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Independent System Operator

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Revision History

Version	Date	Revisions
1.0	12/06/2012	Initial Release
2.0	05/28/2014	Global ➢ Performed a reorganization of content ➢ Implemented minor stylistic changes ➢ Added additional language clarifying the CARIS process
2.1	02/26/2016	Section 3.2 ➢ New section inserted for Developer Qualifications Appendix H ➢ New appendix incorporating by reference, the "NYISO Qualification Form" in Attachment A of the Reliability Planning Manual
2.2	05/30/2019	Global ➢ Updated description of historic congestion data reporting ➢ Inclusion of a reference to Generation Deactivation process in the Introductory section ➢ Correction to NYISO web links ➢ Ministerial changes such as standardization of tariff references, inappropriate capitalizations, and use of defined terms ➢ Minor language edits for user readability
2.3	11/11/2020	Section 3.1 ➢ Removed methodology for maintaining a representative system ➢ Included generic resource addition process for resource adequacy and transmission security needs identified in the latest Reliability Planning Process
2.4	MM/DD/YYYY	Global ➢ Updated introductory section to align with new tariff ➢ Replaced CARIS Phase 1 process with System & Resource Outlook process ➢ Replaced CARIS Phase 2 process with Economic Transmission Project Evaluation process ➢ Replaced Additional CARIS Study process with Requested Economic Planning Study process ➢ Updated forms and appendices to align with new tariff

1. Overview

1.1. The Comprehensive System Planning Process

This Economic Planning Process Manual (Manual) describes the NYISO's Economic Planning Process (EPP) component of the Comprehensive System Planning Process (CSPP). The CSPP was approved by the Federal Energy Regulatory Commission (FERC) and its requirements are contained in Attachment Y of the NYISO's Open Access Transmission Tariff (OATT). One of the NYISO's responsibilities is to prepare for the impact of expected changes in supply and demand of power on the reliable operation of the New York transmission system. The analyses, evaluations and forecasts produced by the NYISO's system and resource planning activities assist Market Participants, regulators and policy makers as they plan for the future. One way the NYISO accomplishes this responsibility is through the Economic Planning Process component of the CSPP.

The CSPP is comprised of four components:

1. Local Transmission Planning Process (LTPP),
2. Reliability Planning Process (RPP) along with parts of the Short-Term Reliability Process (STRP),
3. Economic Planning Process (EPP), and
4. Public Policy Transmission Planning Process

The first component in the CSPP cycle is the LTPP. Under this process, the local Transmission Owners (TOs) perform transmission studies for their transmission areas according to all applicable criteria. This process produces the Local Transmission Owner Plan (LTP), which feeds into the NYISO's determination of system needs through the CSPP. Details of the LTPP are included in the Reliability Planning Process ("RPP") Manual[1].

The second component in the CSPP cycle is the RPP, covering year 4 through year 10 following the year of starting the study, along with STRP, covering year 1 through year 5 following the Short-Term Assessment of Reliability (STAR) Start Date of the study. The RPP and STRP requirements are described in detail in the RPP Manual and Attachments Y and FF to the OATT, respectively. Under the biennial process

[1] See the *Reliability Planning Process Manual*, which is located in the Manuals>Planning folder on the NYISO Manuals, Technical Bulletins & Guides Web site: https://www.nyiso.com/manuals-tech-bulletins-user-guides.

[2] Generator Deactivation Reliability Needs that arise on local facilities, not on the BPTF, must always be addressed in the STRP.

for conducting the RPP, the reliability of the New York Bulk Power Transmission Facilities (BPTF) is assessed, any Reliability Needs are identified, solutions to identified needs are proposed and evaluated for their viability and sufficiency to satisfy the identified needs, and the more efficient or cost-effective transmission solution to the identified need(s) is selected by the NYISO. The RPP was originally developed and implemented in conjunction with stakeholders, was approved by FERC in December 2004 and was revised in 2014 to conform to FERC Order No. 1000. The RPP consists of two studies:

1. The Reliability Needs Assessment (RNA). The NYISO performs a biennial study in which it evaluates the resource and transmission adequacy and transmission system security of the New York BPTF over its Study Period, encompassing years 4 through 10 following the year in which the RNA is conducted. Through this evaluation, the NYISO identifies Reliability Needs in accordance with applicable Reliability Criteria. This report is reviewed by NYISO stakeholders and approved by the Board of Directors.

2. The Comprehensive Reliability Plan (CRP). After the RNA is complete, the NYISO requests the submission of market-based solutions to satisfy the Reliability Needs. The NYISO also identifies a Responsible TO and requests that the TO submit a regulated backstop solution and that any interested entities submit alternative regulated solutions to address the identified Reliability Needs. The NYISO evaluates the viability and sufficiency of the proposed solutions to satisfy the identified Reliability Needs and evaluates and selects the more efficient or cost-effective transmission solution to the identified need. In the event that market-based solutions do not materialize to meet a Reliability Need in a timely manner, the NYISO triggers regulated solution(s) to satisfy the need. The NYISO develops the CRP for its Study Period that sets forth its findings regarding the proposed solutions. The CRP is reviewed by NYISO stakeholders and approved by the Board of Directors.

The Short-Term Reliability Process uses quarterly Short-Term Assessment of Reliability studies to assess the reliability impacts of Generator deactivations on both Bulk Power Transmission Facilities and non-BPTF (local) transmission facilities, in coordination with the Responsible Transmission Owner(s). The STAR is also used by the NYISO, in coordination with the Responsible Transmission Owner(s), to assess the reliability impacts on the BPTF of system changes that are not related to a Generator deactivation. These changes may include adjustments to load forecasts, delays in completion of planned upgrades, long duration transmission facility outages and other system topology changes. Section 38 of the NYISO OATT describes the process by which the NYISO, Transmission Owners, Market Participants, Generator Owners,

Developers and other interested parties follow to plan to meet Generator Deactivation Reliability Needs affecting the New York State Transmission System and other Reliability Needs affecting the BPTF (collectively, Short-Term Reliability Needs).

Each STAR will assess a five-year period, with a particular focus on Short-Term Reliability Process Needs ("needs") that are expected to arise in the first three years of the study period. The STRP is the sole venue for addressing Generator Deactivation Reliability Needs on the non-BPTF, and for BPTF needs that arise in the first three years of the assessment period. With one exception[2], needs that arise in years four or five of the assessment period may be addressed in either the STRP or longer-term Reliability Planning Process.

Each STAR looks out five years from its STAR Start Date. The STRP concludes if a STAR does not identify a need or if the NYISO determines that all identified needs will be addressed in the RPP. Should a STAR identify a need to be addressed in the STRP, the NYISO would request the submission of market-based solutions to satisfy the need along with a Responsible Transmission Owner STRP solution. The NYISO evaluates the viability and sufficiency of the proposed solutions to satisfy the identified needs and selects a solution to address the need. The NYISO reviews the results of the solution or combination of solutions (including an explanation regarding the solution that is selected) with stakeholders and posts a Short-Term Reliability Process Report detailing the determination with stakeholders.

The third component of the CSPP is the Economic Planning Process, which consists of three study processes:

1. The System & Resource Outlook ("The Outlook") is a biennial report by which the NYISO summarizes the current assessments, evaluations, and plans in the biennial Comprehensive System Planning Process; produces a twenty-year projection of congestion on the New York State Transmission System; identifies, ranks, and groups congested elements; and assesses the potential benefits of addressing the identified congestion. This report is reviewed by NYISO stakeholders and approved by the Board of Directors.
2. If a Developer proposes a Regulated Economic Transmission Project (RETP) to address constraints on the BPTFs identified in the Economic Planning Process, the NYISO will perform an Economic Transmission Project Evaluation (ETPE) of the proposed Regulated Economic Transmission Project to determine the project's initial eligibility for cost allocation and recovery under the ISO OATT and

[2] Generator Deactivation Reliability Needs that arise on local facilities, not on the BPTF, must always be addressed in the STRP.

to identify the beneficiaries that would be allocated the cost of the project. The beneficiaries must approve the project's selection for cost allocation and recovery purposes in accordance with the voting requirements in the ISO OATT.

3. Market Participants and other interested parties may also request that the NYISO perform a Requested Economic Planning Study (REPS) at the requesting party's expense solely for information purposes, which scope and deliverables will be agreed upon by the NYISO and the requesting entity.

The requirements of the EPP are described in this Manual and Attachment Y of the OATT.

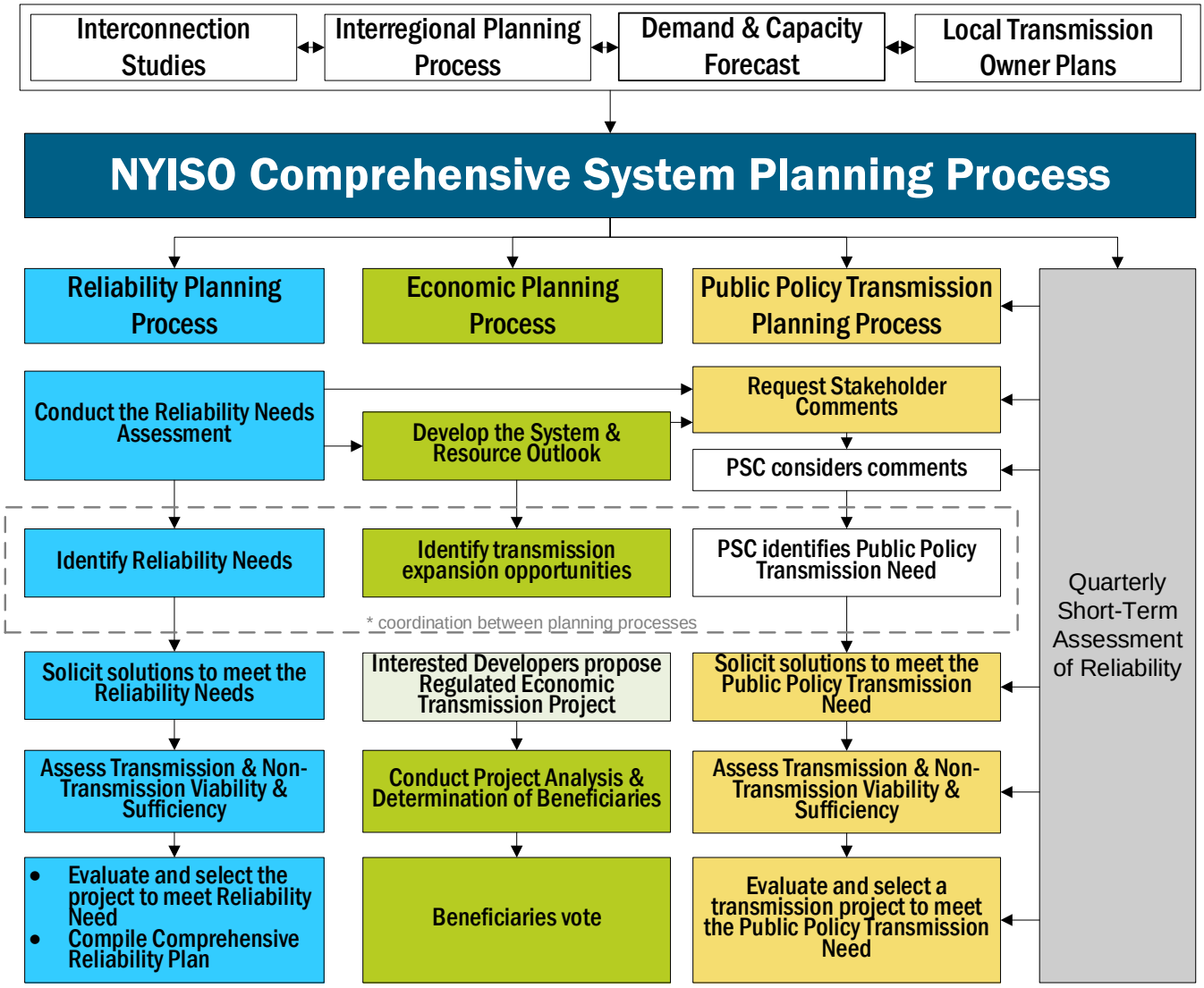
The fourth component of the CSPP is the Public Policy Transmission Planning Process (PPTPP). Under this process interested entities propose, and the New York State Public Service Commission (NYPSC) identifies, transmission needs driven by Public Policy Requirements. The NYISO then requests that interested entities submit proposed solutions to the identified Public Policy Transmission Need. The NYISO evaluates the viability and sufficiency of the proposed solutions to satisfy the identified Public Policy Transmission Need. The NYISO then evaluates and may select the more efficient or cost-effective transmission solution to the identified need. The NYISO develops the Public Policy Transmission Planning Report that sets forth its findings regarding the proposed solutions. This report is reviewed by NYISO stakeholders and approved by the Board of Directors. The requirements of the PPTPP are described in the Public Policy Transmission Planning Manual[3] and Attachment Y of the OATT.

In concert with these four components, interregional planning is conducted with NYISO's neighboring control areas in the United States and Canada under the Northeastern ISO/RTO Planning Coordination Protocol. The NYISO participates in interregional planning and may consider Interregional Transmission Projects in its regional planning processes.

The NYISO CSPP is illustrated in Figure 1.

[3] See the *Public Policy Transmission Planning Process Manual*, which is located in the Manuals>Planning folder on the NYISO Manuals, Technical Bulletins & Guides Web site: https://www.nyiso.com/manuals-tech-bulletins-user-guides.

Figure 1: NYISO Comprehensive System Planning Process



Unless otherwise defined in this document, capitalized terms used herein shall have the meanings ascribed to them in the NYISO OATT.

