

*Economic Planning Process  
Manual -  
Congestion Assessment*

*And and Resource  
Integration Studies (CARIS)*

*-MM 2013*

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NYISO ECONOMIC PLANNING PROCESS MANUAL

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This document was prepared by:

System and ~~Resource~~Resource Planning

New York Independent System Operator  
10 Krey Boulevard  
Rensselaer, NY 12144  
(518) 356-6060  
[www.nyiso.com](http://www.nyiso.com)

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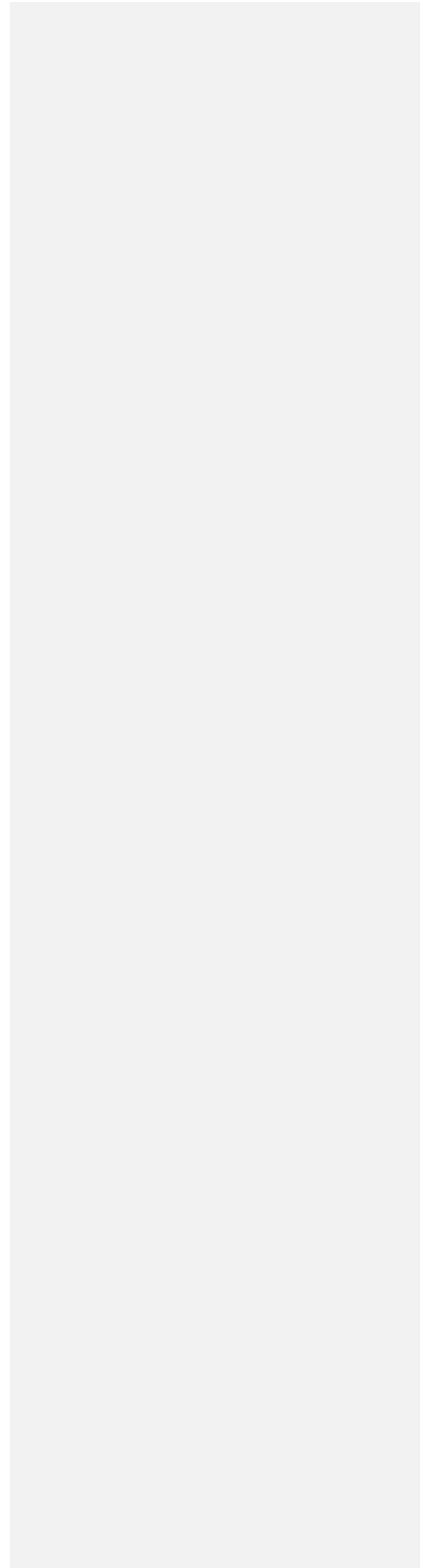
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NYISO ECONOMIC PLANNING PROCESS MANUAL

*NYISO Economic Planning Process (Congestion Assessment and Resource Integration Study) Manual*



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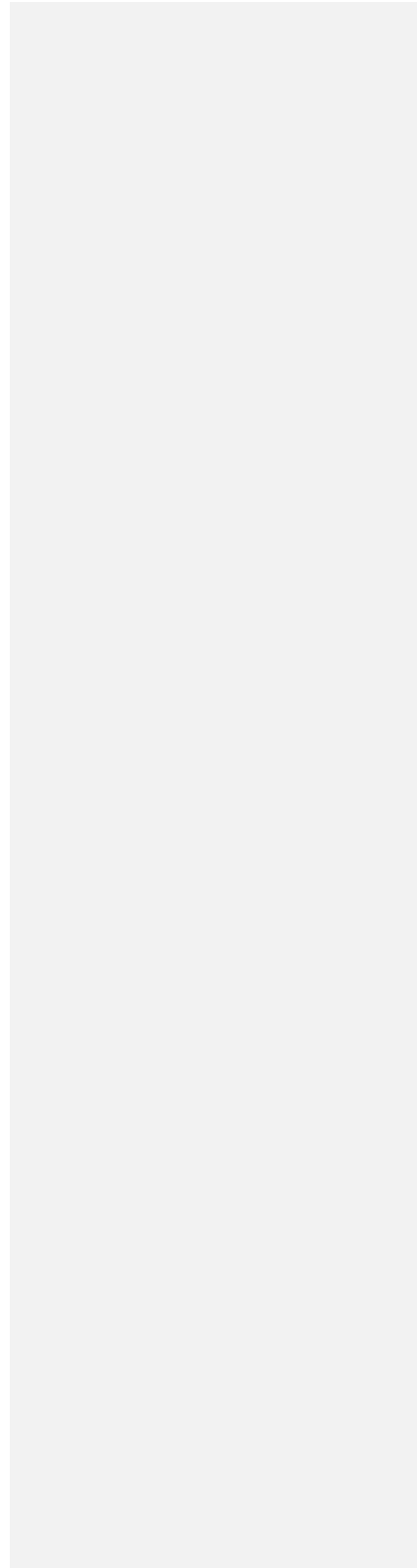
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### Revision History

Version	Date	Revisions
2.0	mm/dd/2013	Section xx >
1.0	12/06/2012	Initial Release



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# **1. OVERVIEW OF THE ECONOMIC**

## **1.1 The Comprehensive System Planning Process – Congestion Assessment and Resource Integration Study (CARIS)**

**Comment [d1]:** This is a new section of the EPP Manual that will be included in each of the three Planning manuals (Economic Planning, Reliability Planning, and Public Policy Planning).

**Comment [d2]:** This section is new and will be consistent across the three Planning manuals.

## **1. CARIS PROCEDURES**

*This Economic Planning Process Manual contains procedures for implementing the CARIS Phase 1 and Phase 2 Studies pursuant to Attachment Y of the NYISO's Open Access Transmission Tariff. The procedures were developed and reviewed by the Electric System Planning Working Group and were approved by the Business Issues Committee.*

### **1.1 Phase 1**

#### **1.1.1 Criteria for Selection of CARIS Studies**

*The criteria for selection of CARIS Studies are governed by Attachment Y [http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf) Section 31.3.1.2.2*

#### **Proposed Criteria/Metrics:**

- Utilize an unweighted present value cost of congestion for the most congested elements considering both historic and projected data.*
- The congestion metric to be used will be the change in total bid/forecasted production costs in accordance with Appendix A to Attachment Y of the NYISO OATT.*
- The same metric will be used for both historic and projected congestion.*

#### **Historic Congestion Considerations**

- Use historic positive unhedged congestion data for the most recent 60 months.*
- Utilize the data from the NYISO's quarterly historic congestion reports.*

*Projected Congestion Considerations*

- ~~• Use ten years of forecast data.~~
- ~~• Projection will utilize the base case assumptions from the most recent CRP.~~
- ~~• Projection will utilize the additional agreed upon future inputs (e.g. fuel costs, unit parameters) for the base case CARIS analysis.~~

### Prioritization Methodology

- Congestion will be identified from the list of most congested monitored element/contingency pairs.
- Based upon the combination of historic and projected congestion metrics noted above, the ranking for each congested element shall be determined by formula: Present Value in Year 1 = [(Sum of the Future Value of Congestion from the Prior five Historic 12-Month Periods) + (Sum of the Present Value of Congestion from the Future ten years)]
- The discount rate to be used for the present value analysis shall be the current weighted average cost of capital for the NY Transmission Owners
- The three congested elements with the highest present value ranking shall be utilized for further assessment under the CARIS process for that cycle. This assessment will be accomplished in multiple iterations to include additional elements that appear as limiting when each of the top three constrained elements are unconstrained. The assessed element groupings will then be ranked based upon change in production cost. The three ranked groupings with the largest change in production cost will then be selected as the three CARIS studies.
- Exception: If future system changes (e.g. generation, transmission or demand side additions) produce a significant declining trend in congestion over an identified congested element in later years of the study period, such element shall be excluded from the rankings.
- The NYISO shall perform these computations for each CARIS cycle, and review them with ESPWG.

### Other Issues

- Provide the flexibility for grouping elements:
  - NYISO to assess and recommend groupings to ESPWG based on the individual rankings and proximity of congested elements.
- This process shall be incorporated in the CSPP timeline at the beginning of the CARIS part of each cycle:
  - The analysis of historic congestion data can be done prior to the start of the CARIS process.
- The list of the three (3) studies selected under this process and, when completed, the studies themselves will be posted on the NYISO web site.

### **1.1.2 Process for Additional CARIS Studies**

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The process for Additional CARIS Studies is governed by Attachment Y [http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf) Sections 31.3.1.2.3 and 31.3.1.2.4

### Applicability:

- ~~• To requests for additional congestion and resource integration studies (“Additional CARIS Studies”) pursuant to Attachment Y of the NYISO OATT;~~
- ~~• Not Applicable to:~~
  - ~~○ Requests for firm point to point transmission service under Section 3.7 of the NYISO OATT;~~
  - ~~○ Requests for firm Network Integration Transmission Service pursuant to Section 4.5 of the NYISO OATT;~~
  - ~~○ Interconnection requests under Attachment X, Z or S of the NYISO OATT;~~
  - ~~○ Requests for evaluation of projects as potential reliability solutions to an identified Reliability Need.~~

### Eligibility:

- ~~• Any NYISO Market Participant or other interested party (“Requestor”) is eligible to request Additional CARIS Studies;~~
- ~~• Requestor is responsible for all reasonable actual costs incurred by the NYISO for Additional CARIS Studies. Such costs may include the use of contractors/consultants assistance at the NYISO’s discretion, and costs that TOs may incur to supply study related data when requested to do so by the NYISO.~~

### Posting of Requests for Additional CARIS Studies

- ~~• NYISO will post the requests for Additional CARIS Studies on its Website.~~
- ~~• Postings shall include a general description of the study requests, the date of receipt, and the identity of the Requestor.~~
- ~~• Provision shall be made to allow combination/cost sharing of identical/similar or overlapping study requests from different parties if the parties agree.~~
- ~~• Results of these Additional CARIS Studies will be treated as Confidential Information under Attachment F to the OATT;~~
  - ~~○ However, if a Requestor should seek regulated cost recovery under the NYISO OATT, Attachment Y, Section 31.4.3.3 and the approved procedures for Regulated Economic Projects – Specific Project Submittals, the Requestor may elect to post results of its Additional CARIS Studies on the NYISO website at that time;~~
- ~~○ If the Requestor elects to post the results of Additional CARIS Studies, the posting will note whether the database and base case assumptions (collectively “Study Assumptions”) used in the study are different from the Study Assumptions that are required for seeking regulated cost recovery under the CARIS Phase 2.~~



### Timing of Requests for Additional CARIS Studies

- ~~The NYISO shall, upon request, subject to resource limits, conduct an Additional CARIS Study at any time during the year.~~
  - ~~The NYISO will accommodate all study requests to the extent reasonable and practicable, subject to resource limitations.~~
- ~~The Additional CARIS Study shall use the database and base case assumptions in the scope agreed upon by the Requestor and the NYISO.~~

### Request for Additional CARIS Studies

- ~~Requestor shall submit a “Request for Additional CARIS Study” using a form developed by the NYISO which requires specific information needed to conduct the study.~~
- ~~Each study request must be accompanied by a refundable deposit of \$25,000, which deposit shall be applied toward the reasonable actual costs incurred by the NYISO, and its contractors, in the performance of the study.~~
- ~~Multiple study requests involving diverse locations system shall each be required to submit a separate request and a separate deposit.~~

### Scoping Meeting

- ~~NYISO shall acknowledge receipt of the Request for Additional CARIS Study within ten (10) business days of receipt and shall inform Requestor whether its request is complete in the judgment of the NYISO. If not complete, the NYISO will request additional information.~~
- ~~Following the receipt of a complete Request for Additional CARIS Study, the NYISO shall establish with Requestor a mutually agreeable time for a Scoping Meeting.~~
- ~~The Scoping Meeting shall be used to determine the nature of the study to be conducted, including any customization that the Requestor may desire for its study, such as:~~
  - ~~Additional metrics for measuring congestion and the benefits of relieving that congestion.~~
  - ~~Additional scenarios and the assumptions to be used for each.~~
  - ~~Whether the Requestor wants the NYISO to analyze potential transmission, generation and/or demand response solutions, and the characteristics of those solutions.~~
  - ~~Degree of certainty requested for the solution cost estimates.~~
- ~~Following the Scoping Meeting, the NYISO will memorialize the results in writing as part of a Study Agreement for an Additional CARIS Study (developed by the NYISO) to be provided to the Requestor along with a non-binding estimate of the total study costs.~~
  - ~~The Study 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 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 before the NYISO conducts any study work.~~
- ~~• If Requestor modifies the scope of the Additional CARIS Study as initially specified, and does so in such a way as to increase the estimated total cost of the Additional CARIS Study, the NYISO may request, and the Requestor shall pay, an additional deposit to reflect that cost increase, which the NYISO shall also apply to the actual cost of the Additional CARIS Study.~~

### **Completion and Delivery of Study Results**

- ~~• The NYISO will process the Additional CARIS Studies in the order in which they are received. A study will be deemed received by the NYISO on the date the NYISO receives the completed study request form and acceptable deposit.~~
- ~~• The NYISO will use reasonable efforts to complete each Additional CARIS Study 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 Additional CARIS Study 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.~~

### **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 immediately terminate any further study work.~~
- ~~• Requestor shall reimburse the NYISO for all reasonable expenses incurred prior to the receipt of the withdrawal notice. NYISO will refund any unpaid deposit funds to the Requestor, if applicable.~~
- ~~• Following reimbursement (refund), the NYISO will forward the results of any study work completed prior to the withdrawal date to the Requestor.~~

[This Economic Planning Process Manual \(Manual\) describes the NYISO's economic planning process component of the Comprehensive System Planning](#)

## NYISO ECONOMIC PLANNING PROCESS MANUAL

Process (CSPP). The CSPP was approved by the Federal Energy Regulatory Commission (FERC), and its requirements are set forth in Attachment Y of the NYISO's Open Access Transmission Tariff (OATT). One of the NYISO's primary responsibilities is to anticipate and prepare for the impact of changes in supply and demand of power on the reliable operation of the New York bulk power 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:

Local Transmission Planning Process (LTPP),  
Reliability Planning Process (RPP),  
Congestion Assessment and Resource Integration Study (CARIS), and  
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.

The second component in the CSPP cycle is the RPP, which requirements are described in Attachment Y of the OATT and the RPP Manual. Under this biennial process, the reliability of the New York bulk power system is assessed, 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 needs is selected by the NYISO. This process was originally developed and implemented in conjunction with stakeholders, was approved by FERC in December 2004 and has been revised 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 adequacy and transmission system adequacy and security of the New York bulk power system over a 10 year Study Period and 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 Need. The NYISO also identifies a Responsible Transmission Owner and requests that it submit a regulated backstop solution and that any other interested entities submit alternative regulated solutions to address the identified Reliability Needs.

