



Manual ##

Aggregation Manual Part 2

Issued: Month Year

WG/SUBCOMMITTEE DRAFT – NOT FOR COMMITTEE ACTION

1. Interconnection

DER facility interconnection is permitted through either the NYISO Small Generator Interconnection Procedure (SGIP) or through an approved non-NYISO interconnection procedure (e.g., NYS Standardized Interconnection Requirements). The NYISO requires that interconnection studies be complete and approved prior to the submission of enrollment data for a DER in the Aggregation System – the enrollment process draws on the information provided by the interconnection study process for validation of DER physical and operating characteristics. To support the review for reliability and safety conducted for DER connected to a Distribution Utility’s electrical facilities, the Aggregator must provide to the applicable Distribution Utility, upon request, any supplemental interconnection information beyond the requirements explicitly set forth in the NYISO’s Aggregation System and Tariffs, including but not limited to injection and withdrawal limits for 24 hours of the operating day per Appendix K Attachment 1 of the NYS Standardized Interconnection Requirements (SIR). For further information on the NYS SIR, please see the information at the following link: <https://dps.ny.gov/distributed-generation-information>.

Interconnection requirements for DER focus on the facility level, not the asset level (an asset within a facility) or the Aggregation level (comprised of multiple facilities). In order to address CRIS and interconnection requirements applicable to DERs, additional information specific to Resources with Energy Duration Limitations and multiple assets must be submitted as part of the NYISO’s interconnection process as set forth in Attachments S, X and Z of the OATT. A DER facility that is comprised solely of Demand Side Resources is not required to complete interconnection studies under the NYISO OATT and need not have ERIS or CRIS.

DER Aggregation

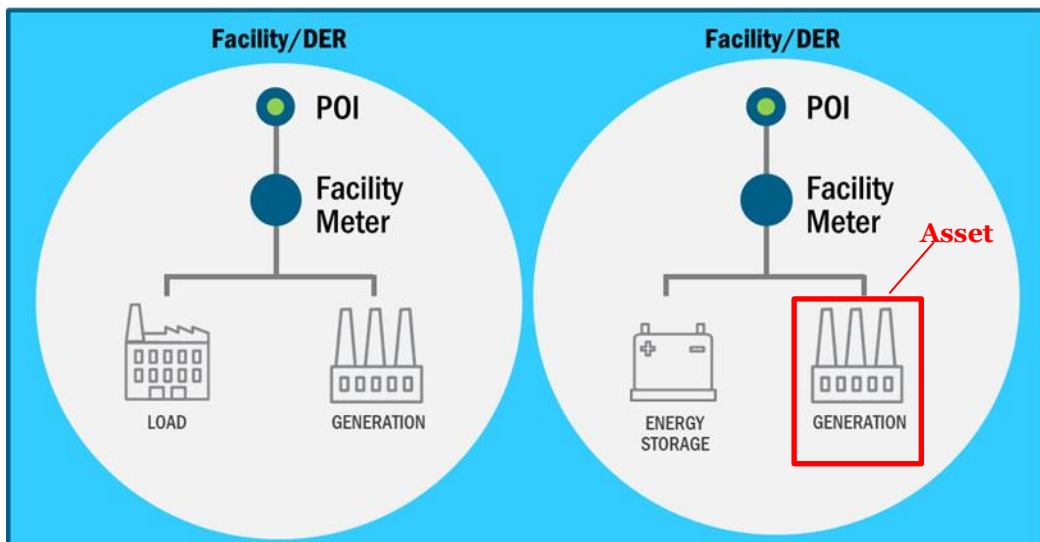


Figure X: Depiction of asset, DER Facility, and Aggregation

1.1. Energy Resource Interconnection Service (ERIS) for DER

ERIS can be obtained through the NYISO's standard SGIP for individual DER upon the DER's acceptance of cost responsibility for any upgrades required to mitigate reliability issues posed by the interconnection. The ERIS value is memorialized in its Interconnection Agreement. Please refer to the NYISO's Transmission Expansion and Interconnection Manual for further details. A DER that is studied through a non-NYISO interconnection procedure (e.g., SIR) may still obtain an 'ERIS-equivalent' in the seasonal Max Net value provided by the SIR. For further information on this process, please refer to the Load Forecasting Manual [LINK] and the Aggregation System User's Guide [LINK].

1.2. Capacity Resource Interconnection Service (CRIS) for DER

CRIS can be obtained for individual DER via Attachment S of the OATT if the DER accepts cost responsibility for any upgrades required under a deliverability evaluation. A DER 2MW or less can obtain CRIS without going through a deliverability study. DER that are interconnected through a non-NYISO interconnection procedure must also be studied for deliverability by the NYISO in order to obtain CRIS unless the DER is smaller than 2MW. Please refer to the NYISO's Transmission Expansion and Interconnection Manual for further details [LINK].

A Demand Side Resource seeking to participate in the Capacity market is not required to obtain CRIS – the ICAP of a Demand Side Resource is based on its demonstrated maximum output during a DMNC test, and the enrollment parameters detailed in the Aggregation System User's Guide, which include the MW demand reduction capability of a Demand Side Resource. When a single DER has multiple assets behind the point of interconnection, the ICAP value of the DER as a whole is the sum of the ICAP of each asset comprising the DER, which ICAP is calculated separately for each asset as described in the ICAP Manual. For more information, please refer to the ICAP Manual [LINK].

For an Aggregation comprised of DER with an energy duration limitation, the maximum permissible CRIS that can be requested for each DER cannot exceed the minimum of the following: (a) its expected maximum injection capability in MW for the Developer-selected duration; (b) the nameplate capacity of the DER (i.e., injection capability of the facility expressed in MW); or (c) the sum of DER's requested and existing ERIS, as applicable.

2. Distributed Energy Resources and Aggregations

This section includes the definitions of DER and Aggregations, as well as the basic characteristics that

enable Aggregation participation in the NYISO-administered Energy, Ancillary Services, and Capacity markets.

2.1. Definitions

2.1.1. Distributed Energy Resource

A Distributed Energy Resource may be one of the following categories of facilities electrically located in the New York Control Area (“NYCA”):

- (i) a facility comprising two or more different technology types located behind a single point of interconnection with a maximum Injection Limit of 20 MW,
- (ii) a Demand Side Resource, or
- (iii) a Generator with a maximum Injection Limit of 20 MW.

For purposes of the definition of a Distributed Energy Resource:

- An “individual facility” will be either: (i) a single facility at a distinct physical location (*e.g.*, street address and utility account number), or (ii) a single physical location with (a) more than one facility with separate utility account numbers and/or points of interconnection with the distribution system, that are (b) operated independently from other facilities at that physical location.

For example, an apartment building where the entire building is commonly metered and has a single utility account for all of the apartments would likely be considered one “individual facility.” On the other hand, a commercial building where each unit is separately owned, operated, and metered may qualify to be multiple “individual facilities.” The NYISO seeks to provide flexibility to Aggregators to develop Aggregations that best suit the Aggregator’s needs considering both the capability and metering configuration of the individual facilities. The NYISO will work with Aggregators as needed to confirm appropriate designation of individual facilities.

- Distributed Energy Resources may be interconnected either to the NYCA Transmission system or a distribution system located in the NYCA.
- “Technology types” refers to any of the following categories of facilities: Demand Side Resources, Generators, Energy Storage Resources, Solar generation, Wind generation, or Landfill Gas plants. Individual DER may also be eligible for certain classifications that otherwise apply to standalone Resources in the NYISO-

administered markets including Energy Limited Resource, Capacity Limited Resource, or Limited Energy Storage Resource.

Demand Side Resource Participation

An individual DER that is a Demand Side Resource shall be designated as one of the following Demand Response types, based on how the DER facilitates its load reduction:

- Type C (Curtailment only),
- Type G (generation from a Local Generator only), or
- Type B (A combination of Curtailment and generation from a Local Generator)

As described above, an individual DER's Injection Limit may not exceed 20MW. An individual Demand Side Resource that participates as a DER has no maximum size limitation (e.g., a Demand Side Resource with 70 MW of load reduction capability is permitted).

A Demand Side Resource may not curtail Critical Electric System Infrastructure Load (as that term is defined in Section 2.3 of the Market Services Tariff) in response to a NYISO-initiated demand response event or test as part of participation in the DER participation model. See Market Administration and Control Area Services Tariff Sections 2.3 and 2.4, and ICAP Manual Section 4.12 for further information.

DER with Injection and Load Curtailment

A DER may use a behind-the-meter generation source to facilitate load curtailment and inject excess generation to the grid. An individual DER capable of both load curtailment and injection shall be classified as a 'Type I' in the NYISO's Aggregation System, and its load curtailment and injection are enrolled as two separate assets. A DER capable of both load curtailment and injection will have an Economic Customer Baseline Load (ECBL) in accordance with section [1] of this manual. An Aggregator is responsible for calculating the ECBL reflective of the load curtailment MW capability of a 'Type I' DER. Additionally, the load curtailment MW capability of a 'Type I' DER is subject to the Monthly Net Benefit Threshold (MNBT) as outlined in section [2] of this manual. A 'Type I' DER that facilitates load curtailment in response to a NYISO dispatch shall only be compensated for its Demand Reductions when the LBMP meets or exceeds the NYISO-defined MNBT.

Resource Type Eligibility

The following NYISO-defined resource types are ineligible to participate in an Aggregation:

- Facilities designated as PURPA units,

- Limited Control Run of River (LCRoR) units,
- Behind the Meter Net Generation (BTM:NG) Resources,
- Municipally owned Generators,
- System Resources, and
- Control Area System Resources.