1.2. The Economic Planning Process (EPP)

1.2.1. Overview of the EPP

The NYISO's EPP was first developed in 2007 in response to FERC Order No. 890 as a biennial complement to the NYISO's established Reliability Planning Process. The EPP is consistent with the core principles identified in Order Nos. 890 and 1000. The EPP is also consistent with the NYISO's market-based philosophy. The process provides resource neutral, open and transparent information to all Market Participants, stakeholders, and interested parties concerning historic, present, and projected congestion of

the New York State Transmission System. Studies performed under the EPP use a variety of metrics to aid informed decision making and to identify transmission expansion opportunities. The process also allows for a qualified Developer to propose a Regulated Economic Transmission Project to seek to allocate and recover the costs through the OATT of a project to address constraints on the BPTFs, but the EPP does not mandate the development, construction, or funding of Regulated Economic Transmission Projects. In the event that a New York Transmission Owner or Developer proposes a Regulated Economic Transmission Project proposal, the EPP provides a process pursuant to which the NYISO would determine the project's initial eligibility for cost allocation and recovery under its OATT, and for the identification of the beneficiaries that would be allocated the costs of the project and that must approve the project's selection for purposes of cost allocation and recovery in accordance with the voting requirements set forth in the OATT.

1.2.2. System & Resource Outlook

The EPP requires that the NYISO biennially develops a System & Resource Outlook, which timing will align with the Reliability Planning Process as set forth in the OATT. The NYISO actively engages with the Electric System Planning Working Group (ESPWG) in vetting the System & Resource Outlook assumptions, methodologies and results. The NYISO's stakeholder committees must review the System & Resource Outlook before it is forwarded to the NYISO's Board of Directors for approval.

The System & Resource Outlook uses a 20-year planning horizon and assumes a reliable system throughout, as applicable, the most recent 10-year Study Period evaluated by the Reliability Planning Process and the Short-Term Reliability Process. As part of the System & Resource Outlook, the NYISO assesses system congestion on the New York State Transmission System over the 20-year Study Period for the Economic Planning Process using the metrics set forth in the NYISO OATT, along with assessing the impact on projected congestion and other metrics of various scenarios (e.g., public policy goals) and sensitivities (e.g., higher fuel costs). The NYISO also conducts a benefit analysis for addressing identified system congestion. This includes the NYISO's calculation of an energy deliverability metric, using the reference cases and/or scenarios. Energy deliverability quantifies the impact that transmission constraints have on the ability for generators to inject energy into the transmission system. Among other things, the metric may be used to aid in the identification of renewable generation pockets on the transmission system for publication in the System & Resource Outlook report.

The NYISO also develops for the Outlook a summary of the current assessments, evaluations, and plans in the biennial CSPP and the information sources relied upon by the NYISO. Based on these data, analyses, and findings, the System & Resource Outlook provides stakeholders with a wide range of information to

assist in making informed decisions, including identifying and developing projects to address transmission congestion.

1.2.3. Economic Transmission Project Evaluation (ETPE)

If a Developer proposes a Regulated Economic Transmission Project to address constraints on the BPTFs identified in the Economic Planning Process, the NYISO will process that project proposal in an Economic Transmission Project Evaluation in accordance with the beneficiary-based cost allocation principles and methodology described below.

The proposed cost allocation mechanism is based on a "beneficiaries pay" approach. Beneficiaries are those entities that economically benefit from the project, and the cost allocation among them will be based upon their relative economic benefit. While the initial eligibility for regulated cost recovery for a Regulated Economic Transmission Project will be determined on the basis of a NYCA-wide production cost benefit, the beneficiary determination will be based upon the Load Serving Entities' relative Locational Based Marginal Pricing ("LBMP") load savings. Both production cost benefits and LBMP load savings will be measured over the first ten years of the proposed project's life. The NYISO analysis of beneficiaries will provide information, where appropriate, regarding future uncertainties (e.g., load forecasts, fuel prices, environmental regulation) and potential benefits (e.g., system operation, environmental effects, and renewable integration).

A Regulated Economic Transmission Project will only be eligible for cost allocation and recovery under the OATT if the NYISO determines the project's satisfies the eligibility requirements for cost allocation and recovery and a super majority of a project's beneficiaries agree that an economic project should proceed. The super-majority required to proceed equals 80% of the beneficiaries associated with the project present at the time of the vote. If the proposed project meets the required vote in favor of implementing the project, and the project is implemented, all designated beneficiaries, including those not voting to implement the project will pay their allocated share of the cost of the project.

1.2.4. Requested Economic Planning Study (REPS)

The EPP also provides for individual Market Participants or other interested parties to request that the NYISO perform a Requested Economic Planning Study separate from and in addition to the System & Resource Outlook. The NYISO uses the most recently approved planning database and agreed upon assumptions to perform the study. The requesting party will be responsible for the actual costs incurred by the NYISO in performing the Requested Economic Planning Study.

1.2.5. Study Replication

An individual Market Participants or other interested party may request that the NYISO replicate the System & Resource Outlook or Economic Transmission Project Evaluation studies, with the study costs to be paid for by the requesting party.

2. System & Resource Outlook ("Outlook")

For the System & Resource Outlook, the NYISO will perform a study and prepare and publish a report to: (1) summarize the current assessments, evaluations, and plans in the biennial Comprehensive System Planning Process and the information and sources relied upon by the NYISO; (2) project congestion on the New York State Transmission System and system conditions over a twenty-year Study Period; (3) identify, rank, and group the congested elements on the New York State Transmission System based on metrics set forth in Sections 31.3.1.3.4 and 31.3.1.3.5 of Attachment Y of the ISO OATT; and (4) assess the potential benefits of addressing the identified congestion.

The NYISO will develop the scope of the Outlook in accordance with the tariff, in consultation with the ESPWG and Transmission Planning Advisory Subcommittee (TPAS) to incorporate inputs from Market Participants and other interested parties.

2.1. Reference Case Development

The first step in the EPP is the development of a set of reference cases for the GE-MAPS production cost model. As described in Section 2.1.2, this step will first entail the benchmarking of the production cost model utilizing historic actual data, and then the development of model inputs for reliability and economic assumptions, such as fuel and emission forecasts for the twenty-year Study Period, as described in Section 2.1.3.

Of the reference cases developed in this process, the NYISO will use the base case for its performance of its analysis for the Outlook, which base case also will serve as the model for the evaluation and consideration of any Regulated Economic Transmission Projects in the Economic Transmission Project Evaluation. In addition to this base case, the NYISO may develop additional reference cases for informational purposes, including but not limited to a contract case and a policy case. These additional reference cases may be established to provide insights based on different assumptions, such as the impact of renewable resource procurements and policy drivers.

For each planning cycle for the Outlook, the NYISO will discuss the development of the reference case(s) for that cycle with stakeholders at the ESPWG, including the development of any reference cases in addition to the base case. During the development of the reference case models, Market Participants, Developers, and other parties shall provide, as described in Section 31.3.1.4 of Attachment Y of the OATT, the data necessary to establish the proper modelling assumptions.

2.1.1. Study Period

Per Section 31.3.1.3.1 of the ISO OATT, the Study Period for the Economic Planning Process shall be twenty years, with year one being the first year or the second year of the current biennial Comprehensive System Planning Process, as determined by the NYISO in consultation with stakeholders.

2.1.2. Benchmarking of the Production Cost Model

The NYISO will commence the Outlook process by benchmarking the NYISO's most recent production cost model against a single year of historic actual data. The NYISO will benchmark the production cost model for the most recent historic year in which data is available. The NYISO will compare select production cost simulation metrics against the NYISO system's actual performance, adjust the model to improve performance, and present the benchmark results to stakeholders at the ESPWG. The NYISO will use the updated production cost model for the reference case(s) for that cycle.

2.1.3. Base Case

The NYISO will develop the base case using the assumptions and process described in this section and present to stakeholders for review and discussion. The assumptions fall into two categories: 1) reliability assumptions concerning security and adequacy; and 2) economic assumptions, such as fuel price and demand forecast.

2.1.3.1. Reliability Assumptions for the Base Case

The NYISO will develop the assumptions related to reliability for the Outlook base case consistent with the case from the most recent Reliability Planning Process and the Short Term Reliability Process, as updated according to base case inclusion rules in Section 3.2 of the Reliability Planning Process Manual, except as described below. The reliability assumptions generally concern either resource adequacy or transmission security:

- The NYISO will use assumptions related to resource adequacy, such as transmission topology, consistent with those used in the Reliability Planning Process and the Short Term Reliability Process. Specifically, resource and facility addition and deactivation assumptions will follow the principles below:
    - Resource and Facility Additions: All new projects that meet the base case inclusion rules in Section 3.2 of the Reliability Planning Process Manual at the time of finalizing the System and Resource Outlook base case will be included in the base case pursuant to their proposed in-service dates.

- Generation Deactivations The NYISO will develop the base case for the Outlook using the most recent Reliability Planning Process and the Short Term Reliability Process, as updated according to base case inclusion rules in Section 3.2 of the Reliability Planning Process Manual except for the following conditions:

    - If a Generator Owner submitted a completed Generator Deactivation Notice to the NYISO and the study assessment is still underway prior to the base case database lockdown date, the base case will retain the unit. If the Short-Term Assessment of Reliability study assessment found no reliability needs prior to the database lockdown date, the unit will be deactivated as requested.

- The NYISO will use assumptions related to transmission security, such as transmission network model and interface limits, consistent with Reliability Planning Process and market and grid operation practices, as expanded to include monitored constraints and contingency pairs either observed in historical market operation or identified in planning and operation studies. In addition, the NYISO will coordinate with the Transmission Owners to incorporate the Transmission Owners' Local Transmission Owner Plans and model the non-BPTF portion of the New York State Transmission System.

2.1.3.2. Treatment of Reliability Needs in Base Case

The Study Period for the Economic Planning Process is 20 years. This Study Period is greater than the Study Period for both the Reliability Planning Process and the Short-Term Reliability Processes, which evaluate 10 years and five years, respectively. The base case for the Outlook will assume a reliable system throughout the Study Period covered by the most recent Reliability Planning Process and the Short-Term Reliability Process. If any reliability needs in the Study Period for the Reliability Planning Process and the Short-Term Reliability Process (*i.e.,* a Reliability Need identified in the Reliability Planning Process or a Short-Term Reliability Process Need identified in the Short-Term Reliability Process) remain unresolved at the time the Outlook is conducted, the NYISO will take the actions set forth in Section 2.1.3.2.1 of this Manual to resolve the reliability needs for the Reliability Planning Process and the Short-Term Reliability Process Study Periods.

The NYISO does not assess reliability needs or the need for compensatory MW for the remainder of the Economic Planning Process Study Period. However, if a resource shortage is anticipated in the Economic Planning Process Study Period, the NYISO may adjust load and resources in the remainder of the Economic Planning Process Study Period in the base case and/or scenarios, and will review the adjustment with

stakeholders.

2.1.3.2.1 Process for Resolving Reliability Needs for Initial 10 Years of Economic Planning Process Study Period

In the event that a Reliability Need is identified in the most recent Reliability Planning Process or Short-Term Reliability Process, the NYISO will include in the base case market-based solutions ("MBS") that the NYISO has determined are viable solutions, regulated solutions, and/or generic generation capacity, in the order listed, to resolve the identified needs.

The four possible outcomes that may result from the Reliability Planning Process and the Short-Term Reliability Process are as follows:

- More than sufficient MBS to meet any identified reliability needs;
- Sufficient MBS to meet any identified reliability needs;
- Insufficient MBS to meet any identified reliability needs; or
- No reliability needs identified through the applicable 10-year Study Period encompassing the Reliability Planning Process and Short-Term Reliability Process, or the NYISO determined not to solicit a solution in the most recently completed reliability study processes.

The NYISO will use the following methodologies to address each of the four possible outcomes:

1. More Than Sufficient Viable MBS to Meet Any Identified Reliability Needs:
    - The NYISO will consider all viable MBS resources from the current Reliability Planning Process and the Short-Term Reliability Process for inclusion in the base case, unless the NYISO determines, based upon updated information, that such resource is no longer viable.
    - The NYISO will "scale back" MBS resources to a level which is the minimum to meet the reliability need (i.e., to achieve a statewide Loss Of Load Expectation (LOLE) metric of 0.1) by the following methodology:
        - The NYISO will sort all MBS by size—from largest to smallest—regardless of resource type.
        - The NYISO will sequentially test each MBS, one at a time for potential removal, starting from the largest and ending with the smallest.
        - The NYISO will remove an MBS from the base case if:

- There is a surplus in the actual locational reserve and the removal of the resource would not result in the locational reserve falling below the Locational Capacity Requirement (LCR).
- If the starting point is below a LCR, MBS resources will not be added to meet that LCR. However, MBS resources will not be removed that causes the locational reserve to fall to even lower levels.
- Statewide LOLE requirement is still met.
- Minimum requirements are met to maintain transmission security requirements for a specific interconnection point for MBS resources identified in the Reliability Planning Process and the Short-Term Reliability Process.

o If either the Statewide LOLE or the LCR requirement is not met with the removal of a specific unit, then that unit is retained in the base case, and the removal of the next unit is tested.

o If both the Statewide LOLE and the LCR requirements are met with the removal of a unit, that unit is removed from the base case, and subsequent units will be tested sequentially in the same manner.

o The initial determination will be made for the horizon year of the Reliability Planning Process Study Period (e.g., – year 10) of the analysis.

o Considering each project's in-service date, the NYISO will verify each year of the study period to assure that both the Statewide LOLE and the LCR reliability criteria will be met, subject to the caveat that resources will not be added to achieve an LCR that is not met at the starting point.

