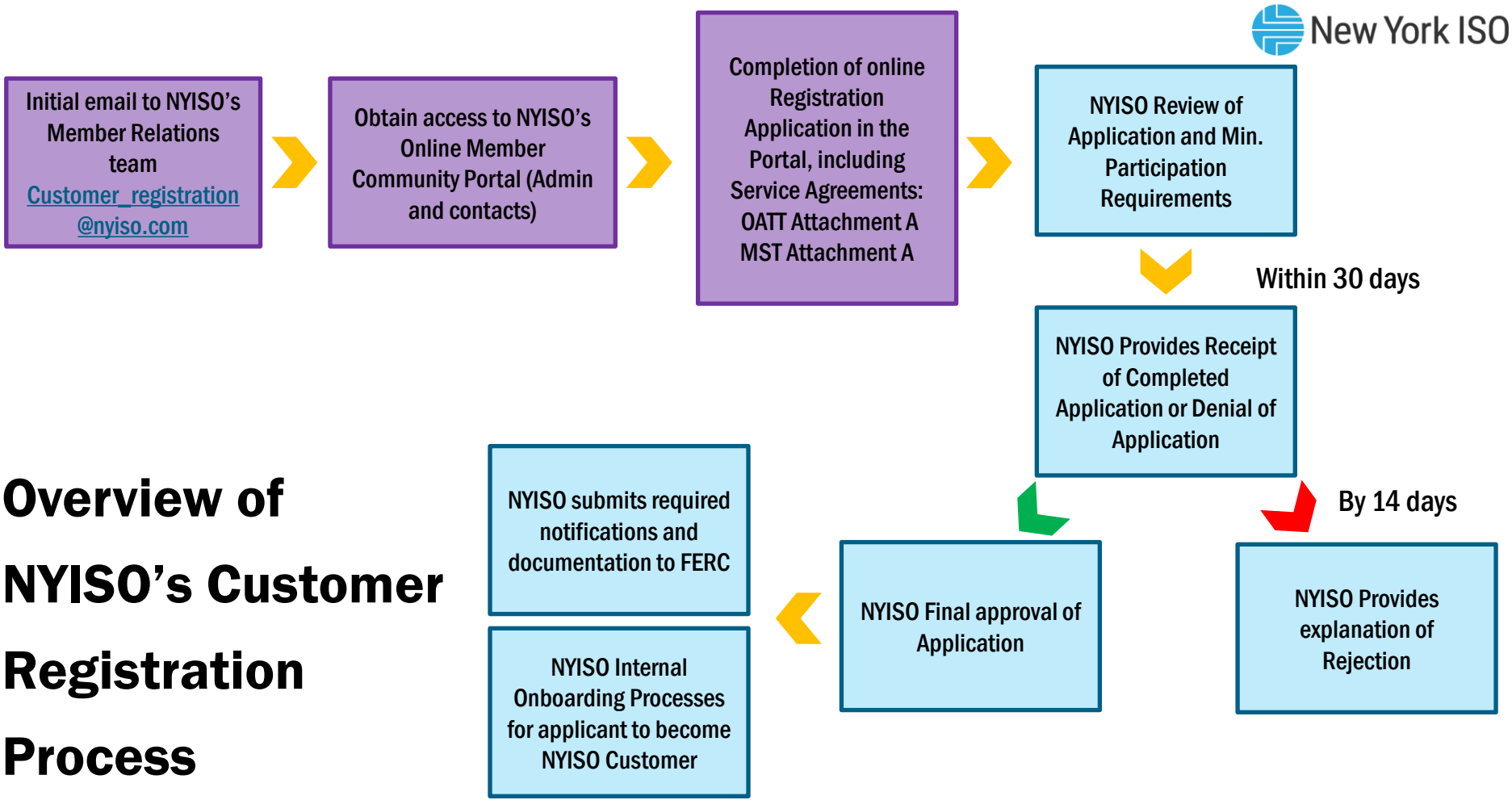
NYISO Customer Registration

- Minimum Participation Criteria:
  - Minimum Capitalization Requirement
    - Maintain at least US $10 million in assets or at least US $1 million in tangible net worth
      - As evidenced by Customer's or its guarantor's most recent audited annual financial statements
  - If unable to meet Minimum Capitalization Criteria, post with NYISO either:
    - $200,000 to participate in any/all of the ISO-Administered Markets other than the TCC market, or
    - $500,000 to participate in any/all of the ISO-Administered Markets including the TCC market
  - The Customer may not use this security to support any NYISO credit requirements

NYISO Customer Registration

- Timeline Facts:
  - The primary Registration process of review, validation and approval of a new applicant as a NYISO customer may take up to, or more than, 60 days
  - Incomplete applications expire 12 months from the date of receipt by the NYISO or 6 months from the date of NYISO legal approval, whichever is earlier
  - The Interconnection Study process does not need to be completed before starting Customer Registration
    - However, by the time Registration is completed, all the steps in the Interconnection process needs to be completed, and the Interconnection Agreement needs to be executed

Overview of NYISO's Customer Registration Process



NYISO Customer Registration

- NYISO Internal Onboarding Processes:
  - Credit Evaluation
  - Establishing MIS privileges
  - Establishing system access privileges for organization/personnel:
    - NAESB Digital Certificate
    - NYISO online systems such as Market Information System (MIS), ICAP Automated Market System, (ICAP AMS), Reference Level System (RLS), Credit Management System (CMS), Outage Management System (OMS), Customer Settlement Interface (CSI) etc.

Resource Registration Process

- Process by which new/existing NYISO customers register a resource for participation in NYISO markets
- Can take place in parallel with the NYISO Customer Registration Process for new applicants who own or operate an ESR and wish to participate in NYISO markets
- Resource specific sections of the application package (Section BB, one-line diagrams, etc.) used to complete:
  - Resource modeling in NYISO operational systems
  - Establishing resource specific privileges in NYISO systems
  - Pre-commercial processes to get resource ready for commercial participation in NYISO markets
- Resource specific sections must be submitted at least 4-6 months before Start-Up testing to account for accurate modeling of the resource in NYISO Operational systems