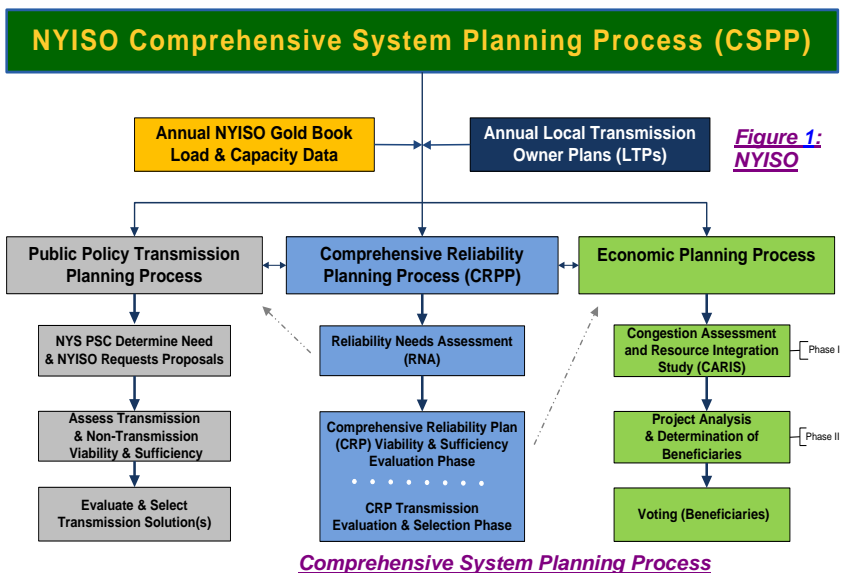
The NYISO evaluates the viability and sufficiency of the proposed solutions to satisfy the identified Reliability Needs and evaluates and selects the more efficient or cost-effective transmission solution to the identified need. In the event that market-based solutions do not materialize to meet a Reliability Need in a timely manner, the NYISO triggers regulated solution(s) to satisfy the need. The NYISO develops the CRP for the 10 year 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 third component of the CSPP is CARIS, the economic planning process based on the CRP, which requirements are described in Attachment Y of the OATT and this Manual. CARIS Phase 1 examines congestion on the New York bulk power system, and the costs and benefits of generic alternatives to alleviate that congestion. During CARIS Phase 2, the NYISO evaluates specific transmission project proposals for regulated cost recovery.

The fourth component of the CSPP is the Public Policy Transmission Planning Process, which requirements are described in Attachment Y of the OATT and the Public Policy Transmission Planning Process Manual. Under this process, interested entities propose, and the New York State Public Service Commission (NYPSC) and New York State Department of Public Service (NYDPS) identify, 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 and evaluates and selects 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.

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.



## Definitions

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)**

**Comment [d3]:** This is a new descriptive section. It draws from prior the NYISO filing letters, the current CARIS Manual and prior CARIS reports.

### **1.2.1 Overview of the EPP**

The NYISO’s economic planning process was first developed in 2007 in response to FERC Order No. 890 as a complement to the NYISO’s established reliability planning process. The economic planning process is consistent with the core principles identified in Order No. 890, specifically, stakeholder participation, transparency and clear cost allocation rules. The economic planning process is also consistent with the NYISO’s market-based philosophy. The process encourages stakeholders’ voluntary participation and the development of market-based solutions to reduce congestion, as the process does not mandate the construction or funding of economic-related transmission projects. The NYISO’s role is to serve as a neutral provider of information regarding potential remedies to congestion in response to Market Participants’ requests. Market Participants can use this information to determine whether they want to come forward with an economic proposal. In the event that a New York Transmission Owner or developer comes forward with an economic transmission proposal, the process provides a methodology under which the NYISO would determine the project’s initial eligibility for regulated funding under its OATT, and for the identification of beneficiaries who would be allocated the costs of the project.

### **1.2.2 CARIS Phase 1**

The EPP requires that the NYISO biennially perform a Congestion Assessment and Resource Integration Study (“CARIS”) in alignment with the CSPP schedule. The NYISO actively engages with the ESPWG in vetting the CARIS assumptions, methodologies and results. The NYISO’s stakeholder committees must review the CARIS before it is forwarded to the NYISO’s Board of Directors for approval.

The CARIS uses the same 10-year planning horizon as the most recently conducted RNA and assumes a reliable system throughout the 10-year study period. The basecase system for the CARIS will first incorporate sufficient and viable market-based solutions and then, if necessary, reliability-backstop solutions to meet identified Reliability Needs. In responding to identified congestion, the NYISO will evaluate all resource types, including transmission, generation, energy efficiency and demand response on a comparable basis. As part of the CARIS Phase 1, the

NYISO develops estimates of historic and projected system congestion, the impact on projected congestion and other metrics of various scenarios (e.g., higher fuel costs) and conducts an initial cost-benefit analysis of each potential solution identified to address system congestion. Based on these analyses, the CARIS provides stakeholders with a wide range of information to assist them in identifying and developing actual solutions to address congestion.

### 1.2.3 CARIS Phase 2

If in response to the results of the CARIS Phase 1, a developer proposes an actual project to address specific congestion identified in the CARIS, the NYISO will process that project proposal 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 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 price (“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 non-quantifiable benefits (e.g., system operation, environmental effects, and renewable integration).

The proposed cost allocation mechanism will apply only if a super majority of a project’s beneficiaries agree that an economic project should proceed. The super-majority required to process 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 Other CARIS Studies

The economic planning process also provides for individual Market Participants to request that the NYISO perform congestion and resource integration studies (with the costs to be paid for by the requesting party).

### 1.2.5 Study Replication

The economic planning process also provides for individual Market Participants or other interested parties to request that the NYISO replicate the CARIS Phase 1 or CARIS Phase 2 studies (with the study costs to be paid for by the requesting party).

## 2. CARIS PHASE 1

**Comment [d4]:** This is new section providing an introduction into the detailed discussion of CARIS Phase 1.

In CARIS Phase 1, the NYISO, in collaboration with its stakeholders and other interested parties, develops a ten-year projection of congestion and together with historic congestion identifies, ranks, and groups the most congested elements on the New York bulk power system. For the top three congested elements or groupings, studies are performed which include: (a) the development of three types of generic solutions to mitigate the identified congestion; (b) a benefit/cost assessment of each solution based on projected NYCA-wide production cost savings and estimated project costs; and (c) presentation of additional metrics for informational purposes. The four types of generic solutions are transmission, generation, energy efficiency and demand response. Scenario analyses are also performed to help identify factors that increase, decrease or produce congestion in the CARIS base case.

Historic congestion values are calculated using the Congestion Reporting for Off-Line SCUC (“CROS”) tool. With CROS, the NYISO can estimate for historic periods the demand congestion in the NYISO day-ahead market caused by system transmission constraints by re-running SCUC without the constraints. Projected congestion, production cost and other metrics are developed utilizing GE-MAPS, an industry-standard, production cost simulation tool that models a four-pool system, NYISO, PJM, IESO and ISO-NE.

### 2.1 Base Case Development

The first step in the EPP is the development of the Base Case for the GE-MAPS production cost model. This will entail the validation of the model utilizing historic actual data and the development of model inputs such as fuel and emission forecasts for the ten-year study period.

#### 4.1.32.1.1 Inclusion of Market-Based Solutions (MBS) and Regulated Backstop Solutions (RBS) in CARIS Base Case; Scaling Back MBS

**Comment [d5]:** Other than the section title, the language in this section is unchanged.

The inclusion of market-based solutions (MBS) and regulated backstop solutions (RBS) in CARIS base case, and the scaling back of MBS is governed by Attachment Y



[http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf)  
Section 31.3.1.3.2

### **Possible Scenarios**

There are four possible scenarios that may result from the CRPP process:

- More than sufficient MBS to meet the reliability needs
- Sufficient MBS to meet the needs
- Insufficient MBS to meet the needs
- RNA/CRP finds no reliability needs through the 10-year study period

Since it is possible for any of these four outcomes to occur, there must be procedures in place to address each outcome in order to develop the base case assumptions for the CARIS studies

### **METHODOLOGY:**

The intent of this procedure is to produce a CARIS base case that is unbiased by resource type or in the selection or location of particular resources. The NYISO will implement this procedure for each CARIS cycle, in collaboration with stakeholders through the ESPWG.

### **BASE ASSUMPTIONS:**

- In all cases, the base case resource additions (including updated TO Plans, if any) included in the current CRP shall be included in the CARIS base case—unless NYISO determines, based upon updated information, that such resource is no longer viable.
- All new projects that meet the criteria for inclusion in a RNA base case at the time of finalizing the CARIS base case, shall be so included.
- Any regulated backstop solutions (RBS) that have been triggered and not subsequently halted shall be included in the CARIS base case—unless NYISO determines, based upon updated information, that such resource is no longer viable.
- If a TO, or another developer, is proceeding with an alternative regulated solution that has been approved by the PSC and not subsequently halted, then such project shall be included in the CARIS base case.
- A gap solution that has previously been triggered shall be considered for inclusion in the CARIS base case consistent with the type and duration of that solution.
- If any such resource that was previously included in the CRP is determined by the NYISO to be no longer viable, the NYISO shall re-analyze the viable MBS

solutions to determine whether they remain sufficient to meet the statewide LOLE of 0.1 throughout the study period

- The Statewide and LCR requirements shall be held constant over the ten-year Study Period
- Resources modeled in the CARIS base case are not evaluated as potential economic solutions
- Resources selected for inclusion in the CARIS base case under these assumptions shall not change during subsequent scaling of resources
  - Scenarios may be developed to include a resource mix that differs from the base case, but still meets applicable reliability criteria

#### **More Than Sufficient MBS** *(This section to be finalized for the next CARIS cycle)*

- All viable MBS resources from the current CRP shall be considered for inclusion in the CARIS base case—unless the NYISO determines, based upon updated information, that such resource is no longer viable
- MBS resources shall be “scaled back” to a level which is the minimum to meet the Reliability Need (i.e. – to achieve a statewide LOLE of 0.1) by the following methodology:
  - Sort all MBS by size—from largest to smallest—regardless of resource type
  - Sequentially test each MBS-, one at a time for potential removal, starting from the largest and ending with the smallest. Remove from the base case if:
    - There is a surplus in the actual locational reserve and removal would not result in the locational reserve falling below the LCR
    - If the starting point is below a LCR, resources will not be added to meet that LCR. However, resources will not be removed that cause the locational reserve to fall to even lower levels.
    - Statewide LOLE requirement is still met
    - Any minimum requirements for a specific interconnection point for resources identified in the CRP to maintain transmission security requirements is met
  - 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
  - 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
  - The initial determination will be made for the horizon year (e.g. – year 10) of the analysis
  - Considering each project’s in-service date, 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, add back starting with the smallest resource removed and increment to the next largest until the above requirements are met
- Determine the minimum amount of MBS capacity needed to meet both the LCR and the statewide LOLE requirements

#### **Sufficient MBS**

- In the case that there are sufficient MBS to just meet the statewide LOLE of 0.1, all of the MBS contained in the current CRP will be included in the CARIS base case
- This situation will be determined if the removal of any single MBS will cause the statewide LOLE to exceed 0.1

#### **MBS & Regulated Solutions Required**

- In this situation, the combination of MBS and regulated solutions (whether or not yet triggered) designated in the current CRP as necessary for a reliable system over the 10-year planning horizon shall be included in the CARIS base case.

#### **No Reliability Needs**

- If the current RNA finds no reliability needs throughout the 10-year study period, the CARIS base case shall include all resources included in the current RNA base case—unless the NYISO determines, based upon updated information, that such resource is no longer viable.
- In the event that a RNA base case resource is no longer viable and this causes a violation of the statewide LOLE during the study period, generic resource amounts shall be added, in a manner similar to that used by the NYISO in the determination of compensatory MW, until the statewide LOLE meets or exceeds 0.1.

### **~~1.1.4 Additional Benefit Metrics for CARIS Studies; Methodology and Models to Develop and Implement Additional Metrics~~**

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### 2.1.2 See Attachment Y Post-CRP Reliability Issues

**Comment [d6]:** This is a new section. The language describes the process utilized in the 2013 CARIS 1 process. It needs to be vetted with ESPWG and enhanced to provide additional detail.

Given that the CARIS requires a reliable system to be in place through the study period, there may be bulk or local reliability needs that are identified in the CARIS process that were not identified in the RNA process, for example, due to updated load forecasts or newly-submitted retirement or mothball notices.

In these circumstances the NYISO will evaluate and review with the ESPWG the appropriate resource or resources to be included in the model to maintain reliability. This may entail the retention in the model of units which have submitted retirement or mothball notices. Such notices would trigger a study by the NYISO to determine whether the unit is required for system reliability. In the event that such a study determines that the unit is required and no firm plan has been submitted to address the reliability need associated with the unit retirement, the unit would be retained in the model. Similarly, if the study has not been completed at the time of the database lockdown, the unit would be retained.

### 2.1.3 Categorical Parameter Updates

**Comment [d7]:** New Section. Highlights data compiled for CARIS 1 process. Current manual does reference updating parameters for CARIS 2 studies in section 1.2.6.

The NYISO will update the CARIS production model database to reflect the most currently available data. Specifically,

- The NYISO will update a number of inputs based on the most recent NYISO Load and Capacity Data report for the New York Control Area: peak load forecast, energy forecast, generating units (accounting for additions and retirements), and generating unit capacities. The NYISO will also develop and review with ESPWG updated fuel and emissions price forecasts for both the NYCA and the neighboring control areas (i.e., PJM, IESO and ISO-NE) as appropriate.
- The NYISO will also review the most recent data publicly available to update peak load and energy forecasts for PJM, IESO and ISO-NE. The NYISO will similarly update its models of its neighbors systems to capture generator additions and retirements, and transmission system changes.
- The NYISO will update the projected flows from Hydro-Quebec based on the five-year historic average.

The NYISO will review its system model assumptions to verify that it is best capturing actual system operations to the extent feasible. Specific changes in modeling assumptions will be reviewed and discussed with the ESPWG.

Each of the key assumptions will be captured in the Assumptions Matrix (see Appendix A). the Assumptions Matrix will be reviewed and discussed with the ESPWG and modified as necessary to reflect any necessary changes or clarifications. The database will be locked down following the public posting of the NYISO Load and Capacity Data report for the current year.

### 2.1.4 **Benchmarking**

In order to assess the performance of the production cost model, the NYISO will test the model on a historic year utilizing actual data to the extent feasible. The results of this benchmarking exercise will be reviewed and discussed with ESPWG including the rationale for any deviations between the modeled outputs and the historic actual. The benchmarking metrics will include demand congestion, zonal generation, inter-control flows, and LBMPs.

One key aspect of the benchmarking exercise is the tuning of the hurdle rates which are “adders” that capture economic and non-economic factors influencing inter-control transactions and flows. There are both commitment and dispatch hurdle rates for each of the interfaces modeled in the production cost simulation. Through the benchmarking process the hurdle rates are adjusted in order to best align the modeled flows with the historic actual, real-time flows.

## 2.2 **Scenario Development**<sup>1</sup>

The NYISO will seek input from ESPWG on potential scenarios and develop a draft list of scenarios for further consideration by ESPWG. The list will be reviewed with ESPWG and finalized based on comments from ESPWG. The final list of scenarios should not exceed ten and will be modified at the NYISO’s discretion subject to schedule and resource considerations.

Scenarios could include: high / low load forecasts; high / low fuel forecasts; high / low emission cost forecasts; changes in resource mixes due to generator retirements and regulatory mandates. The NYISO will modify the Base Case data and perform production cost analyses for each of the identified scenarios. It will report back to ESPWG with the results of the analysis, specifically the projected production cost and demand congestion, and be prepared to provide the rationale for the direction and magnitude of differences between the Base Case and scenario results.

## 2.3 **Selection of CARIS Studies**

The NYISO, in conjunction with ESPWG, will select three congestion and resource integration studies to comprise each CARIS. The study selection criteria are governed by Attachment Y  
[http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf)  
Section 31.3.1.2.2—Section 31.3.1.3.5

:

<sup>1</sup> Cite Tariff section addressing scenarios. (31.3.1.5)

**Comment [d8]:** New Section elaborating on this element of this process, including hurdle rates.

**Comment [d9]:** New Section. See Section 31.3.1.5 of the OATT.

**Comment [d10]:** An existing section. For added clarity, language from Section 1.1.2 of existing Manual was merged with language from 2013 CARIS1 report.

NYISO shall assess and recommend groupings to ESPWG based on the individual rankings and proximity of congested elements. Selection of the three CARIS studies is a two-step process in which the top ranked constraints are identified and utilized for further assessment in order to identify potential for grouping of constraints. The resultant grouping of elements for each of the top ranked constraints is utilized to determine the three studies.