A Resource designated as one of the above-identified Resource types may choose to forego the applicable classification, and instead be treated as a “Generator” for the purposes of its participation in an Aggregation. Please note that when such a Resource enters an Aggregation it will be subject to the rules applicable to DER Aggregations (for heterogeneous Aggregations) or a single resource type Generator Aggregation (a homogeneous Generator Aggregation).

DER Minimum Size Requirements

Pursuant to Services Tariff Section 4.1.10, each DER (including Demand Side Resources) must have a minimum capability of 10 kW. Where an individual facility includes multiple assets, which are defined by the NYISO as different technologies located at the facility, each individual asset must have a minimum capability of 10 kW.

Asset Requirements

Each asset is classified in the Aggregation System as one of the following types: Demand Side Resource, Generator, Energy Storage, Wind, Solar, Landfill Gas – any variance of one asset between these ‘types’ necessitates a new asset. Assets classified as Demand Side Resources, ESR, LESR, or IPRs may be reported as a single asset comprised of multiple energy producing/curtailing components.

All components of an asset must share the same generating technology and fuel type in order to enroll as a singular asset with an associated GADS submission record. Each Generator participating as an asset must be enrolled as a singular asset with an associated GADS submission record. Additionally, all components of an asset must be electrically connected and behind the same meter. For example, a DER site contains, behind the same net meter, one electrochemical battery and ten wind turbines. In the Aggregation System, the Aggregator must enroll this configuration as one energy storage asset and one wind asset – please refer to the Aggregation System User’s Guide for the complete ruleset regarding asset enrollment.

There is no limit on the number of assets comprising an individual facility. The 10-kW minimum capability is applied to Demand Reduction, Injection, and Withdrawal capabilities separately, pursuant to Services Tariff Sections 4.1.10 and 2.5. Therefore, an individual DER

with a combination of assets capable of Demand Reduction, Injection, and Withdrawal shall have the 10-kW minimum capability applied to each of the three response types.

A DER with Demand Reduction capability will only be permitted to have a single asset capable of Demand Reduction, given that there may only ever be one load associated with an individual DER (An 'individual DER' is characterized as such based on the uniqueness of its utility account and net meter – having two loads with unique utility accounts and net meters would automatically result in two individual DERs). As a result, the 10-kW minimum Demand Reduction capability for one hour pursuant to Services Tariff Section 4.1.10 shall be applied to the single asset capable of Demand Reduction within an individual DER.

Demand Reduction may be facilitated by load curtailment and/or a Local Generator. The NYISO permits a Local Generator used to facilitate Demand Reduction to be smaller than 10-kW, so long as that local supply source does not inject to the grid and is solely used to facilitate Demand Reductions. Importantly, the Total Demand Reduction Declared MW (*Refer to the Aggregation System User's Guide*) for the individual DER must be at least 10-kW, even if the single Demand Reduction-capable asset uses a combination of curtailment and local supply behind the meter smaller than 10-kW to facilitate the total load reduction capability.

If an individual DER contains injection-capable assets, the nameplate of each individual asset must be at least 10-kW. If an individual DER contains withdrawal-capable assets, then each individual asset must have a nameplate withdrawal capability must be at least 10-kW.

2.1.2. Aggregations

An Aggregation is a Resource, comprised of two or more individual Generators, Demand Side Resources, or Distributed Energy Resources, or one or more individual Demand Side Resources, at separate points of interconnection and that are grouped and dispatched as a single unit by the ISO, and for which Energy injections, withdrawals and Demand Reductions are modeled at a single Transmission Node. An Aggregation may be comprised of DER interconnected to either the Transmission System or a distribution system in the NYCA – an Aggregation may include a mix of DER interconnected on the Transmission and distribution systems, but all DER must electrically map to the same Transmission Node. Figure [\[#\]](#) illustrates the various types of Aggregations – the NYISO permits heterogenous Aggregations, Aggregations of Demand Side Resources, and homogenous Aggregations of a single Resource Type.

An Aggregation may be classified as an Energy Limited Resource (ELR), Capacity Limited Resource (CLR), or Limited Energy Storage Resource (LESR) if all DER within the Aggregation share the same energy or capacity-limiting characteristic. Where the DER in an Aggregation do not share the same energy or capacity-limiting characteristics, the Aggregation will be subject to the rules applicable to DER Aggregations and will not be treated as a single Resource type ELR or CLR Aggregation. An LESR Aggregation is subject to the same rules that apply to a standalone LESR, including but not limited to sustained operation of less than one hour, and the sole ability to provide Regulation service to the NYISO market – LESR Aggregations may not sell Energy, Operating Reserves, or Capacity. Like Aggregations of Energy and Capacity-limited Resources, an Aggregation of Intermittent Power Resources will only be considered a “single Resource type” when each DER in the Aggregation has the same intermittent characteristic. For example, an Aggregation of Intermittent Power Resources using solar energy as their fuel will be a single Resource type Intermittent Power Resource Aggregation, but an Aggregation where some DER use solar energy and others use wind energy as their fuel will be a DER Aggregation.

Aggregation Types	
DER	Single Resource Type (Homogenous)
<ol style="list-style-type: none"> 1. Heterogenous 2. Demand Side Resource(s) 	<ol style="list-style-type: none"> 1. Generator 2. Energy Storage Resource (ESR) 3. Limited Energy Storage Resource (LESR) 4. Wind 5. Solar 6. Landfill Gas

Figure #: Illustration of Aggregation types.

DER Aggregation

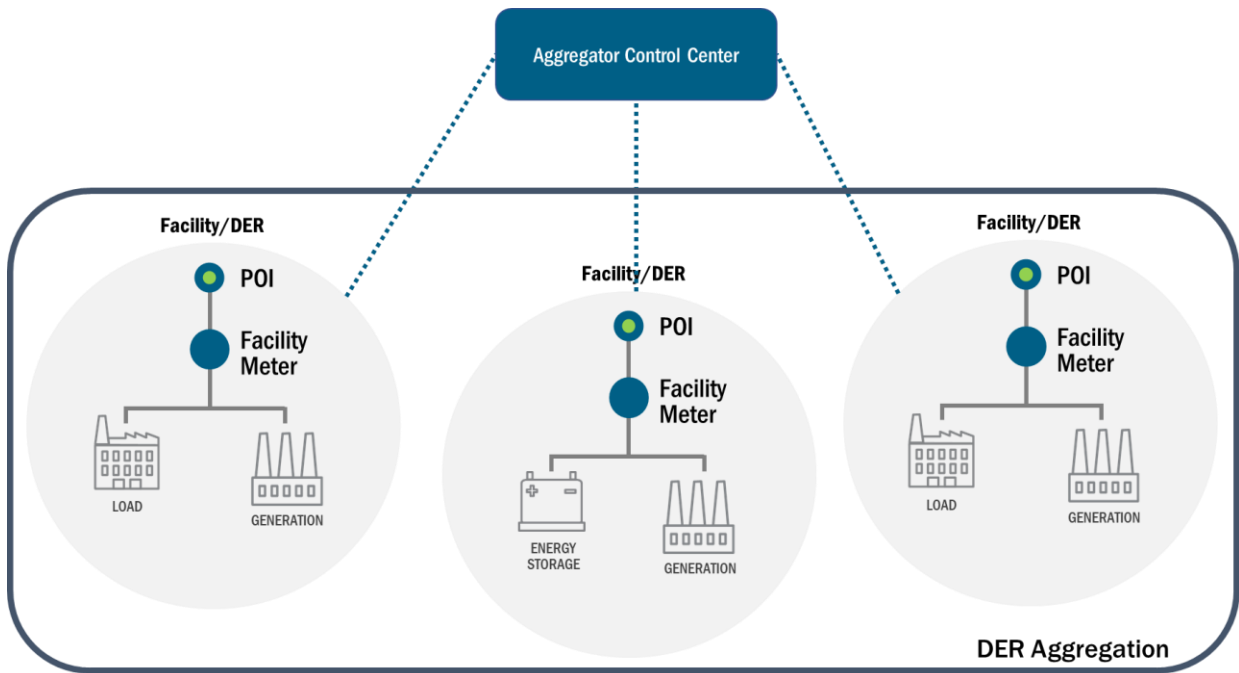


Figure #. DER Aggregation.

An Aggregation that includes more than one Resource type (heterogenous, see Figure #) or only Demand Side Resources is a “DER Aggregation.”

Single Resource Type Aggregation

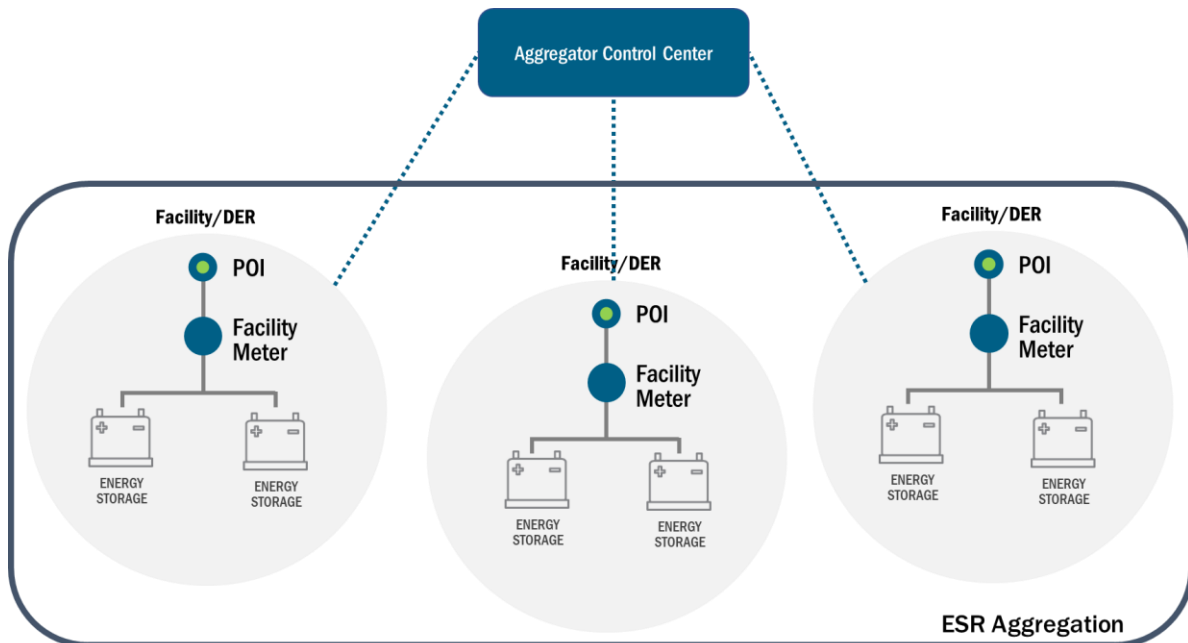


Figure #. Single Resource Type Aggregation.