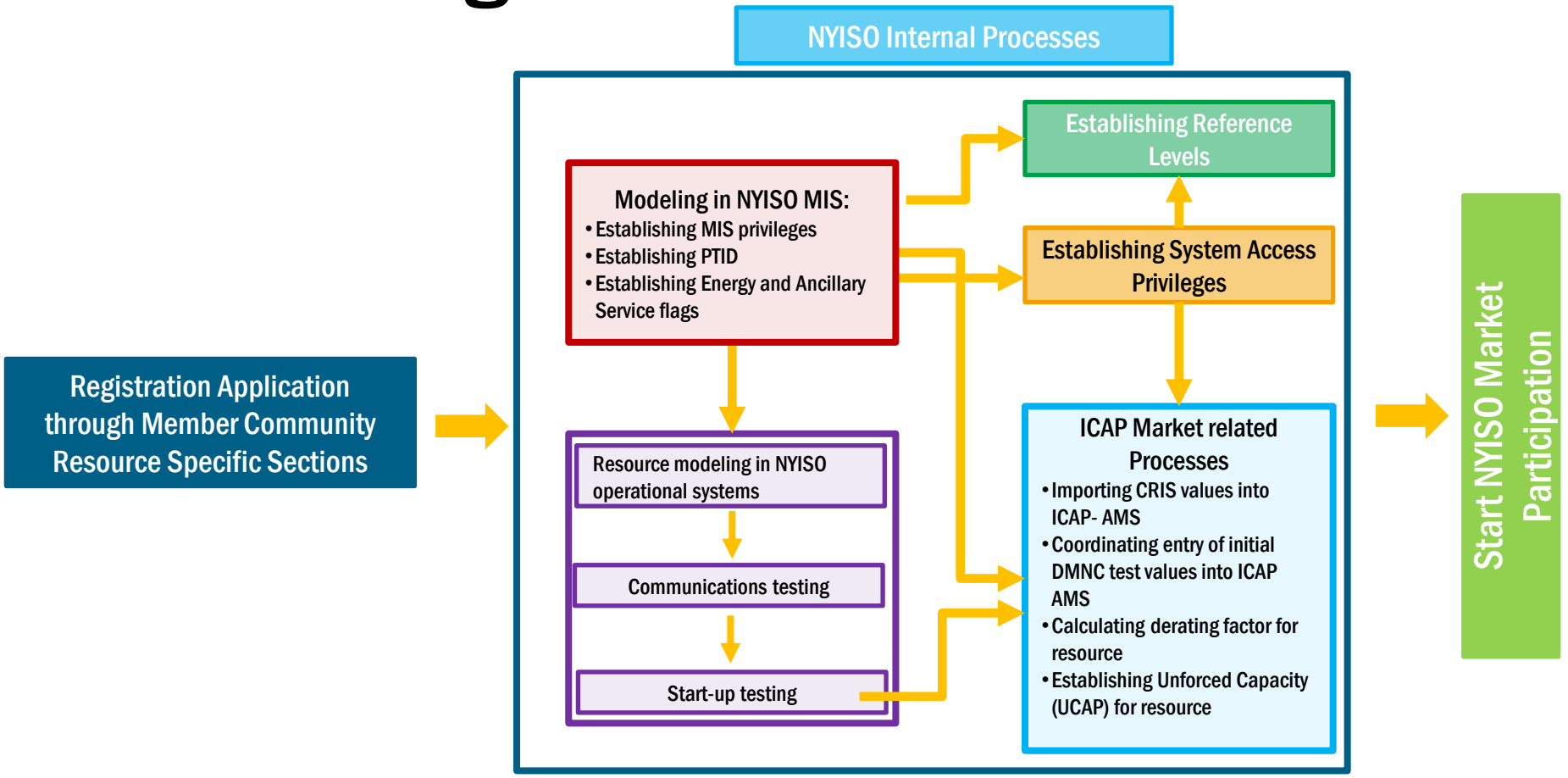
Resource Registration

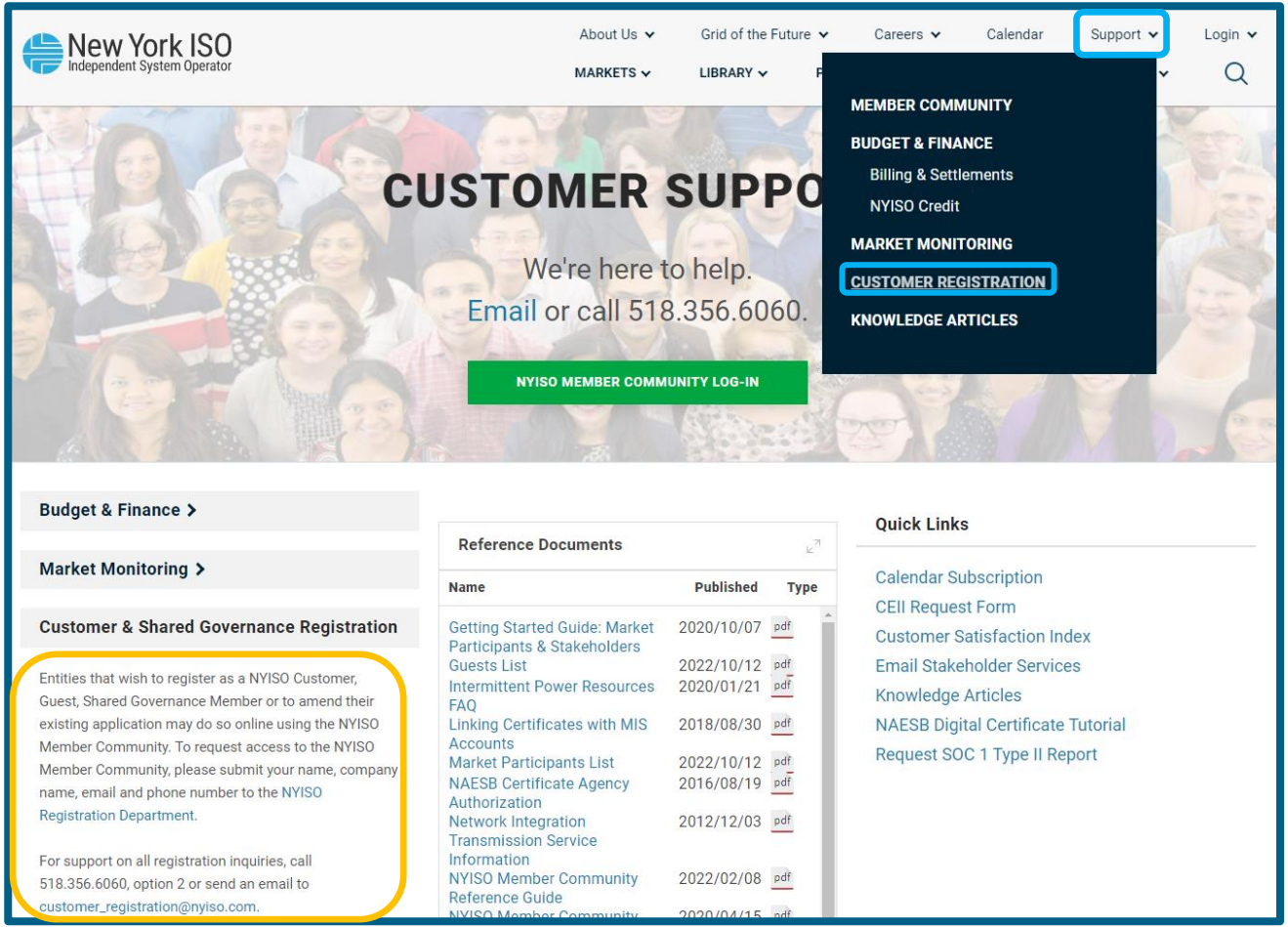
- Operational Information from Resource in Registration Application:
  - Section BB of Registration packet, Information includes:
    - Generator size
    - Operating restrictions
    - State of Charge Information
    - NYS Transmission System injection point and voltage level
    - VAR Capability of ESR
    - Indication of ICAP Market Participation
    - Indication of Reserve and Regulation Market Participation
  - One-line Diagram of the resource
    - Representation of all electrical equipment and connections

Resource Registration

- NYISO Internal Processes pertaining to Resource Registration:
  - Establishing NYISO MIS system privileges for market participation of the resource
    - Establishing Generator Point Identifier (PTID)
    - Establishing Energy, Ancillary service flags within the NYISO MIS
    - Establishing resource specific Registration parameters
  - Establishing Reference Levels for Energy for new ESR
  - Establishing ICAP Market related metrics within ICAP AMS (CRIS, derating factors, Unforced Capacity) for new ESR
  - Modeling of new ESR in NYISO operational systems
  - End-to-End Communications Testing
  - Start-up Testing

Resource Registration





Contact Information – NYISO Registration

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Energy Storage Resources (ESR)

New York ISO

Resource Modeling and Start-Up Testing

Modeling of a new ESR within NYISO Operational Systems

To enable accurate system representation, the new ESR must be modeled in the NYISO MIS and Operational systems, based on resource-specific Registration parameters and metering configuration setup. A completed Registration packet, including Section BB, must be submitted to the NYISO. For timely modeling to be completed and for timely modeling to be completed and for start-up testing and participation in the NYISO markets, the recommended timeframe for modeling a new resource is 4-6 months prior to the intended start date. Resource specific Object IDs, meter configuration and appropriate MIS flags (Energy and Ancillary Services participation) are attributed to the resource within the NYISO's MIS and operational systems.