Step 1 of the process utilizes the historic and projected demand congestion value for each of the congested elements. The demand congestion value is calculated as the congestion component of the LBMP paid by NYCA load (sum of the total zonal loads). It is defined as the shadow price of each constrained element multiplied by the load affected.

In Step 1, the top three congested elements for the fifteen-year period (both historic (5 years) and projected (10 years)) are ranked in descending order based on the calculated present value of demand congestion for further assessment. (The discount rate to be used for the present value analysis shall be the current weighted average cost of capital for the NY Transmission Owners.) The top congested elements are then iteratively relieved independently by relaxing their limits. This is to determine if any of the congested elements need to be grouped with other elements, depending on whether new elements appear as limiting with significant congestion when a primary element is relieved.

Step 2 of the process utilizes the change in the production cost value, or production cost savings, that is attributable to the constraint or group of constraints being relieved. NYCA production cost is the total generation cost of producing power to serve NYCA load. The total 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.

In Step 2, the assessed element groupings are then ranked based upon the highest change in production cost as shown with the top 3 groupings selected to be studied.

Note that, if future system changes (e.g., generation, transmission, energy efficiency or demand side additions) produce a significant declining trend in congestion over an identified congested element in later years of the study period, such element shall be excluded from the rankings.

The NYISO shall perform these computations for each CARIS cycle, and review them with ESPWG.

#### **4.1.5.2.4 Potential Generic Solutions**

**Comment [d11]:** Existing section. Added language provides context for topic.

The next step in the CARIS Phase 1 process is to identify the specific solutions that will be studied for each of the three congested transmission elements. These solutions are then integrated into the production cost models, and the models are re-run.

The procedures for developing potential generic solutions are governed by Attachment Y [http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf) Sections 31.3.1.3.3 and 31.3.1.4

### 2.4.1 Determining Potential Solutions

~~One potential generic solution will be determined by NYISO for each resource type (generation, transmission, and demand response) for each of the three congestion studies. This will be accomplished using a cost matrix methodology. This methodology will be based on utilizing typical MW block size generic solutions, a standard set of assumptions and an order of magnitude costs for each resource type. The cost matrix will be developed during each CARIS cycle as part of the Assumptions Matrix. The NYISO will then recommend to the ESPWG the MW block size of generation, transmission and demand response capacity needed for each of the three congestion studies.~~

#### Potential Solutions Assumptions

~~The assumptions used to determine the order of magnitude costs included in the cost matrix will be stated as part of the Assumptions Matrix. These assumptions will address the following items:~~

##### Generation Resource

- ~~1. type of plant~~
- ~~2.1 length, type, voltage and ampacity of generator lead~~
- ~~3.1 substation interconnection~~
- ~~4.1 length of gas line~~
- ~~5.1 rights of way~~
- ~~6.1 permitting~~
- ~~7.1 system upgrade facilities~~
- ~~8.1 order of magnitude cost estimate.~~

**Comment [d12]:** Existing section but with significant new language to describe process for identifying the size and location of four solutions for each study.

### Transmission Resource

- ~~1. type of construction (i.e. overhead or underground)~~
- ~~2.1 voltage and ampacity capability~~
- ~~3.1 substation interconnection~~
- ~~4.1 rights of way~~
- ~~5.1 permitting~~
- ~~6.1 system upgrade facilities~~
- ~~7.1 order of magnitude cost estimate.~~

### Demand Response

- ~~1. order of magnitude cost estimate~~
- ~~2.1 zonal locations~~

### Potential Solutions Costs

~~The NYISO will provide recommended order of magnitude costs for each resource type. The costs will be developed for relevant geographic locations during each CARIS cycle. The order of magnitude costs will be provided to the ESPWG for their review and acceptance during each CARIS cycle as part of the Assumption Matrix approval process.~~

### Application of Potential Solutions

During each cycle, NYISO will develop with ESPWG specific project criteria for each resource type (generation, transmission, and demand response, and energy efficiency) including block size and construction assumptions. Following the identification of the three studies, each resource type shall be applied in year one of the planning horizon, in sufficient quantities of generic block sizes associated with each resource type and specific locations to alleviate a substantial and comparable portion of the identified congestion over the planning horizon.

One potential generic solution will be determined by NYISO for each resource type (generation, transmission, and demand response, and energy efficiency) for each of the three congestion studies. The NYISO will collaborate with the ESPWG to identify the most appropriate sizing of each solution to ensure that the solutions are evaluated on a comparable basis.

The NYISO will determine the transmission solutions for each of the studies based on its engineering judgment and in consultation with the appropriate transmission owners. The specific generation solutions will be developed based on relevant publicly available data such as engineering and cost data developed as part of the NYISO ICAP Demand Curve Reset process. These studies will inform the selection of the generic unit whose specific unit characteristics will be modeled in the product cost simulations. To determine the appropriate sizing or quantity of generic units to be sited, the NYISO will report to the ESPWG on the impact on demand congestion reduction, production cost savings and MWs (either the unit size or increase in transfer limitations across the constraint) for



various unit sizes. These comparisons will inform the decision on the sizing of the generator solutions to ensure comparability with the transmission solution.

The demand response and energy efficiency solutions will be sized in total equivalent to the increase in transfer limitations for the transmission solution. Demand response and energy efficiency will be assigned on a zonal basis in block sizes of no greater than 200 MW of peak load reduction. In order to maintain reasonableness, the quantity of MWs of demand response and energy efficiency will be limited to 10% of the zonal peak load. The DR and EE solutions will be assigned first to the zone immediately downstream of the congested element. To the extent that the total MWs for the solution exceeds the 10% limitation, the residual MWs will be assigned to zones further downstream. The energy efficiency solution will be reflected with a reduced zonal load forecast based on the peak MWs reduced and the zonal load shape; the demand response solution will be reflected with a reduced zonal load forecast for the 100 peak zonal hours.

Based on these analyses, the NYISO will then recommend to the ESPWG the MW block size of generation, transmission, and demand response, and energy efficiency capacity needed for each of the three congestion studies.

#### 2.4.2 Cost Data for Potential Solutions

The NYISO will provide recommended order of magnitude costs for each resource type. The costs will be developed for relevant geographic locations during each CARIS cycle. The order of magnitude costs will be provided to the ESPWG for their review and acceptance during each CARIS cycle as part of the Assumption Matrix approval process. The NYISO will utilize typical MW block size generic solutions and a standard set of assumptions in developing the costs for each resource type. The cost matrix will be developed during each CARIS cycle as part of the Assumptions Matrix.

If upon a cursory review of the location for the potential solution identifies unusual complexities, a contingency factor will be applied to the costs included in the matrix. These complexities may include but are not limited to right of way restrictions, terrain and/or permitting difficulties, etc. Field inspections will not be completed as part of the cursory review.

#### Potential Solutions Assumptions

The assumptions used to determine the order of magnitude costs included in the cost matrix will be stated as part of the Assumptions Matrix. These assumptions will address the following items:

##### Generation Resource

1. type of plant
2. length, type, voltage and ampacity of generator lead
3. substation interconnection
4. length of gas line

**Comment [d13]:** New section which restructures language from Section 1.1.5 of existing Manual.

- 5. rights of way
- 6. permitting
- 7. system upgrade facilities
- 8. order of magnitude cost estimate.

#### Transmission Resource

- 1. type of construction (i.e. overhead or underground)
- 2. voltage and ampacity capability
- 3. substation interconnection
- 4. rights of way
- 5. permitting
- 6. system upgrade facilities
- 7. order of magnitude cost estimate.

#### Demand Response

- 1. order of magnitude cost estimate
- 2. zonal locations

Energy Efficiency

1. order of magnitude cost estimate
2. zonal locations

**4.2.5 Benefit Metrics for CARIS Phase 21 Studies**

The Benefit Metrics provide stakeholders key information on the impact of the generic solutions on the various outputs of the production cost model. These metrics can be utilized by stakeholders in determining the overall value of the project across multiple dimensions (e.g., load payments, supplier payments, environmental).

The NYISO Tariff does define the system production cost as the primary metric in the CARIS Phase 1 process, i.e., the metric utilized in determining the benefit-cost ratios for each of the generic solutions. There are additional metrics which are calculated and presented for stakeholder information. These metrics, while they are not utilized in the benefit-cost ratio, do provide stakeholders with a wider view of the benefits attributable to the generic projects under study. Attachment Y of the OATT provides a detailed discussion of each of the CARIS metrics.

[http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf)  
Section 31.3.1.3.5.

**Comment [d14]:** Enhanced language. Section 1.2 in existing Manual simply refers reader to Attachment Y of the OATT.

**2.6 CARIS Phase 1 Report**

The CARIS Phase 1 Report informs NYISO stakeholders, including its regulators and Market Participants as well as prospective project developers, on the opportunities for mitigating system congestion through the implementation of generic solutions (i.e., generation, transmission, energy efficiency and demand response). In doing so the Report also 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.

It provides for stakeholders a comprehensive record of the CARIS process and outcomes, describing modeling assumptions, the historic and projected system congestion, the identified constrained transmission elements to be studied, proposed generic solutions, and the projected system benefits. Report appendices also include detailed tables of non-confidential model outputs for each of the solution cases and scenarios.

NYISO Staff prepares an initial draft of the Report for review by ESPWG. Comments provided by ESPWG members are incorporated and reflected in subsequent drafts in an iterative process. A final draft of the CARIS Phase 1 Report is reviewed with ESPWG and TPAS ("Transmission Planning Advisory Subcommittee") for comment before it is submitted to the Business Issues Committee ("BIC") for approval. Following action by the BIC, the Report is submitted to the Management Committee ("MC") for its approval. Following MC action, the Report is submitted to the NYISO Board of Directors ("BOD")

**Comment [d15]:** New Section. See Sections 31.3.1.6, 31.3.2.1 and 31.3.2.2 of OATT.

for its action. The BOD may opt to approve the Report as is, or provide comments to Staff requiring edits to the document. Any edits to the Report must be reviewed with the MC and any comments from the MC must be provided to the BOD prior to its final determination on the Report.

## **2.7 Public Information Session**

Following the BOD's approval of the Report, the NYISO is to report on the CARIS in an open forum for all interested parties. The NYISO's presentation provides background on the CARIS process as well as a high-level discussion of the study methodology and findings. There is an opportunity for forum participants to ask questions and to engage in a dialogue with NYISO leadership on any aspect of the study.

**Comment [d16]:** New section. See Section 31.3.2.3 of the OATT.

## **3. PHASE 2**

[Add context re: Phase 2]

### **3.1.1 Phase 2 Base Case Development**

- Explain how Phase 2 database is developed, using the most recently approved CARIS Phase 1 database, with updated discussed and agreed upon by NYISO and ESPWG.

The methodology to extend the CARIS Phase 1 database for specific project in a Phase 2 Benefit/Cost Analysis is governed by Attachment Y Section 31.5.3.3.1  
[http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf)

#### **I. Purpose**

This procedure describes the methodology to be used to develop the set of databases required for the NYISO to evaluate a regulated economic transmission project that seeks cost recovery pursuant to Section 31.5.4 of Attachment Y.

This procedure does not apply to developers or any other interested parties requesting and funding the NYISO to conduct additional congestion and resources integration studies pursuant to Section 31.3.1.2.3 of Attachment Y. The NYISO will develop assumptions used for analyzing additional studies with the requestor of the study.

#### **II. Introduction**

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 CARIS Phase 1 databases and assumption matrix will be used as the starting point for developing the databases necessary to conduct this evaluation. Certain parameters of the CARIS Phase 1 databases and assumption matrix will be updated as agreed by the NYISO, upon consultation with ESPWG, to, for example, ensure the determination of the benefits of a regulated economic project is based on current information. In order to accommodate the maximum required time period to be studied for a proposed project, the NYISO will extend the updated set of CARIS Phase 1 databases in conjunction with the ESPWG for an additional ten years.

The creation of the database for analyzing specific projects as part of the CARIS Phase 2 cycle will follow the steps noted below:

- a. Prepare assumption matrix for ESPWG review and comment.
- b. Update the assumption parameters used in the CARIS Phase 1 databases for years 1-10 as described in Section IV.A below.
- c. Extend the updated databases for years 11 through 20 as described in Section IV.B below.
- d. If the target reserve proxy as defined in Section V.2i is not met for any portion of the study period, add representative MWs as necessary as described in Section V.2ii and V.2iii below.
- e. Present the changes for both the updated and the extended databases to ESPWG for review, and comment.
- f. Upon completion of the ESPWG review, the Phase 2 base case will be presented to BIC for discussion and conceptual approval.
- g. Begin Benefit/Cost analysis as requested.

The same set of updated and extended databases will be used to analyze all proposed projects submitted within the same CARIS Phase 2 cycle. The NYISO will not change or modify the set of updated and extended databases to be used for the Phase 2 base case, except that the NYISO may modify the updated and extended databases when performing additional scenario analyses. The developer of the regulated economic transmission project being analyzed will not be able to modify the updated and extended database that has been presented by the NYISO to the ESPWG and BIC.

### III. Assumption Matrix Categories

Each parameter included in the CARIS Phase 1 assumption matrix will be updated or extended depending on their classification into one of the following categories (See Table 2 for full list of assumption parameters)

1. Trajectory Based  
to include but not limited to load forecasts and fuel forecasts
2. Discrete System Changes  
to include but not limited to installations and retirements
3. Fixed Parameters  
to include but not limited to EFORD , heat rates, emission rates, etc
4. Operating Rules/Criteria
5. Calculated Value  
to include but not limited to transfer limits and nomograms
6. Factors impacting additional benefit metrics calculations listed in Attachment Y, Section 31.5.3.3.6 and other post processing requirements  
to include but not limited to TCC ownership, bilaterals, discount rates, emissions levels and costs, etc.
7. Other

to include but not limited to long term contracts and program updates.

#### **IV. CARIS Phase 2 Assumption Matrix**

##### **A. Parameter Modifications**

The following CARIS Phase 1 assumption matrix parameters (Years 1-10) will be updated for the CARIS Phase 2 study:

##### **1. Trajectory Based**

- i. NYCA Load Forecast- based on the most recently NYISO issued Load and Capacity Data Report.
- ii. External Areas Load Forecast- based on most recent publicly available data adopted by the external area.
- iii. Fuel Forecast- based on the most current publicly available data. The fuel forecast for both NYCA and the external control areas will be updated.

##### **2. Discrete System Changes**

- i. Update the proposed in-service date for all new projects included in the database pursuant to the latest status report submitted by developers.
- ii. Remove projects that have withdrawn from the NYISO queue.
- iii. Add new projects to the database that meet the Reliability Needs Assessment inclusion rules as described in the NYISO's Comprehensive Reliability Planning Process Manual
- iv. Remove retired units and publicly announced scheduled retirements.
- v. Include any changes to external control areas that are expected to significantly impact NYCA congestion.
- vi. Target reserve proxy, as described in Section V, will be maintained.

3. Operating Rules and Criteria

- i. Incorporate any operating rules or criteria that have been implemented since the completion of CARIS Phase 1.

4. Calculated Values

- i. Parameters will be revised that are significantly impacted due to the updated changes noted above in Items IV.A 1 through 3.

5. Factors Impacting Additional Benefit Metrics

- i. Incorporate any changes that have occurred since the completion of CARIS Phase 1.

B. Data Extension

The assumption matrix parameters for the NYCA system will be extended for ten (10) additional years beyond the CSPP study period (Years 11-20) using the methodology described below.

The external control areas representation will be fixed at year ten of CARIS Phase 1 Typical imports/exports between NYISO and its neighboring control areas will be maintained throughout the study period by adjustments to hurdle rates and area average heat rates.

1. Trajectory Based

- i. Parameters will be extended utilizing the same forecast procedure as used for the most recent CRP and CARIS Phase 1.
- ii. If the data necessary to implement the required forecast procedure used for the most recent CRP and CARIS Phase 1 is not available for a portion of the database extension period, the NYISO will employ an escalation rate developed in conjunction with ESPWG.