Single Resource type Aggregations, with the exception of Demand Side Resources (which participates as a DER Aggregation), will be subject to the market rules applicable to that Resource type. For example, an Aggregation comprised entirely of ESR facilities will be subject to the market rules that apply to an ESR (Figure #).

2.2. Aggregations & Market Participation

Aggregations are eligible to qualify to participate in the NYISO-administered Energy, Ancillary Services, and Installed Capacity markets. Except for single Resource type LESR Aggregations, Aggregations that want to provide one or more Ancillary Services and/or Capacity must also participate in the Energy market. Aggregations are considered dispatch-only and will not receive a unit commitment from the NYISO. The Aggregation will offer Energy using a bid curve representing the continuous, fully dispatchable, operating range of the Aggregation, or bid curve representing a fixed amount. Bidding modes per Aggregation types are described in section [#]. For more information on bidding modes rules please refer to MPUG [LINK].

2.2.1. Aggregations are Dispatch-Only

Aggregations will be treated as always available for dispatch, consistent with their Bids. The NYISO will not accept the submission of commitment parameters, nor will it evaluate those commitment parameters.

Aggregators must be able to operate its Aggregation(s) such that it can meet 5-minute basepoints from the NYISO in Real Time. Dispatch capability depends on the type of Aggregation, and the NYISO will treat each Aggregation consistent with its 'type,' (e.g., Single Resource Type Aggregation comprised of Solar only).

DER, Generator, and Energy Storage Resource Aggregations shall be expected to follow NYISO dispatch signals consistent with the Aggregation's bid-in operating range, including when the dispatch signal moves the basepoint of the Aggregation above or below its expected basepoint in Real-Time.

Intermittent Power Resource Aggregations using solar or wind as their fuel, and Landfill Gas Aggregations, just like individual Intermittent Power Resources using solar or wind as their fuel and Landfill Gas units, are not required to respond to NYISO dispatch signals that are above the expected basepoint of the Aggregation in Real-Time but shall respond to NYISO dispatch instructions when the basepoint is lower than the Aggregation's expected basepoint

in Real-Time, and the clearing price is lower than the Aggregation's offer for the interval but still within the Aggregation's operating range.

LESR Aggregations do not offer Energy into the Day-Ahead or Real-Time markets, and instead only provide Regulation service – LESR Aggregations are required to follow basepoint changes in Real-Time. The ISO may reduce the Real-Time Regulation Capacity offered by an LESR Aggregation depending on the energy storage capacity of the Aggregation.

For details on the bidding requirements applicable to Aggregations, please also refer to the *NYISO Market Participant User's Guide*.

2.2.2. Aggregation Minimum Offer Requirement

The NYISO requires that each transaction offered in the Energy, Ancillary Services, and Installed Capacity markets on behalf of an Aggregation have a minimum offer of 100 kW. If an Aggregation offers a combination of Energy injections, Energy withdrawals, and/or Demand Reductions, the Aggregation must offer the minimum offer level of 100 kW for each response type. Although each response type will be processed separately, the NYISO re-combines the separate pieces of the aggregate response and settles the Aggregation as a whole.

2.2.3. Energy Market Participation

Aggregation participation in the NYISO-administered Energy market is based on the dispatch-only nature of Aggregations. Aggregations may offer into the Day-Ahead and Real-Time Markets and are not committed in the NYISO's market software.

Energy market participation details are available in the NYISO's *Market Participant User's Guide*, *Day-Ahead Scheduling Manual*, and *Transmission & Dispatch Operations Manual*.

2.2.4. Ancillary Services Market Participation

Aggregation eligibility to provide one or more Ancillary Services products depends on the composition of the Aggregation. An Aggregation that seeks to provide any one of the following services must be comprised of DER facilities that are each individually capable of providing said service(s), based on the existing requirements of the NYISO Market Services Tariff and Ancillary Services Manual:

- Regulation
- Operating Reserve
 - Spinning Reserve
 - 10-Minute Non-Synchronized Reserve

- 30-Minute Reserve

Aggregations are not eligible to provide the following Ancillary Services in the NYISO market:

- Voltage Support Service
- Black Start Capability Service

An Aggregator may enroll Aggregations of DER to begin providing Regulation or Operating Reserves at any time after beginning Energy market participation and adhering to the prerequisites and verification testing documented in the NYISO's Ancillary Services Manual—there are no annual deadlines or notification requirements associated with providing Regulation or Operating Reserves. For details regarding Aggregation participation in any of the aforementioned services, please refer to the NYISO's *Ancillary Services Manual*.

2.2.5. Installed Capacity Market Participation

Aggregators may qualify Aggregations as ICAP Suppliers in the NYISO market. ICAP Suppliers must comply with the requirements of Services Tariff Sec. 5.12, including, but not limited to, outage scheduling and reporting, meeting Day-Ahead Market bidding requirements, and performing applicable DMNC tests. Capacity market participation requirements are available in the NYISO's *ICAP Manual* and *ICAP AMS User's Guide*.

Aggregation participation in the NYISO-administered Capacity market is based on the capabilities of the individual facilities that comprise Aggregations. Aggregations may offer into the Strip, Monthly, and Spot market auctions.

Distributed Energy Resources may participate in an Aggregation with an Energy Duration Limitation (EDL) of 2, 4, 6, or 8 hours. Each individual DER seeking participation in the NYISO's Installed Capacity Market via Aggregation must have a minimum daily energy duration of 1 hour. DER may time stack their daily energy durations to meet the Energy Duration Limitation hourly designation for the Aggregation – more information regarding the ability for duration limited resources to Time Stack can be found in Services Tariff Section 5.12 and the ICAP Manual.

Please note that whenever an Aggregation is being updated, has been separated from the market by the NYISO or Aggregator, or has not yet been approved for market participation, capacity-related calculations displayed in the Aggregation System are forecasted values and may change.

Annual Election for Aggregations

Aggregations that are ICAP Suppliers are subject to certain obligations to notify the NYISO when making changes to their operating capability or their participation in the NYISO-administered markets. For example, an Aggregator is required to notify the NYISO when electing to change an Aggregation's Energy Duration Limitation or decides to end its ICAP market participation. As described further below, certain of the notifications must be made by August 1 of a calendar year to become effective for the following Capability Year (*e.g.*, notifying the NYISO by August 1, 2023, for the 2024-2025 Capability Year). The August 1 notification requirement allows the NYISO to reflect accurate generation and load data in NYSRC and NYISO forecasts that determine the NYCA Installed Reserve Margin and the Locational Minimum Installed Capacity Requirements for a Capability Year.

This subsection addresses annual election requirements applicable to Aggregations. For additional requirements applicable to Aggregations and to other resource types, please refer to the ICAP Manual.

A facility that switches from participating as a retail load modifier to participating in the NYISO wholesale market must elect to do so by August 1 to effectuate the transition for the upcoming Capability Year. A facility seeking to end participation in the DER participation model to participate as a retail load modifier must comply with the requirements of ICAP Manual Section 4.1.2.

Annual election rules applicable to Behind-the-Meter ("BTM:NG") Resources are outlined in ICAP Manual Section 4.15. Please also refer to Section [#] of this Aggregation Manual for information regarding the transition to and from the DER participation model for BTM:NG Resources.

An Aggregator may enroll an Aggregation and begin Capacity market participation at any time. Some DER and Aggregation characteristics, which are identified in Services Tariff Section 5.12.13.1, may be updated on an annual basis only. For example, a DER facility whose capability has contributed to an Aggregation's UCAP in a given Capability Year may only switch from a DER Aggregation to a single Resource type ("SRT") Aggregation (and vice versa) on an annual basis. DER facilities that have contributed to an Aggregation's UCAP in a given Capability Year can elect to change to a new Aggregation of a different type on a Capability Year basis, by notifying the NYISO by August 1 and updating the Aggregation System accordingly. For example, a DER facility that participates in an SRT Generator Aggregation, in which the facility contributed to the SRT Generator Aggregation's UCAP, must submit an election by August 1 to transition to a DER Aggregation type for the upcoming Capability Year.

A DER facility, whose capability contributed to an Aggregation's UCAP within a Capability Year, that wants to transition from the DER participation model to participate in the NYISO markets via a different participation model must elect to cease participation as a DER by August 1, and provide notice to the NYISO and complete the update in the Aggregation System by removing the DER facility from the applicable Aggregation. For example, a DER facility whose capability contributed to an Aggregation's UCAP, starting in September 2023, must submit an annual election by August 1, 2024, in order to transition to a different participation model effective beginning in May 2025. Aggregations can elect to change an Energy Duration Limitation (EDL) on a Capability Year basis by notifying the NYISO by August 1 and completing the update in the Aggregation System for the upcoming Capability Year.