- If more resources are needed, the NYISO will add back resources starting with the smallest resource removed and adding each next largest resource until the above requirements are met.

o The NYISO will determine the minimum amount of MBS capacity needed to meet both the LCR and the statewide LOLE requirements.

2. Sufficient Viable MBS to Meet Any Identified Reliability Needs:

- In the case that there are sufficient MBS to equal the statewide LOLE of 0.1, the NYISO will include in the base case all of the MBS resources consistent with the current Reliability Planning Process and the Short-Term Reliability Process.
- The NYISO will make this determination based on whether the removal of any single MBS will cause the statewide LOLE to exceed 0.1.

3. Insufficient Viable MBS to Meet Any Identified Reliability Needs and Regulated Solutions or Generic Generator Capacity Are Required:
   - If there are insufficient viable MBS to meet any identified reliability needs, the NYISO will include in the base case in the order listed: (i) any viable MBS resource(s), (ii) regulated solutions selected by the NYISO in the most recent Reliability Planning Process and the Short-Term Reliability Process (whether or not yet triggered), and (iii) generic generation capacity, as the solutions are necessary for a reliable system over the applicable 10-year planning horizon. Generic generators will be modeled using representative data provided in the most recent NYISO Installed Capacity Demand Curve report.
4. No Reliability Needs or NYISO Elects Not to Solicit Solutions in Planning Process:
   - If the current Reliability Planning Process and the Short-Term Reliability Process finds no reliability needs throughout the applicable 10-year study period or the NYISO determined not to solicit a solution in the most recently completed reliability study process, the NYISO will include in the base case all resources included in the current Reliability Planning Process and the Short-Term Reliability Process base case, unless the NYISO determines, based upon updated information, that such resource is no longer viable.

2.1.3.3. Economic Assumptions for the Base Case

The economic assumptions for the base case will be developed based on publicly available data, and may be calibrated by incorporating Market Participant Confidential Information to improve the database accuracy. The economic assumptions include, but are not limited to, the following categories:

- Load & Energy Forecasts: Forecasts for New York Control Area will be consistent with the most recent NYISO issued Load and Capacity Data Report.
- Fuel Forecast: Regional natural gas price forecast will be based on recently published national annual forecasts with regional and weekly adjustments applied.

- External Area Assumptions: Assumptions such as demand, energy, resource additions and retirement of neighboring control area resources will be based on recent publicly available data, such as the interconnection queues, or results from the forward capacity market auctions.

- Carbon Policies/Emission Forecast: The allowance price forecasts will be consistent with the projected environmental program compliance costs attributed to current state or federal regulations, such as CO_2 emissions reduction programs (e.g., Regional Greenhouse Gas Initiative, New York Department of Environmental Conservation guidance, Massachusetts, and Ontario compliance costs), and SO_2 and NO_X emission reduction programs (e.g., CSAPR markets).

2.1.4. Contract Case

If the Outlook includes a contract case, the NYISO will extend the inclusion rules for generation and transmission resources beyond what is assumed in the base case. This is intended to capture high probability projects that did not meet the base case inclusion rule requirements within the NYCA and in directly neighboring systems. These projects typically have been selected through a procurement process and may have a financial contract in place, including awards announced in solicitations pursuant to State-supported programs. The reliability and economic assumptions for the contract case may be updated accordingly in coordination with NYISO stakeholders.

2.1.5. Policy Case

If the Outlook includes a policy case, the NYISO will build off of the contract case assumptions and include additional assumptions pertaining to public policies that impact the power system, electricity markets, and grid operations in New York. The reliability and economic assumptions for the policy case may be updated accordingly in coordination with NYISO stakeholders.

2.2. Scenario & Sensitivity Development

The NYISO will, time permitting, identify additional scenarios and sensitivities to be simulated based on the reference case(s) in accordance with Section 31.3.1.5 of Attachment Y of the ISO OATT. The NYISO will work with stakeholders through ESPWG to identify potential sensitivities and/or scenarios and will determine which to perform based on stakeholder interest level and time requirements.

2.3. Benefit Metrics for System & Resource Outlook Studies

The NYISO performs production cost simulations for the reference cases, scenarios, and sensitivities. Each simulation produces a set of benefit metrics that detail for stakeholders key information on the

various outputs of the production cost model. These metrics can be utilized by stakeholders in estimating the potential benefits of projects through multiple variables such as time, geographic location, and across scenarios.

The NYISO Tariff defines system production cost as the primary metric in the Economic Planning Process, which is also utilized in determining the benefit-cost ratios for a Regulated Economic Transmission Project in the Economic Transmission Project Evaluation. The NYISO calculates a "NYCA-wide" production cost through its production cost simulations to identify changes in system cost, which incorporates the total generation cost of producing power to serve NYCA load. The total production cost includes the following components:

1. Fuel cost (fuel consumption mmBtu multiplied by fuel cost $/mmBtu);
2. Variable O&M cost (VOM adder $/MWh);
3. Emission cost (emission allowance price multiplied by total allowance);
4. Start-up Costs (number of starts multiplied by start-up cost); and
5. NYCA Imports and Exports evaluated at the solution case proxy bus LBMP values.

For purposes of determining the present value of the NYCA-wide production cost over the Study Period, the NYISO will use the following formula:

$$Present\ Value_{Total} = \sum_{y=1}^{20} Present\ Value_{Year\ y}$$

The discount rate to be used for the present value analysis shall be the current after-tax weighted average cost of capital for the Transmission Owners.

Additional metrics are also calculated in the production cost simulations for the reference cases and presented for stakeholder information. These metrics provide stakeholders with important insights concerning the New York State Transmission System, which metrics are reported in the Outlook. Section 31.3.1.3.5 in Attachment Y to the OATT provides a detailed discussion of each of the additional metrics. The energy deliverability metric is described further in Section 2.7 below. These additional metrics are not used in the benefit-cost analysis for the Economic Transmission Project Evaluation.

2.4. Historic & Projected Transmission System Congestion

Transmission congestion limits the economic transfer of energy between generation resources and demand, creates inefficient generation commitment and dispatch, causes generation curtailment, and increases the cost of electricity when lower variable cost resources cannot be delivered to consumers. Information regarding historic and projected future transmission system congestion provides key insights

for understanding and quantifying the impact on existing system resources, the expected impact on future generation resources and changes in transmission congestion patterns, including the identification of new congested paths, impacting the New York Control Area.

As part of the System & Resource Outlook, the NYISO develops estimates of historic and projected transmission system congestion, which concerns the following congestion:

- Historic Transmission System Congestion – the historic transmission system congestion concerns congestion for the prior five year period. The historic actual transmission congestion metrics for constraints that were active in the NYISO's market are currently posted publicly on a quarterly basis to the NYISO website.[4] This data serves as the basis for the historic transmission system congestion analysis.
- Projected Transmission System Congestion – the projected transmission system congestion concerns congestion identified over the forward-looking, 20-year Economic Planning Process Study Period, which congestion is identified through the NYISO's production cost simulations.

The NYISO will use two metrics to quantify the impact of specific congested transmission elements for both historic transmission system congestion and projected transmission system congestion: (i) demand congestion and (ii) constrained hour count.

- The <u>demand congestion value</u> of a transmission constraint represents the congestion component of the LBMP paid by NYCA load (sum of the total zonal loads) and is defined as the shadow price[5] of each constrained element multiplied by the load affected with consideration for zonal Generator Shift Factors (GSF). The formula used to calculate the demand congestion value of a transmission constraints is as follows:

$$\boldsymbol{Constraint\ Demand\ Congestion} = \sum_{Hour\ h}^{8760} \sum_{Zone\ i}^{Zone\ K} Shadow\ Price_{i,h} \times Zone\ GSF_{i,h} \times Zone\ Load_{i,h}$$

[4] See https://www.nyiso.com/ny-power-system-information-outlook/ > Congested Elements Report.

[5] Shadow price is a term used in economic theory to describe the monetary value of goods or services that are difficult to calculate and lack a clear market signal. In power markets where optimization engines determine security constrained economic dispatch, shadow prices are defined for transmission constraints and represent the production cost savings achieved by relaxing the constraint limit by 1 MW. Shadow prices are an indicator of the economic impact that binding transmission constraints have on a power market. For the demand congestion metric, by multiply the shadow price by zonal GSF and zonal load, the economic impact of transmission constraints can be separated into the impact on specific NYISO zones.

- The constrained hour count metric represents the annual number of hours that a specific transmission constraint is active.

For the historic five year period, the NYISO will compile individual transmission constraints and will report them in descending order according to their demand congestion value. The NYISO assesses and identifies transmission constraint groupings based on the individual rankings and proximity of congested elements.

Using the simulation results from selected reference cases (base, contract, and policy), the NYISO will also compile, rank, and group the 20-year projected transmission constraints. The projected transmission system congestion is then combined with congestion data from the historic analysis. The congested elements for the full twenty-five year period (both historic (5 years) and projected (20 years)) are ranked in descending order based on trends in the calculated present value of demand congestion for further assessment. The ranking is then adjusted to exclude any element when future system changes produce a significant declining trend in congestion over such congested element in later years of the study period. Likewise, elements with significant increasing trends in congestion could also be evaluated.

2.5. Congestion Relief Analysis

The operational and economic impact of transmission congestion on the New York State Transmission System can be quantified through congestion relief analyses. Using the projected potential future constraints and groupings initially identified for the reference case simulations, as described in Section 2.4 above, the NYISO will perform additional simulations to further analyze transmission paths as warranted to identify the change in benefit metrics, and review with ESPWG to identify the reference cases and specific constraints for study.

To perform the constraint relief analysis, selected individual or groups of congested elements are iteratively relieved independently by relaxing their respective limits. For each binding constraint that has been relaxed, the production cost model will be re-run for the base case, and may be re-run for other reference cases, to produce results that reflect the system conditions that would occur were that transmission element not congested. By comparing this information with the information determined for the same reference case when the production cost model was initially run, the economic and operational impacts of the constraint can be determined. The metrics used to evaluate the impact may include production cost, demand congestion, LBMP, and energy deliverability.

Another part of the constraint relief analysis will determine if any of the congested elements must be grouped with other elements, depending on whether new elements appear as limiting with significant

congestion when a primary element is relieved.

The findings from the congestion relief analysis will assist the NYISO in determining transmission flow behaviors during the energy deliverability analysis, as described in Section 2.7. In addition, the congestion relief analysis will also assist Market Participants, stakeholders, and other interested parties in identifying potential transmission projects so as to avoid future constraints prospectively.

2.6. Renewable Generation Pocket Formation

When specific areas of the New York State Transmission System contain one or more constrained transmission elements, preventing renewable energy resources from dispatching based on their availability, a renewable generation pocket exists. As part of the System & Resource Outlook, the NYISO will use the metrics and results concerning the projected system transmission congestion in the reference case(s), as described in Section 2.4, to identify, define, quantify, and visualize the potential renewable pockets formed. In consultation with the stakeholders in the ESPWG, the NYISO will identify the reference case(s) simulation year(s) and the potential need for seasonal assessments for renewable pocket determination in each Outlook study.

To define a renewable generation pocket, the NYISO will first identify the specific renewable generators that experience curtailment throughout the study period being analyzed. Where needed, the NYISO will conduct a seasonal analysis to account for factors specific to certain resource technologies. The NYISO will use the GE-MAPS generation shift factor report (YRGSF) to identify the specific transmission constraints directly contributing to the curtailment of renewable generation resources. This can include multiple lines and multiple impacted generators from each congested transmission line. The NYISO will qualitatively and, if warranted by the degree of the constraint, quantitatively collect transmission constraints causing curtailed generation and other electrically similar transmission paths into a grouping to form a renewable generation pocket. When reporting the findings of this analysis, the NYISO will identify specific transmission paths comprising each renewable generation pocket, such as interface(s) or circuit(s), and the NYISO will consider other measures to help stakeholders understand the results, such as providing a graphical representation of the identified renewable pockets.

2.7. Energy Deliverability Analysis

The NYISO will evaluate the relationship between transmission congestion and the operation of resources throughout the system utilizing an energy deliverability metric. This metric will consider potential seasonal factors and account for the respective fuel availability of each resource type, including wind, solar, and water. In addition, the metric will quantify the energy projected to be produced by such

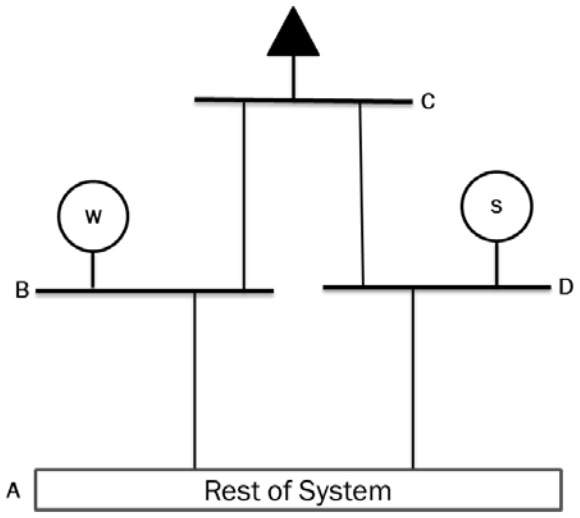
resource considering the impact of applicable local, statewide, and interregional transmission constraints as compared to the total amount of energy it would otherwise produce absent transmission constraints. The NYISO will use the following formulation to determine energy deliverability for each resource on the system:

$$Energy\ Deliverability\ (\%) = \frac{Energy\ Production}{Energy\ Production\ Capability}\ x\ 100$$

The NYISO will use data from production cost simulations to quantify the collective impact of resources on energy deliverability at locations on the system that are identified as being constrained. The NYISO will use generation shift factors (GSF), which quantify the incremental impact of generation on the flow of transmission facilities, to identify groupings of generators with similar energy deliverability impacts. The NYISO will provide information on the collective impact of transmission congestion on resource groupings.