2. Discrete System Changes

- i. Add new projects to the database that meet the Reliability Needs Assessment inclusion rules as described in the NYISO's CRPP Manual.
- ii. Remove retired units and publicly announced scheduled retirements.
- iii. Target reserve proxy, as described in Section V, will be maintained.

3. Fixed Parameters

- i. Fixed at the year ten value in the CARIS Phase 1 databases.



4. Operating Rules/Criteria
  - i. Carry forward any rules/criteria changes implemented in the Year 1-10 update. However, parameters will not be extended beyond their expiration dates.
5. Calculated Values
  - i. Fixed at the year ten value in the CARIS Phase 1 databases.
6. Factors Impacting Additional Benefit Metrics
  - i. Carry forward any changes implemented in the Year 1-10 update. However, parameters will not be extended beyond their expiration dates.
7. Other
  - i. Fixed at the year ten value in the CARIS Phase 1 databases or as appropriate depending on the parameter type.

## V. Methodology for Maintaining a Representative System

### A. Principles

The process for updating and extending the databases may affect the capacity and load equilibrium, and/or may impact the system's reliability. Therefore, the following guiding principles will be followed in order to maintain a representative system for economic study purposes throughout the study period:

- a. For security criteria, local problems will be assumed to be mitigated by local TOs.
- b. The NYCA and locational Installed Capacity Levels (ICL)<sup>2</sup> over the study term will on average reflect the excess capacity above minimum required capacity levels, as provided for in the NYISO Installed Capacity Demand Curve report.
- c. A representative generic combination of peakers and combined cycle units will be added as needed to maintain target ICL. Appropriate adjustments will be made in areas with a demonstrated favorability for renewable resources.
- d. Added generic capacity will be located at known bus locations where the model can dispatch energy without undue constraints.
- e. Added generic capacity block sizes will reflect typical known installation sizes.

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<sup>2</sup> ICL is defined as the total installed capacity in the respective control area or locality divided by its respective peak demand

f. For adequacy criteria, transfer limits calculated for year ten of the CARIS Phase 1 database(s), adjusted to capture system changes (from Section IV.A.2), will be applied.

B. Procedure:

The target reserve proxy will be the ICL for NYCA and the respective localities from the updated or extended CARIS load and capacity table for the year LOLE exceeds 0.1, plus the recommended expected percentage excess capacity as stated in the most current NYISO Installed Capacity Demand Curve report. For example, if the year in which the LOLE exceeds 0.1 the NYCA ICL is 118% and the recommended excess capacity in NYCA is 2.8%, the NYCA target reserve proxy would be 120.8%. If for the same year in which the LOLE exceeds 0.1 the ICL in Zone J is 80% and the recommended excess capacity in Zone J is 4%, then the locational target reserve proxy would be 84%.

1. If after completion of the database updates and extensions the target NYCA or locational area reserve proxy over the study period is not met, add back market-based solutions in the reverse order in which they were removed during CARIS Phase 1, if any.
2. If the target reserve proxy for either the NYCA or the respective locality is still not met after adding back all market-based solutions, then add additional resources to the respective area utilizing the following priority:
  - i. Regulated backstop solutions utilizing the smallest resources first
  - ii. Representative MW additions comprised of a combination of generic peakers and combined cycle units to achieve an expected mix of resources. Generic peakers will be modeled using representative data provided in the NYISO Installed Capacity Demand Curve report. Generic combined cycle units will be modeled based on the generic generation resource developed in CARIS Phase 1.

The NYISO in conjunction with ESPWG will review the procedure to add resources to maintain a representative system after completion of the first Phase 2 database creation and make necessary refinements.

## VI. Phase 2 Base Case Database Review

NYISO will update ESPWG on the changes incorporated to complete the update of Years 1-10 of the CARIS database(s) as well as the assumptions and changes to extend the database for Years 11-20. NYISO will post such modeling changes and assumptions on its website. Upon completion of the ESPWG review and comment, the Phase 2 base case will be presented to BIC for discussion and conceptual approval.

## Cost Allocation for Regulated Economic Transmission Projects

### 1.2.43.1.2 Cost Allocation for Regulated Economic Transmission Projects

Project Eligibility and Cost Allocation for Regulated Economic Transmission Projects is governed by Attachment Y  
[http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf)  
Sections 31.45.3.3 and 31.45.3.4

#### Timeframe for Evaluation:

- Ten-year period
- Beginning with proposed Commercial Operation (CO) date for project

#### Benefit Metric:

- Ten-year PV of NYCA-wide production cost savings
- Benefit = ten-year PV (NYCA production cost w/o project – NYCA production cost w/project)

#### Project Cost:

- Supplied by developer
- Project Cost = PV of total annual revenue requirement for first ten years from CO date

#### Eligibility Criteria:

- Benefit > Project Cost
- Both expressed in PV terms over the first ten years from CO date

#### Timeframe for Evaluation:

- ten-year period
- Beginning with proposed Commercial Operation date for project

#### Zonal Benefit Metric:

- Zonal Benefit = ten-year PV \* (net zonal LBMP load cost w/o project – net zonal LBMP load cost w/project)
- Net of reductions in TCC payments (further clarifying detail required)
- Net of bilateral contracts (further clarifying detail required)

B/C Test for Beneficiary Determination:

- Sum of Zonal Benefits for zones with load savings > Project Cost
- Expressed in PV terms over the first ten years from CO date
- If this B/C test is met, then develop the zonal cost allocation information to inform the beneficiary voting.

Non-beneficiary Zone:

- Zonal Benefit < 0
- Expressed in PV terms over the first ten years from CO date

Zonal Cost Allocation:

- Zonal Cost Allocation = Project Cost \* (zonal benefit/sum of positive zonal benefits)
- Expressed in PV terms over the first ten years from CO date

Intra-Zonal Cost Allocation:

LSE Intra-zonal Cost Allocation = Zonal Cost Allocation \* (LSE zonal MWh/total zonal MWh)

Timeframe for Evaluation:

- ~~• Ten-year period~~
- ~~• Beginning with proposed Commercial Operation (CO) date for project~~

Benefit Metric:

- ~~• Ten-year PV of NYCA-wide production cost savings~~
- ~~• Benefit = ten-year PV (NYCA production cost w/o project – NYCA production cost w/project)~~

Project Cost:

- ~~• Supplied by developer~~
- ~~• Project Cost = PV of total annual revenue requirement for first ten years from CO date~~

Eligibility Criteria:

- ~~• Benefit > Project Cost~~
- ~~• Both expressed in PV terms over the first ten years from CO date~~

Timeframe for Evaluation:

- ~~• ten-year period~~
- ~~• Beginning with proposed Commercial Operation date for project~~

Zonal Benefit Metric:

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- ~~Zonal Benefit = ten year PV \* (net zonal LBMP load cost w/o project - net zonal LBMP load cost w/project)~~
- ~~Net of reductions in TCC payments (further clarifying detail required)~~
- ~~Net of bilateral contracts (further clarifying detail required)~~

### ~~B/C Test for Beneficiary Determination:~~

- ~~Sum of Zonal Benefits for zones with load savings > Project Cost~~
- ~~Expressed in PV terms over the first ten years from CO date~~
- ~~If this B/C test is met, then develop the zonal cost allocation information to inform the beneficiary voting.~~

### ~~Non-beneficiary Zone:~~

- ~~Zonal Benefit < 0~~
- ~~Expressed in PV terms over the first ten years from CO date~~

### ~~Zonal Cost Allocation:~~

- ~~Zonal Cost Allocation = Project Cost \* (zonal benefit/sum of positive zonal benefits)~~
- ~~Expressed in PV terms over the first ten years from CO date~~

### ~~Intra-Zonal Cost Allocation:~~

- ~~LSE Intra-zonal Cost Allocation = Zonal Cost Allocation \* (LSE zonal MWh/total zonal MWh)~~

### Project Cost:

- ~~Supplied by developer~~ Supplied by developer
- Parameters used in cost allocation will follow the parameters applicable to cost recovery of a project pursuant to a regulated rate.
  - 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.
  - 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 for cost recovery purposes to ensure the continued validity of the cost benefit analysis.

### Methodology to Estimate the TCC Revenue Changes That Would Result From a Proposed Project

#### **4.2.23.1.3 ~~Methodology to Estimate the TCC Revenue Changes That Would Result From a Proposed Project~~**

The methodology to estimate the TCC revenue changes that would result from a proposed project is governed by Attachment Y [http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf) Section 31.45.3.4.2.3 and set forth in Appendix B.

**PROCEDURE FOR FORECASTING THE NET REDUCTIONS IN TCC REVENUES THAT WOULD RESULT FROM A PROPOSED PROJECT**

~~**PROCEDURE FOR FORECASTING THE NET REDUCTIONS IN TCC REVENUES THAT WOULD RESULT FROM A PROPOSED PROJECT**~~

For the purpose of determining the allocation of costs associated with a proposed project as described in Section 31.45.3.4.2 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.

**Definitions**

~~The following definitions will apply to this procedure. The following definitions will apply to this procedure.~~

Pre-CARIS Centralized TCC Auction: The last Centralized TCC Auction that had been completed as of the date the input assumptions were determined for the CARIS in which the Project was identified as a candidate for development under the provisions of this Attachment Y.

Project: The proposed transmission project for which the evaluation of the net benefits forecasted for Load in each Load Zone, as described in Section 31.45.3.4.2 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.

**Steps 1 through 6 of the Procedure**

For each Project, the ISO 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.

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

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

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- (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 ISO 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 ISO has awarded, or that the ISO 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 of 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-CARIS Centralized TCC Auction.

### **Step 3.** The ISO 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.

### **Forecasting the Allocation of TCC Auction Revenues Among the Transmission Owners**

#### **Step 4.** The ISO 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-CARIS 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 ISO 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 ISO 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-CARIS Centralized TCC Auction.

#### **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.

#### **Forecasting the Impact of the Project on TSC Offsets and the NTAC Offset**

**Step 7.** The ISO 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:



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- (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 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 ISO 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 would 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.

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

**Step 9.** The ISO 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 ISO 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.

#### **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 of 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.

#### **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.

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#### **4.2.33.1.4 Procedure for Project Cost Overruns**

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The procedure for project cost overruns is governed by Attachment Y [http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf) Section 31.45.3.4.5.3

#### **Project Cost Overruns**

The Developer is required to provide as part of the project proposal, 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:

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1. The stage of project development and the level of accuracy of the project cost estimate;
2. Required cost overruns sharing, if any, between the Developer and the LSEs benefiting from the project;
3. Required project cost increase sharing, if any, due to a force majeure between the Developer and the LSEs benefiting from the project; and
4. 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 LSE's benefiting from the project as if it was a separate project.

### **Quarterly Reporting**

Upon acceptance of the project by the LSEs benefiting from the project and the risk profile, including any cost overrun sharing between the Developer and 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
- 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 which 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).

### **4.2.43.1.5 Procedure for Regulated Economic Projects - Specific Projects Submittals**

The procedure for specific regulated economic project submittals is governed by Attachment Y  
[http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf)  
Section 31.3.2.4 and 31.45.3.3

## PROCESS

### Purpose

- This procedure describes the eligibility and informational requirements for submitting to the NYISO for evaluation a regulated economic transmission project that seeks cost recovery pursuant to Section 31.45.4 of Attachment Y.
- This procedure does not apply to developers or any other interested parties requesting and funding the NYISO to conduct additional congestion and resources integration studies pursuant to Section 31.3.1.2.3 of Attachment Y. The requirements regarding requesting additional congestion and resource integration studies are provided in Section 1.1.2 of this manual.

### Eligibility

- Any developer of a regulated economic transmission project that will interconnect with or be integrated into the existing New York State Bulk Power Transmission Facilities, who is seeking cost recovery pursuant to Section 31.45.4 of Attachment Y, may submit such proposed project for an evaluation pursuant to Section 31.45.3.3 of Attachment Y, of the project's benefits and costs over a ten-year period commencing with the commercial operation date ("Benefit/Cost Analysis"). 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.

### Timing of Requests for Benefit/Cost Analysis

- The NYISO shall, upon request and subject to resource limits, conduct a Benefit/Cost Analysis at any time during the current CARIS 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 31.45.3.6 of Attachment Y, during the current CARIS study cycle, then the developer must submit a complete "Benefit /Cost Analysis Request" and the required deposit to the NYISO.

### Request for Benefit/Cost Analysis

- Each Benefit/Cost Analysis Request submitted to the NYISO (on a request form developed by the NYISO) 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, in the performance of the Benefit/Cost Analysis.
- The developer shall also submit to the NYISO a Project Conceptual Package ("PCP") in its Benefit/Cost Analysis request.

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- A developer submitting multiple Benefit/Cost Analysis requests, must submit a separate PCP and separate deposit for each project.
- The Benefit/Cost Analysis Request and the PCP should be submitted to the NYISO utilizing the e-mail address: <mailto:CARISSpecificProject@nyiso.com>
- The type of information required in the PCP and how that information will be used is included in Table 1. This information is required in order to serve the needs of the following three entities:
  1. NYISO: In order to perform the Benefit/Cost analysis
  2. ESPWG: In order to determine scenarios that should be analyzed as part of the Benefit/Cost analysis
  3. Benefiting LSE's: In order to have sufficient information to make an informed vote.

**Table 14: PCP Information Matrix**

Project Conceptual Package Information	Required for NYISO to Perform Analysis	Required for ESPWG to Identify Scenarios	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
Risk Profile			X
Annual Revenue Requirements	X		X
Developer's Business Information			X

- The PCP shall include, but not be limited to, 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
- 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
- Transmission route plan.

4. Project Capital Costs

The developer will submit detailed capital cost estimates for each segment of the project (i.e., each substation, protection/communication systems, transmission line, system upgrades, etc.). 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
- 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;
- 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 LSE's benefiting from the project as if it was 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
- 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 5 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

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- 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.

### PCP Review and Scoping Meeting

- The NYISO shall review the developer's PCP to ensure its completeness and clear description of the project scope and costs and acknowledge receipt of the Benefit/Cost Analysis Request 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 Benefit/Cost Analysis.
- The Scoping Meeting shall be used to address any questions regarding the project description to ensure that all the technical parameters needed by the NYISO to perform the Benefit/Cost Analysis are understood.
- The base case applicable to economic projects seeking tariff recovery will be established pursuant to the procedure to update and extend the database for specific project benefit cost analysis.
- Following the Scoping Meeting, the NYISO will forward the information identified in Table 1 to the ESPWG for review and determination of the scenarios to be analyzed for the proposed project.
- Following the ESPWG meeting, the NYISO will (i) memorialize the results in writing as part of an agreement for a Benefit/Cost Analysis ("Project Analysis Agreement" developed by the NYISO) and (ii) provide the developer with the Project Analysis Agreement and a non-binding estimate of the total costs.
- The Project Analysis 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 Project Analysis Agreement will also contain payment terms and conditions.
- The Project Analysis 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 Benefit/Cost Analysis. 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.

#### Completion and Delivery of Results

- The NYISO will process the Benefit/Cost Analysis requests in the order in which they are received. A Benefit/Cost Analysis 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 Benefit/Cost Analysis 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 Benefit/Cost Analysis will be completed.
- Upon completion of the analysis, the NYISO will provide the Benefit/Cost Analysis results 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 Benefit/Cost Analysis and from any requested modifications to the Benefit/Cost Analysis.
- The NYISO will provide the “Final Invoice” to the developer to cover all reasonable costs the NYISO incurred in the performance of the Benefit/Cost Analysis that have not yet been paid by the developer.

#### Withdrawal of Request

- The developer may withdraw its Benefit/Cost Analysis Request 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 Benefit/Cost Analysis.
- The developer shall reimburse the NYISO for all reasonable expenses incurred prior to the receipt of the withdrawal notice. NYISO will refund any portion of the deposit that has not been used for the Benefit/Cost Analysis prior to receipt of the withdrawal notice to the developer, if applicable.
- Following reimbursement (refund), the NYISO will forward the completed results, if any, of the Benefit/Cost Analysis work completed prior to the withdrawal date to the developer.