Pursuant to Services Tariff Section 5.12.13.1 and ICAP Manual Section 4.1.1, any time an annual election is not made by August 1, when applicable, the election will default to the current setting for the upcoming Capability Year. For example, for an Aggregation that has a 4-hour EDL, if no election is made by the August 1 deadline, the Aggregation will maintain a 4-hour EDL for the upcoming Capability Year.

DMNC Testing

ICAP Manual Section 4.2 describes the DMNC testing requirements for DER and Aggregations. The Aggregation System User's Guide describes the process of DMNC submission for Aggregations.

Market Participants are encouraged to contact DER@nyiso.com for support when unusual DMNC submission scenarios arise. In particular, please contact the NYISO if one or more of the following scenarios is applicable:

1. A DMNC record is being submitted for a single Resource type ESR Aggregation comprising only electrochemical batteries, and the ESR has a 1-hour DMNC duration testing requirement (see Section **X** of the ICAP manual).
 - a. Aggregators that have an Aggregation comprising only electrochemical batteries must contact the NYISO once the Aggregation is submitted to the Aggregation System. NYISO will review applicable information and support Market Participants regarding proper submission of 1-hour DMNC test data into the Aggregation System.
 - b. If the Aggregation has an EDL, it is required to fulfill the applicable EDL testing requirement for its initial DMNC. See ICAP Manual Section 4.2.2.2

2. A DMNC record is being submitted for an existing stand-alone Generator (i) with an EDL that has a valid, approved, in-period DMNC test type, and (ii) the Aggregator plans to transition the existing stand-alone Generator to a SRT Aggregation with an EDL using the SRT Transfer DMNC.
 - a. Aggregators must contact the NYISO once the Aggregation is submitted to the Aggregation System. NYISO will review the applicable information and provide guidance regarding proper submission of both the prior-approved DMNC record that established the EDL, as well as the currently approved in-period DMNC test into the Aggregation System.
 - b. For additional information on using an SRT Transfer DMNC, refer to Section [#] of this Aggregation Manual and Section [X] of the ICAP Manual.
3. A DER facility whose capability has contributed to an Aggregation's UCAP in a given Capability Year and is changing to another Aggregation in which the number of hours in the DER facility's former Aggregation's DMNC test is not the same as the number of hours in the new Aggregation's DMNC test.
 - a. A DER facility may be eligible to carry over an existing DMNC value if: (1) the facility is changing to an Aggregation with an EDL that is less than or equal to its former Aggregation's EDL, or (2) the facility is changing to an Aggregation with a longer EDL and the Aggregation is time stacking.
 - b. If the DER facility meets one of the above criteria, then the Aggregator must contact the NYISO to initiate the Aggregation change to enable appropriate submission of a DMNC record that reflects Aggregation's EDL.

Provisional DMNC and Single Resource Type (SRT) Transfer DMNC

Pursuant to Services Tariff Section 5.12.13.1, a qualified ICAP Supplier that is an existing SCR or an existing Generator that (i) meets the requirements to participate in an Aggregation, and (ii) is currently participating in the ICAP market or participated in the Capacity market in the prior like Capability Period, may be eligible to offer its capacity as a DER through an Aggregation without missing a month of Capacity market participation. SCRs and Generators will utilize a provisional DMNC or Single Resource Type (SRT) Transfer DMNC, as appropriate.

A provisional DMNC (which is the upper limit of ICAP that an Aggregator can declare for a DER facility that previously participated in the NYISO-administered markets as a Special Case Resource (SCR) or Generator) will be used when a Generator or SCR enters a DER Aggregation.

A stand-alone Generator may use a SRT Transfer DMNC (which is the upper limit of ICAP that an Aggregator can declare for a DER facility that previously participated in the NYISO-administered markets as a Generator) when a Generator is transitioning to an equivalent Single Resource Type Aggregation (*e.g.*, when a stand-alone ESR seeks to enter an ESR Aggregation). The use of a provisional DMNC or SRT Transfer DMNC will be subject to NYISO review. A provisional DMNC or SRT Transfer DMNC is valid for the first Capability Period in which the DER facility participates in an Aggregation and will be end-dated to reflect the last day of that Capability Period. An Aggregator may only use a Provisional DMNC or SRT Transfer DMNC for a DER facility upon that DER facility's transition to the DER participation model and must declare the Provisional DMNC or SRT Transfer DMNC value when it enrolls the facility in an Aggregation. A Provisional DMNC or SRT Transfer DMNC value may be utilized for a DER facility until the Aggregation establishes its DMNC value for that Capability Period through an in-period DMNC test.

If the amount of UCAP supplied by a DER facility using a provisional DMNC or SRT Transfer DMNC is greater than the amount of UCAP the DER facility is eligible to provide after completion of the Aggregation DMNC test, the Aggregation may be subject to financial penalties for an ICAP Shortfall. See Services Tariff Section 5.14.2.

An Aggregator with an Aggregation that may be eligible to utilize a provisional DMNC or SRT Transfer DMNC based on the Aggregation's composition should contact DER@nyiso.com to discuss the process requirements before submitting DER and Aggregation information for enrollment into the Aggregation System.

3. Registration & Enrollment

An Aggregator is a NYISO Market Participant that may combine facilities across a broad range of Resource types and sizes to participate in the NYISO markets as a single entity – an Aggregation. The Aggregator is required to register as a NYISO Market Participant (if not already registered as a Market Participant) in order to enroll Aggregations with the NYISO, and to enroll the individual facilities to form an Aggregation. The individual facilities are required to satisfy certain requirements to enter, exit, and switch Aggregations. A Distribution Utility will have the opportunity to review and approve each DER and Aggregation that is connected to the utility's electrical facilities.

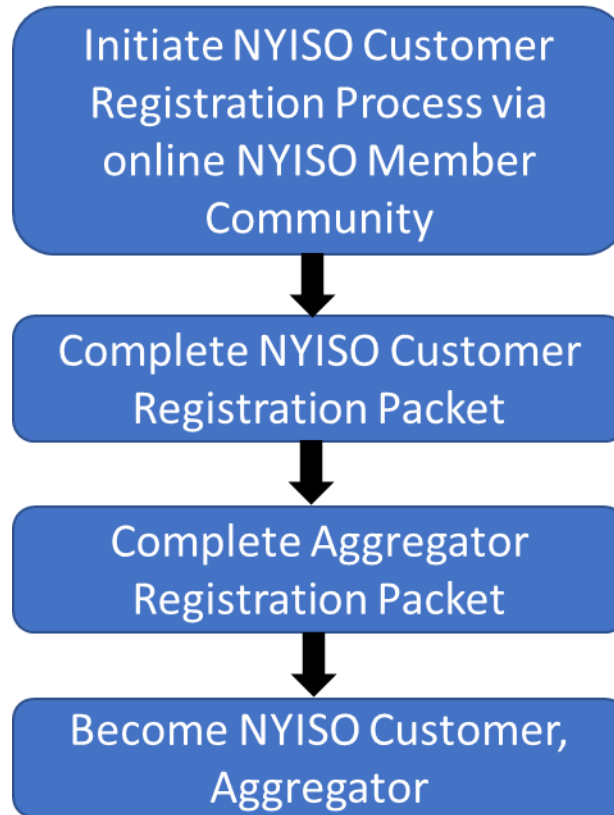


Figure X: Registration Process Flow

3.1. NYISO Aggregator Registration

The Aggregator is the party who represents one or more DER facilities as an Aggregation participating in the NYISO wholesale market. To become an Aggregator, an entity must first become a NYISO Customer, if not already registered. Aggregators must complete the NYISO Customer Registration packet and are subject to all of the general registration requirements applicable to other Customers, including but not limited to submission of credit information, designation of MIS Administrator and users, and notification to the NYISO of corporate affiliations. Please refer to the Market Participant User’s Guide for the complete list of responsibilities. Aggregators must also complete the NYISO Aggregator Registration Packet. The NYISO Customer Registration Packet and NYISO Aggregator Registration Packet must be submitted through the Salesforce NYISO Member Community: <https://nyiso.force.com/MemberCommunity/s/>.

To request access to the NYISO Member Community, please submit your name, company name, email and phone number to the [NYISO Registration Department](#).

3.1.1. NYISO Aggregator Registration Packet

In addition to mailing address and basic applicant contact information, the NYISO Aggregator Registration Packet requires applicant's 24/7/365 control center contact information for operational coordination activities, referred to as the 'Operational Contact.' The Operational Contact must be available 24/7/365 to respond to the NYISO and the interconnected utility. The contact information for a Secondary Operational Contact is required as well.

All Aggregators must communicate each Aggregation's operating status through the applicable Transmission Owner (TO) and are advised to contact the applicable TO business account representative for technical requirements associated with establishing TO telemetry. Aggregators opting to communicate with the NYISO solely through the Transmission Owner are not required to submit an Infrastructure and Technology Plan with the Registration Packet.

An Aggregator electing to communicate both to the TO and also directly with the NYISO must submit an Infrastructure and Technology Plan with the Aggregator Registration Packet – the Infrastructure and Technology Plan requires information describing Aggregator control center configuration, system and communications architecture, and data management practices. An Aggregator will need to reference the Direct Communications Procedure in order to set up direct communications with the NYISO. Aggregators are required to complete a CEII (Critical Energy Infrastructure Information) form and an NDA (Nondisclosure Agreement) in order to obtain the Direct Communications Procedure. The CEII and NDA forms are available using the following link: <https://nyiso.tfaforms.net/187>.