Section BB includes:

- ✓ Generator size
- ✓ Operating restrictions
- ✓ State of Charge Information
- ✓ NYS Transmission System injection point and voltage level
- ✓ VAR Capability of ESR
- ✓ Indication of ICAP Market Participation
- ✓ Indication of Reserve and Regulation Market Participation

End-to-end communications testing

Real-time communication protocols and the communications path must be established with the respective Transmission Owners (TOs) prior to the onset of start-up testing. The typical path is a three-way communication path from the NYISO Control Computer System to the Transmission Owner Control Computer system, and from there to the generator. Requirements and procedures are detailed in the Control Center Requirements Manual. Generators requesting direct communication with the NYISO for transmitting data and basepoint information must follow the procedures outlined in the Direct Communications Manual, as well as reach out to NYISO Stakeholder Services.

End-to-end communications testing including 5-min, 6-second basepoints, breaker status, generator MW & MWH measurement (telemetry testing) must be completed prior to scheduling start-up testing and must be coordinated with the NYISO using the customer_registration@nyiso.com email address.

Pre-commercial Start-up testing

Start-up testing covers various aspects of operating, scheduling, and bidding of new ESRs prior to commercial operation and participation in NYISO Energy, Installed Capacity Markets and Ancillary

Services. Start-up testing must be coordinated with NYISO Customer Registration as well as the Outage Scheduling department and NYISO's Operations Generation desk.

Start-up testing includes:

- Operating details of the New Generator
- Synchronization to the grid
- Meter data coordination for various phases of metering, based on MW output of Generator
- ICAP specific resource capability testing (DMNC), and
- Testing for providing any selected Ancillary Services products e.g., Regulation, Operating Reserve, VSS etc.

Details about pre-commercial start-up testing can be found in Technical Bulletin 116: New Generation Units Operating During the Start-UP Testing Phase. Details about pre-qualification testing for ancillary services can be found in the Ancillary Services Manual.

Once start-up testing is completed without any issues, the operational onboarding process of the new ESR is complete. The resource can now start participating in the various NYISO markets and services that it qualifies for.

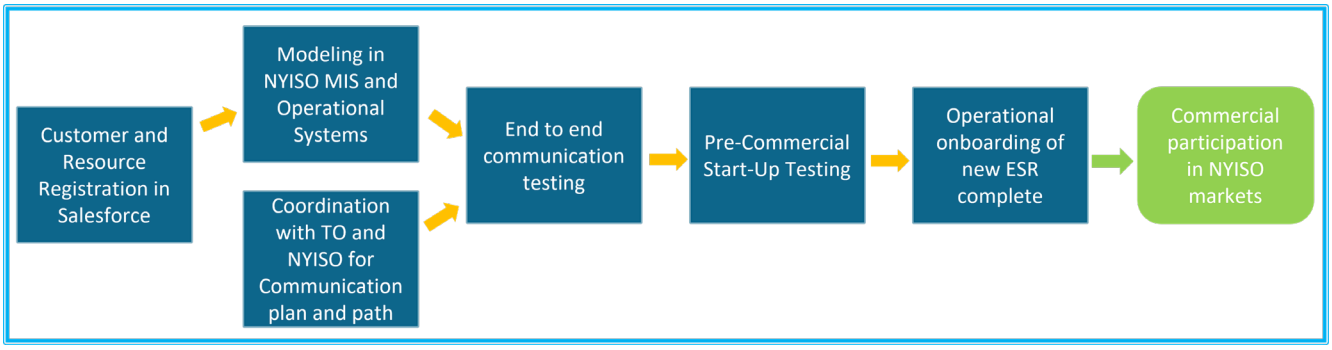


Figure: Process for resource modeling and Start-Up testing for a new ESR

New York ISO

Credit

Market Participants can see their individual market credit requirements within the Credit Management System

The Credit Management System (CMS) is a New York Independent System Operator (NYISO) software application designed to allow viewing and maintenance of Credit information by qualified users.

What documentation is required on a periodic and annual basis?

Annual/Periodic Submissions: Summary Matrix

A. Market Participant authorized to participate in the TCC market
B. Market Participant NOT authorized to participate in the TCC market
C. Guarantor who has provided a guarantee to be used as collateral
D. Guarantor who has provided an unlimited guarantee solely for capitalization purposes
E. Market Participant who qualifies for and is using Unsecured Credit

Form	Due Date	A	B	C	D	E
NYISO Officer Certification Form and Credit Questionnaire	Annually by 4/30	X	X			X
Annual Financial Statements*	Within 90 days of fiscal year end	X	X	X	X	X
Quarterly Financial Statements	Within 60 days of quarter end			X		X
Risk Policies**	Annually by 4/30	X				
Road Map if requested	Date requested by the NYISO	X				
Affiliate Forms***	Annually by requested due date	X	X			X

* If the Market Participant is using financial statements to meet their capitalization requirement or is using Unsecured Credit, the annual financial statements must be audited.

** If the Market Participant's Risk Policies have not materially changed since the last annual submission, only the Road Map needs to be submitted indicating that there have been no material changes.

*** If the Market Participant is using Unsecured Credit and they do not submit the Affiliate Form by the date requested, the Unsecured Credit will be removed and secured credit will be required until the form is received.

New York ISO

Market Mitigation & Analysis

Energy Reference Levels for ESR Participation

What are Energy Reference Levels?

- Thresholds that NYISO establishes that provide Market Participants with a framework for conduct as well as provide NYISO a more defined way to monitor Market Participant conduct
- Reference levels are based on MP cost data submissions submitted via Reference Level Software (RLS)
    - RLS
        - Access to current and historical reference levels
        - Submit and check status of data submissions and reference level adjustment requests
        - Generates DAM and RT reference levels by unit on a daily and hourly basis