#### Disclosure of Benefit/Cost Results

- In the event that the Benefit/Cost Analysis finds that a project is eligible for cost allocation and recovery under Section 3.5.4 of Attachment Y (as such eligibility is defined by Section 31.5.3.3.5), and the developer ~~decides to seek~~ seeks cost recovery pursuant to 31.45.4 of Attachment Y, then the results of the Benefit/Cost Analysis shall be posted on the NYISO website.
- In the event that the Benefit/Cost Analysis finds that a project is not eligible for cost allocation and recovery under Section 3.5.4 of Attachment Y (as such eligibility is defined by Section 31.5.3.3.5), the developer's Benefit/Cost Analysis Request will be deemed withdrawn.
- In the event that the developer either (1) withdraws its Benefit/Cost Analysis Request in accordance with the foregoing section or (2) ~~decides not to seek cost recovery for its regulated economic transmission project pursuant to Section 31.4.4 of Attachment~~

~~¶~~the developer's Benefit/Cost Analysis Request is deemed withdrawn pursuant to this section, then the results of the Benefit/Cost Analysis shall not be disclosed or posted on the NYISO website.

### ~~4.2.53.1.6~~ Voting Procedure for Regulated Economic Transmission Projects

The voting procedure for regulated economic transmission projects is governed by Attachment Y

[http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf)

Sections 31.45.3.5 and 31.45.3.6

#### Procedure:

- Specific List of Voting Beneficiaries: The NYISO staff will develop the specific list of voting entities pursuant to Section 31.45.3.4 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 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 defined in Regulated Economic Projects Specific Project Submittals Procedure. 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 31.45.3.6 of Attachment Y.

Procedure:

- 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 31.45.3.4.2.
- Zonal benefit, zonal cost allocation, and other terms and formulas related to this procedure are discussed in the procedures for Sections 31.45.3.4.2 (calculation of Zonal Benefit), 31.45.3.4.3 (addressing load zones not benefiting from a proposed project) and 31.45.3.4.4 (allocation of project costs to the load).
- Weighted zonal voting share of each LSE =  $(\text{Zonal Benefits} / \text{Total Zonal Benefits for zones with positive net benefits}) * (\text{LSE Zonal MWh} / \text{Total Zonal MWh})$ .
  - Both the LSE Zonal MWh and the Total Zonal MWh are the same as those used for the allocation of the project costs to the beneficiaries performed pursuant to Section 31.45.3.4.4. The project costs to benefiting LSEs within the beneficiary zones will be allocated in accordance with the prescribed rate schedule based on the then-current monthly load ratio shares for the billing months in which costs are being recovered.
- 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.

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- 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.

Methodology for calculation of LSE Zonal MWh load data:

- Data source - 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 of 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.
- 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 their 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 procedure provided herein of their updated voting shares at least five business days before the date of the vote.
- 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 CARIS voting process.

For a regulated economic transmission project to have its cost allocated under Section 31.45.3.6.3, eighty (80) percent or more of the actual votes cast on a weighted basis must be cast in favor of implementing the project.



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### Procedure:

- Voting Metrics: sum of total voting shares cast in favor/sum of all total voting shares cast (either in favor or against) greater than or equal to 0.80. 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 31.45.3.6.5.

### Procedure:

- 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 NYISO staff, will send voting materials related to the particular project by electronic mail directed to the Customer 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 Regulated Economic Projects Specific Project Submittals Procedure, 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 NYISO staff, 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 staff 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.

- NYISO staff 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.

*Methodology to Extend Database*

## **4. ADDITIONAL CARIS STUDIES**

### **4.2.6 – The process for Specific Project Benefit/Cost Analysis**

*The methodology to extend the database for specific project benefit/cost analysis* **Additional CARIS Studies** is governed by Attachment Y *Section 31.4.3.3.1* [http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf)

#### ***Purpose***

*This procedure describes the methodology to be used to develop the set of databases required for the NYISO to evaluate a regulated economic transmission project that seeks cost recovery pursuant to Section* Sections 31.3.1.2.3 and 31.3.1.2.4

#### **Applicability**

- To requests for additional congestion and resource integration studies (“Additional CARIS Studies”) pursuant to Attachment Y of the NYISO OATT
- Not Applicable to:
  - Requests for firm point-to-point transmission service under Section 3.7 of the NYISO OATT;
  - Requests for firm Network Integration Transmission Service pursuant to Section 4.5 of the NYISO OATT;
  - Interconnection requests under Attachment X, Z or S of the NYISO OATT;
  - Requests for evaluation of projects as potential reliability solutions to an identified Reliability Need.

#### **Eligibility**

- Any NYISO Market Participant or other interested party (“Requestor”) is eligible to request Additional CARIS Studies.
- Requestor is responsible for all reasonable actual costs incurred by the NYISO for Additional CARIS Studies. Such costs may include the use of contractors/consultants assistance at the NYISO’s discretion, and costs that TOs may incur to supply study-related data when requested to do so by the NYISO.

#### **Posting of Requests for Additional CARIS Studies**

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- NYISO will post the requests for Additional CARIS Studies on its Website.
- Postings shall include a general description of the study requests, the date of receipt, and the identity of the Requestor.
- Provision shall be made to allow combination/cost sharing of identical/similar or overlapping study requests from different parties if the parties agree.
- Results of these Additional CARIS Studies will be treated as Confidential Information under Attachment F to the OATT:
  - However, if a Requestor should seek regulated cost recovery under the NYISO OATT, Attachment Y, Section 31.4.3.3 and the approved procedures for Regulated Economic Projects – Specific Project Submittals, the Requestor may elect to post results of its Additional CARIS Studies on the NYISO website at that time;
  - If the Requestor elects to post the results of Additional CARIS Studies, the posting will note whether the database and base case assumptions (collectively “Study Assumptions”) used in the study are different from the Study Assumptions that are required for seeking regulated cost recovery under the CARIS Phase 2.

### Timing of Requests for Additional CARIS Studies

- The NYISO shall, upon request, subject to resource limits, conduct an Additional CARIS Study at any time during the year.
  - The NYISO will accommodate all study requests to the extent reasonable and practicable, subject to resource limitations.
- The Additional CARIS Study shall use the database and base case assumptions in the scope agreed upon by the Requestor and the NYISO.

### Request for Additional CARIS Studies

- Requestor shall submit a “Request for Additional CARIS Study” using a form developed by the NYISO which requires specific information needed to conduct the study.
- Each study request must be accompanied by a refundable deposit of \$25,000, which deposit shall be applied toward the reasonable actual costs incurred by the NYISO, and its contractors, in the performance of the study.
- Multiple study requests involving diverse locations system shall each be required to submit a separate request and a separate deposit.

### Scoping Meeting

- NYISO shall acknowledge receipt of the Request for Additional CARIS Study within ten (10) business days of receipt and shall inform Requestor whether its request is complete in the judgment of the NYISO. If not complete, the NYISO will request additional information.

- Following the receipt of a complete Request for Additional CARIS Study, the NYISO shall establish with Requestor a mutually agreeable time for a Scoping Meeting.
- The Scoping Meeting shall be used to determine the nature of the study to be conducted, including any customization that the Requestor may desire for its study, such as:
  - Additional metrics for measuring congestion and the benefits of relieving that congestion.
  - Additional scenarios and the assumptions to be used for each.
  - Whether the Requestor wants the NYISO to analyze potential transmission, generation and/or demand response solutions, and the characteristics of those solutions.
  - Degree of certainty requested for the solution cost estimates.
- Following the Scoping Meeting, the NYISO will memorialize the results in writing as part of a Study Agreement for an Additional CARIS Study (developed by the NYISO) to be provided to the Requestor along with a non-binding estimate of the total study costs.
  - The Study 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 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 before the NYISO conducts any study work.
  - If Requestor modifies the scope of the Additional CARIS Study as initially specified, and does so in such a way as to increase the estimated total cost of the Additional CARIS Study, the NYISO may request, and the Requestor shall pay, an additional deposit to reflect that cost increase, which the NYISO shall also apply to the actual cost of the Additional CARIS Study.

#### **Completion and Delivery of Study Results**

- The NYISO will process the Additional CARIS Studies in the order in which they are received. A study will be deemed received by the NYISO on the date the NYISO receives the completed study request form and acceptable deposit.
- The NYISO will use reasonable efforts to complete each Additional CARIS Study 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 Additional CARIS Study 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.

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- 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.

### 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 immediately terminate any further study work.
- Requestor shall reimburse the NYISO for all reasonable expenses incurred prior to the receipt of the withdrawal notice. NYISO will refund any unpaid deposit funds to the Requestor, if applicable.
- ~~Following reimbursement (refund), the NYISO will forward the results of any study work completed prior to the withdrawal date to the Requestor. 4.4 of Attachment Y.~~

~~This procedure does not apply to developers or any other interested parties requesting and funding the NYISO to conduct additional congestion and resources integration studies pursuant to Section 31.3.1.2.3 of Attachment Y. The NYISO will develop assumptions used for analyzing additional studies with the requestor of the study.~~

### II.I.—Introduction

~~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 CARIS Phase 1 databases and assumption matrix will be used as the starting point for developing the databases necessary to conduct this evaluation. *Certain parameters of the CARIS Phase 1 databases and assumption matrix will be updated to ensure the determination of the benefits of a regulated economic project is based on current information.* In order to accommodate the maximum required time period to be studied for a proposed project, the NYISO will extend the updated set of CARIS Phase 1 databases in conjunction with the ESPWG for an additional ten years.~~

~~The creation of the database for analyzing specific projects as part of the CARIS Phase 2 cycle will follow the steps noted below:~~

- ~~a. Prepare assumption matrix for ESPWG review and comment.~~
- ~~b. a. Update the assumption parameters used in the CARIS Phase 1 databases for years 1-10 as described in Section IV.A below.~~
- ~~e. a. Extend the updated databases for years 11 through 20 as described in Section IV.B below.~~

- ~~d.a. If the target reserve proxy as defined in Section V.2i is not met for any portion of the study period, add representative MWs as necessary as described in Section V.2ii and V.2iii below.~~
- ~~e.a. Present the changes for both the updated and the extended databases to ESPWG for review, and comment.~~
- ~~f.a. Upon completion of the ESPWG review, the Phase 2 base case will be presented to BIC for discussion and conceptual approval.~~
- ~~g.a. Begin Benefit/Cost analysis as requested.~~

~~The same set of updated and extended databases will be used to analyze all proposed projects submitted within the same CARIS Phase 2 cycle. The NYISO will not change or modify the set of updated and extended databases to be used for the Phase 2 base case, except that the NYISO may modify the updated and extended databases when performing additional scenario analyses. The developer of the regulated economic transmission project being analyzed will not be able to modify the updated and extended database that has been presented by the NYISO to the ESPWG and BIC.~~

### ~~III.I. Assumption Matrix Categories~~

~~Each parameter included in the CARIS Phase 1 assumption matrix will be updated or extended depending on their classification into one of the following categories (See Table 2 for full list of assumption parameters)~~

- ~~1. Trajectory Based~~  
to include but not limited to load forecasts and fuel forecasts
- ~~2.1. Discrete System Changes~~  
to include but not limited to installations and retirements
- ~~3.1. Fixed Parameters~~  
to include but not limited to EFORd, heat rates, emission rates, etc
- ~~4.1. Operating Rules/Criteria~~
- ~~5.1. Calculated Value~~  
to include but not limited to transfer limits and nomograms
- ~~6.1. Factors impacting additional benefit metrics calculations listed in Attachment Y, Section 21.4.3.3.6 and other post-processing requirements~~  
to include but not limited to TCC ownership, bilaterals, discount rates, emissions levels and costs, etc.
- ~~7.1. Other~~  
to include but not limited to long term contracts and program updates.

### ~~IV.I. CARIS Phase 2 Assumption Matrix~~

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### ~~A. Parameter Modifications~~

~~The following CARIS Phase 1 assumption matrix parameters (Years 1-10) will be updated for the CARIS Phase 2 study:~~

#### ~~1. Trajectory Based~~

- ~~i. NYCA Load Forecast based on the most recently NYISO issued Load and Capacity Data Report.~~
- ~~ii.i. External Areas Load Forecast based on most recent publicly available data adopted by the external area.~~
- ~~iii.i. Fuel Forecast based on the most current publicly available data. The fuel forecast for both NYCA and the external control areas will be updated.~~

#### ~~2.1. Discrete System Changes~~

- ~~i. Update the proposed in service date for all new projects included in the database pursuant to the latest status report submitted by developers.~~
- ~~ii.i. Remove projects that have withdrawn from the NYISO queue.~~
- ~~iii.i. Add new projects to the database that meet the Reliability Needs Assessment inclusion rules as described in the NYISO's Comprehensive Reliability Planning Process Manual~~
- ~~iv.i. Remove retired units and publicly announced scheduled retirements.~~
- ~~v.i. Include any changes to external control areas that are expected to significantly impact NYCA congestion.~~
- ~~vi.i. Target reserve proxy, as described in Section V, will be maintained.~~

~~3.1. Operating Rules and Criteria~~

- ~~i. Incorporate any operating rules or criteria that have been implemented since the completion of CARIS Phase 1.~~

~~4.1. Calculated Values~~

- ~~i. Parameters will be revised that are significantly impacted due to the updated changes noted above in Items IV.A.1 through 3.~~

~~5.1. Factors Impacting Additional Benefit Metrics~~

- ~~i. Incorporate any changes that have occurred since the completion of CARIS Phase 1.~~

~~B.A. Data Extension~~

~~The assumption matrix parameters for the NYCA system will be extended for ten (10) additional years beyond the CSPP study period (Years 11-20) using the methodology described below.~~

~~The external control areas representation will be fixed at year ten of CARIS Phase 1. Typical imports/exports between NYISO and its neighboring control areas will be maintained throughout the study period by adjustments to hurdle rates and area average heat rates.~~

~~1. Trajectory Based~~

- ~~i. Parameters will be extended utilizing the same forecast procedure as used for the most recent CRP and CARIS Phase 1.~~

~~ii.i. If the data necessary to implement the required forecast procedure used for the most recent CRP and CARIS Phase 1 is not available for a portion of the database extension period, the NYISO will employ an escalation rate developed in conjunction with ESPWG.~~

~~2.1. Discrete System Changes~~

- ~~i. Add new projects to the database that meet the Reliability Needs Assessment inclusion rules as described in the NYISO's CRPP Manual.~~

~~ii.i. Remove retired units and publicly announced scheduled retirements.~~

~~iii.i. Target reserve proxy, as described in Section V, will be maintained.~~

~~3.1. Fixed Parameters~~

- ~~i. Fixed at the year ten value in the CARIS Phase 1 databases.~~



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### ~~4.1. Operating Rules/Criteria~~

- ~~i. Carry forward any rules/criteria changes implemented in the Year 1-10 update. However, parameters will not be extended beyond their expiration dates.~~

### ~~5.1. Calculated Values~~

- ~~i. Fixed at the year ten value in the CARIS Phase 1 databases.~~

### ~~6.1. Factors Impacting Additional Benefit Metrics~~

- ~~i. Carry forward any changes implemented in the Year 1-10 update. However, parameters will not be extended beyond their expiration dates.~~

### ~~7.1. Other~~

- ~~i. Fixed at the year ten value in the CARIS Phase 1 databases or as appropriate depending on the parameter type.~~

## ~~V.I. Methodology for Maintaining a Representative System~~

### ~~A. Principles~~

~~The process for updating and extending the databases may affect the capacity and load equilibrium, and/or may impact the system's reliability. Therefore, the following guiding principles will be followed in order to maintain a representative system for economic study purposes throughout the study period:~~