A prospective Aggregator must successfully register as a NYISO Customer and Aggregator before enrolling facilities and Aggregations. Facility and Aggregation enrollment occurs in the NYISO Aggregation System, to which Aggregators will receive access after successful registration as a NYISO Customer and Aggregator.

Aggregators planning to use a third party for communication services or scheduling and dispatch of DER facilities are advised to contact Customer Registration to understand how the third party may interact with the NYISO on behalf of the Aggregator. Third party service providers are required to register as NYISO Customers or Guests prior to providing services to an Aggregator. For more information on third party service provision related to scheduling of Aggregations and DER, please refer to the Scheduling Service Provider/Agency Agreement form of the NYISO Customer Registration Packet. For more information on third party service provision related to communication services and the details of the Direct Communications Service Provider Agreement, please contact NYISO Customer Registration at the following email address: customer_registration@nyiso.com.

An Aggregator who intends to use a qualified Meter Services Entity (MSE) to perform meter data

services, as defined in the Revenue Metering Requirements Manual, for one or more Aggregations need not submit either the Scheduling Service Provider/Agency Agreement or the Direct Communications Service Provider Agreement. However, the MSE must be qualified to provide meter data services per the standards set forth in the NYISO Services Tariff and the Meter Services Entity Manual.

After successful completion of both the Customer Registration and Aggregator Registration procedures, an Aggregator will be established in the NYISO's Market Information System (MIS) based on the contact information provided by the Customer. Aggregation System privileges are granted to the Aggregator's Organization, which allows the MIS Administrator to assign the applicable privileges to designated users representing the Aggregator's Organization. The MIS Administrator for the Aggregator's Organization must enter the information to establish each user on behalf of the Organization before granting access privileges. Individual users with the appropriate Aggregation System access may commence enrollment of DER and Aggregations.

3.1.2. Pre-Enrollment Activity Checklist

In addition to successfully completing the NYISO Customer Registration and Aggregator Registration processes described in the previous section, Aggregators must ensure that the following tasks are successfully completed prior to attempting to enroll Aggregations of DER in the Aggregation System:

- Interconnection Agreement – All individual DER must have a signed interconnection agreement either through the NYISO's SGIP or an acceptable non-NYISO interconnection procedure (*e.g.*, NYS SIR). For guidance on this process, please review the NYISO's *Transmission Expansion and Interconnection Manual*.
- Telemetry communications – An Aggregator must successfully establish telemetry infrastructure connection with the applicable Transmission Owner prior to submitting an Aggregation in the Aggregation System. The Aggregator to TO connection is a prerequisite to the enrollment processes. The NYISO's Distributed Resources Operations group will work with the NYISO Power System Applications Engineering group, TO, and Aggregator to test communications using the uniquely assigned telemetry point identifiers for each Aggregation. For further information on this process, please see telemetry testing information for Aggregators, outlined in section [X]. The Aggregator should be able to successfully receive and transmit telemetry to the applicable TO over their required protocols (*e.g.*, DNP, IEC61850, etc.) prior to enrollment of any DER or Aggregation. The telemetry communications testing procedure for individual Aggregations is detailed in Section [X] of this Manual.

3.2. NYISO Aggregation Enrollment

An Aggregator that has successfully completed the NYISO Customer Registration and DER Aggregator Registration processes and has contracted with DER facilities that have successfully interconnected to the NYCA may enroll those facilities in an Aggregation. Enrollment of DER and Aggregations, and subsequent changes to enrollments, is completed using the NYISO's Aggregation System.

3.2.1. Aggregation Enrollment Data

Aggregation enrollments may be submitted on a monthly basis. Aggregation enrollment data is obtained through a combination of methods: 1) provided by the Aggregator manually during import, or 2) auto calculated based on the data for all facility enrollments in the given Aggregation, Please note: A DER Aggregation must contain at least one facility in order to be submitted, while a Single Resource Type Aggregation must contain at least two facilities in order to be submitted (Please refer to Section <#> Aggregations).

The Aggregation enrollment process begins with the request for an Aggregation ID in the Aggregation System. The Aggregation ID is a unique identifier in the Aggregation System, which the Aggregator will use to associate DER facilities in the Aggregation; in order to request an Aggregation ID, the Aggregator must have identified the Transmission Node to which the Aggregation and all comprising facilities will electrically map. The requisite data and all instructions describing how to enroll an Aggregation are included in the *Aggregation System User's Guide*.

3.2.1.1. Required Aggregation Documentation

An Aggregator is responsible for submitting documentation to support the enrollment data provided to the NYISO for each Aggregation. All documentation (Refer to Appendix B of the Aggregation System User's Guide) must be submitted to the NYISO at DER@nyiso.com on or before the same date that the Aggregation enrollment record is imported into the Aggregation System. If the Aggregation's physical or operational characteristics change such that any of the required documentation also changes, the Aggregator is responsible for submitting a new version of the applicable document(s) to the NYISO on or before the date that the updated Aggregation enrollment record is imported into the Aggregation System.

Please note: The NYISO does not provide standard templates for any of the required documents – the Aggregator should submit a document that appropriately communicates the required information. The NYISO reserves the right to request additional documentation to

support the enrollment review process as needed. Up-front documentation required for each Aggregation is detailed in the NYISO Aggregation System User's Guide.

3.3. NYISO DER Facility Enrollment

An Aggregator is responsible for enrolling each individual DER facility, including all composite assets, in the NYISO Aggregation System. The Aggregator may assign a DER facility to an Aggregation by providing the Aggregation ID of the desired Aggregation on the facility enrollment record.

3.3.1. DER Facility Enrollment Data

DER facility enrollment data is submitted to the NYISO for review as part of an Aggregation. That is, each DER facility must be associated with/assigned to an Aggregation when the enrollment data is submitted. The NYISO will review individual DER facilities as part of a holistic Aggregation review workflow, completed each month.

Facility enrollment data is either 1) provided by the Aggregator manually, or 2) auto-calculated based on the data for all assets in the given facility.

The facility enrollment process may commence at any point after an Aggregation ID has been assigned to the Aggregator. The Aggregator is not required to create an Aggregation enrollment record before creating facility enrollment records, however the facilities must be assigned to an Aggregation enrollment in order for all validations to successfully occur. Each facility will receive a unique Facility ID, assigned by NYISO, used to identify the DER facility throughout the NYISO Aggregation System. The requisite data and all instructions describing how to enroll a facility are included in the *Aggregation System User's Guide*.

3.3.1.1. Required DER Facility Documentation

An Aggregator is responsible for submitting documentation to support the enrollment data provided to the NYISO for each DER facility. All documentation (Refer to Appendix B of the Aggregation System User's Guide) must be submitted to the NYISO at DER@nyiso.com on or before the same date that the DER facility enrollment record is imported into the Aggregation System. If the DER facility's physical or operational characteristics change such that any of the required documentation also changes, the Aggregator is responsible for submitting a new version of the applicable document(s) to the NYISO on or before the date that the updated DER facility enrollment record is imported into the Aggregation System.

Please note: The NYISO does not provide standard templates for any of the required documents – the Aggregator should submit a document that appropriately communicates the

required information. The NYISO reserves the right to request additional documentation to support the enrollment review process as needed. Up-front documentation required for each Aggregation is detailed in the NYISO Aggregation System User's Guide.

3.3.2. Duplicate DER Facility Enrollments

There must only be one active enrollment for a given DER facility in the Aggregation System. The same DER facility may not be enrolled in two Aggregations at once, by the same or different Aggregators. Additionally, a DER may not participate simultaneously in other NYISO programs, *e.g.*, SCR. If an Aggregator is found to be attempting to enroll a facility that is already enrolled as part of the portfolio of a different Aggregator, or if multiple Aggregators attempt to enroll the same facility for a given month, then the NYISO will review the information submitted by the Aggregator for the applicable facility.

A duplicate enrollment attempt may result in a temporary separation of the DER facility from the market until the issue can be resolved by NYISO staff.

3.3.3. Participation Model Transitions to and from DER

Generators and Demand Side Resources are permitted to transition to the DER participation model and will be added to an Aggregation on a monthly basis – please note that the requirements and important deadlines vary depending on the participation model that the resource currently uses, and when it intends to transition to the DER participation model. Several exemplary scenarios are detailed in the following sections.

Existing Market Participants must register as an Aggregator prior to beginning the DER transition process. Successful DER Aggregator registration will grant access to the NYISO's Aggregation System, which is used for DER enrollment and Aggregation management – more information on DER Aggregator registration can be found in Section [■]. The Aggregator is responsible for providing notice to the NYISO and the applicable Transmission Owner expressing intent to transition a resource into or out of the DER participation model.

3.3.3.1. Special Case Resources (SCR)

Resources that are active participants in the SCR program may initiate the transition to the DER participation model on a monthly basis. If a market participant intends to transition an SCR to the DER participation model during same or current Capability Period, the SCR must be Separated in DRIS prior to the close of certification for the applicable auction month, which must occur prior to the month in which they intend to begin participation as a DER. The SCR

should be separated in DRIS by the RIP if the DER is approved prior to enrollment close, as further outlined below.

An SCR must satisfy all performance testing obligations during and after its transition to the DER participation model per Services Tariff Section 5.12. An SCR that receives a Day-Ahead performance test notice during the month in which its DER enrollment submission is Pending NYISO Review must respond to the test notice either through performance during the test window, or by submitting performance data that reflects a 4-hour Event performance within that Capability Period. SCR performance test activity will not impact the DER enrollment submission status – the Resource will remain submitted for review to begin DER participation, while satisfying the obligation of SCR performance testing as required. A former SCR that successfully transitions to the DER participation model and is active in an Aggregation is still required to fulfill applicable SCR test requirements by either submitting SCR Event data or participating in a SCR performance test. Once a former SCR has transitioned to the DER participation model, performance during an SCR test is not compensable through the SCR program. A DER must appropriately schedule to fulfill any SCR program testing obligations and will be compensated as a DER for such schedules consistent with NYISO market rules.