ESR Reference Levels will be based on Opportunity Cost Adjustments

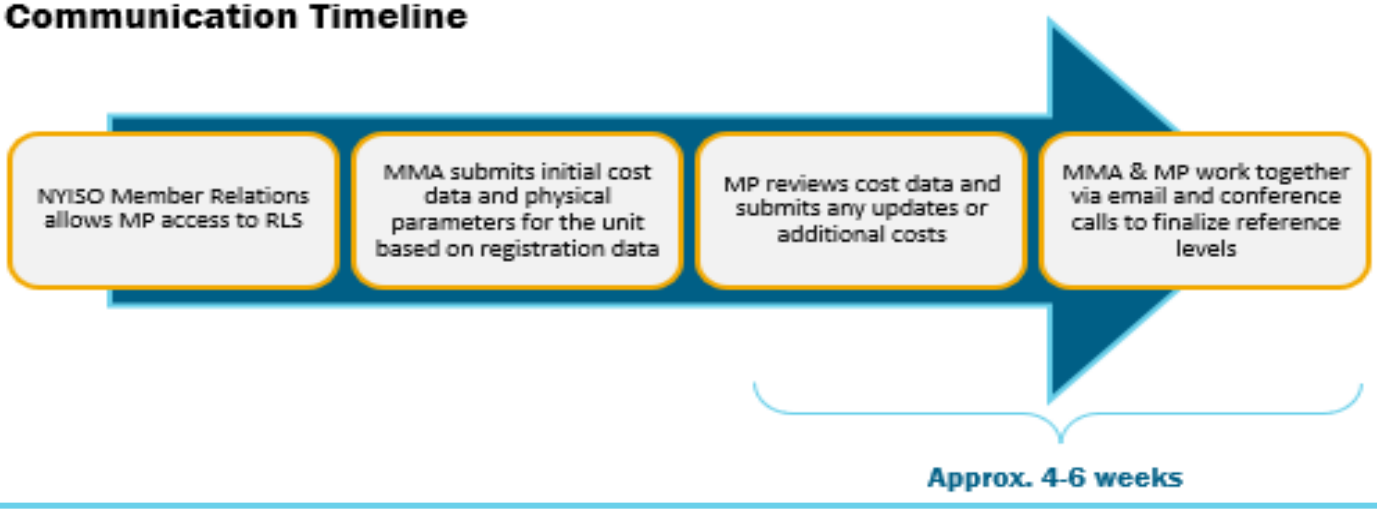
Main steps to calculate the opportunity cost for an ESR:

1. Determining an expected LBMP path for the day to use as a baseline
2. Determining the ESR's maximum revenue for each MW segment included in the unit's Reference Curve in the RLS for every hour of the day
3. The difference in the maximum revenue between the MW segments is used to determine the opportunity cost for that MW range for each hour

ESR-specific constraints used in calculation of maximum revenue for each MW segment for every hour of the day:

- State of Charge Energy Level at the start of HB 0, assumed to be zero
- State of Charge Energy Level at the end of the hour used for calculation
- Lower Operating Limit
- Upper Operating Limit
- Lower Storage Limit
- Upper Storage Limit
- Round Trip Efficiency
- Maximum number of Round trips allowed in the day

Communication Timeline



New York ISO

Outage Scheduling

Outage Scheduling is the process by which NYISO evaluates and tracks planned and unplanned changes to operational availability of transmission and generating facilities.

Basis for Outage Scheduling Process

- NYCA Reliability
- Reliability Rules Compliance
- Ensuring Sufficient Capacity
- Impact to Neighboring Control Areas

What is required for ESR onboarding with the NYISO?

Outage Scheduling - ESRs are required to submit a <u>two-year maintenance schedule</u> to the NYISO upon registration.

After the initial two-year maintenance schedule has been submitted, all subsequent updates and submittals should be provided through the Outage Management System (OMS).

Outage Management System (OMS)

- Secure, web-based application used for scheduling and tracking resource outages
  - **NOTE:** Market Participants only see the outages that pertain to their own organization

Hardware/Software/Network Specifications

- Details can be found in OMS Training Modules

Additional Specifications upon Registration with the NYISO

- Users must have the following set up with NYISO Member Relations upon registration with the NYISO <u>before</u> Market Participants are able to access OMS through the NYISO website
  - **NOTE:** Market Participants do not need these specifications to view the OMS Training Modules on the NYISO website

NAESB Digital Certificate

- Users must have a valid NAESB Digital Certificate installed

Market Information System (MIS)

- OMS users must have specific MIS privileges
  - OMS privileges must be set up for MIS account at the Org Level, **this privilege is assigned by the NYISO**
  - OMS users must also have OMS privileges assigned to the MIS account at the User Level, **this privilege is done by the organization's MIS Administrator**

New York ISO

Installed Capacity Market

General Process from Registration up to Auction Participation:

Capacity Market Qualifications → 60 Days before Go-Live → Establishing Energy Duration Limitations → ICAP Market Operations Processes

Capacity Market Qualifications

- Satisfaction of all registration requirements as per tariff rules
- Effective Interconnection Agreement that allows wholesale market participation
- Have a minimum injection capability of 0.1 MW or greater
- Outage schedules two years forward from the anticipated date of first offer into the capacity market

60 Days before Go-Live

- ESR submits checklist of documents to the NYISO Member Services/ Registration team indicating:
  - NYISO activates MIS
  - NYISO establishes PTID
  - Obtains CRIS data
- ICAP Operations team to set ICAP AMS access; ICAP Market Operations (IMO) to send email to ESR
- ESR to enter DMNC information once PTID is activated in ICAP AMS

Checklist

Documents needed to participate in the ICAP market

- ❑ Intent to offer letter
- ❑ Dependable Maximum Net Capability (DMNC) Test form
- ❑ Generating Availability Data System (GADS) form

Establishing Energy Duration Limitations

- ESRs with an EDL will be able to elect, on an annual basis, an Energy Duration Limitation that is consistent with their capability
  - ESR with an EDL may elect a 2-, 4-, 6-, or 8-hour duration

ICAP Market Operations Processes

- ICAP Operations calculates UCAP for resource using CRIS, DMNC, Energy Duration Limit, and class average derating factor

New York ISO

Energy Storage Resources (ESR) Metering Requirements

ESR Meter Requirements

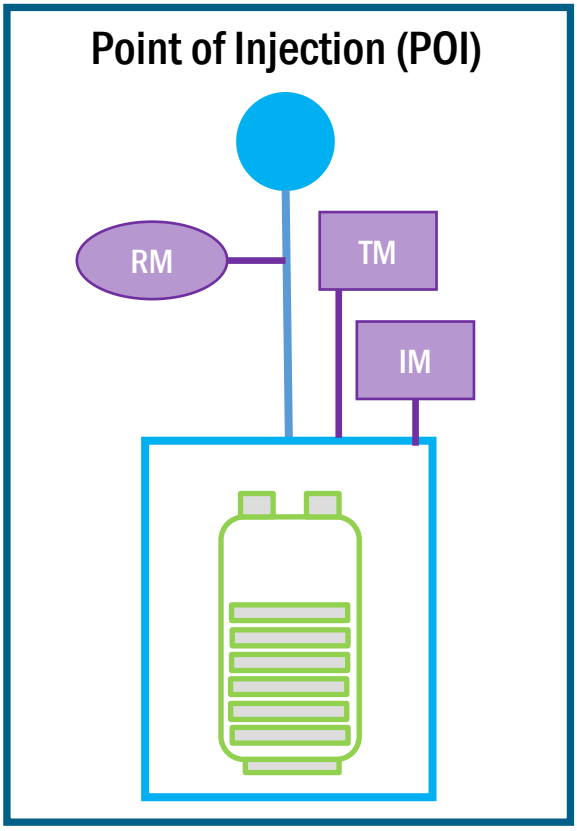
- Meters must:
  - Be approved by Metering Authority
  - Provide revenue-quality metering information
  - Provide six-second telemetry
  - Comply with minimum acceptable accuracy standards
- Submit dual channel hourly meter data
  - Separate fields for Injection MW and Withdrawal MW vs. single net MW value
- Provide Energy Level (MWh) telemetry in RT
- Fulfill Station Power requirements

Meter Authority

- An entity responsible for the calibration, maintenance, operation, and reporting of metered data from an electric revenue meter used in the wholesale electricity markets administered by the NYISO (i.e., a Member System)
- For stand-alone ESRs, typically a Transmission Owner (TO)
- Decided based on sub-zone
- Will provide instantaneous and hourly metered data (meeting NYISO and TO requirements), to the NYISO and the TO.