Below is an illustrative example system with a load, wind generator, and solar generator interconnected by four transmission lines and 3 buses. The example network is assumed to connect to a larger bulk power system.

Figure 2: Illustrative Example Power System Network Configuration



Parameter	Value
Wind "W" Capacity	500 MW
Solar "S" Capacity	250 MW
Load	100 MW
Line Limits	100 MW

Transmission line flows on the example system are dictated by the electrical impedances of the transmission lines, which are assumed to be equal in this example. In this example, assuming that bus "A" acts as the reference point, if the wind generator at bus "B" produced 1 MW, 0.75 MW would flow on line "B-A" and 0.25 MW would flow on lines "B-C", "C-D", and "D-A". The full set of relationships between generators and the transmission system can be captured through a generation shift factor matrix. The GSF

matrix for this example system is show below.

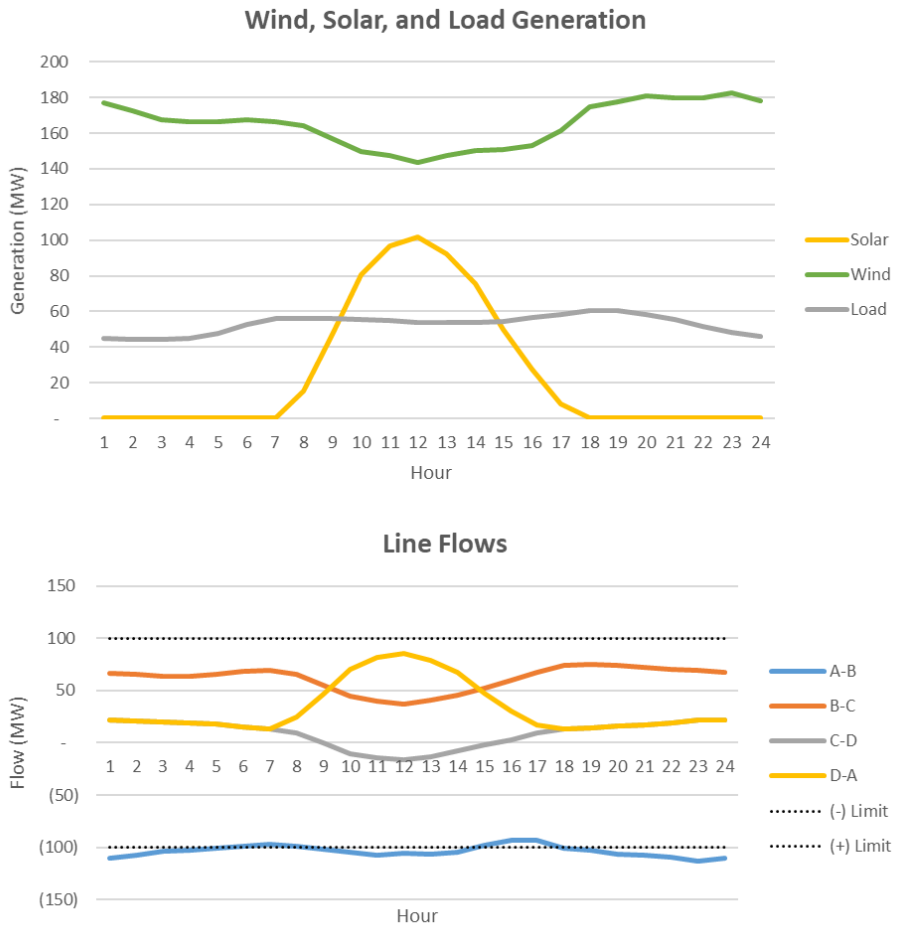
Table 1: Illustrative Example GSF Matrix

GSF Matrix	A-B	B-C	C-D	D-A
Wind	-0.75	0.25	0.25	0.25
Solar	-0.25	-0.25	-0.25	0.75
Load	0.5	0.5	-0.5	-0.5

GSF values must be between the values of 0 and 1, positive or negative, depending on the defined direction of the transmission line.

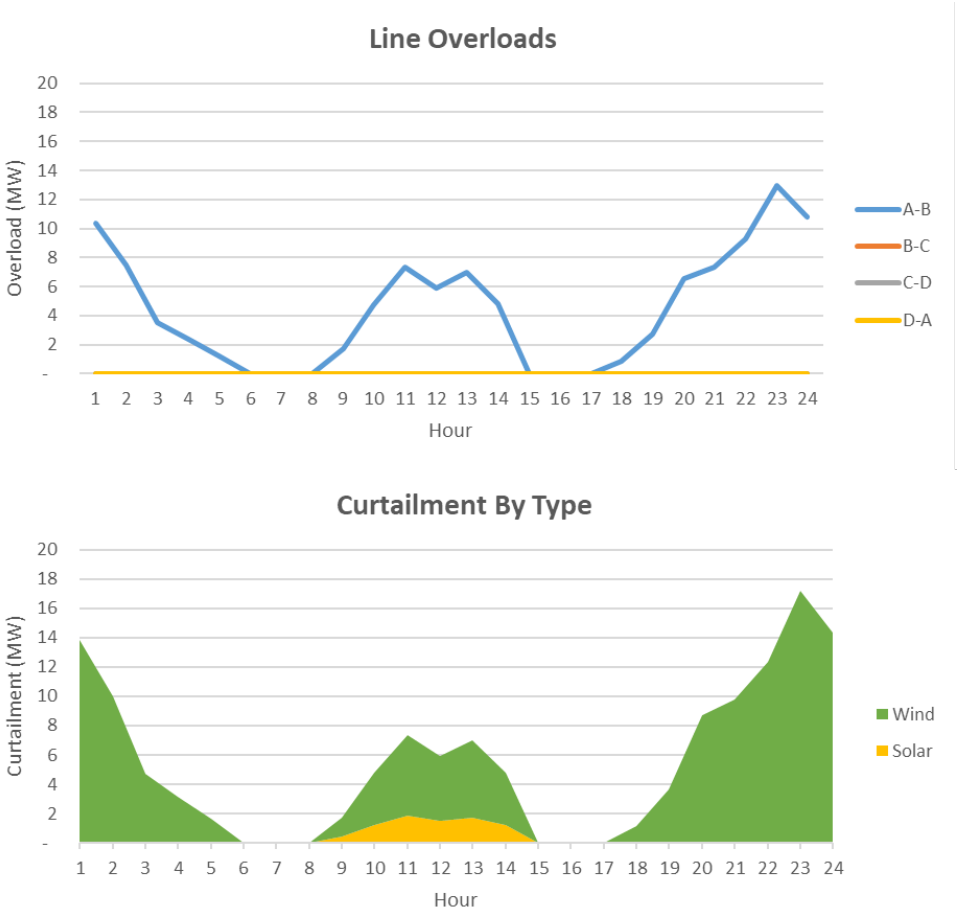
With the example system defined, a representative day of generator and load dispatch values can be applied to evaluate the transmission flows compared to their limits. This allows transmission constraints and generator curtailments to be identified. The charts below show an example 24 hour period of generator dispatch and transmission line flows.

Figure 3: Illustrative Example Hourly Operation Profiles



The charts show the interaction between the transmission system and the varying dispatch patterns of these generators. For the "A-B" transmission line, the flow exceeds the line limit of 100 MW. As a result, absent upgrades, the generators contributing to the line limit violation must be curtailed to reduce the flows to fall within operating limits. The charts below quantify line "A-B" overload levels and the required curtailment levels of the wind and solar generators where the current infrastructure would be sufficient to keep the transmission system within its limits.

Figure 4: Illustrative Example Line Overloads & Renewable Curtailment



For this example system, if only one of the technology types is producing energy at the time of line overloads, the amount of curtailment necessary to remedy line overloads will exceed the overload amount. This is due to a particular generator's shift factor relationship to the overloaded line. The interrelationship between the specific unit or units operating in a given period and the required level of curtailment to bring the system within criteria will be captured.

Using the 24-hour period from this example, the energy deliverability metric can be calculated for each of the technology types. The table below shows the potential energy, curtailed energy, actual energy, and energy deliverability metrics relevant to this example.

Table 2: Illustrative Example Generator Energy Deliverability Results

Energy (MWh)	Potential	Curtailment	Actual	Energy Deliverability (%)
Solar	595	8	587	99%
Wind	3,963	124	3,839	97%

The potential energy deliverability metric shows the total amount of energy that each resource could produce absent transmission constraints. The actual energy metric projects the energy each resource will produce considering the curtailed energy metric, which will be impacted by applicable local, control area-wide, and interregional transmission constraints. Where warranted, seasonal impacts will be quantified.

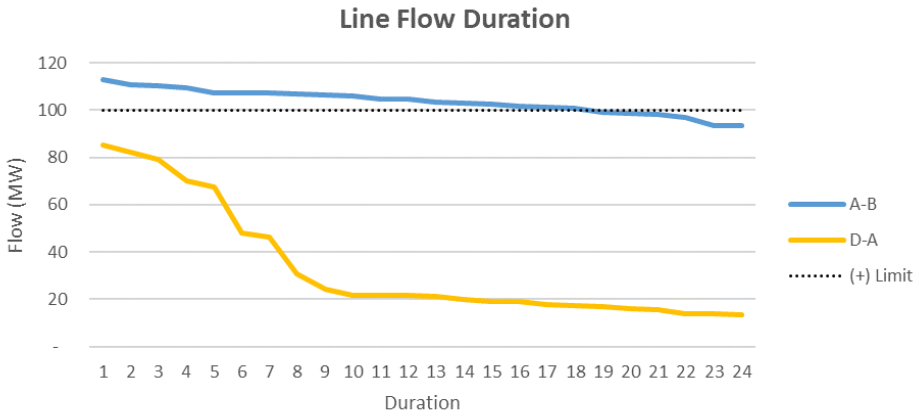
Where applicable, the energy deliverability metric will also include quantification of the collective impact of resources at locations on the system that are identified as being constrained, in whole or in part. For example, if the sample system presented were identified as a renewable generation pocket, these metrics can be calculated and presented to produce the overall impact on the resources taken together. The table below shows the calculation for a renewable generation pocket encapsulating the example system.

Table 3: Illustrative Example Renewable Generation Pocket Energy Deliverability Results

Energy (MWh)	Potential	Curtailment	Actual	Energy Deliverability (%)
Pocket	4,558	132	4,426	97%

Where available, resource areas that have been identified will also include such additional information resulting from the study analysis concerning capability remaining on the transmission system to support energy deliverability. The metric may be expressed as a percentage of such total amount of energy or as the amount of curtailed energy. As an example, the hourly flows for line "A-B" and "D-A" can be quantified and compared to the line limit to determine the capability of the line to support additional flows. A flow duration curve for both of these lines during the sample time period is shown below.

Figure 5: Illustrative Example Line Flow Duration Curves



In the chart, the area below each curve represents the energy transferred throughout the day over

the line. The area above the curve but below the line limit represents the unused capability of the line to transact energy, sometimes known as energy headroom. Any area below a curve but above the line limit represents the transmission line overload, which results in curtailed energy. Calculation of this quantity requires simulations from the congestion relief analysis. These values are quantified in the table below.

Table 4: Illustrative Example Potential Headroom Calculation

Energy (MWh)	Max Flow	Actual Flow	Overload	Headroom	Headroom (%)
Line A-B	2,400	2,487	107	20	1%
Line D-A	2,400	803	0	1,597	67%

While it is not possible to calculate the energy headroom on each line on the system, the NYISO will collaborate with stakeholders to identify a subset of lines that should be considered based on awards made in State solicitation processes, relevant studies and other updated information concerning system developments that affect energy deliverability. The NYISO will provide the associated energy headroom information respectively.

As part of the analysis, results from simulations may be analyzed to identify electrical, geographic, and/or temporal patterns in energy deliverability.

2.8. System & Resource Outlook Report

The System & Resource Outlook report informs NYISO stakeholders, including its regulators, Market Participants, and prospective project developers, of the findings of the System & Resource Outlook. In particular, the identification of potential transmission constraints may be used to guide the Public Policy Transmission Planning Process. Additionally, the report provides potential transmission developers information upon which to decide whether to pursue cost recovery for a Regulated Economic Transmission Project under the NYISO's Tariff.

2.8.1. State of NYISO System & Resource Planning

The Outlook will include a summary of the current assessments, evaluations, and plans in the biennial CSPP and the information and sources relied upon by the NYISO, including, among other things, the following.

2.8.1.1. Demand Forecast & Analysis Summary

The NYISO produces the Load & Capacity Data Report ("Gold Book") on an annual basis. The Gold Book details: (i) historical and forecast seasonal peak demand and energy usage, and energy

efficiency, electrification, and other distributed energy resources and load-modifying impacts; (ii) existing and proposed generation and other capacity resources; and (iii) existing and proposed transmission facilities. The Outlook will summarize, as applicable, trends concerning energy demand, behind-the-meter resources, and electrification derived from the Gold Book.

2.8.1.2. Public Policy Transmission Planning Process Summary

The NYISO solicits transmission needs driven by Public Policy Requirements on a biennial basis. If the New York Public Service Commission has identified a Public Policy Transmission Need and/or an ongoing solicitation and evaluation of solutions to address a Public Policy Transmission Need is underway, the Outlook will describe any Public Policy Transmission Need and the state of the solicitation and evaluation of proposed solutions in the NYISO's Public Policy Transmission Planning Process.