- ~~a. For security criteria, local problems will be assumed to be mitigated by local TOs.~~
- ~~b.a. The NYCA and locational Installed Capacity Levels (ICL)<sup>3</sup> over the study term will on average reflect the excess capacity above minimum required capacity levels, as provided for in the NYISO Installed Capacity Demand Curve report.~~
- ~~e.a. A representative generic combination of peakers and combined cycle units will be added as needed to maintain target ICL. Appropriate adjustments will be made in areas with a demonstrated favorability for renewable resources.~~
- ~~d.a. Added generic capacity will be located at known bus locations where the model can dispatch energy without undue constraints.~~
- ~~e.a. Added generic capacity block sizes will reflect typical known installation sizes.~~

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<sup>3</sup> ICL is defined as the total installed capacity in the respective control area or locality divided by its respective peak demand

~~f.a. For adequacy criteria, transfer limits calculated for year ten of the CARIS Phase 1 database(s), adjusted to capture system changes (from Section IV.A.2), will be applied.~~

~~B.A. Procedure:~~

~~The target reserve proxy will be the ICL for NYCA and the respective localities from the updated or extended CARIS load and capacity table for the year LOLE exceeds 0.1, plus the recommended expected percentage excess capacity as stated in the most current NYISO Installed Capacity Demand Curve report. For example, if the year in which the LOLE exceeds 0.1 the NYCA ICL is 118% and the recommended excess capacity in NYCA is 2.8%, the NYCA target reserve proxy would be 120.8%. If for the same year in which the LOLE exceeds 0.1 the ICL in Zone J is 80% and the recommended excess capacity in Zone J is 4%, then the locational target reserve proxy would be 84%.~~

- ~~1. If after completion of the database updates and extensions the target NYCA or locational area reserve proxy over the study period is not met, add back market-based solutions in the reverse order in which they were removed during CARIS Phase 1, if any.~~
- ~~2.1. If the target reserve proxy for either the NYCA or the respective locality is still not met after adding back all market-based solutions, then add additional resources to the respective area utilizing the following priority:~~
  - ~~i. Regulated backstop solutions utilizing the smallest resources first~~
  - ~~ii. i. Representative MW additions comprised of a combination of generic peakers and combined cycle units to achieve an expected mix of resources. Generic peakers will be modeled using representative data provided in the NYISO Installed Capacity Demand Curve report. Generic combined cycle units will be modeled based on the generic generation resource developed in CARIS Phase 1.~~

~~The NYISO in conjunction with ESPWG will review the procedure to add resources to maintain a representative system after completion of the first Phase 2 database creation and make necessary refinements.~~

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**VI.I. Phase 2 Base Case Database Review**

~~NYISO will update ESPWG on the changes incorporated to complete the update of Years 1-10 of the CARIS database(s) as well as the assumptions and changes to extend the database for Years 11-20. NYISO will post such modeling changes and assumptions on its website. Upon completion of the ESPWG review and comment, the Phase 2 base case will be presented to BIC for discussion and conceptual approval.~~

Appendix A. **Table 2: Typical CARIS Base Case Assumptions Matrix**

**Assumption Parameters Category**

<b>Parameter</b>	<b>Modeling for CARIS Base Cases</b>	<b>Basis for Recommended Assumptions for CARIS</b>	<b>Category</b>
<b>Peak Load</b>	Forecast as per <del>XXXX RNA Base Case</del> . <del>Scenarios for other forecasts.</del>	Based on CRP Peak Forecast Use <del>XXXX Base Case Energy Forecast</del>	Trajectory
<b>Load Shape Model</b>	<del>XXXX Load Shape, constant over ten year period.</del>	<del>XXXX load shape is an appropriate representation for this analysis. For base year, use XXXX Load Shape.</del>	Fixed
<b>Energy Forecast</b>	<del>XXXX RNA Base Case Forecast</del>	Adjusted for Energy Forecast if needed. Evaluate alternative in future	Trajectory
<b>Load Uncertainty Model</b>	Statewide and zonal model updated to reflect current data., constant over ten year period	Base Level Forecast will be used. Other load uncertainty levels not evaluated.	Fixed
<b>Generating Unit Capacities</b>	Same as CRP— Per <del>XXXX CRP</del> , updated DMNC test values plus units	Any changes in CRP capacities through time to be represented in <del>CARIS.</del>	Fixed
<b>New Units</b>	As per the CRP and scaled back according to procedure (Tariff Attachment Y, Section 31.3.1.3.2)	N/A	Discrete System Change
<b>Wind Resource Modeling</b>	Existing units derived from hourly wind data with average Summer Peak Hour capacity factor of approximately 11%. New units from wind shapes from wind study.	Typical shape for location as per MARS and wind studies.	Fixed
<b>Non-NYPA Hydro Capacity Modeling</b>	Pondage Run of River(Hourly)	N/A	Fixed
<i>Special Case Resources</i>	<i>Those sold for the program, discounted to historic availability and distributed according to zonal performance.</i>	<i>N/A</i>	<i>Fixed</i>

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	<i>Assume 15% growth rate for all zones. Modify load SCR/EOP to proportion available SCR by load amount by zone. See SCR determinations in Attachment G.</i>		
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<b>EDRP Resources</b>	Those registered for the program, discounted to historic availability (45% overall). July & August values calculated from XXXX July and August registrations.	Need to define costs associated, firm modifiers vs. price responsive.	Fixed
<b>External Capacity Purchases</b>	Based on NYISO forecast.	N/A	Other
<b>Retirements</b>	XXXX Gold Book over ten year period.	As per the CRP.	Discrete System Change
<b>Planned Outages</b>	Per XXXX CRP, based on schedules received by NYISO & adjusted for history, constant over ten year period.	As per the CRP.	Fixed
<b>Outage Scheduling</b>	Continue with approximately XXXX MW after reviewing last year's data.	As per the maintenance schedules in long term adequacy studies.	Fixed
<b>Gas Turbines Ambient Derate</b>	Continue with approximately XXXX MW after reviewing last year's data, constant over ten year period.	Reflected only in summer/winter ratings.	Fixed
<b>Environmental Modeling Externalities Allowances</b>	Included in the Base Case and modified in the scenarios  Built into the development of cost curves of resources. Optimization is cost driven.	Any impacts assumed in CRP carried forward.  Limits on emissions done through allowances, not hard limits.  Allowance cost from Chicago Climate Futures Exchange.	Fixed
<b>Commitment and Dispatch Options Operating Reserves</b>	Each Balancing Authority Commits separately Hurdle Rates are employed for commitment and dispatch. Operating Reserves as per NYCA requirements.	N/A	Other
<b>Fuel Price Forecast</b>	EIA data obtained quarterly, adjusted for seasonality on monthly basis, monthly volatility based on historical patterns.	NYISO to calibrate forecast based on public information and historical data.	Trajectory
<b>Cost Curve Development</b>	Developed from Heat Rate Curve, Fuel Price forecast, environmental adders, penalty factors.	Allowances from Chicago Climate Futures Exchange, Heat Rate development under discussion. Unit specific heat rates are confidential and not disclosed.	Other
<b>Heat Rates</b>	Developed from vendor supplied		Fixed

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NYCA External Systems	data and fuel input data matched with MWh data for NYCA.		
Local Reliability Rules	List and develop appropriate nomograms.	Fuel burn restrictions, operating restrictions and exceptions, commitment/dispatch limits.	Operating Rules/Criteria
Energy Storage Gilboa PSH Lewiston PSH	Gilboa and Lewiston scheduled against NYCA.	N/A	Other
Transmission System Model			
Power Flow Cases	As per CRP.	N/A	
Interface Limits Monitored/contingency pairs Nomograms Joint Grouping Unit Sensitive Voltage	Transfer limit analysis done in RNA/CRP for critical interfaces. External system limits from input from neighboring systems.	Based on historical congestion, planning study results, NERC book of flowgates, PROBE/SCUC list of active/potential constraints, Special Protections Systems	Calculated
New Transmission Capability	As per CRP.	N/A	Discrete System Change
Internal Controllable Lines (PARs, DC, VFT)	Optimized in simulation.	N/A	Other
Neighboring Systems			
Outside World Area Models Fuel Forecast	Power flow data from CRP, "production" data developed by NYISO with vendor and neighbor input. Linked with NYCA forecast.	N/A	Trajectory
External Capacity Load Forecast	Firm and grandfathered are included.  Neighboring systems data reviewed and held at required reserve margin.	Neighboring systems modeled consistent with reserve margins in the RNA/CRP analysis.	Discrete System Change  Trajectory
System representation in Simulation	HQ modeled as load/generation pair. Full Representation/Participation —— NYISO —— NE-ISO —— IESO —— PJM Classic & Full Representation: NYISO, NE-ISO, IESO, PJM (PJM Classic).	N/A	Fixed

	<del>AP, AEP, CE, DLCO, DAY, VP)</del> <del>Proxy Bus:</del> <del>HQ NYISO, HQ NEISO</del> <del>Transmission Only/Zeroed Out:</del> <del>MECS, FE, SPP, MAR,</del> <del>NIPS, OVEC, TVA,</del> <del>FRCC, SERC, ERCOT, WECC</del>		
<b>External Controllable Lines (PARs, DC, VET, Radial lines)</b>	<del>A, B, C and J, K "wheel"</del> <del>Both sets set at XXXX min,</del> <del>±200 max, imbalance monitored</del> <del>Ramapo +/- XXXX MW</del> <del>Norwalk +/- XXXX MW</del> <del>L33,34 +/- XXXX MW</del> <del>PV20 - XXXX MW</del> <del>Neptune and CSC as per CRP</del> <del>firm X 24 hrs, economy remainder</del>	N/A	Other

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## 4.2.7**5**. PROCEDURE FOR STUDY REPLICATION

The procedure for study replication is governed by Attachment Y [http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt\\_attachments/att\\_y.pdf](http://www.nyiso.com/public/webdocs/documents/tariffs/oatt/oatt_attachments/att_y.pdf) Sections 31.2.3.1, 31.2.6.1, 31.3.2.1, and 31.4**5**.3.5.1

### 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) CARIS Phase 1, and (4) CARIS Phase 2.
- 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

- 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.
- NYISO will ensure 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 a form developed by the NYISO 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 (developed by the NYISO) that will be provided to the Requestor along with a non-binding estimate of the total study costs.
  - The Scope of 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, 31.2.6.1, 31.3.2.1 and/or 31.45.3.5 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.

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- 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. NYISO will refund any unpaid deposit funds to the Requestor, if applicable.







A  
Appendix A. Typical CARIS Base Case Assumptions Matrix

Assumption Parameters Category

<u>Parameter</u>	<u>Modeling for CARIS Base Cases</u>	<u>Basis for Recommended Assumptions for CARIS</u>	<u>Category</u>
<u>Peak Load</u>	<u>Forecast as per XXXX RNA Base. Scenarios for other forecasts.</u>	<u>Based on CRP Peak Forecast Use XXXX Base Case Energy Forecast</u>	<u>Trajectory</u>
<u>Load Shape Model</u>  <u>Energy Forecast</u>	<u>XXXX Load Shape, constant over ten year period.</u>  <u>XXXX RNA Base Case Forecast</u>	<u>XXXX load shape is an appropriate representation for this analysis. For base year, use XXXX Load Shape. Adjusted for Energy Forecast if needed. Evaluate alternative in future</u>	<u>Fixed</u>  <u>Trajectory</u>
<u>Load Uncertainty Model</u>	<u>Statewide and zonal model updated to reflect current data., constant over ten year period</u>	<u>Base Level Forecast will be used. Other load uncertainty levels not evaluated.</u>	<u>Fixed</u>
<u>Generating Unit Capacities</u>	<u>Same as CRP - Per XXXX CRP, updated DMNC test values plus units</u>	<u>Any changes in CRP capacities through time to be represented in CARIS.</u>	<u>Fixed</u>
<u>New Units</u>	<u>As per the CRP and scaled back according to procedure (Tariff Attachment Y, Section 31.3.1.3.2)</u>	<u>N/A</u>	<u>Discrete System Change</u>
<u>Wind Resource Modeling</u>	<u>Existing units derived from hourly wind data with average Summer Peak Hour capacity factor of approximately 11 %. New units from wind shapes from wind study.</u>	<u>Typical shape for location as per MARS and wind studies.</u>	<u>Fixed</u>
<u>Non-NYPA Hydro Capacity Modeling</u>	<u>Pondage</u> <u>Run of River(Hourly)</u>	<u>N/A</u>	<u>Fixed</u>
<u>Special Case Resources</u>	<u>Those sold for the program, discounted to historic availability and distributed according to zonal performance. Assume 15% growth rate for all zones. Modify load SCR/EOP to proportion available SCR by</u>	<u>N/A</u>	<u>Fixed</u>

	<u>load amount by zone. See SCR determinations in Attachment G.</u>		
<u>EDRP Resources</u>	<u>Those registered for the program, discounted to historic availability (45 % overall). July &amp; August values calculated from XXXX July and August registrations.</u>	<u>Need to define costs associated, firm modifiers vs. price responsive.</u>	<u>Fixed</u>
<u>External Capacity – Purchases</u>	<u>Based on NYISO forecast.</u>	<u>N/A</u>	<u>Other</u>
<u>Retirements</u>	<u>XXXX Gold Book over ten year period.</u>	<u>As per the CRP.</u>	<u>Discrete System Change</u>
<u>Planned Outages</u>	<u>Per XXXX CRP, based on schedules received by NYISO &amp; adjusted for history, constant over ten year period.</u>	<u>As per the CRP.</u>	<u>Fixed</u>
<u>Outage Scheduling</u>	<u>Continue with approximately XXXX MW after reviewing last year's data...</u>	<u>As per the maintenance schedules in long term adequacy studies.</u>	<u>Fixed</u>
<u>Gas Turbines Ambient Derate</u>	<u>Continue with approximately XXXX MW after reviewing last year's data, constant over ten year period.</u>	<u>Reflected only in summer/winter ratings.</u>	<u>Fixed</u>
<u>Environmental Modeling</u> <u>Externalities</u> <u>Allowances</u>	<u>Included in the Base Case and modified in the scenarios</u>  <u>Built into the development of cost curves of resources. Optimization is cost driven.</u>	<u>Any impacts assumed in CRP carried forward.</u>  <u>Limits on emissions done through allowances, not hard limits.</u>  <u>Allowance cost from Chicago Climate Futures Exchange.</u>	<u>Fixed</u>
<u>Commitment and Dispatch Options</u> <u>Operating Reserves</u>	<u>Each Balancing Authority Commits separately Hurdle Rates are employed for commitment and dispatch... Operating Reserves as per NYCA requirements.</u>	<u>N/A</u>	<u>Other</u>
<u>Fuel Price Forecast</u>	<u>EIA data obtained quarterly, adjusted for seasonality on monthly basis, monthly volatility based on historical patterns.</u>	<u>NYISO to calibrate forecast based on public information and historical data.</u>	<u>Trajectory</u>
<u>Cost Curve Development</u>	<u>Developed from Heat Rate Curve, Fuel Price forecast, environmental adders, penalty factors.</u>	<u>Allowances from Chicago Climate Futures Exchange. Heat Rate development under discussion. Unit specific heat rates are confidential and not disclosed.</u>	<u>Other</u>
<u>Heat Rates</u>	<u>Developed from vendor supplied</u>		<u>Fixed</u>