The SCR that has transitioned to a DER must conduct its performance test in the same manner as its previous SCR characteristics, including metering configuration and response type – such requirement is applicable for the duration of a Capability Period in which the DER previously participated as a SCR, after which point, the DER is no longer required to respond to SCR performance tests.

An existing SCR may transition to become a DER and participate in an Aggregation. An Aggregator may claim the capacity associated with the former SCR, now DER, for the first month in which the DER participates in its Aggregation. That is, a former SCR is not required to “sit out” of the Capacity market for a period of time due to its transition to the DER participation model. An Aggregator transitioning an SCR to the DER participation model, seeking to continue uninterrupted capacity market participation, must submit a provisional DMNC to the NYISO that will be used to establish the amount of capacity the resource will be able to sell as a DER. See Services Tariff Section 5.12.13.1.

The Aggregator shall submit the provisional DMNC value to the NYISO through the Aggregation System – please refer to the Aggregation System User’s Guide for details. The maximum ICAP that an Aggregator can declare for a DER that transitions from being a SCR shall be the upper limit of ICAP of the SCR (which is the SCR’s former Average Coincident Load)

for the current Capability Period. When an SCR enters an Aggregation and becomes a DER at the beginning of a Capability Period (i.e., begins participating as a DER on May 1 or November 1), the maximum Installed Capacity that an Aggregator can declare for that Distributed Energy Resource shall be the ACL of the Special Case Resource for the immediately prior like Capability Period. After completion of a DMNC test, typically within the first month of participation, the Aggregation will be subject to penalties for any amount of oversold capacity.

The NYISO and applicable Distribution Utility will process all enrollment submissions through the workflow on a best effort basis. After DU review, NYISO 30-day review takes place. If the NYISO approves the DER prior to enrollment close for the SCR program, then the RIP should separate the resource in DRIS to ensure the SCR enrollment does not overlap with the DER enrollment. The SCR must have an End Effective Date in DRIS for the resource that is no later than the first day of the Resource's participation as a DER. If the NYISO is able to approve the DER after enrollment close for the SCR program, but prior to certification close, then, if appropriate, the NYISO may separate the SCR to allow DER program participation. If the resource is not enrolled as an SCR in the current Capability Period, then no action is required in DRIS. It is important to note that the DER facility cannot participate in the DER participation model until the resource's SCR record has been Separated in DRIS. Please refer to the DRIS Event Calendar for enrollment close and certification close dates.

In the event of an attempted duplicate enrollment in the DER and SCR programs by different Market Participants, the NYISO will follow its procedure for duplicate facility enrollments outlined in section [4] above. If the NYISO determines that it is appropriate to move forward with DER program participation, then the SCR must be separated in DRIS prior to DER program participation, as outlined above. If the NYISO determines that it is appropriate to maintain SCR program participation, then the DER enrollment will be rejected.

After NYISO approval, the DER that has transitioned from the SCR program is eligible for Energy market participation in the following month. An SCR providing a provisional DMNC value would be able to begin selling ICAP. Otherwise, the transitioning SCR will DMNC test as part of a DER Aggregation during the first month of participation as a DER. An SCR transitioning to DER that is not providing a provisional DMNC would be eligible for Capacity market participation after it has successfully completed its DMNC test.

Emergency Demand Response Program (EDRP)

EDRP Resources do not participate in the Capacity market, and so do not have the testing obligations applicable to SCRs transition to the DER program. An EDRP intending to transition to DER must unenroll and set an end effective date in DRIS that is prior to its intended start date as a DER. An EDRP may initiate the transition to the DER participation model during a given month, provided that it is Separated in DRIS prior to participation as a DER. An Aggregator providing Capacity in the NYISO markets for the first time, such as by enrolling EDRP resources that will begin participating in the Capacity market in an Aggregation as a DER facility, should review requirements applicable to Capacity suppliers prior to participation, including, but not limited to requirements outlined in the NYISO tariffs and the ICAP Manual.

Demand Side Ancillary Services Program (DSASP) and Day Ahead Demand Response Program (DADRP)

Resources that are active participants in the DSASP or DADRP may initiate the transition to the DER participation model on a monthly basis. The DSASP Provider or Demand Reduction Provider (DRP) for the Resource must coordinate with NYISO Customer Registration to remove the DSASP or DADRP Resource from the NYISO markets prior to participation in the NYISO markets as a DER. The DSASP Provider or DRP is responsible to coordinate the removal any bids submitted to NYISO that are not already being evaluated for the Day Ahead or Real-Time market prior to participation as a DER.

A DSASP or DADRP Resource transitioning to the DER participation model that is also participating as an SCR or EDRP must additionally follow the transitioning steps for SCRs or EDRP resources, as applicable, outlined above.

Behind-the-Meter Net Generation (BTM:NG) Resources

BTM:NG Resources may initiate the transition to the DER participation model on a Capability year basis, and the BTM:NG must notify the NYISO by August 1 that it intends to transition to DER for the upcoming capability year. Upon deciding to transition and prior to August 1, the market participant must notify the NYISO as described in the ICAP Manual. Once the NYISO has received and approved the end effective date notice for the BTM:NG Resource, and the Market Participant has successfully registered as a DER Aggregator, the Aggregator may begin the process of enrolling the Resource as a DER. Note that once the facility ends its participation as a BTM:NG Resource, the BTM:NG Resource market rules will no longer apply to the facility or its component assets.

A BTM:NG Resource may be comprised either of a single generating unit that serves a host load, or an aggregated unit that serves a host load. Regardless of the configuration of

generating units, when the Resource enrolls as a DER that reflects any load reduction capability, injection capability, or withdrawal capability that will be provided through an Aggregation as a DER. A BTM:NG Resource routinely serves its host load with the on-site Generation source; this is a defining characteristic of the BTM:NG Resource model and precludes a BTM:NG Resource from the DER participation model. A BTM:NG Resource that transitions to become a DER must thereafter routinely serve its host load by withdrawing from the grid, rather than primarily from the on-site generation source. Further, the DER enrollment should reflect the number of generating units as assets within a single DER – for example, if an existing BTM:NG Resource facilitates serves its Host Load through the use of two gas turbines, it may enroll as one (or more) DER with (i) Demand Reduction capability (either through curtailment, Local Generation, or both) and (ii) Generation.

A BTM:NG Resource that provides Voltage Support Service (VSS) will become ineligible to do so upon enrollment as a DER in an Aggregation.

If the resource will offer Capacity market via its Aggregation, please consult all applicable requirements in the NYISO tariffs and the ICAP Manual.

Existing Non-Demand Side Resources

Resources that are enrolled in the NYISO markets in any of the following participation models may transition to the DER participation model: Generator, Energy Storage Resource (ESR), Limited Energy Storage Resource (LESR), Solar, Wind, Landfill Gas, Energy Limited Resource (ELR), or Capacity Limited Resource (CLR). Some resource types may need to submit an annual election prior to transitioning to becoming a DER, including retail load modifiers. For more information regarding annual election requirements, please refer to section [1] of this manual and the ICAP Manual.

If a Resource seeks transition into the DER participation model, it must be enrolled by a Market Participant who is a qualified NYISO Customer and registered DER Aggregator. For more information about registering as a DER Aggregator, see section [1].

Upon deciding to transition, the market participant must submit a notice to NYISO Customer Registration of the end effective date for the current Resource. The market participant shall submit a notice, in the form of an email, to NYISO Customer Registration (customer_registration@NYISO.com) and DRO (DER@nyiso.com). Notice must be provided prior to the import of enrollment data in the Aggregation System for the applicable Resource seeking to transition to DER – in other words, before the Aggregator can submit data to enroll

a Resource that is transitioning to become a DER, the NYISO must acknowledge and approve its end effective date notice as a standalone unit. Once the NYISO has received and approved the end effective date notice for the current Resource enrollment, and the Market Participant has successfully become a DER Aggregator (or associated the unit with another Aggregator), the unit may begin the process of enrolling as a DER.