2.8.1.3. Reliability Planning Processes Summary

The Short-Term Reliability Process establishes the process by which the NYISO identifies and addresses Short-Term Reliability Process Needs that would result from a Generator's deactivation or other Reliability Needs that cannot be timely addressed in the Reliability Planning Process. The Reliability Planning Process establishes the identification of any Reliability Needs in the Reliability Needs Assessment (RNA), which needs are addressed in a Comprehensive Reliability Plan (CRP). The Outlook will describe the evaluations performed in the Short-Term Reliability Process, the RNA, and the CRP.

2.8.1.4. Interconnection Studies Summary

The NYISO evaluates the proposed interconnection of generators and transmission facilities to the NYISO system. The NYISO maintains an interconnection queue list, which details Developer-proposed projects by type, size, location, etc. The Outlook will include a summary of this information.

2.8.2. Report Contents

The Outlook report may include the following components as described in Section 2 of this Manual, and provides additional information as necessary: State of NYISO System & Resource Planning, Reference Case Development, Economic Planning Model Development, Historic & Future Transmission Congestion, Congestion Relief Analysis, Renewable Generation Pocket Formation, Energy Deliverability Analysis, Projected Operations & Market Impact Analysis, and Scenarios and

Sensitivities.

2.9. Stakeholder Review

The NYISO will develop the draft Outlook in accordance with Section 31.3.1.7 of Attachment Y. The requirements for Market Participants' review of the draft Outlook are set forth in Section 31.3.1.8.1 of Attachment Y.

2.10. Market Monitoring Unit's Review

The requirements for the Market Monitoring Unit's review of the draft Outlook are set forth in Section 31.3.1.8.2 of Attachment Y.

2.11. Board Review and Action of System & Resource Outlook Report

The requirements for the NYISO Board of Directors review and action on the Outlook are set forth in Section 31.3.1.8.2 of Attachment Y.

2.12. Public Information Session

Following the Board of Directors approval of the Outlook, the NYISO is to report on the System & Resource Outlook in an open forum for all interested parties as set forth in Section 31.3.1.9 of Attachment Y. The NYISO's presentation provides background on the Outlook process as well as a high-level discussion of the study methodology and findings. The public information session provides an opportunity for forum participants to ask questions and to engage in a dialogue with NYISO leadership on any aspect of the study.

3. Economic Transmission Project Evaluation (ETPE)

If a Developer proposes a Regulated Economic Transmission Project (RETP) to address constraint(s) on the BPTFs identified in the Economic Planning Process, then the NYISO: (i) will process that project proposal in an Economic Transmission Project Evaluation in accordance with the relevant provisions set forth in Sections 31.3.2, 31.5.1, 31.5.4, and 31.5.6 of Attachment Y of the NYISO OATT and this Manual and (ii) may provide benefit/cost analysis and other analysis of potential generic solutions to the congestion identified. The process for a Developer to propose a Regulated Economic Transmission Project is voluntary. For purposes of the ETPE, the NYISO will use the most recent System & Resource Outlook database and report approved by the NYISO Board of Directors. The purpose of the ETPE is to process specific transmission projects for which Developers are seeking to allocate and recover their projects cost through the NYISO OATT as Regulated Economic Transmission Projects.

To perform the ETPE, the NYISO may need to update the base case database to be utilized in the production cost modeling and associated evaluation of any proposed Regulated Economic Transmission Projects. The ETPE establishes the requirements by which the NYISO will first determine whether a proposed Regulated Economic Transmission Project is eligible for consideration by beneficiaries for cost allocation and recovery under the NYISO OATT. The ETPE also establishes the requirements for the determination of beneficiaries, the assignment of voting shares, and the procedures by which the beneficiaries will vote on whether to approve a proposed Regulated Economic Transmission Project for purposes of allocating and recovering its cost under the NYISO OATT. For an Interregional Transmission Project, the NYISO will jointly evaluate the project proposal with the relevant adjacent transmission planning region(s) in accordance with Section 7.3 of the Interregional Planning Protocol.

3.1. Economic Transmission Project Evaluation Base Case Development

The NYISO will develop a base case to be used in the ETPE to evaluate a Regulated Economic Transmission Project that seeks cost allocation and recovery in accordance with this Section 3.1 of the Manual.

The NYISO will evaluate the benefits and costs of each Regulated Economic Transmission Project over the first ten years from the proposed commercial operation date for that project. The most recently approved Economic Planning base case and assumption matrix will be used as the starting point for developing the databases necessary to conduct this evaluation. Certain parameters of the System & Resource Outlook databases and assumption matrix will be updated as agreed by the NYISO, upon consultation with ESPWG, to, for example, provide that the determination of the benefits of a Regulated Economic Transmission Project is based on current information.

The NYISO will update the database to analyze specific Regulated Economic Transmission Projects as part of the Economic Transmission Project Evaluation as follows:

- The NYISO will update the assumption parameters used in the base case of the System & Resource Outlook in accordance with Section 2.1.3 of this Manual; and
- The NYISO will present the changes for the updated databases to ESPWG for review and comment.

The same set of updated databases will be used to analyze all proposed projects submitted within the same Economic Planning Process cycle. The NYISO will not change or modify the set of updated databases to be used for the Economic Transmission Project Evaluation base case, except that the NYISO may modify the updated databases when performing additional scenario analyses. The Developer of the Regulated Economic Transmission Project being analyzed will not be able to modify the updated database that has

been presented by the NYISO to the ESPWG.

3.1.1. Economic Transmission Project Evaluation Base Case Database Review

The NYISO will update ESPWG on the changes incorporated to complete the update of the Regulated Economic Transmission Project database(s). The NYISO will post such modeling changes and assumptions on its website. Following review and comment at ESPWG, the Economic Transmission Project Evaluation base case will be deemed locked-down for the Economic Planning Process cycle, until the next Outlook database has been approved. However, the Developer may elect to study alternate assumptions, as scenarios, in analyzing the benefits of specific proposed projects, for informational purposes.

3.2. Developer Qualifications

A Developer must satisfy the Developer qualification requirements set forth in Section 31.3.2.2 of Attachment Y of the OATT to be eligible to propose a Regulated Economic Transmission Project. The NYISO must determine the qualifications of a Developer intending to propose a Regulated Economic Transmission Project and to use the cost allocation and cost recovery mechanism in the ISO OATT. A Developer seeking to be qualified by the NYISO must submit to the NYISO Developer Qualification Mailbox (DeveloperQualification@NYISO.com) the qualification information described in Section 31.3.2.2 of Attachment Y, as set forth in the NYISO Developer Qualification Form in Attachment A of the Reliability Planning Process Manual and all other related correspondence.

3.3. Project Eligibility

In order for a proposed Regulated Economic Transmission Project to be eligible for a vote by the project beneficiaries, the NYISO must determine that it meets two benefit-cost criteria; the first pertaining to NYCA-wide production cost savings and the second pertaining to the zonal load cost reductions.

3.3.1. Project Costs

The project costs for a Regulated Economic Transmission Project are supplied by the Developer in accordance with Section 31.3.2.3 of Attachment Y of the OATT and Section 3.4.3.3 of this Manual.

The parameters used in cost allocation will follow the parameters applicable to cost recovery of a project pursuant to a regulated rate. That is, if an applicable formula rate has been filed with FERC, the parameters utilized in the formula rate such as the amortization period should be utilized in the NYISO's cost benefit calculation. Likewise, if there is no formula rate on file with FERC, the Developer will provide the project-specific parameters to be used for the cost allocation analysis.

Once the cost benefit analysis is completed, the amortization period and other parameters used for cost allocation for the project should not be changed, unless so ordered by FERC or a court of applicable jurisdiction, for cost recovery purposes to maintain the continued validity of the cost benefit analysis.

3.3.2. Project Eligibility –NYCA Wide Production Cost Savings

The NYISO will develop the first benefit/cost ratio by evaluating the NYCA-wide production cost savings for the first ten-years of the Regulated Economic Transmission Project, beginning with the first year of the project's proposed Commercial Operation (CO) date. The specific benefit metric is the present value of the ten-year difference in the NYCA-wide production cost with and without the project installed. The project costs are those supplied by the Developer with the total project cost utilized in the benefit/cost ratio equal to the present value of the total annual revenue requirement for the first ten years of the project beginning with the project's proposed CO date.

Specifically, the NYCA-wide production cost savings are calculated using the following formula:

NYCA-wide Production Cost Savings = NYCA Generator Production Cost Savings –

$$\sum \sum [(Import/Export\ Flow)_{Solution} - (Import/Export\ Flow)_{Base}] \times ProxyLMP_{Solution}$$

Where:

$ProxyLMP_{Solution}$ is the LMP at one of the external proxy buses;
$(Import/Export\ Flow)_{Solution} - (Import/Export\ Flow)_{Base}$ represents incremental imports/exports with respect to one of the external systems; and the summations are made for each external area and all simulated hours

3.3.3. Project Eligibility – Zonal Load Cost Savings

The NYISO will develop the second benefit/cost ratio by evaluating the zonal load cost savings for the first ten-years of the Regulated Economic Transmission Project, beginning with the first year of the project's proposed Commercial Operation (CO) date. The specific benefit metric is the present value of the ten-year difference in the net zonal LBMP load costs with and without the project installed. These LBMP load costs are net of any reduction in TCC payments and any bilateral contracts. The project costs are those supplied by the Developer with the total project cost utilized in the benefit/cost ratio equal to the present value of the total annual revenue requirement for the first ten years of the project beginning with the project's proposed CO date. If the sum of the zonal LBMP load cost savings (for those zones with a positive savings) is in excess of the project costs, then the NYISO will develop the zonal cost allocation information to inform the beneficiary voting.

The adjusted LBMP savings for each Load Zone is calculated as presented in Section 31.5.4.4.2.5.4 of

Attachment Y.

3.4. Eligibility and Cost Allocation for Regulated Economic Transmission Projects

The eligibility and cost allocation requirements for Regulated Economic Transmission Projects are described in Sections 31.5.4.3 and 31.5.4.4 of Attachment Y to the OATT and this Section 3.4 of the Manual. The cost allocation process described in this Section 3.4 of the Manual is strictly for the purpose of determining the allocation of LSE voting shares utilized in the voting procedures described in Section 3.4.5 of this Manual below.

All benefits, expressed in this instance as net zonal LBMP cost savings, are denoted in present value terms over the first ten years of the Regulated Economic Transmission Project's operation, i.e., ten years from the projects proposed CO date. Zones with a zonal benefit less than 0 are excluded from the cost allocation process. Costs are allocated to the Zones with positive benefit based on the ratio of the individual Zone's benefit to the sum of positive zonal benefits. Zonal costs are allocated to the individual LSEs within the zones based on the ratio of each LSE's zonal MWh (for the most twelve-month period for which actual metered data is available) to the total zonal MWh.

3.4.1. Methodology to Adjust the LBMP Load Costs for Bilateral Contracts and LSE-Owned Generation

The LBMP load cost values utilized in the Zonal Benefit Metric are adjusted to account for the presence of bilateral contracts and LSE-owned generation, which could for specific Load Serving Entities reduce the impact of the project on the cost of their energy purchases. The methodology to adjust the LBMP Load Cost savings for bilateral contracts and self-generation for purposes of identifying project beneficiaries is provided in Section 31.5.4.4.2.5.4 in Attachment Y to the OATT.

3.4.2. Methodology to Estimate the TCC Revenue Changes That Would Result From a Proposed Regulated Economic Transmission Project

The methodology to estimate the TCC revenue changes that would result from a proposed Regulated Economic Transmission Project is provided in Section 31.5.4.4.2.3 in Attachment Y to the OATT.

3.4.2.1. Forecasting the Net Reductions in TCC Revenues Resulting from a Proposed Regulated Economic Transmission Project

For the purpose of determining the allocation of costs associated with a proposed Regulated Economic Transmission Project as described in Section 31.5.4.4.2.3 of Attachment Y, the ISO shall use the procedure described herein to forecast the net reductions in TCC revenues allocated to Load in each Load Zone as a result of a proposed project.

3.4.2.1.1. Definitions

The following definitions will apply to this procedure:

Pre-Outlook Centralized TCC Auction: The last Centralized TCC Auction that had been completed as of the lock down date the input assumptions for the Outlook in which the Regulated Economic Transmission Project was identified as a candidate for development under the provisions of this Attachment Y.

Project: The proposed Regulated Economic Transmission Project for which the evaluation of the net benefits forecasted for Load in each Load Zone, as described in Section 31.5.4.4.2 of this Attachment Y, is being performed.

TCC Revenue Factor: A factor that is intended to reflect the expected ratio of (1) revenue realized in the TCC auction from the sale of a TCC to (2) the Congestion Rents that a purchaser of that TCC would expect to realize. The value to be used for the TCC Revenue Factor shall be stated in the ISO Procedures.

3.4.2.1.2. Steps 1 through 6 of the Procedure

For each Project, the NYISO will perform Steps 1 through 6 of this procedure twice for each of the ten (10) years following the proposed commercial operation date of the Project: once under the assumption that the Project is in place in each of those years, and once under the assumption that the Project is not in place in each of those years.

3.4.2.1.2.1. Forecasting the Value of Grandfathered Rights, Grandfathered TCCs, Incremental TCCs and TCC Auction Revenue

Step 1. The NYISO shall forecast Congestion Rents collected on the New York electricity system in each year, which shall be equal to:

a. the product of:

(i) the forecasted Congestion Component of the Day-Ahead LBMP for each hour at each Load Zone or Proxy Generator Bus and

(ii) forecasted withdrawals scheduled in that hour in that Load Zone or Proxy Generator bus, summed over all locations and over all hours in that year, minus:

b. the product of:

(i) the forecasted Congestion Component of the Day-Ahead LBMP for each hour at each Generator bus or Proxy Generator Bus and

(ii) forecasted injections scheduled in that hour at that Generator bus or Proxy Generator Bus, summed over all locations and over all hours in that year.