ESR Metering Configuration

Meter Designation	Meter Requirements	Data Flows
RM	Revenue grade, dual channel meter; Reported by a Meter Authority	Hourly data
TM	Telemetry data	ESR State of Charge (SOC)
IM	Instantaneous metering	6 second aggregated output telemetry from ESR



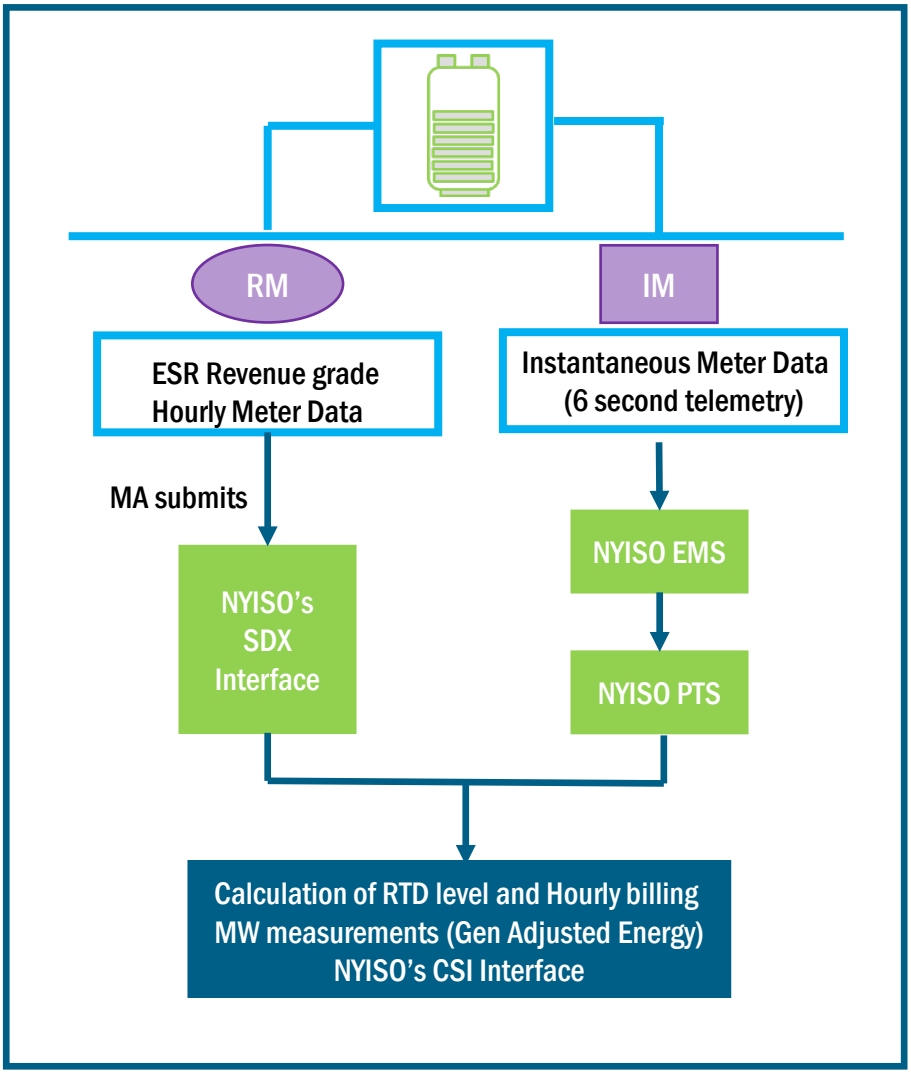
- If co-located with a retail Load, the metering must only measure the ESR, and not include any co-located Load
- If co-located with a Wind/Solar IPR, at one POI, additional metering requirements may apply

FOR TRAINING PURPOSES ONLY

New York ISO

Metering Data for Settlement Processing

ESR Meter Data Processing



- Calculation of the Generator Adjusted Energy includes:
  1. Hourly integration of Instantaneous meter data from the ESR, and
  2. Profiling process to account for measurement variability between Revenue Grade meter data and Instantaneous telemetry data
- MP should check for discrepancies between MA and PTS hourly interval data in the CSI platform, refer to Section 4.1.3.2 of the Accounting and Billing Manual for details
- Gen Adjusted Energy calculations used for settlement calculations

Terms

Metering Authority (MA):
Entity responsible for calibration, maintenance, operation, and reporting of metered data from an electric revenue meter used in the wholesale electricity markets administered by the NYISO;

Settlement Data Exchange (SDX):
A web-enabled application for the upload and download query functions related to hourly tie line, generation, Sub-Zone, and load bus data

EMS:
NYISO's Energy Management System

Performance Tracking System (PTS):
Actual energy injections are measured in real time and telemetered to the NYISO typically every six seconds

Customer Settlements Interface (CSI):
NYISO's online settlement interface that houses all the billing invoices and related information

New York ISO

Metering Data for Settlement Processing

Billing Invoice Cycle*

* For specific timelines, refer to the Processing and Invoice Schedule on NYISO Website

Tracking a given Billing period:

MA submits Revenue grade meter data by noon the following business day

Gen metering updates
Up to 55 days after dispatch day

Billing Day	Weekly Invoice Version 0.5	Monthly Invoice Version 1.0	4-month True-up Version 2.0	Final Bill Close out 8 months Version 3.0

Note: Each monthly invoice contains a 4-month true up and final bill close out for prior Billing periods

Billing Invoice information

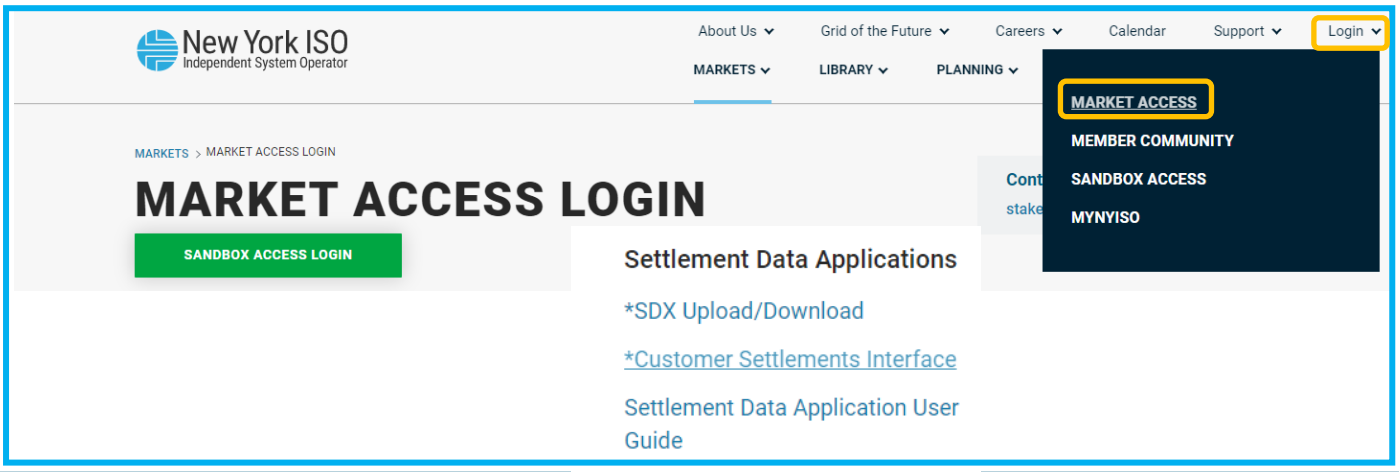
Flexible Invoice Period (FIP):