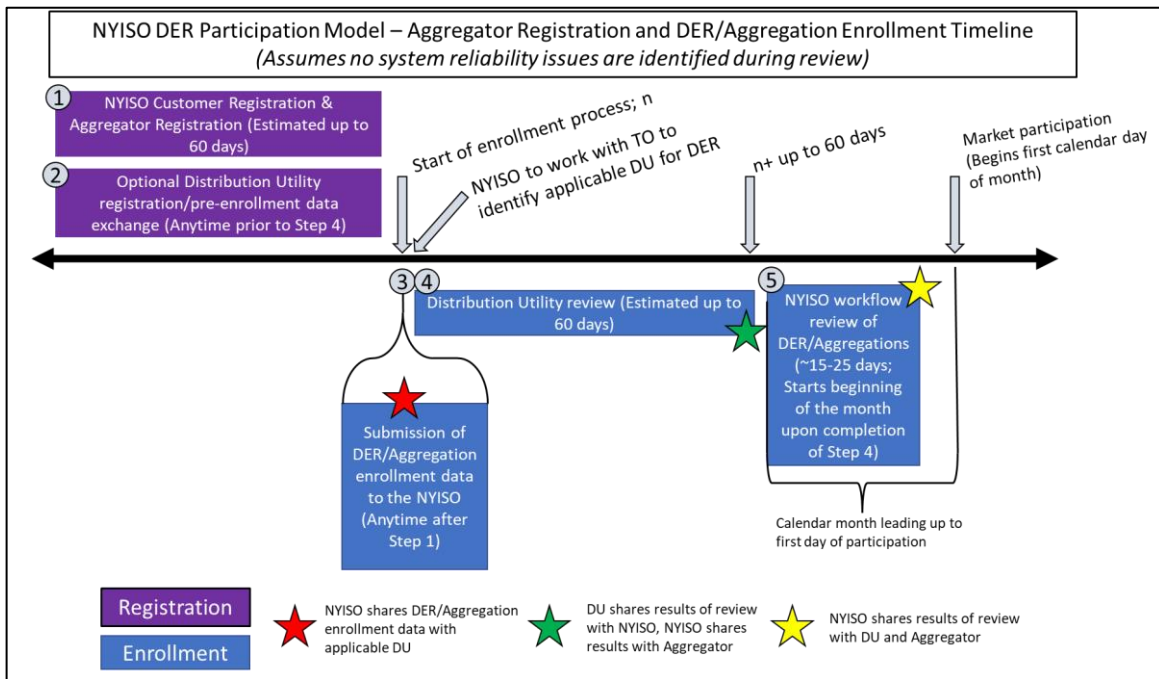
An existing Generator that is an ICAP Supplier may transition to the DER program without missing a month of Capacity market participation, provided that the applicable Generator must have an approved in-period DMNC rating. When a Generator with an approved in-period DMNC rating enters an Aggregation to become a Distributed Energy Resource, the maximum ICAP that an Aggregator can declare for the Distributed Energy Resource shall be the minimum of the Generator's approved in-period DMNC rating and the Generator's Capacity Resource Interconnection Service ("CRIS"). See Services Tariff Section 5.12.13.1.

Transitioning out of the DER participation model

Resources that are enrolled in the DER participation model and actively participating in an Aggregation may elect to separate from the DER model to participate as a stand-alone Resource. It is important to note that all applicable rules must be followed, including a minimum size of 1 MW for injection-only generators and 100 kW for ESRs and SCRs. The Aggregator is required to notify NYISO Customer Registration of the intent to transition from the DER program to another program prior to initiating the removal process. After the NYISO has been notified, the Resource will be able to proceed with registering for the new program, consistent with existing processes.

3.4. Enrollment Review of DER

3.4.1. Optional Distribution Utility Registration/Pre-Enrollment Data Exchange



Prior to engaging in the NYISO’s enrollment and registration process, Aggregators may exchange information and data with a DER’s applicable Distribution Utility (DU) in order to support its enrollment of DER with the NYISO. This pre-enrollment process is not required. During this process an Aggregator may seek to verify the data contained in an Interconnection Agreement (if applicable) based on the DU’s records. This pre-enrollment communication can aid in expediting the NYISO enrollment process. The Aggregator must submit written confirmation of the Transmission Node for each DER upon import to the Aggregation System, as described in the Aggregation System User’s Guide - the applicable Transmission Owner to whose Transmission Node the DER electrically maps shall confirm that the DER is connected to the correct Transmission Node, pursuant to Services Tariff Section 4.1.10.2. For details on what potential system access or information may be available, please contact the applicable DU. A list of contacts for select Distribution Utilities are available on the NYISO’s public website at the following: [LINK].

3.4.2. Distribution Utility DER Review

Distribution Utilities will have the opportunity to evaluate the safety and reliability impact(s) each DER and group of DERs may have on the utility’s electric facilities. See Services Tariff Section 4.1.10. As described in this Section #, Aggregators will be responsible for submitting all requested DER and Aggregation physical and operational data to the NYISO, which will verify that all required information has been provided. The NYISO and Aggregator will consult with the applicable Member System, if

necessary, to identify the DU(s) (including municipal electric utilities) responsible for reviewing the DER in an Aggregation. The NYISO will provide the Member System and identified DU(s) with all DER and Aggregation physical and operational enrollment data supplied by the Aggregator. Once the appropriate DU(s) is identified for each individual DER within an Aggregation, the DU will be responsible for evaluating the reliability and safety impacts of DER directly connected to its electric facilities. Aggregator, Transmission Owner, DU, and NYISO responsibilities related to the DU review process are described below.

3.4.2.1. Aggregator Responsibilities

An Aggregator must provide to the NYISO all Aggregation-specific, and individual DER-specific information identified in the Aggregation System User Guide prior to each DER's enrollment. The Aggregator must receive written confirmation of each DER's applicable Transmission Node, which shall be submitted to the NYISO contemporaneously with the DER's enrollment materials. The NYISO requires any change to DER or Aggregation-specific enrollment data to be submitted to the NYISO Aggregation System, however only "material" changes shall be subject to review by the applicable DU. NYISO will share updated non-material enrollment data with the applicable DU for administrative visibility. When there is a material change to a DER or Aggregation's physical or operational characteristics, the applicable DU will review the safety and reliability impact(s) of the change, if any. This will enable the applicable DU to evaluate the safety and reliability impact of individual DER and Aggregations on its distribution system as individual DER and Aggregations evolve.

A 'material change' to a DER or Aggregation is any change to the physical and operating characteristics identified in Section [X] of the Aggregation System User's Guide. A comprehensive list of all data attributes that, when modified, require a supplemental DU review can be found in the Aggregation System User's Guide Section [X]. Non-material changes, such as changing a phone number, are administrative in nature and are not expected to have operational impacts. The NYISO will review non-material changes to DER and Aggregations and share the updated enrollment data with the applicable DU for administrative visibility. An Aggregator must always ensure that changes submitted to the enrollment information for a particular DER are in compliance with the applicable interconnection agreement, pursuant to Services Tariff Section 4.1.10.

The Aggregator must upload enrollment information using the import instructions described in the Aggregation System User's Guide. All imports to the NYISO's Aggregation System must be in Microsoft Excel (.xlsx) file format, using the template provided by the NYISO available within the Aggregation System. The Aggregator shall submit changes to DER enrollment data to the NYISO's Aggregation System based on the

results of the DU review as soon as practicable after receipt of DU review results from the NYISO.

During the DU review, the Aggregator may be required to provide additional supplemental information to the DU to support the review process and must provide the requested information as necessary. Services Tariff Section 11 contains the NYISO's Dispute Resolution Procedures. These procedures, both formal and informal, are available to parties having a dispute under the ISO's Services Tariff and OATT, the ISO Procedures, or any Agreement entered into under either Tariff. Entities that seek to enroll a DER or Aggregation for participation in the NYISO's participation model will be able to utilize these procedures to resolve related concerns arising under the market rules under the Services Tariff and OATT.

3.4.2.2. Transmission Owner Responsibilities

The Transmission Owner shall confirm the Transmission Node for each DER and provide written documentation to the Aggregator upon request. To the extent that an Aggregator identifies the incorrect Transmission Node for a particular DER, the TO shall inform the Aggregator of the discrepancy, as defined above in Section X detailing the "Optional Distribution Utility registration/pre-enrollment data exchange."

The TO shall communicate with the NYISO to aid in identification of the appropriate DU for each DER upon request by the NYISO. The NYISO will not share DER enrollment data with a DU until the identity of the correct Distribution Utility to whose facilities the DER electrically maps is known.

3.4.2.3. NYISO Responsibilities

Once the Aggregator's data upload is complete, the NYISO will confirm completeness of the enrollment data in the Aggregation System – this validation occurs automatically upon import to the System and returns error messages to the extent that a given data attribute is incorrectly formatted, inappropriate characters are used, data length fields are exceeded, or the information is otherwise incomplete. The NYISO's evaluation does not ensure accuracy of all data provided. Upon successful submission to the Aggregation System of all enrollment information, the NYISO will conduct a manual export of the data provided by the Aggregator to produce a Microsoft Excel (.xlsx) file that will be provided to the applicable DU. The NYISO's export and sharing of enrollment data will occur upon successful import and completeness confirmation. The DU will receive notification that the information has been shared.

The NYISO will send the results of each DU review to the applicable Aggregator. The Aggregator and DU shall coordinate as necessary to resolve safety and/or reliability concerns identified by the DU's review. The Aggregator shall submit any DER or Aggregation physical and operating data changes to the NYISO's Aggregation System, which shall remain the official data repository and must always reflect changes or modifications as a result of the deliberations between the Aggregator and DU. Aggregators must re-submit DER enrollment data to the NYISO's Aggregation System after resolving safety and/or reliability concerns,

which will initiate the review process again.

3.4.2.4. Distribution Utility Responsibilities

The DU to whose electric facilities a DER maps will receive the Aggregator's submitted data, including the physical and operational data identified in Appendix [X] of the Aggregation System User's Guide that is applicable to a given Aggregation and the DER facilities within that Aggregation. The DU is expected to begin its safety and reliability review once the data has been transmitted by the NYISO. The DU may require the Aggregator to provide additional information during this time to supplement the information gathered in the NYISO's Aggregation System.

The DU is responsible for communicating the outcome of the review to the NYISO using a standard attestation template, which will require the DU to articulate the results of the review, either in the form of an approval, or a denial accompanied by the reason for denial and required mitigation to resolve the safety or reliability issue(s) identified. The DU's review shall verify that the operating characteristics of the DER and Aggregations comply with NYISO and/or Distribution Utility metering configurations, do not violate existing interconnection agreements, and otherwise do not cause safety and reliability concerns. Please refer to Services Tariff Section 4.1.10 for the NYISO requirements associated with the DU review process. It is anticipated that Distribution Utilities will complete their safety and reliability review and provide the results of that review to the NYISO within 60 calendar days, but the 60-day review period is a recommended maximum amount of time, and DU review may take longer in practice. If the DU finds DER/Aggregation information to be incomplete or inaccurate, it will notify the NYISO as soon as practicable, which notification will terminate the review period. A new review period will begin when the Aggregator resubmits the enrollment data to the NYISO's Aggregation System.