Step 2. The NYISO shall forecast:

a. payments in each year associated with any Incremental TCCs that the ISO projects would be awarded in conjunction with that Project (which will be zero for the calculation that is performed under the assumption that the Project is not in place);

b. payments in each year associated with any Incremental TCCs that the NYISO has awarded, or that the NYISO projects it would award, in conjunction with other projects that have entered commercial operation or are expected to enter commercial operation before the Project enters commercial operation; and

c. payments that would be made to holders of Grandfathered Rights and imputed payments that would be made to the Primary Holders of Grandfathered TCCs that would be in effect in each year, under the following assumptions:

(i) all Grandfathered Rights and Grandfathered TCCs expire at their stated expiration dates;

(ii) imputed payments to holders of Grandfathered Rights are equal to the payments that would be made to the Primary Holder of a TCC with the same Point of Injection and Point of Withdrawal as that Grandfathered Right; and

(iii) in cases where a Grandfathered TCC is listed in Table 1 of Attachment M to the OATT, the number of those TCCs held by their Primary Holders shall be set to the number of such TCCs remaining at the conclusion of the ETCNL reduction procedure conducted before the Pre-Outlook Centralized TCC Auction.

Step 3. The NYISO shall forecast TCC auction revenues for each year by subtracting:

a. the forecasted payments calculated for that year in Steps 2(a), 2(b) and 2(c) of this procedure

from:

b. the forecasted Congestion Rents calculated for that year in Step 1 of this procedure,

and multiplying the difference by the TCC Revenue Factor.

3.4.2.1.2.2. Forecasting the Allocation of TCC Auction Revenues Among the Transmission Owners

Step 4. The NYISO shall forecast the following:

a. payments in each year to the Primary Holders of Original Residual TCCs, and

b. payments in each year to the Primary Holders of TCCs that correspond to the amount of ETCNL remaining at the conclusion of the ETCNL reduction procedure conducted before the Pre-Outlook Centralized TCC Auction,

and multiply each by the TCC Revenue Factor to determine the forecasted payments to the Primary Holders of Original Residual TCCs and the Transmission Owners that have been allocated ETCNL.

Step 5. The NYISO shall forecast residual auction revenues for each year by subtracting:

a. the sum of the forecasted payments for each year to the Primary Holders of Original Residual TCCs and the Transmission Owners that have been allocated ETCNL, calculated in Step 4 of this procedure

from:

b. forecasted TCC auction revenues for that year calculated in Step 3 of this procedure.

Step 6. The NYISO shall forecast each Transmission Owner's share of residual auction revenue for each year by multiplying:

a. the forecast of residual auction revenue calculated in Step 5 of this procedure and

b. the ratio of:

(i) the amount of residual auction revenue allocated to that Transmission Owner in the Pre-CARIS Centralized TCC Auction to

(ii) the total amount of residual auction revenue allocated in the Pre-Outlook Centralized TCC Auction.

3.4.2.1.3. Steps 7 through 10 of the Procedure

The ISO will perform Steps 7 through 10 of this procedure once for each of the ten (10) years following the proposed commercial operation date of the Project, using the results of the preceding calculations performed both under the assumption that the Project is in place in each of those years, and under the assumption that the Project is not in place in each of those years.

3.4.2.1.3.1. Forecasting the Impact of the Project on TSC Offsets and the NTAC Offset

Step 7. The NYISO shall calculate the forecasted net impact of the Project on the TSC offset for each megawatt-hour of electricity consumed by Load in each Transmission District (other than the NYPA Transmission District) in each year by:

a. summing the following, each forecasted for that Transmission District for that year under the assumption that the Project is in place:

   (i) forecasted Congestion Rents associated with any Incremental TCCs that the NYISO has awarded, or that the NYISO projects it would award, as calculated in Step 2(b) of this procedure, in conjunction with other projects that have entered commercial operation or are expected to enter commercial operation before the Project enters commercial operation, if those Congestion Rents would affect the TSC for that Transmission District;

   (ii) forecasted Congestion Rents associated with any Grandfathered TCCs and forecasted imputed Congestion Rents associated with any Grandfathered Rights held by the Transmission Owner serving that Transmission District that would be paid to that Transmission Owner for that year, as calculated in Step 2(c) of this procedure, if those Congestion Rents would affect the TSC for that Transmission District;

   (iii) the payments that are forecasted to be made for that year to the Primary Holders of Original Residual TCCs and ETCNL that have been allocated to the Transmission Owner serving that Transmission District, as calculated in Step 4 of this procedure; and

   (iv) that Transmission District's forecasted share of residual auction revenues for that year, as calculated in Step 6 of this procedure for the Transmission Owner serving that Transmission District;

b. subtracting the sum of items (i) through (iv) above, each forecasted for that Transmission District for that year under the assumption that the Project is not in place; and

c. dividing this difference by the amount of Load forecasted to be served in that Transmission District in that year, stated in terms of megawatt-hours, net of any Load served by municipally owned utilities that is not subject to the TSC.

Step 8. The NYISO shall calculate the forecasted net impact of the Project on the NTAC offset for each megawatt-hour of electricity consumed by Load in each year by:

a. summing the following, each forecasted for that year under the assumption that the Project is in place:

   (i) forecasted Congestion Rents associated with any Incremental TCCs that the ISO has awarded, or that the ISO projects it would award, as calculated in Step 2(b) of this procedure, in conjunction with other projects that have entered commercial operation

or are expected to enter commercial operation before the Project enters commercial operation, if those Congestion Rents would affect the NTAC;

(ii) forecasted Congestion Rents associated with any Grandfathered TCCs and forecasted imputed Congestion Rents associated with any Grandfathered Rights held by NYPA that would be paid to NYPA for that year, as calculated in Step 2(c) of this procedure, if those Congestion Rents would affect the NTAC;

(iii) the payments that are forecasted to be made for that year to NYPA in association with Original Residual TCCs allocated to NYPA, as calculated in Step 4 of this procedure; and

(iv) NYPA's forecasted share of residual auction revenues for that year, as calculated in Step 6 of this procedure;

b. subtracting the sum of items (i) through (iv) above, each forecasted for that year under the assumption that the Project is not in place; and

c. dividing this difference by the amount of Load expected to be served in the NYCA in that year, stated in terms of megawatt-hours, net of any Load served by municipally owned utilities that is not subject to the NTAC.

3.4.2.1.3.2. Forecasting the Net Impact of the Project on TCC Revenues Allocated to Load in Each Zone

Step 9. The NYISO shall calculate the forecasted net impact of the Project in each year in each Load Zone on payments made in conjunction with TCCs and Grandfathered Rights that benefit Load, but which do not affect TSCs or the NTAC, which shall be the sum of:

a. Forecasted Congestion Rents paid or imputed to municipally owned utilities serving Load in that Load Zone that own Grandfathered Rights or Grandfathered TCCs that were not included in the calculation of the TSC offset in Step 7(a)(ii) of this procedure or the NTAC offset in Step 8(a)(ii) of this procedure, which the ISO shall calculate by:

(i) summing forecasted Congestion Rents that any such municipally owned utilities serving Load in that Load Zone would be paid for that year in association with any such Grandfathered TCCs and any forecasted imputed Congestion Rents that such a municipally owned utility would be paid for that year in association with any such Grandfathered Rights, as calculated in Step 2(c) of this procedure under the assumption that the Project is in place; and

(ii) subtracting forecasted Congestion Rents that any such municipally owned utilities would be paid for that year in association with any such Grandfathered TCCs, and any forecasted imputed Congestion Rents that such a municipally owned utility would be paid for that year in association with any such Grandfathered Rights, as calculated in Step 2(c) of this procedure under the assumption that the Project is not in place; and

b. Forecasted Congestion Rents collected from Incremental TCCs awarded in conjunction with projects that were previously funded through this procedure, if those Congestion Rents are used to reduce the amount that Load in that Load Zone must pay to fund such projects, which the ISO shall calculate by:

(i) summing forecasted Congestion Rents that would be collected for that year in association with any such Incremental TCCs, as calculated in Step 2(b) of this procedure under the assumption that the Project is in place; and

(ii) subtracting forecasted Congestion Rents that would be collected for that year in association with any such Incremental TCCs, as calculated in Step 2(b) of this procedure under the assumption that the Project is not in place.

Step 10. The NYISO shall calculate the forecasted net reductions in TCC revenues allocated to Load in each Load Zone as a result of a proposed Project by summing the following:

a. the product of:

(i) the forecasted net impact of the Project on the TSC offset for each megawatt-hour of electricity consumed by Load, as calculated for each Transmission District (other than the NYPA Transmission District) in Step 7 of this procedure; and

(ii) the number of megawatt-hours of energy that are forecasted to be consumed by Load in that year, in the portion of that Transmission District that is in that Load Zone, for Load that is subject to the TSC;

summed over all Transmission Districts;

b. the product of:

(i) the forecasted net impact of the Project on the NTAC offset for each megawatt-hour of electricity consumed by Load, as calculated in Step 8 of this procedure; and

(ii) the number of megawatt-hours of energy that are forecasted to be consumed by Load in that year in that Load Zone, for Load that is subject to the NTAC; and

c. the forecasted net impact of the Project on payments and imputed payments made in conjunction with TCCs and Grandfathered Rights that benefit Load but which do not affect TSCs or the NTAC, as calculated in Step 9 of this procedure.

3.4.2.1.4. Additional Notes Concerning the Procedure

- For the purposes of Steps 2(c) and 4(b) of this procedure, the NYISO will utilize the currently effective version of Attachment L to the OATT to identify Existing Transmission Agreements and Existing Transmission Capacity for Native Load.
- Each Transmission Owner, other than NYPA, will inform the NYISO of any Grandfathered Rights and Grandfathered TCCs it holds whose Congestion Rents should be taken into account in Step 7 of this procedure because those Congestion Rents affect its TSC.
- NYPA will inform the NYISO of any Grandfathered Rights and Grandfathered TCCs it holds whose Congestion Rents should be taken into account in Step 8 of this procedure because those Congestion Rents affect the NTAC.

3.4.2.1.4.1. Procedure for Setting TCC Revenue Factor

The TCC Revenue Factor will initially be set at 0.9. In the event that there is evidence that the ratio of the price for which a TCC sells in the Centralized TCC Auction to the Congestion Rents that the Primary Holder expects to receive from that TCC is generally significantly different from 0.9, the TCC Revenue Factor will be revised.

3.4.3. Procedure for Regulated Economic Transmission Projects - Specific Projects Submittals

A Developer seeking to propose a Regulated Economic Transmission Project for purposes of cost allocation and recovery under the NYISO OATT must satisfy the eligibility and informational requirements set forth in this Section 3.4.3 of the Manual and Sections 31.3.2 and 31.5.4.3 of Attachment Y of the NYISO OATT. This Section 3.4.3 of the Manual does not apply to Developers or any other interested parties requesting and funding the NYISO to conduct Requested Economic Transmission Studies pursuant to

Section 31.3.3 of Attachment Y. The requirements regarding Requested Economic Planning Studies are described in Section 4 of this Manual.

3.4.3.1. Eligibility

Any Developer that is proposing a Regulated Economic Transmission Project that will interconnect with or be integrated into the existing New York State Bulk Power Transmission Facilities and that is seeking cost allocation and recovery under the NYISO OATT may submit the proposed project for an evaluation, of the project's benefits and costs over a ten-year period commencing with the commercial operation date pursuant to Section 31.5.4.3 of Attachment Y. A Regulated Economic Transmission Project may include the construction of a new line, rebuild or re-conductoring of an existing line and/or addition of transmission equipment, such as, but not limited to, static var compensators, phase angle regulators, capacitor banks, power transformers.

The Developer is responsible for all reasonable actual costs incurred by the NYISO for the Benefit/Cost Analysis. Such costs may include the use by NYISO, at its discretion, of contractors/consultants and costs that Transmission Owners may incur to supply project-related data when requested to do so by the NYISO.

3.4.3.2. Timing of Requests for Economic Transmission Project Evaluation of Regulated Economic Transmission Project

The NYISO shall, upon request and subject to resource limits, conduct an Economic Transmission Project Evaluation at any time during the current Economic Planning Process cycle. The NYISO will accommodate all requests to the extent reasonable and practicable, subject to resource limitations. If the Developer wishes to have its project voted on, pursuant to Section 31.5.4.6 of Attachment Y, during the current Economic Planning Process study cycle, then the Developer must submit a complete a Request Form for Economic Transmission Project Evaluation of a Regulated Economic Transmission Project, which form is included in Appendix D to this Manual, and the required deposit to the NYISO.

3.4.3.3. Request for Economic Transmission Project Evaluation of a Regulated Economic Transmission Project

Each request for an Economic Transmission Project Evaluation submitted to the NYISO (pursuant to the request form in Appendix D of this Manual) shall be accompanied by a refundable deposit of $25,000. Such deposit shall be applied toward the reasonable actual costs incurred by the NYISO and its contractors/consultants, and by Transmission Owners supplying project-related data, including both labor and computing costs, in the performance of the Economic Transmission Project Evaluation.