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<u>NYCA External Systems</u>	<u>data and fuel input data matched with MWh data for NYCA.</u>		
<u>Local Reliability Rules</u>	<u>List and develop appropriate nomograms.</u>	<u>Fuel burn restrictions, operating restrictions and exceptions, commitment/dispatch limits.</u>	<u>Operating Rules/Criteria</u>
<u>Energy Storage Gilboa PSH Lewiston PSH</u>	<u>Gilboa and Lewiston scheduled against NYCA.</u>	<u>N/A</u>	<u>Other</u>
<u>Transmission System Model</u>			
<u>Power Flow Cases</u>	<u>As per CRP.</u>	<u>N/A</u>	
<u>Interface Limits</u> <u>Monitored/contingency pairs</u>  <u>Nomograms</u> <u>Joint, Grouping</u> <u>Unit Sensitive Voltage</u>	<u>Transfer limit analysis done in RNA/CRP for critical interfaces. External system limits from input from neighboring systems.</u>	<u>Based on historical congestion, planning study results, NERC book of flowgates, PROBE/SCUC list of active/potential constraints, Special Protections Systems</u>	<u>Calculated</u>
<u>New Transmission Capability</u>	<u>As per CRP.</u>	<u>N/A</u>	<u>Discrete System Change</u>
<u>Internal Controllable Lines (PARs,DC,VFT)</u>	<u>Optimized in simulation.</u>	<u>N/A</u>	<u>Other</u>
<u>Neighboring Systems</u>			
<u>Outside World Area Models</u> <u>Fuel Forecast</u>	<u>Power flow data from CRP, "production" data developed by NYISO with vendor and neighbor input. Linked with NYCA forecast.</u>	<u>N/A</u>	<u>Trajectory</u>
<u>External Capacity</u> <u>Load Forecast</u>	<u>Firm and grandfathered are included.</u>  <u>Neighboring systems data reviewed and held at required reserve margin.</u>	<u>Neighboring systems modeled consistent with reserve margins in the RNA/CRP analysis.</u>	<u>Discrete System Change</u>  <u>Trajectory</u>
<u>System representation in Simulation</u>	<u>HQ modeled as load/generation pair.</u> <u>Full Representation/Participation</u> <u>- NYISO</u> <u>- NE-ISO</u> <u>- IESO</u> <u>- PJM Classic &amp; Full Representation:</u> <u>NYISO,NEISO,IESO,PJM (PJM Classic,</u> <u>AP,AEP,CE,DLCO,DAY,VP)</u> <u>Proxy Bus;</u>	<u>N/A</u>	<u>Fixed</u>

	<u>HQ-NYISO, HQ-NEISO</u> <u>Transmission Only/Zeroed Out:</u> <u>MECS,FE,SPP, MAR,</u> <u>NIPS,OVEC,TVA,</u> <u>FRCC,SERC,ERCOT,WECC</u>		
<u>External Controllable Lines</u> <u>(PARs,DC,VFT, Radial lines)</u>	<u>A,B,C and J,K “wheel”</u> <u>Both sets set at XXXX min,</u> <u>1200 max, imbalance monitored</u> <u>Ramapo +/- XXXX MW</u> <u>Norwalk +/- XXXX MW</u> <u>L33,34 - +/- XXXX MW</u> <u>PV20 – XXXX MW</u> <u>Neptune and CSC as per CRP</u> <u>firm X 24 hrs, economy</u> <u>remainder</u>	<u>N/A</u>	<u>Other</u>

B.

~~Attachment A~~ Appendix B. **Additional CARIS Study Request  
Form**



## **REQUEST FOR ADDITIONAL CARIS STUDY**

1. The undersigned Market Participant or other interested party (the “Requestor”) submits this request for the NYISO to conduct, pursuant to Section 31.3.1.2.3 of Attachment Y to the OATT and ISO Procedures, a congestion and resource integration study (an “Additional CARIS Study”) that is separate from and in addition to those three congestion and resource studies that comprise the CARIS in accordance with Section 31.3.1.2.2 of Attachment Y to the OATT.
2. The Additional CARIS Study requested by the submittal of this form is separate from and in addition to (i) those studies that an Eligible Customer can request related to Transmission Service provided under Sections 3.7 or 4.5 of the OATT, (ii) those Interconnection Studies conducted under Attachments S, X and Z to the OATT, and (iii) those studies conducted to evaluate projects as potential solutions to Reliability Needs identified by the Comprehensive Reliability Planning Process contained in Attachment Y to the OATT.
3. Requests for an Additional CARIS Study will be handled on a first-come, first-served basis within the resource constraints of the NYISO. This provision shall not be construed to mean that the NYISO must complete and report the results of Additional CARIS Studies in the order that they were received.
4. Requestor shall be responsible for all reasonable actual costs incurred by the NYISO for the Additional CARIS Study. Such costs may include the cost of consultants and contractors retained by the NYISO, and the cost, if any, incurred by Transmission Owner(s) to supply study-related data when requested to do so by the NYISO.
5. When the scope and subject matter of two or more contemporaneous Additional CARIS Studies overlap to any material degree the NYISO, with the prior agreement of each affected Requestor, will conduct the overlapping study work on a consolidated basis and allocate the cost of such work equally to each affected Requestor. Upon execution of the Additional CARIS Study Agreement, the Requestor will designate whether it is willing to entertain a joint study at any point in the future.
6. This Request For Additional CARIS Study must be accompanied by a refundable deposit of \$25,000, payable to “The New York Independent System Operator, Inc.” The Additional CARIS Study Agreement will require Requestor to deposit additional money as needed to cover the actual cost of the Additional CARIS Study. The NYISO will apply all deposits toward the costs it incurs for the Additional CARIS Study.
7. The NYISO will post on its website the following facts regarding this Request For Additional CARIS Study: (i) a general description of the Additional CARIS Study requested, (ii) the identity of the Requestor, and (iii) the date the NYISO received this Request For Additional CARIS Study. The NYISO will treat the results of the Additional CARIS Study as Confidential Information is treated under Attachment F to

the OATT; provided, however, the NYISO will post the results of this Additional CARIS Study if and when Requestor seeks regulated cost recovery under the NYISO Tariff based upon the results of this Additional CARIS Study.

8. The NYISO conducts Additional CARIS Studies throughout the year using the most recently approved CARIS database and base case.
9. The NYISO will review the results of the Additional CARIS Studies 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. The NYISO will provide the results of the Additional CARIS Study to the Requestor. The NYISO will post the results of the Additional CARIS Study on its website if and when Requestor seeks regulated cost recovery under the OATT based upon the results of the Additional CARIS Study.
10. Requestor provides the following information:
  - a. The monitored system element to be studied: \_\_\_\_\_. Note: a separate Request For Additional CARIS Study, and a separate deposit, are required for each monitored system element that Requestor wants the NYISO to study.
  - b. A high level description of the requested study, to include possible scenarios and desired study completion date.
11. The NYISO will acknowledge receipt of this Request For Additional CARIS Study within ten (10) business days and at that time will also tell Requestor whether the information submitted with this Request For Additional CARIS Study is adequate or, if not, what type of additional information needs to be submitted.
12. The NYISO shall use Reasonable Efforts to complete the Additional CARIS Study by the date specified in the executed Additional CARIS Study Agreement.
13. Following receipt of a complete Request For Additional CARIS Study, the NYISO will establish a mutually agreeable time to meet with Requestor to discuss and determine the scope of the Additional CARIS Study. This study scope will be recorded in the Additional CARIS Study Agreement.
14. Requestor may withdraw this Request For Additional CARIS Study by terminating the Additional CARIS Study Agreement in accordance with its terms or, if the Additional CARIS Study Agreement has not yet been executed, the Requestor may terminate this Request For Additional CARIS Study by written notice to the NYISO. In the event that the Additional CARIS Study Agreement has been executed prior to termination, the NYISO, upon such termination, will cease work on the Additional CARIS Study and forward to Requestor either (i) an invoice for unpaid study work or (ii) a refund of that portion of the deposit not required to cover unpaid study work. The NYISO will forward

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all completed study results and work papers to Requestor with the refund, if one is due, or upon receipt of full payment from Requestor for unpaid study work.

15. This Request For Additional CARIS Study shall be submitted to [AdditionalCARISStudyRequest@nyiso.com](mailto:AdditionalCARISStudyRequest@nyiso.com). The currently designated representative of the NYISO is:

Name/Title: *Howard Tarler*

Title: Manager – *Long-Term*Economic Planning

Address: New York Independent System Operator  
10 Krey Blvd.  
Rensselaer, NY 12144

Email: *HTarler@nyiso.com*

Telephone: 518-356-~~8544~~6000

Fax: ~~518-356-7524~~

16. Representative of Requestor to contact:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Email: \_\_\_\_\_

Telephone: \_\_\_\_\_

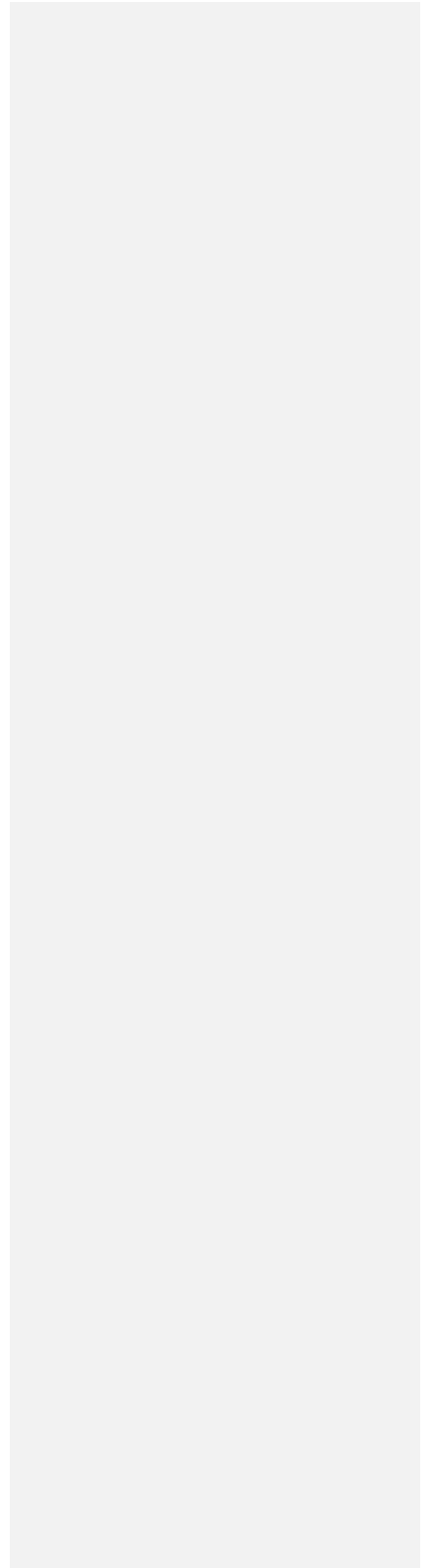
Fax: \_\_\_\_\_





C

~~Attachment B~~ Appendix C. **Additional CARIS Study Agreement  
Form**





**STUDY AGREEMENT TEMPLATE FOR AN ADDITIONAL CARIS STUDY**

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, (“Requestor”), and the New York Independent System Operator, Inc., a not-for-profit corporation organized and existing under the laws of the State of New York (“NYISO”). Requestor and NYISO each may be referred to as a “Party,” or collectively referred to as the “Parties.”

**RECITALS**

**WHEREAS**, Requestor has submitted a completed request form, dated \_\_\_\_\_, and refundable deposit to the NYISO for the NYISO to conduct a congestion and resource integration study pursuant to Section 31.3.1.2.3 of Attachment Y to the OATT (an “Additional CARIS Study”); and

**WHEREAS**, Requestor and the NYISO have met to discuss and determine, and have determined and agreed upon, the scope of the Additional CARIS Study to be performed under this Agreement, which is set forth in Attachment A hereto; and

**WHEREAS**, Requestor desires the NYISO to proceed to perform, or cause to be performed, the Additional CARIS Study in accordance with this Agreement, and with applicable provisions of Attachment Y to the OATT and ISO Procedures;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 Capitalized terms that are not otherwise defined herein shall have the meaning set forth in Section 1 of the OATT or in Attachment X or Attachment Y to the OATT.
- 2.0 Requestor requests, and the NYISO shall perform or cause to be performed, an Additional CARIS Study consistent with Section 31.3.1.2.3 of Attachment Y to the OATT. The terms of Section 31.3.1 of Attachment Y to the OATT, as applicable, are hereby incorporated herein by reference.
- 3.0 The scope of the Additional CARIS Study shall be specified in Attachment A to this Agreement. The Additional CARIS Study shall use the most recently approved CARIS database and base case as of the date on which this Agreement is executed.
- 4.0 The Additional CARIS Study will be based upon the information described in Attachment A to this Agreement, including the information provided by Requestor in its request for an Additional CARIS Study dated \_\_\_\_\_, 20\_\_ (“Request For Additional CARIS Study”). The NYISO reserves the right to

request further information from Requestor, as may reasonably become necessary during the course of the Additional CARIS Study, and Requestor shall promptly provide such additional information if requested to do so.

- 5.0 The NYISO shall perform, or cause to be performed, this Additional CARIS Study on a first come, first served basis in the order in which its respective completed Request for Additional CARIS Study was received. The NYISO shall make Reasonable Efforts to complete the Additional CARIS Study by [calendar date/date point on CARIS time line]. If the NYISO determines that this target date will not be met, the NYISO will promptly inform Requestor and provide Requestor with an updated estimate of the date by which the Additional CARIS Study will be completed together with an explanation of the reasons why additional time is required. If Requestor modifies the technical information provided in the Request For Additional CARIS Study, the NYISO may reasonably extend the time to complete the Additional CARIS Study.
- 6.0 Contents of Additional CARIS Study Report
  - 6.1 [TBD]
  - 6.2 [TBD]
  - 6.3 [TBD]
- 7.0 Study Costs
  - 7.1 The NYISO shall charge, and Requestor shall pay, all reasonable costs actually incurred by the NYISO to perform or cause to be performed, the Additional CARIS Study. Such costs may include the cost of consultants and contractors retained by the NYISO and the cost, if any, incurred by Transmission Owner(s) to supply study-related data when requested to do so by the NYISO. Costs shall be computed on a time and materials basis in accordance with the rates set forth in Attachment B to this Agreement.
  - 7.2 The initial deposit of \$25,000 submitted by Requestor with its Request For Additional CARIS Study, shall be applied to the cost of the Additional CARIS Study. The NYISO's good faith estimate of the total cost of the Additional CARIS Study is \$[\_\_\_\_\_]. The Parties acknowledge and agree that the actual total cost of the Additional CARIS Study may differ from this estimate. Upon execution of this Agreement, Requestor shall submit an additional deposit of \$[\_\_\_\_\_] which the NYISO shall also apply to the actual cost of the Additional CARIS Study. If Requestor modifies the scope of the Additional CARIS Study as initially specified in Attachment A to this Agreement, and does so in such a way as to increase the estimated total cost of the Additional CARIS Study, the NYISO may request, and the Requestor shall pay, an additional

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deposit to reflect that cost increase, which the NYISO shall also apply to the actual cost of the Additional CARIS Study.

- 7.3 Upon completion of the Additional CARIS Study, NYISO shall charge, and Requestor shall pay, all reasonable costs actually incurred by the NYISO for the Additional CARIS Study. Any difference between the total of the deposits submitted by Requestor and the actual cost of the Additional CARIS Study shall be paid by or refunded to Requestor, as appropriate, within thirty (30) days of the final invoice.

8.0 Study Results

- 8.1 Upon completion of the Additional CARIS Study, and payment by Requestor of any amount due pursuant to Section 7.3 of this Agreement, the NYISO will deliver the results of the completed Additional CARIS Study to Requestor, and the Parties will meet at a mutually agreeable time and place to review the results of the Additional CARIS Study.

- 8.2 The NYISO will review the results of the Additional CARIS Studies 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. The NYISO will post the results of the Additional CARIS Study on its website if and when Requestor seeks regulated cost recovery under the OATT based upon the results of the Additional CARIS Study.