- Weekly Invoice, version 0.5
- Contains 7 Billing Days or Fewer
- Issued Wednesday of Each Week
- Starts the 1st of every month
- Typically, a Saturday – Friday Billing Period

Monthly Invoice:

- Issued 5th Business Day of Month
- Initial Month Billing Period
- Updates to FIPs as Needed
- Remaining Initial Month Billing Days not Captured in a FIP

Settlement Interfaces Login



FOR TRAINING PURPOSES ONLY

ESR Settlements - Quick Reference Sheet

Settlements Based on ESR Participation

	Energy Market	Supplemental Supplier Payments	Cost-Based Ancillary Services	Market Based Ancillary Services	Installed Capacity
DAM Energy Balancing Energy	✓ ✓				
TSC & NTAC Charges	✓				
DAM BPCG RT BPCG		✓ ✓			
DAMAP		✓			
Rate Schedule 1			✓		
VSS & VSS LOC			✓		
DAM Regulation Capacity Balancing Regulation Capacity				✓ ✓	
RT Regulation Movement				✓	
Regulation Performance Charge				✓	
Regulation Revenue Adjustment				✓	
Persistent Under Generation Penalty				✓	
Persistent Over Withdrawal Charge				✓	
DAM Operating Reserves Availability Balancing Reserve Availability				✓ ✓	
Auction Settlement					✓

Legend

Acronym	Full Term
DAM	Day Ahead Market
TSC	Transmission Service Charge
NTAC	New York Power Authority Transmission Adjustment Charge
BPCG	Bid Production Cost Guarantee
RT	Real Time
DAMAP	Day Ahead Margin Assurance Payment
VSS	Voltage Support Service
VSS LOC	Voltage Support Service Lost Opportunity Cost

Formulas describing each settlement type can be found in the Accounting & Billing manual as well as the Market Training eLearning module on Energy Storage Resources

New York ISO

New York ISO
Independent System Operator

RESOURCE APPENDIX: ONBOARDING OF NEW NYISO RESOURCES

ESR Participation

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Disclaimer
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New York ISO

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1. NYISO'S INTERCONNECTION PROCESS

A. NYISO INTERCONNECTION TRAINING

Series of five eLearning chapters that encompass:

- **Chapter 1:** This module provides an overview of the purpose behind the interconnection process, addresses key terms, identifies the various stages of the interconnection process and introduces the web portal used to support the NYISO Interconnection Process.
- **Chapter 2:** This module explains the initial kick-off of an interconnection request, provides information on gaining access to the "Interconnection Projects Community" portal, identifies the steps for submitting a formal interconnection request, details the eSignature requirement, addresses the relevance of NYISO's acknowledgement of an interconnection request, and walks through the request validation results of a submitted interconnection request.
- **Chapter 3:** This module includes the detailed steps associated with the feasibility and system reliability impact study process, a compare and contrast review of the different interconnection study options, and the detailed steps associated with the system reliability impact study.
- **Chapter 4:** This explains the purpose behind the class year study, details the components of the class year study and describes corresponding reporting requirements.
- **Chapter 5:** This module identifies supplier next steps regarding pre and post commercial responsibilities that must be completed to result in the commercial participation in NYISO's Installed Capacity Energy and the Ancillary Services Market.

Navigation Path:
NYISO Website → Training → Online Learning → NYISO Interconnection Process

B. TRANSMISSION EXPANSION AND INTERCONNECTION MANUAL

The purpose of this Transmission Expansion and Interconnection Manual ("TEI Manual") is to provide interested parties with a road map of the NYISO's transmission expansion and interconnection process. The manual also describes the study criteria, guidelines, procedures, and practices used in the processes.

Navigation Path:
NYISO Website → Manuals, Tech Bulletins & Guides → Manuals → Planning → Transmission Expansion and Interconnection Manual

C. TRANSMISSION EXPANSION AND INTERCONNECTION GUIDE

The purpose of this guide is to provide developers with an introduction to and a high-level summary of various NYISO interconnection procedures.

Navigation Path:
NYISO Website → Manuals, Tech Bulletins & Guides → Guides → Transmission Expansion and Interconnection Guide

D. NYISO TARIFF – OPEN ACCESS TRANSMISSION TARIFF (OATT)

This document sets forth the provisions applicable to the transmission services provided by the ISO on an open access basis, including:

- *Attachment S, Rules to allocate responsibility for the cost of New Interconnection Studies*
- *Attachment X, Large Facility Interconnection Procedures*
- *Attachment Z, Small Facility Interconnection Procedures*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → OATT

E. HOW NEW ELECTRIC RESOURCES CONNECT TO THE GRID: AN EXPLAINER – NYISO PODCAST EP. 14

It is Zach Smith's job to prepare the New York energy grid for the future. Our Vice President of System and Resource Planning manages the team that looks at all potential reliability issues the grid could face, from a week to 10 years in the future.

Navigation Path:
NYISO Website → About Us → Blog → Podcast Ep. 14: NYISO VP Zach Smith on Emission-Free Grid Planning, Climate Change & the Interconnection Queue

1.1 BUYER-SIDE MITIGATION

A. NYISO TARIFF – MARKET ADMINISTRATION AND CONTROL AREA SERVICES TARIFF (MST)

This document sets forth the provisions applicable to the services provided by the ISO related to its administration of competitive markets for the sale and purchase of Energy and Capacity and for the payments to Suppliers who provide Ancillary Services to the ISO in the ISO Administered Markets ("Market Services") and the ISO's provision of Control Area Services ("Control Area Services"), including:

- *Attachment H, ISO Market Power Mitigation Measures*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → MST

2. NYISO CUSTOMER REGISTRATION

A. NYISO TARIFF – MARKET ADMINISTRATION AND CONTROL AREA SERVICES TARIFF (MST)

This document sets forth the provisions applicable to the services provided by the ISO related to its administration of competitive markets for the sale and purchase of Energy and Capacity and for the payments to Suppliers who provide Ancillary Services to the ISO in the ISO Administered Markets ("Market Services") and the ISO's provision of Control Area Services ("Control Area Services"), including:

- *Section 9, Application and Registration Procedure*
- *Attachment K, Creditworthiness Requirements for Customers*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → MST

B. REFERENCE DOCUMENTATION ON NYISO CUSTOMER SUPPORT WEBPAGE

- Getting Started Guide
- Linking Certificates with MIS
- Member Community Access
- Member Community Reference Guide
- NAESB Digital Certificate Tutorial
- Power Industry Acronyms

Navigation Path:
NYISO Website → Support

C. ENERGY STORAGE RESOURCE (ESR) PARTICIPATION MODEL E-LEARNING MODULE

This e-Learning module provides an overview of the Energy Storage Resources Participation model. Topics being covered include some background information leading up to this model's implementation, key information surrounding participation requirements for ESRs in the energy, ancillary services, and installed capacity markets, and important ESR mitigation measures.