The Developer shall also submit to the NYISO a Project Conceptual Package ("PCP") with its Economic Transmission Project Evaluation request form. A Developer submitting multiple requests, must submit a separate PCP and separate deposit for each project. The Economic Transmission Project Evaluation request

and the PCP should be submitted to the NYISO via email titled "Economic Transmission Project Evaluation Request" utilizing the following e-mail address: EconomicPlanning@nyiso.com

Table 5 below indicates the type of information required in the PCP and how that information will be used. This information will support the requirements of the following three entities:

1. NYISO: In order to perform the Economic Transmission Project Evaluation
2. ESPWG: In order to determine scenarios that should be analyzed as part of the analysis
3. Benefiting LSEs: In order to have sufficient information to make an informed vote.

Table 5: PCP Information Matrix

Project Conceptual Package Information	Required for NYISO to Perform Analysis	Required for ESPWG to Identify Scenarios	Required for ESPWG Review	Required for Benefiting LSEs to Vote
Developer's Contact Information	X			
Project Description	X	X		X
Project Drawings	X	X		X
Project Capital Costs	X		X	X
Risk Profile				X
Annual Revenue Requirements	X			X
Developer's Business Information				X

The PCP shall include the following:

1. Developer's Contact Information
   - Developer's Name and Title
   - Developer's Company Address
   - Developer's Telephone Number, Fax Number and E-mail
   - Address of the Developer's Contact Person.
2. Project Description

   The Developer will submit a written description of the Regulated Economic Transmission Project to NYISO, which will include, but not be limited to, the following:
   - A description of how the project will interconnect with or be integrated into the existing New York State Bulk Power Transmission Facilities
   - A description of the right of way to be used or acquired

- A description of the property that would need to be acquired or condemned for the project
- Transmission project construction type
- The thermal capacity and impedance ratings of the line
- The required substation and protection additions or modifications required including a list of major equipment and their ratings
- Description of project assumptions used for the basis of the Project Capital Costs and Annual Revenue Requirements
- A description of the project management team
- A project implementation plan
- A list of anticipated System Upgrade Facilities
- Status of the project in the NYISO's Interconnection Queue
- A list of all regulatory approvals required from state, federal and local licensing and environmental regulatory agencies, and a schedule for applications and expected regulatory approvals, and
- A major milestone schedule.

3. Project Drawings

   The Developer will submit the following drawings to the NYISO:

   - Site plan
   - System area one-line
   - Detailed substation one-lines
   - Substation plot plans, and
   - Transmission route plan.

4. Project Capital Costs

   The Developer will submit detailed capital cost estimates for each segment of the project including but not limited to each substation, protection/communication systems, transmission line, system upgrades and other interconnection costs to the extent identified. The Developer will also submit a quarterly cash flow from the start of the project until the Commercial Operation Date. A cost estimate breakdown will be provided that includes, at a minimum, the following items:

   - Licensing/permitting
   - Engineering
   - Construction labor
   - Major equipment
   - Real estate acquisitions and rights of ways
   - Overheads, and
   - Contingencies.

5. Risk Profile

   As described in procedures on cost overruns, the Developer will submit a risk profile. The risk profile will address, at a minimum, the following areas:

   - The stage of project development and the level of accuracy of the project cost estimate;
   - Required cost overruns sharing, if any, between the Developer and the LSEs benefiting from the project;

- Required project cost increase sharing, if any, due to a *force majeure* between the Developer and the LSEs benefiting from the project; and
- Identification of conditions, if any, for canceling the project by the Developer including terms and conditions for allocating sunk costs and lost benefits.

The Developer may submit multiple risk profiles for the project, up to a maximum of three. The project and each of its risk profiles will be voted on individually by the LSEs benefiting from the project as if each were a separate project.

6. Annual Revenue Requirements for Years 1-30

   The Developer will provide their Annual Revenue Requirements starting in the first year of the Commercial Operation Date and the subsequent 29 years. A list of assumptions used in calculating the Annual Revenue Requirements will be provided, which shall include but not be limited to:

   - Cost of capital
   - Annual operations and maintenance costs
   - Property Taxes
   - Escalation rate, and
   - Revenue rate of return.

7. Developer's Business Information
   - Development Experience
     - Provide a list of all transmission projects that have been under development or brought into-service during the past five years, and provide a list of other relevant development projects that are located in New York.
   - Pending Litigation
     - List all ongoing litigation and past lawsuits related to the developer's performance regarding the development projects listed above.
   - Credit Worthiness
     - List current rating from at least three rating agencies.
   - Developer Size
     - List revenues for the last three years for the entity that is developing the project.
   - Technical Expertise
     - Provide names and experience of the key technical personnel assigned to the project.
8. Any other reasonably required information to aid NYISO in understanding the scope of the project and the developer's capabilities.

3.4.3.4. PCP Review and Scoping Meeting

The NYISO shall review the Developer's PCP to determine its completeness and clear description of the project scope and costs and acknowledge receipt of the request form for the Economic Transmission Project Evaluation within ten (10) business days of receipt. If, in its sole discretion, the NYISO finds the PCP to be deficient in content, the NYISO will request the Developer to provide the missing data. No analysis will be performed by NYISO until an acceptable PCP is received.

Following the receipt of a complete PCP and the required deposit, the NYISO will post the request on

their website and establish with Developer a mutually agreeable time for a scoping meeting ("Scoping Meeting") for the Economic Transmission Project Evaluation. The Scoping Meeting shall be used to address any questions regarding the project description to provide that all the technical parameters needed by the NYISO to perform the Economic Transmission Project Evaluation are understood. The base case applicable to the Regulated Economic Transmission Project seeking cost allocation and recovery will be established pursuant to the procedure to update the database for specific project benefit cost analysis, pursuant to Section 3.1 of this Manual.

Following the Scoping Meeting, the NYISO will forward the information to the ESPWG for review and determination of the scenarios to be analyzed for the proposed project. The ESPWG will have the opportunity to provide feedback to the Developer on the completeness of the submitted Project Capital Costs.

Following the ESPWG meeting, the NYISO will; (i) finalize the scope as part of an agreement for an Economic Transmission Project Evaluation (in the form of the "Economic Transmission Project Evaluation Agreement" set forth in Appendix E of this Manual), and (ii) provide the Developer with the Economic Transmission Project Evaluation Agreement and a non-binding estimate of the total costs. The Economic Transmission Project Evaluation Agreement will include the scope of work and will define the deliverables to be provided by the NYISO at the completion of the studies. The Economic Transmission Project Evaluation Agreement will also contain payment terms and conditions. The Economic Transmission Project Evaluation Agreement must be executed by the Developer before the NYISO conducts any analysis.

If the NYISO determines that a material change occurs in the project for any reason, the NYISO may require the Developer to pay an additional deposit to reflect that cost increase, which the NYISO shall also apply to the actual cost of the Economic Transmission Project Evaluation. No analysis will be performed by the NYISO on the revised project until the additional deposit is received and an agreed to revised target completion date is determined.

3.4.3.5. Completion and Delivery of Results

The NYISO will process the Economic Transmission Project Evaluation requests in the order in which they are received. An Economic Transmission Project Evaluation request will be deemed received by the NYISO on the date the NYISO receives an acceptable PCP and the required deposit. The NYISO will use reasonable efforts to complete each Economic Transmission Project Evaluation by a date mutually agreed to with the Developer. If the NYISO determines this target date will not be met, the NYISO will promptly inform the Developer and provide the Developer with an updated estimate of the new date by which the Economic Transmission Project Evaluation will be completed.

Upon completion of the analysis, the NYISO will provide the results of the benefit/cost analysis component of the Economic Transmission Project Evaluation to the Developer. Upon request, the NYISO will schedule a meeting to review the results with the Developer. The Developer shall be responsible for all reasonable and actual costs incurred by the NYISO that result from the meeting to review the Economic Transmission Project Evaluation and from any requested modifications to the Economic Transmission Project Evaluation.

The NYISO will provide the "Final Invoice" to the Developer to cover all reasonable costs the NYISO incurred in the performance of the Economic Transmission Project Evaluation that have not yet been paid by the Developer.

3.4.3.6. Withdrawal of Request

The Developer may withdraw its Economic Transmission Project Evaluation at any time by written notice to the NYISO. Upon receipt of such request, the NYISO will immediately terminate any further work on the applicable Economic Transmission Project Evaluation.

The Developer shall reimburse the NYISO for all reasonable expenses incurred prior to the receipt of the withdrawal notice. The NYISO will refund any portion of the deposit that has not been used for the Economic Transmission Project Evaluation prior to receipt of the withdrawal notice to the Developer, if applicable.

Following reimbursement or refund, as applicable, the NYISO will forward the completed results, if any, of the Economic Transmission Project Evaluation work completed prior to the withdrawal date to the Developer.

3.4.3.7. Disclosure of Economic Transmission Project Evaluation Results

In the event that the Economic Transmission Project Evaluation finds that a project is eligible for cost allocation and recovery under Section 31.5.4 of Attachment Y (i.e., the benefit of the proposed project exceeds its cost measured over the first ten years from the proposed commercial operation date for the project, and the total capital cost of the project exceeds $25 million), the Developer may then seek acceptance of its project by the project beneficiaries according to the voting procedures outlined below and in Sections 31.5.4.4, 31.5.4.5, and 31.5.4.6 of Attachment Y through a request in writing to the NYISO. Once such a request is received by the NYISO, the results of the benefit/cost analysis component of the Economic Transmission Project Evaluation shall be posted on the NYISO website.

In the event that the NYISO finds, through the Economic Transmission Project Evaluation, that a project is not eligible for cost allocation and recovery as described in Section 31.5.4 of Attachment Y then the

NYISO shall provide the Developer's written notification of the results and that the Economic Transmission Project Evaluation has been deemed withdrawn.

In the event that the Developer either (1) withdraws its Economic Transmission Project Evaluation in accordance with the foregoing section, or (2) the Developer's Economic Transmission Project Evaluation request is deemed withdrawn pursuant to this section, then the results of the benefit/cost analysis component of the Economic Transmission Project Evaluation shall not be disclosed or posted on the NYISO website.

3.4.4. Procedure for Project Cost Overruns

The Developer is required to provide as part of the proposal for a Regulated Economic Transmission Project, a firm price, as well as a risk profile to address project cost overruns. The risk profile will address at a minimum the following areas:

- The stage of project development and the level of accuracy of the project cost estimate;
- Required cost overruns sharing, if any, between the Developer and the LSEs benefiting from the project;
- Required project cost increase sharing, if any, between the Developer and the LSEs benefiting from the project due to a *force majeure*; and
- Identification of conditions, if any, for canceling the project by the Developer including terms and conditions for allocating sunk costs and lost benefits.

The Developer may submit multiple risk profiles for the project. The project and each of its risk profiles will be voted on individually by the LSEs benefiting from the project as if each one was a separate project.

The rule for project cost overruns is provided Section 31.5.4.4.5.3 in Attachment Y to the OATT.

3.4.4.1. Quarterly Reporting

Upon acceptance of the Regulated Economic Transmission Project and an associated risk profile by the LSEs benefiting from the project, the Developer will provide to the LSEs benefiting from the project with quarterly project updates to include but not be limited to the following:

- project's current status
- updated milestone schedule
- updated cash flow
- a project cost analysis, and
- an explanation for any schedule or cost changes.

Simultaneously, the Developer will provide a copy of the report to the NYISO, which the NYISO will post on its website.

The project cost analysis will include the original estimated costs, the actual costs spent to date, the estimated cost to complete, and the percent change. A change that results in an increase in the project cost will be provided by the Developer to the LSEs benefiting from the project, with a copy to the NYISO, as soon as the change is discovered. The Developer is not to wait until the next quarterly report to notify the LSEs benefiting from the project and the NYISO of the change.

3.4.5. Voting Procedure for Regulated Economic Transmission Projects

Potential beneficiaries of a Regulated Economic Transmission Project will be drafted and finalized and the vote administered. The voting rules for Regulated Economic Transmission Projects are provided in Sections 31.5.4.4, 31.5.4.5 and 31.5.4.6 in Attachment Y to the OATT.

3.4.5.1. Identification of Beneficiaries and Voting Shares

The NYISO will develop the specific list of voting entities pursuant to Section 31.5.4.4 of Attachment Y and deliver them to the ESPWG for comment. Voting beneficiaries will be Load Serving Entities (LSEs) in those Load Zones which will experience net benefits measured over the first ten years from the Regulated Economic Transmission Project's proposed commercial operation date. The ESPWG will, at its first meeting following the receipt of the list, begin reviewing and commenting on the list as presented. Following review and comment by the ESPWG, the final beneficiary list shall be submitted to the BIC and subsequently to the MC for review and comment by Market Participants. Finally, the beneficiary list, the project benefit/cost analysis, and the comments made by Market Participants at the BIC and the MC shall be submitted to the NYISO Board when this matter is brought to the Board for its consideration and approval.

Upon the ESPWG review of the beneficiary list and the benefit/cost analysis, the NYISO will provide each voting beneficiary with the information on its own voting shares, project benefit/cost analysis, and the Project Conceptual Package, as described above in Section 3.4.3 of this Manual. The NYISO will not provide an LSE's voting share information to other voting beneficiaries and will treat that information as Confidential Information under the NYISO Code of Conduct (OATT Attachment F; Services Tariff Article 6).

The NYISO will hold an informational session for voting beneficiaries soon after the results of the project benefit/cost analysis and beneficiary determination are reviewed by the ESPWG and delivered to voting beneficiaries, and prior to the BIC meeting.

Following the review and comment on the beneficiary list by Market Participants at the BIC and MC meetings, the LSEs may submit comments on their respective voting shares directly to the NYISO Board of Directors. In addition, any Market Participant or interested party may submit comments on the final

beneficiary list and the project benefit/cost analysis to the Board. The Board will review such comments, including requests for oral arguments, prior to Board approval of the voting shares, which will take place prior to the beneficiary vote on the specific project.