If the DU does not identify any safety or reliability issues, the DER and Aggregation will move on to a final review by NYISO staff before beginning market participation on the first day of the month following completion of the NYISO's review. However, if one or more safety or reliability issues is identified during the DU review period, the DU is responsible for notifying the NYISO via the applicable form, which the NYISO would then provide to the Aggregator. The Aggregator is responsible for initiating communications with the DU to resolve the identified concerns and resubmitting its application as appropriate through the NYISO. Upon learning that safety and reliability issues have been identified by the DU, the NYISO will perform the 'unsubmit' function, as described in the Aggregation System User's Guide, for the Aggregation in the Aggregation System. Unsubmitting a DER and/or Aggregation removes the DER/Aggregation from its previous status of 'Submitted,' allowing the Aggregator to make adjustments to the enrollment data to mitigate the concerns identified by the DU as needed. It is the responsibility of the Aggregator to then

resubmit all DER physical and operating data, including changes where necessary, to the Aggregation System.

If the Aggregator wishes to proceed with enrollment of the Aggregation, then the Aggregator must 1) correct the issues identified by the DU, and 2) re-submit to the Aggregation System the enrollment data record for each Aggregation for which a safety and/or reliability issue was identified by the DU. The review process of the revised Aggregation will begin at that time, with the NYISO transmitting revised data to the applicable DU for re-review. As noted above, the subsequent review restarts the 60-day timeline; however, the DU will make a best effort to expedite the subsequent review process. This process may iterate, if necessary, but a DER, or if necessary, an Aggregation will not be permitted to begin operating in the NYISO-administered wholesale market until the DU verifies that the operation of that Aggregation would not cause any safety or reliability issues.

3.4.3. NYISO Enrollment Process

The DER enrollment process includes a 30-day NYISO review period immediately preceding the targeted month of DER participation. This process starts after all safety and reliability issues identified by the DU are resolved. The NYISO will review several aspects of each DER and Aggregation, including but not limited to:

- a. Evaluation of Energy/Capacity Limitations (ELR/CLR Resources)
- b. Telemetry communication establishment for individual Aggregations
- c. Review of proposed market services (Energy, Ancillary Services, etc.)
- d. MW declarations – Injection, Withdrawal, and Demand Reduction
- e. Load reduction plan, if applicable
- f. Proposed alternative telemetry mechanism(s)
- g. Ancillary services verification test preparations

The NYISO will complete 1) review and approvals of each DER and the total Aggregation to operate in the market, and 2) configuration and testing of the telemetry communication channels necessary from the Aggregator to the TO to the NYISO, and directly between the Aggregator and the NYISO if the Aggregator chooses parallel communications to the TO and NYISO. At the conclusion of this enrollment review period, assuming the review is successful, the Aggregation and all associated DER will be successfully enrolled in the NYISO market, with the DER effective start date being the first of the month following the month in which the NYISO concludes its review. Aggregators will receive a notification from the NYISO's Aggregation System that the status of the DER and Aggregation will become 'Enrolled' effective on the applicable date. The DU will also receive notice from the NYISO of enrollments for the coming month at the end of the

review period.

3.5. Aggregation and DER Facility Management

After an Aggregation and DER are enrolled in the NYISO market, an Aggregator may modify the characteristics of the Aggregation or DER. Such modifications may include but are not limited to: increasing or decreasing MW capabilities, modifying the Ancillary Service(s) the Aggregation is eligible to provide, entering into or withdrawing from capacity market participation. Fundamentally, these types of modifications are completed through the 'Update' of the Aggregation or facility enrollment records as described in the Aggregation System User's Guide.

An Aggregation may not change participation model type in the Aggregation System. An Aggregator must instead create a new Aggregation and move the applicable DER facilities to that new Aggregation. The functionality that supports this process is featured in the Aggregation System User's Guide.

An Aggregator may also change the composition of an Aggregation. An Aggregator may add a new DER facility to an Aggregation by associating the applicable Aggregation ID with the DER facility enrollment record in the Aggregation System. An Aggregator may remove a DER facility from an Aggregation by removing the Aggregation ID from the DER facility enrollment record, thereby disassociating the Aggregation and DER data. The Aggregator may remove a DER facility from one Aggregation, and then add the DER facility to a different Aggregation.

Modifications to DER or Aggregation data attributes that are considered 'material' (see the Appendix to the Aggregation System User's Guide) are subject to a safety and reliability review by the applicable DU. Attributes that are considered to be 'non-material' can be updated and changed as needed without going through a DU safety and reliability review. Please refer to the Aggregation System User's Guide for further details.

The Aggregator also has the ability to separate an Aggregation from the markets, which withdraws the Aggregation from all market participation effective at the beginning of the next calendar month. Aggregation separation is not subject to review and approval by the NYISO or DU. Aggregators will be responsible for all existing obligations of its Aggregations such as penalties, existing bids, or schedules.

Pursuant to Services Tariff section 5.12, a DER may switch from one Aggregation to a different Aggregation on a monthly basis. DER facilities whose capability has contributed to an Aggregation's UCAP in a given Capability Year are subject to additional Aggregation switching requirements. Please refer to the ICAP Manual section 4.1.3 for detailed requirements for DER switching between Aggregations.

A DER that switches from one Aggregation to a different Aggregation must be removed from the

original Aggregation and enrolled in the new Aggregation by the respective Aggregator(s). If a DER moves from one Aggregation to another Aggregation, and both Aggregations are managed by the same Aggregator, the Aggregator can complete this update for each Aggregation in the Aggregation System. If the two Aggregations are managed by different Aggregators, the Aggregators must coordinate this update with the resource to ensure that the DER is not added to the new Aggregation prior to being removed from the original Aggregation.

A DER whose capability has not contributed to an Aggregation's UCAP in a given Capability Year may switch Aggregations monthly, subject to DU review and NYISO enrollment review as detailed in section [#] of this Aggregation Manual and Services Tariff Section 4.1.10.3. When the transition of a DER from one Aggregation to another necessitates a change in the 'type' of one or both Aggregations (*e.g.*, a Demand Side Resource joins a Generator Aggregation, which must then become a DER Aggregation), the Aggregator is responsible for submitting a new Aggregation with a new Aggregation ID to effectuate this change. If a DER's transition does not change the type of an Aggregation (*e.g.*, a battery moving from one ESR Aggregation to a different ESR Aggregation), the Aggregator is not required to create a new Aggregation under a new Aggregation ID. For further details regarding the enrollment process and applicable attributes, please refer to the Aggregation System User's Guide.

4. Mitigation & Market Monitoring

4.1. Energy Market Mitigation

Aggregations are subject to the market mitigation measures contained in Services Tariff Sections 23 and 30. The mitigation rules that apply to an existing resource type, such as an ESR, shall apply to an Aggregation of the same type, *e.g.*, an ESR Aggregation. An Aggregator may not use Aggregations to avoid the application of mitigation or financial sanctions under the NYISO's Market Mitigation Measures. The NYISO shall monitor for conduct that may be used by an Aggregator to avoid the application of mitigation, including but not limited to creating or dissolving Aggregations or moving facilities between Aggregations.

4.1.1. Aggregation Reference Levels

Aggregators may only use cost-based reference levels for Aggregations – bid-based, LBMP-based, and new unit reference levels are prohibited for use by Aggregators. For more information, please refer to the Reference Level Manual [LINK].

4.2. Capacity Market Mitigation

Aggregations are subject to the market mitigation measures contained in Services Tariff sections 23 and 30.

4.2.1. Buyer Side Mitigation

Injection-capable facilities, that are not Excluded Facilities, participating in an Aggregation are subject to the NYISO's Buyer-Side Mitigation (BSM) rules, pursuant to Services Tariff section 23. Demand Side Resources participating in an Aggregation are not subject to the NYISO's BSM rules. Proposed new generators seeking to participate in an Aggregation or additional CRIS for an injection-capable facility participating in an Aggregation are examined in a two-part test to determine whether an Offer Floor is applicable.

All individual injection-capable facilities participating as DER in an Aggregation, and that are not Excluded Facilities, are evaluated as independent 'Examined Facilities' – only revenue streams and costs associated with each individual facility are evaluated. Revenue streams may include those earned by providing energy services to another entity, such as a utility, if the facility is engaged in dual participation pursuant to Services Tariff section 4.1.11.

Competitive Entry, Renewable, and Self-Supply exemptions are available to injection-capable facilities participating in an Aggregation. If a facility is not exempt, an Offer Floor is applied upon enrollment to the accepted CRIS value associated with that individual facility.

Please note that an Aggregation in a Mitigated Capacity Zone that is subject to Buyer Side Mitigation (BSM), having non-exempt MW greater than zero, that is (1) new to the market, or (2) is undergoing a change to the Aggregation and is thus under review, will not be able to allocate sales from the Aggregation in the Strip or Monthly auctions and will only be able to offer any applicable MW into the Spot auction.

4.2.2. Supply Side Mitigation

All injection-capable facilities participating in Aggregations that are ICAP Suppliers are subject to the Physical Withholding rules relating to the audit of removal of capacity from Mitigated Capacity Zones. Demand Side Resources participating in an Aggregation are not subject to the NYISO's Physical Withholding rules.

Aggregations that are capacity Suppliers are subject to the Pivotal Supplier 'must-offer' rule. Aggregators must identify Affiliated Entities as defined in Services Tariff section 23.2.1, pursuant to Services Tariff section 5.12.1. Aggregations are not permitted to request a Going Forward Cost.