Navigation Path:
NYISO Website → Training → Online Learning → Energy Storage Resources Participation Model

3. CREDIT

A. NYISO TARIFF – MARKET ADMINISTRATION AND CONTROL AREA SERVICES TARIFF (MST)

This document sets forth the provisions applicable to the services provided by the ISO related to its administration of competitive markets for the sale and purchase of Energy and Capacity and for the payments to Suppliers who provide Ancillary Services to the ISO in the ISO Administered Markets ("Market Services") and the ISO's provision of Control Area Services ("Control Area Services"), including:

- *Attachment K, Creditworthiness Requirements for Customers*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → MST

B. CREDIT DEPARTMENT FAQ

The NYISO Credit FAQ Document covers the following topics:

- Collateral
- Cash Deposits
- Letter of Credit
- Surety Bonds
- Credit Management System (CMS)
- Annual/Periodic Submissions
- New Applicants – Items needed for Credit Approval

Navigation Path:
NYISO Website → Support → Budget & Finance → NYISO Credit → NYISO Credit FAQ

4. METERING CONFIGURATION & METERING FOR SETTLEMENTS

A. NYISO TARIFF – MARKET ADMINISTRATION AND CONTROL AREA SERVICES TARIFF (MST)

This document sets forth the provisions applicable to the services provided by the ISO related to its administration of competitive markets for the sale and purchase of Energy and Capacity and for the payments to Suppliers who provide Ancillary Services to the ISO in the ISO Administered Markets ("Market Services") and the ISO's provision of Control Area Services ("Control Area Services"), including:

- *Section 13, Metering*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → MST → Metering 13.2.4

B. REVENUE METERING REQUIREMENTS MANUAL

The material in this manual defines the standards for the revenue metering systems required for conducting accurate financial settlements of the New York Independent System Operator, Inc. (NYISO) – administered wholesale electric energy markets. Additionally, it defines the responsibilities for Meter Authorities (MA) and describes the processes for data processing, analysis, and dispute resolution.

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Administrative → Revenue Metering Requirements

C. CONTROL CENTER REQUIREMENTS MANUAL

This Manual focuses on the computer, communications, and metering systems required for reliable and economic operations of the New York Independent System Operator (NYISO).

- Computer Systems
- Metering Policy and Certification
- Voice Communications

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Administrative → Control Center Requirements

D. ENERGY STORAGE RESOURCE (ESR) PARTICIPATION MODEL E-LEARNING MODULE

This e-Learning module provides an overview of the Energy Storage Resource Participation model. Topics being covered include some background information leading up to this model's implementation, key information surrounding participation requirements for ESRs in the Energy, Ancillary Services, and Installed Capacity Markets, and important ESR mitigation measures.

Navigation Path:
NYISO Website → Training → Online Learning → Energy Storage Resources Participation Model

E. CO-LOCATED STORAGE RESOURCES (CSR) PARTICIPATION MODEL E-LEARNING MODULE

This e-Learning module provides an overview of the Co-located Storage Resources participation model. Topics being covered in this presentation include salient and distinguishing features of how Energy Storage Resources and Wind or Solar Intermittent Power Resources can participate as CSRs in NYISO's Energy, Ancillary Services and Installed Capacity markets, and Energy market settlements.

Navigation Path:
NYISO Website → Training → Online Learning → Co-located Storage Resources Participation Model

F. ACCOUNTING & BILLING MT-304 COURSE MATERIALS

This course provides detailed knowledge of the settlements associated with Power Suppliers, Load Serving Entities, Transactions, Virtual Trading, Demand Response and Transmission Owners.

- Metering Fundamentals
- Settlements Reports Overview

Navigation Path:
NYISO Website → Training → Course Materials & Infographics → Training Course Materials → Accounting & Billing MT-304

5. MARKET MITIGATION & ANALYSIS ENERGY REFERENCES

A. NAESB DIGITAL CERTIFICATE TUTORIAL

This e-Learning module is geared toward guiding Market Participants (MPs) on how to obtain and implement the use of a digital certificate to access NYISO markets and applications.

Navigation Path:
NYISO Website → Training → Online Learning → NAESB Digital Certificate Tutorial

B. REFERENCE LEVEL MANUAL

This manual provides an overview of the NYISO's Reference Level Processes and details various timelines that apply to the submission, review, approval, and update of cost-based data and to mitigation consultations.

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Operations → Reference Level Manual

C. REFERENCE LEVEL SOFTWARE USER'S GUIDE

This user guide is intended for Market Participants (MPs) who are users of the NYISO Reference Level Software (RLS) application.

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Guides → Reference Level Software User's Guide

D. NYISO TARIFF – MARKET ADMINISTRATION AND CONTROL AREA SERVICES TARIFF (MST)

This document sets forth the provisions applicable to the services provided by the ISO related to its administration of competitive markets for the sale and purchase of Energy and Capacity and for the payments to Suppliers who provide Ancillary Services to the ISO in the ISO Administered Markets ("Market Services") and the ISO's provision of Control Area Services ("Control Area Services"), including related services.

- *Attachment H, ISO Market Power Mitigation Measures*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → MST

6. RESOURCE MODELING

A. CONTROL CENTER REQUIREMENTS MANUAL

This Manual focuses on the computer, communications, and metering systems required for reliable and economic operations of the New York Independent System Operator (NYISO).

- Computer Systems
- Metering Policy and Certification
- Voice Communications

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Administrative → Control Center Requirements

B. DIRECT COMMUNICATIONS MANUAL

The Direct Communications Procedure describes the facilities available to generation owners, Demand Side Resources, Limited Energy Storage Resources, and other suppliers that provide energy and ancillary services to the NYISO markets; outlines the Initial Installation Procedure; and documents Operational Procedures for communications facilities.

- The Direct Communications Procedure is a secured document not available on the NYISO website. To request authorization to receive the Direct Communications Procedure, please contact **Stakeholder_services@nyiso.com**

C. ANCILLARY SERVICES MANUAL

The purpose of this Manual is to provide an overview of the Ancillary Services available in the New York market along with settlement process associated with each of the available ancillary services.

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Operations → Ancillary Services Manual

D. NEW GENERATION UNITS OPERATING DURING THE START-UP TESTING PHASE

This Technical Bulletin describes procedures for new generating units to operate in testing mode prior to commercial operation.

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Technical Bulletins → TB 116 – New Generation Units Operating During the Start-Up Testing Phase

7. OUTAGE SCHEDULING

A. NYISO TARIFF – OPEN ACCESS TRANSMISSION TARIFF (OATT)

This document sets forth the provisions applicable to the transmission services provided by the ISO on an open access basis, including:

- *Section 9.6, Outages and Interruptions*
- *Section 35.9, Coordination of Scheduled Outages*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → OATT

B. NYISO TARIFF – MARKET ADMINISTRATION AND CONTROL AREA SERVICES TARIFF (MST)

This document sets forth the provisions applicable to the services provided by the ISO related to its administration of competitive markets for the sale and purchase of Energy and Capacity and for the payments to Suppliers who provide Ancillary Services to the ISO in the ISO Administered Markets ("Market Services") and the ISO's provision of Control Area Services ("Control Area Services"), including:

- *Section 5.18, Generator Outages and Generator Obligations While in These Outages*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → MST

C. OUTAGE SCHEDULING MANUAL

This Outage Scheduling Manual is intended for the New York Independent System Operator (NYISO) staff and those entities who are responsible for notifying the NYISO of planned and unexpected changes to the operational availability of their transmission and generating facilities.

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Outage Scheduling Manual

D. OUTAGE SCHEDULER USER'S GUIDE

This user guide is intended for Market Participants (MPs) and Transmission Owners (TOs) who are users of the NYISO Outage Scheduler (OMS) System.