The Board may approve the benefit/cost analysis and beneficiary designations as submitted or propose modifications on its own motion. If any changes are proposed by the Board, the revised benefit/cost analysis and beneficiary designations shall be returned for comment by Market Participants at the Management Committee and by affected LSEs. The Board shall not make a final determination on the project benefit/cost analysis and beneficiary designation until it has reviewed the comments made by Market Participants at the Management Committee and by affected LSEs. Upon final approval of the Board, the project benefit/cost analysis and the beneficiary list shall be posted by the NYISO on its website and shall form the basis of the beneficiary voting described in Section 31.5.4.6 of Attachment Y.

3.4.5.1.1. Procedural Details

- For purposes of this procedure, the Notice Date shall be defined as the date the required voting material is sent to the voting entities for the special voting meeting.
- For purposes of this procedure, LSEs shall be defined in accordance with the tariff as those LSEs that benefit from a project pursuant to Section 31.5.4.4.2.
- Zonal benefit, zonal cost allocation, and other terms and formulas related to this procedure are discussed in the procedures for Sections 31.5.4.4.2 (calculation of Zonal Benefit), 31.5.4.4.3 (addressing load zones not benefiting from a proposed project) and 31.5.4.4.4 (allocation of project costs to the load).
- Weighted zonal voting share of each LSE = (Zonal Benefits / Total Zonal Benefits for zones with positive net benefits) * (LSE Zonal MWh/Total Zonal MWh).
- If a Load Serving Entity benefits in more than one zone, the formula will be calculated for each zone of benefit and the total voting share of the Load Serving Entity will be the sum of such calculations.
    - The total voting share of each LSE = sum of the weighted zonal voting shares for each LSE.
    - The total voting share of each LSE will be calculated to seven decimal places with rounding.
    - The sum of all total LSE voting shares must equal 1.

3.4.5.1.2. Methodology for Calculation of LSE Zonal MWh Load Data

For purposes of this calculation, the NYISO will use the most recent rolling 12-month settlement data (Hourly Billing Metered Load MWh data) calculated using the most recent month for which actual metered load data is available pursuant to the metering timelines in Section 2.7.4.2 to the OATT and Section 7.4.1 of the MST (90 day true-up). The LSEs' MWh data used for this calculation will be from the first available actual metered month at the time of the study and the prior 11 months.

Each LSE's load share will be calculated as the ratio of that LSE's MWh to total load MWh (in zones that will benefit from the project), for the rolling 12-month period data being used.

LSE load shifts that occur within the rolling 12-month period data being used shall be treated as follows:

- If an LSE has no billing metered data in the last billing month of the rolling 12-month period data being used, that LSE's load and voting weight will be removed from the calculation.
- If a new LSE joins a zone anytime during the rolling 12-month period data being used, that LSE's load share will be calculated as the ratio of that LSE's MWh to total 12-month zonal load MWh.

Voting shares will be assigned to the LSEs. The billing organization may be a proxy for an LSE within that billing organization if that LSE decides to be represented by its billing organization to cast the vote. As such, that billing organization will be responsible for collecting and forwarding to the NYISO proper authorization for that LSE's load.

3.4.5.1.2.1. Changes in LSE Loads

After the Board approval of the beneficiary determination, the NYISO will examine its billing data to determine if changes have occurred in LSE registrations and load served in the NYCA. At least thirty days before the vote, the NYISO will re-run the calculation to determine if any LSE load has been changed by 10% or more (of its own load). If a change in any LSE load of 10% or more for an individual LSE occurs after the Board approval and before the Notice Date, the NYISO will update the calculation before the date of the actual vote and will notify each LSE in accordance with NYISO notification procedures provided herein of their updated voting shares at least five business days before the date of the vote.

3.4.5.1.2.2. LSE Education

The NYISO will reach out to LSEs or, if they so designate, their designated proxy Billing Organizations, sufficiently in advance of the scheduled voting date in order to inform them and educate them about the Economic Transmission Project Evaluation voting process.

3.4.5.1.3. Beneficiary Voting Procedure

For a Regulated Economic Transmission Project to have its cost allocated under Section 31.5.4.6.3 in Attachment Y to the OATT, eighty (80) percent or more of the actual votes cast on a weighted basis must be cast in favor of implementing the project. If less than 80% of the LSE votes are cast in favor of implementing the project, the project will be deemed to be rejected. Abstentions and absentees will not be

counted as votes cast. If no LSE votes are cast on a proposed project, the project will be deemed to be rejected.

For regulated economic projects, the procedure for tallying the vote is governed by Section 31.5.4.6.5.

3.4.5.1.3.1. Details

- Voting will occur at a special voting meeting chaired by the BIC Chair. The BIC Chair will oversee the voting.
- Upon finalization of the specific list of voting beneficiaries, the BIC Chair, supported by the NYISO, will send voting materials related to the particular project by electronic mail directed to the Member Relations main contact, billing contact (as applicable) and the MC representative (as applicable) of each voting entity of the related specific list. Voting materials related to a particular project will include the time, date, location and telephone dial-in information of the voting session, as well as the Project Conceptual Package, as defined in Section 3.4.3 of this Manual, to be voted on, the Board-approved project benefit/cost analysis and specific list of voting beneficiaries, and for that particular LSE, the calculations of the weighted voting share.
- No voting session shall take place earlier than five business days following the distribution by the BIC Chair, supported by the NYISO, of voting materials related to the project to be voted on.
- If multiple projects are presented for voting at the same voting session, projects will be voted upon in descending order based on their benefit/cost ratio; the project with the largest benefit/cost ratio will be voted on first:
    - The LSEs voting on each project will vote beginning at that point in the alphabetical order determined by lottery conducted prior to each project vote.
    - The voting results of each project will be announced directly after the voting of each project.
- Prior to each vote, the NYISO will present the project and voting materials.
- Votes will be taken by roll call from the specific list of voting beneficiaries.
- Voice votes can be cast in person or by telephone during the voting session.
- LSEs voting against the project must submit in writing to the NYISO their rationale for their vote within 30 days of the date the vote is taken. LSEs must state the specific reasons for a vote against a project, including the metrics used in making their decision to oppose a project and how those metrics were used.
- The NYISO will record the vote, and will calculate and report the results of the vote. The Chair of the BIC will announce the results of the vote.
- The results of the vote shall be posted on the NYISO's website.

4. Requested Economic Planning Studies (REPS)

A Market Participant or any other interested party may, at any time, request that the NYISO perform a study separate from and in addition to the System & Resource Outlook at the requesting party's sole expense and solely for informational purposes. The scope and deliverables for the Requested Economic Planning Study will be agreed upon by the NYISO and the requesting party. The rules governing Requested Economic Planning Studies are established in Section 31.3.3 in Attachment Y to the OATT. The Requested Economic Planning Study Request Form and the Study Agreement for a Requested Economic Planning Study are located in Sections 31.13 and 31.14 in Attachment Y of the OATT. Additionally, the Requested Economic Planning Study Request Form will be posted on the NYISO website[6].

[6] See under *Economic Planning Studies > Study Forms*, which is located on the NYISO Comprehensive System Planning Process webpage (https://www.nyiso.com/cspp/).

5. PROCEDURE FOR STUDY REPLICATION

Section 5 of this Manual establishes the rules governing study replication provided for in Sections 31.2.3.1, 31.2.7.1, 31.3.1.8.1, 31.5.4.5.1, and 31.4.11.1 of Attachment Y to the OATT.

PROCEDURE

Applicability and Eligibility

- Any NYISO Market Participant or other interested party ("Requestor") is eligible to request replication of the following studies: (1) the Reliability Needs Assessment, (2) Comprehensive Reliability Plan, (3) System & Resource Outlook, (4) the benefit/cost analysis and beneficiary determination in the Economic Transmission Project Evaluation, and (5) Public Policy Transmission Planning Report.
- Requestor is responsible for all reasonable costs incurred by the NYISO for Study Replication. Such costs may include, at the NYISO's discretion, the costs for use of contractors/consultants to assist in the completion of the Study Replication, and the reasonable costs that New York Transmission Owners may incur to supply study-related data when requested to do so by the NYISO.

Confidentiality

- The NYISO will treat a request for Study Replication as Confidential Information under Attachment F to the OATT.
- Results of Study Replication will be treated as Confidential Information under Attachment F to the OATT.
- The NYISO will determine that the Scope of Study Replication is not designed in a way which will produce results that could be used to divulge confidential information.

Timing of Requests for Study Replication

- The NYISO shall, upon request, and subject to resource limits, promptly respond to study requests.
    - The NYISO will accommodate all Requests for Study Replication subject to resource limitations.

Request for Study Replication

- Requestor shall submit a "Request for Study Replication" using the request form in Appendix F of this Manual, which requires specific information needed to conduct the study.

- Each request must be accompanied by a refundable deposit of $25,000, which deposit shall be applied toward the reasonable costs incurred by the NYISO.
- NYISO will post the requests for Study Replication on its website.
- Postings shall include a general description of the study requests, the date of receipt, and the identity of the Requestor.

Scoping Meeting

- NYISO shall acknowledge receipt of the Request for Study Replication within ten (10) business days of receipt and shall inform Requestor whether, in the judgment of the NYISO, the request is complete. If not complete, the NYISO will request additional information.
- Following the receipt of a complete Request for Study Replication, the NYISO shall establish with Requestor a mutually agreeable time for a Scoping Meeting at which the Study Replication scope will be determined.
- Following the Scoping Meeting, the NYISO will prepare a Scope of Study Replication to become part of a Study Agreement for a Study Replication, which agreement form is set forth in Appendix G of this Manual, which will be provided to the Requestor along with a non-binding estimate of the total study costs.
    - The scope of the Study Replication will define the deliverables to be provided by the NYISO at the completion of the studies and will include identification of the study to be replicated as specified in applicable Section(s) 31.2.3.1, 31.2.7.1, 31.3.1.8, 31.5.4.5.1, and/or 31.4.11.1 of Attachment Y, and data to be analyzed.
    - The Study Agreement will also contain payment terms and conditions.
    - Additional deposits shall be required to cover the NYISO's estimate of the total study costs (after credit for the initial deposit).
    - The Study Agreement must be executed by the Requestor and the NYISO before the NYISO conducts any study work.
    - If Requestor modifies the scope of the Study Replication as initially specified, and does so in such a way as to increase the estimated total cost of the Study Replication, the NYISO may request, and the Requestor shall pay, an additional deposit.

Completion and Delivery of Study Results

- The NYISO will conduct the Study Replication in the order in which requests for Study Replication are received. A request will be deemed received by the NYISO on the date the NYISO receives all necessary components of a complete request, including the deposit.

- The NYISO will use reasonable efforts to complete each Study Replication by a date mutually agreed to with the Requestor. If the NYISO determines this target date will not be met, the NYISO will promptly inform the Requestor and provide the Requestor with an updated estimate of the new date by which the Study Replication will be completed.
- Upon completion of the study, the NYISO will provide a final invoice to the Requestor to cover all reasonable costs it has incurred in the performance of the study.
- Within 30 days of the final invoice, there shall be a final payment (refund) to true up any study deposits to the final study cost.
- Following final payment (refund), the NYISO will provide the study results to the Requestor.
- Upon request, the NYISO will schedule a meeting to review the study results with the Requestor.
- The NYISO will review the results of the Study Replications to determine whether the results reveal Confidential Information that is not subject to disclosure under the NYISO's Code of Conduct. Confidential Information will be removed or the results aggregated or masked sufficiently to avoid the disclosure of Confidential Information.

Withdrawal of Request

- Requestor may withdraw its study request at any time by written notice to the NYISO.
- Upon receipt of such request, the NYISO will terminate any further study work.
- Requestor shall reimburse the NYISO for all reasonable expenses incurred prior to the receipt of the withdrawal notice. The NYISO will refund any unpaid deposit funds to the Requestor, if applicable.

Appendix A Typical Assumptions Matrix

The Typical System & Resource Outlook Assumptions Matrix is available under the *Economic Planning Process Manual* which is located in the Manuals>Planning folder on the NYISO Manuals, Technical Bulletins & Guides Web site:

https://www.nyiso.com/manuals-tech-bulletins-user-guides

Appendix B Reserved

Appendix C Reserved

Appendix D Request Form for Economic Transmission Project Evaluation (ETPE) of a Regulated Economic Transmission Project

The Economic Transmission Project Evaluation Request Form is available under the *Economic Planning Process Manual* which is located in the Manuals>Planning folder on the NYISO Manuals, Technical Bulletins & Guides Web site: https://www.nyiso.com/manuals-tech-bulletins-user-guides

Appendix E Economic Transmission Project Evaluation (ETPE) Agreement Form

The Economic Transmission Project Evaluation (ETPE) Agreement Form is available under the *Economic Planning Process Manual* which is located in the Manuals>Planning folder on the NYISO Manuals, Technical Bulletins & Guides Web site:

https://www.nyiso.com/manuals-tech-bulletins-user-guides

Appendix F Study Replication Request Form

The Study Replication Request Form is available under the *Economic Reliability Planning Process Manual* which is located in the Manuals>Planning folder on the NYISO Manuals, Technical Bulletins & Guides Web site:

https://www.nyiso.com/manuals-tech-bulletins-user-guides

Appendix G Study Replication Agreement Form

The Study Replication Agreement Form is available under the *Economic Reliability Planning Process Manual* which is located in the Manuals>Planning folder on the NYISO Manuals, Technical Bulletins & Guides Web site:

https://www.nyiso.com/manuals-tech-bulletins-user-guides