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Guides → Outage Scheduler User's Guide

E. MARKET PARTICIPANTS USER GUIDE

This Guide provides Market Participants with the information needed to participate in New York Independent System Operator (NYISO) Energy Markets.

- *Section 7.4, Generator and Ancillary Services Bids*

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Guides → Market Participant User's Guide

F. INSTALLED CAPACITY MANUAL

The Installed Capacity Manual contains the procedures that will be followed by the NYISO, and its Customers regarding the Installed Capacity markets and auctions administered by the NYISO pursuant to the NYISO Market Administration and Control Area Services Tariff (Services Tariff).

- *Section 4.3, Maintenance Scheduling Requirements*

- *Section 4.8, Bidding, Scheduling, and Notification Requirements*
- *Attachment K, Reportable Operating Data*

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Operations → Installed Capacity Manual

G. OUTAGE SCHEDULER TRAINING: OUTAGE SCHEDULER (OMS) SYSTEM – GENERATOR OWNER (GO) EDITION

This e-Learning module provides a walk-through of the Outage Scheduler (OMS) System for Generator Owners. Topics covered include accessing and logging into the OMS System, environment navigation, creating a new outage request (Generation O.R.E.), tracking a request, as well as modifying a request.

Navigation Path:
NYISO Website → Training → Online Learning → Outage Scheduler (OMS) System → Generator Owner (GO) Edition

H. OUTAGE SCHEDULER TRAINING: OUTAGE SCHEDULER (OMS) SYSTEM – TRANSMISSION OWNER (TO) EDITION

This e-Learning module provides a walk-though of the Outage Scheduler (OMS) System for Transmission Owners. Topics covered include accessing and logging into the OMS System, environment navigation, accessing the conflict calendar, creating a new outage request (Transmission O.R.E.), tracking a request, as well as modifying a request.

Navigation Path:
NYISO Website → Training → Online Learning → Outage Scheduler (OMS) System → Transmission Owner (TO) Edition

8. INSTALLED CAPACITY (ICAP) ENROLLMENT FOR PARTICIPATION

A. NYISO TARIFF – MARKET ADMINISTRATION AND CONTROL AREA SERVICES TARIFF (MST)

This document sets forth the provisions applicable to the services provided by the ISO related to its administration of competitive markets for the sale and purchase of Energy and Capacity and for the payments to Suppliers who provide Ancillary Services to the ISO in the ISO Administered Markets ("Market Services") and the ISO's provision of Control Area Services ("Control Area Services"), including:

- *Section 5.12, Requirements Applicable to Installed Capacity Suppliers*

Navigation Path:
NYISO Website → Library → Regulatory Resources → Tariffs, FERC Filings & Orders → Tariffs → MST

B. INSTALLED CAPACITY MANUAL

The Installed Capacity Manual contains the procedures that will be followed by the NYISO, and its Customers regarding the Installed Capacity markets and auctions administered by the NYISO pursuant to the NYISO Market Administration and Control Area Services Tariff (Services Tariff).

- *Attachment D, Dependable Maximum Net Capability (DMNC)*
- *Attachment F, Intent to Offer Letter*

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Operations → Installed Capacity Manual

C. NEW RULES FOR ICAP MARKET PARTICIPATION - ECE AND TAM

This presentation will provide an overview of changes to the NYISO's Capacity Market due to the implementation of Expanding Capacity Eligibility (ECE), and Tailored Availability Metric (TAM).

Navigation Path:

NYISO Website → Training → Course Materials → Installed Capacity → New Rules for ICAP Market Participation - ECE and TAM

9. SETTLEMENTS

A. ACCOUNTING AND BILLING MANUAL

This document focuses on the settlement, invoicing and clearing processes for wholesale market transactions encompassing the NYISO-administered Energy, Transmission Service, and Ancillary Services markets.

- *Section 1, Settlement and Invoicing Process*
- *Section 2, Market Participant Responsibilities and Controls*

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Administrative → Accounting and Billing

B. REVENUE METERING REQUIREMENTS MANUAL

This document focuses on meter configuration requirements for NYISO resources.

- *Section 3.2.2, Meter Configuration for Energy Storage Resources*

Navigation Path:
NYISO Website → Library → Manuals, Tech Bulletins & Guides → Manuals → Administrative → Revenue Metering Requirements

C. BUSINESS INTELLIGENCE TASK FORCE (BITF) PRESENTATIONS

BITF is a forum for stakeholders to exchange information pertaining to NYISO software enhancements and associated software training courses.

Navigation Path:
NYISO Website → Committees → Business Issues Committee → Business Intelligence Task Force

D. DECISION SUPPORT SYSTEM (DSS) TRAINING

Series of four eLearning modules that encompass:

- **Session 1:** This e-Learning module explains the purpose and benefits behind DSS, identifies reports available, and explains how to access it.
- **Session 2:** This e-Learning module steps through logging into DSS, the DSS homepage options, resources within DSS, and DSS data versioning.
- **Session 3:** This e-Learning module demonstrates how to access DSS corporate reports, utilize Automated Data Delivery Files, and identified supporting documentation.
- **Session 4:** This e-Learning module explains the organization of DSS Data and teaches basic custom query building.

Navigation Path:
NYISO Website → Training → Online Learning → DSS

E. ENERGY STORAGE RESOURCE (ESR) PARTICIPATION MODEL E-LEARNING MODULE

This e-Learning module provides an overview of the Energy Storage Resources Participation model. Topics being covered include some background information leading up to this model's implementation, key information surrounding participation requirements for ESRs in the energy, ancillary services, and installed capacity markets, and important ESR mitigation measures.

Navigation Path:
NYISO Website → Training → Online Learning → Energy Storage Resources Participation Model

10. ADDITIONAL RESOURCES FOR ESR

A. ENERGY STORAGE RESOURCE (ESR) PARTICIPATION MODEL E-LEARNING MODULE

This e-Learning module provides an overview of the Energy Storage Resources Participation model. Topics being covered include some background information leading up to this model's implementation, key information surrounding participation requirements for ESRs in the Energy, Ancillary Services, and Installed Capacity Markets, and important ESR mitigation measures.

Navigation Path:
NYISO Website → Training → Online Learning → Energy Storage Resources Participation Model

B. ENERGY STORAGE: FREQUENTLY ASKED QUESTIONS

The use of Energy Storage Resources (ESRs) on the grid is growing in New York State. It has the potential to enhance energy production from clean energy resources while supporting improved grid efficiency and resilience.

Navigation Path:
NYISO Website → About Us → Blog → Energy Storage: Frequently Asked Questions

C. STATION POWER TRAINING MODULE

This intermediate level e-Learning module explains the function of Station Power, various types of Station Power, requirements for Station Power, as well as the registration process for participation in the Station Power Program.

Navigation Path:
NYISO Website → Training → Online Learning → Station Power

D. STATION POWER METERING, DATA, AND PROGRAM REQUIREMENTS

Generators wishing to participate in the NYISO's Station Power program have specific registration, data modeling, and metering requirements that are outlined in this Technical Bulletin.

Navigation Path:

NYISO Website → Library → Manuals, Tech Bulletins & Guides → Technical Bulletins → TB-117 Station Power Metering, Data and Program Requirements

11. CONTACT INFORMATION

A. CREDIT DEPARTMENT

Contact: credit_department@nyiso.com

B. CUSTOMER REGISTRATION

Contact: customer_registration@nyiso.com

C. STAKEHOLDER SERVICES

Contact: stakeholder_services@nyiso.com