- 9.0 Requestor may withdraw its Request For Additional CARIS Study at any time by terminating this Agreement in accordance with Section 10.5 of this Agreement. Upon receipt of such termination notice, the NYISO will cease work on the Additional CARIS Study. Requestor shall reimburse the NYISO for all reasonable costs incurred for the Additional CARIS Study through the effective date of termination. The NYISO will promptly forward to Requestor either (i) an invoice for unpaid study work, payable within thirty (30) days, or (ii) a refund of that portion of Requestor's deposited funds not required to cover unpaid study work. The NYISO will forward all completed study results and work papers to Requestor with the refund, if one is due, or upon receipt of full payment from Requestor for unpaid study work.

10.0 Miscellaneous.

- 10.1 Accuracy of Information. Except as Requestor may otherwise specify in writing when it provides information to the NYISO under this Agreement, Requestor represents and warrants that the information it provides to NYISO shall be accurate and complete as of the date the information is

provided. Requestor shall promptly provide NYISO with any additional information needed to update information previously provided.

- 10.2 **Disclaimer of Warranty.** In preparing the Additional CARIS Study, the NYISO and any subcontractor or consultant employed by it and any Transmission Owner that provides study-related data shall have to rely on information provided by the Requestor, and possibly by third parties, and may not have control over the accuracy of such information. Accordingly, neither the NYISO nor any subcontractor consultant employed by the NYISO nor any Transmission Owner that provides study-related data makes any warranties, express or implied, whether arising by operation of law, course of performance or dealing, custom, usage in the trade or profession, or otherwise, including without limitation implied warranties of merchantability and fitness for a particular purpose, with regard to the accuracy, content, or conclusions of the Additional CARIS Study. Requestor acknowledges that it has not relied on any representations or warranties not specifically set forth herein and that no such representations or warranties have formed the basis of its bargain hereunder.
- 10.3 **Limitation of Liability.** In no event shall either Party or its subcontractors or consultants or any Transmission Owner that provides study-related data be liable for indirect, special, incidental, punitive, or consequential damages of any kind including loss of profits, arising under or in connection with this Agreement or the Additional CARIS Study or any reliance on the Additional CARIS Study by either Party or third parties, even if one of the Parties or its subcontractor consultants have been advised of the possibility of such damages.
- 10.4 **Third-Party Beneficiaries.** Without limitation of Sections 10.2 and 10.3 of this Agreement, Requestor further agrees that any subcontractor or consultant hired by NYISO with respect to the Additional CARIS Study and any Transmission Owner that provides study-related data shall be deemed third party beneficiaries of these Sections 10.2 and 10.3.
- 10.5 **Term and Termination.** This Agreement shall be effective from the date hereof and unless earlier terminated in accordance with this Section 10.5, shall continue in effect for a term of [\_\_\_\_\_] or until the Additional CARIS Study is completed, whichever event occurs first. Requestor may by ten (10) days written notice terminate this Agreement and thereby withdraw Requestor's Request For Additional CARIS Study.
- 10.6 **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to any choice of laws provisions.

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- 10.7 Severability. In the event that any part of this Agreement is deemed as a matter of law to be unenforceable or null and void, such unenforceable or void part shall be deemed severable from this Agreement and the Agreement shall continue in full force and effect as if each part was not contained herein.
- 10.8 Counterparts. This Agreement may be executed in counterparts, and each counterpart shall have the same force and effect as the original instrument.
- 10.9 Amendment. No amendment, modification or waiver of any term hereof shall be effective unless set forth in writing signed by the Parties hereto.
- 10.10 Survival. All warranties, limitations of liability and confidentiality provisions provided herein shall survive the expiration or termination hereof.
- 10.11 Independent Contractor. NYISO shall at all times be deemed to be an independent contractor and none of its employees or the employees of its subcontractors shall be considered to be employees of Requestor as a result of this Agreement.
- 10.12 No Implied Waivers. The failure of a Party to insist upon or enforce strict performance of any of the provisions of this Agreement shall not be construed as a waiver or relinquishment to any extent of such Party's right to insist or rely on any such provision, rights and remedies in that or any other instances; rather, the same shall be and remain in full force and effect.
- 10.13 Successors and Assigns. This Agreement, and each and every term and condition hereof, shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

**IN WITNESS THEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.  
NYISO

**NYISO**

**[Insert name of Requestor]**

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

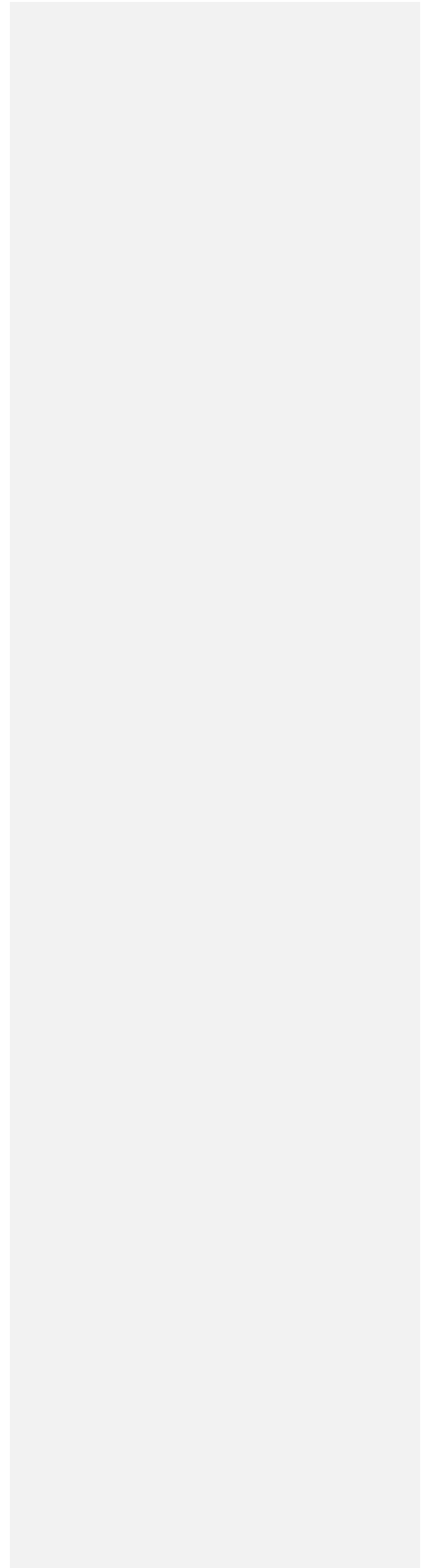
**ATTACHMENT A**

**SCOPE OF WORK FOR THE ADDITIONAL CARIS STUDY**

[TBD]

[TBD]

[TBD]





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**ATTACHMENT B**

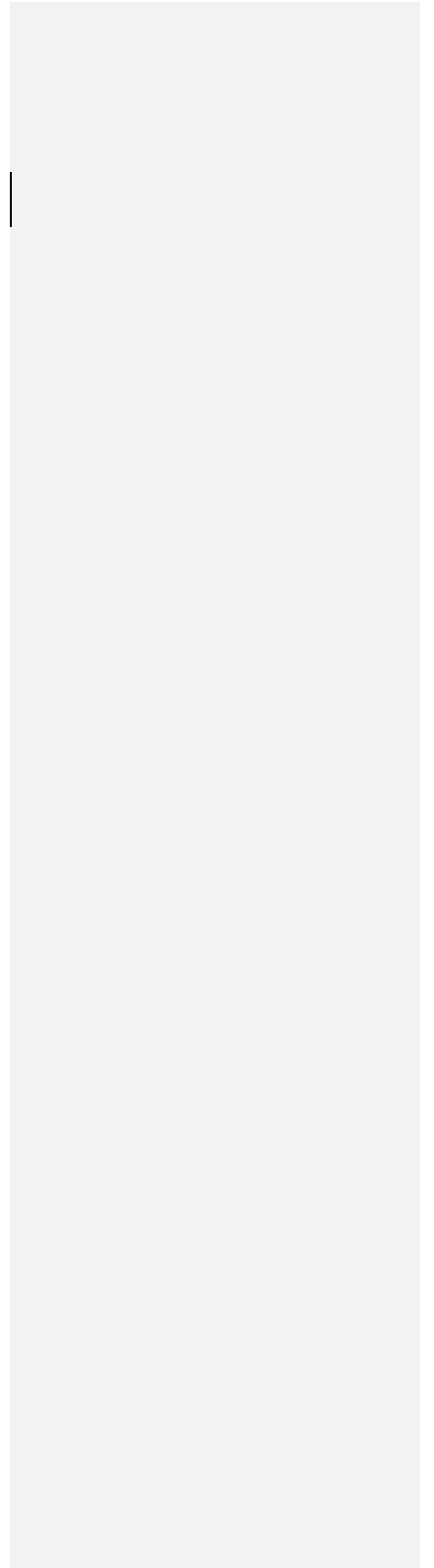
**HOURLY RATES FOR PERSONNEL WORKING ON THE ADDITIONAL CARIS  
STUDY**

<u>Position</u>	<u>Hourly Rate</u>



D.

~~Attachment C~~ Appendix D. **Specific Project Submittal Request  
Form**



## **CARIS PHASE 2 PROJECT- REQUEST FOR BENEFIT/COST ANALYSIS**

1. The undersigned developer of a regulated economic transmission project (the “Requestor”) submits this request for the NYISO to conduct, pursuant to Section 31.45.3.3 of Attachment Y to the Open Access Transmission Tariff (“OATT”), an analysis of the benefits and costs (“Benefit/Cost Analysis”) of a regulated economic transmission project that will interconnect with or be integrated into the existing New York State Bulk Power Transmission Facilities.
2. Requestor shall be responsible for all reasonable actual costs incurred by the NYISO for the Benefit/Cost Analysis. Such costs may include the cost of consultants and subcontractors retained by the NYISO, and the cost, if any, incurred by Transmission Owner(s) to supply analysis-related data when requested to do so by the NYISO.
3. When the scope and subject matter of two or more contemporaneous Benefit/Cost Analyses overlap to any material degree the NYISO, with the prior agreement of each affected Requestor, will conduct the overlapping analysis work on a consolidated basis and allocate the cost of such work equally to each affected Requestor.
4. This Request For Analysis must be accompanied by a refundable deposit of \$25,000 payable to “The New York Independent System Operator, Inc.” The Project Analysis Agreement will require Requestor to deposit additional money as needed to cover the actual cost of the Benefit/Cost Analysis. The NYISO will apply all deposits to the costs it incurs for the Benefit/Cost Analysis.
5. The NYISO will post on its website the following facts regarding this Request For Analysis: (i) a general description of the Benefit/Cost Analysis requested, (ii) the identity of the Requestor, and (iii) the date the NYISO received this Request For Analysis. The NYISO will also post the final results of this Benefit/Cost Analysis if Requestor seeks regulated cost recovery under Section 31.45.4 of Attachment Y to the OATT based upon the results of this Benefit/Cost Analysis.
6. Requestor shall submit to the NYISO, with this Request for Analysis, a Project Conceptual Package (“PCP”) as described in the Congestion Assessment and Resource Integration Study procedure “Regulated Economic Projects: Specific Projects Submittal”, which shall include information about the proposed transmission project, including but not limited to the following:
  - a. Requestor’s Contact Information;
  - b. Project Description;
  - c. Project Drawings;
  - d. Project Capital Costs;
  - e. Risk Profile;
  - f. Annual Revenue Requirements for Years 1-30;
  - g. Developer Business Information; and

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- h. Any Other Reasonably Required Information to Aid NYISO in Understanding the Scope of the Project.
- 7. The NYISO will acknowledge receipt of this Request For Analysis within ten (10) business days and at that time will also tell Requestor whether the information submitted in the PCP is adequate, reasonable or, if not, what type of additional or alternative information needs to be submitted. The Requestor may subsequently update information provided; however, it is within the NYISO's sole discretion whether such updated information is reasonable and whether it will be accepted for purposes of the Benefit/Cost Analysis.
- 8. Following receipt of a complete Request For Analysis and PCP, the NYISO will meet with Requestor at a mutually agreeable time to discuss and determine the nature and scope of the Benefit/Cost Analysis, addressing any questions regarding the project description to ensure that all the technical parameters needed by the NYISO to perform the Benefit/Cost Analysis are understood. The analysis scope will be recorded in the Project Analysis Agreement.
- 9. Requestor may withdraw this Request For Analysis by terminating the Project Analysis Agreement in accordance with its Section 10.5 therein or, if the Project Analysis Agreement has not yet been executed, the Requestor may terminate this Request For Analysis by written notice to the NYISO. Upon termination, the NYISO will cease work on the Benefit/Cost Analysis and forward to Requestor either (i) an invoice for unpaid analysis work or (ii) a refund of that portion of the deposit not required to cover unpaid analysis work. The NYISO will forward all completed results and work papers, if any, to Requestor with the refund, if one is due, or upon receipt of full payment from Requestor for unpaid analysis work.
- 10. This Request For Analysis shall be submitted to [CARISSpecificProject@nyiso.com](mailto:CARISSpecificProject@nyiso.com). The currently designated representative of the NYISO is:

*Name:* Howard Tarler

*Name/Title:* Manager – ~~Long Term~~Economic Planning

*Address:* 10 Krey Blvd.  
Rensselaer, NY 12144

*Email:* HTarler@nyiso.com

*Telephone:* 518-356-6000

*Fax:* 518-356-7524

11. Representative of Requestor to contact:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Email: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

12. This Request For Analysis is submitted by:

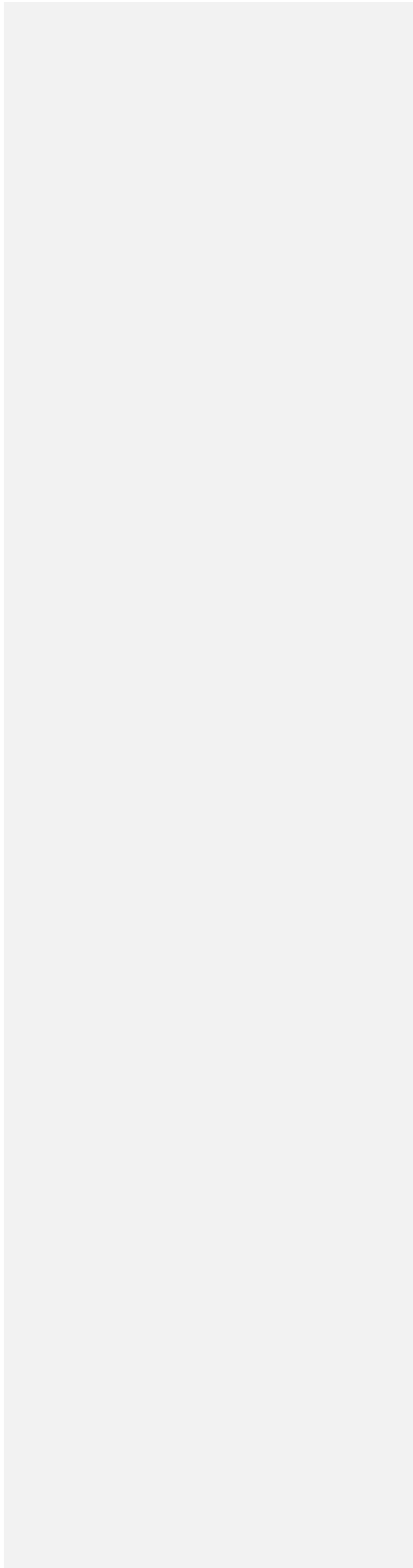
Requestor: \_\_\_\_\_

By (signature): \_\_\_\_\_

Name of Representative  
(type or print): \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



E

~~Attachment D~~ Appendix E. **Specific Project Submittal Agreement Form**

## CARIS PHASE 2 PROJECT BENEFIT/COST ANALYSIS AGREEMENT TEMPLATE

**THIS PROJECT ANALYSIS AGREEMENT** (this “Agreement”) is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, (“Requestor”), and the New York Independent System Operator, Inc., a not-for-profit corporation organized and existing under the laws of the State of New York (“NYISO”). Requestor and NYISO each may be referred to as a “Party,” or collectively referred to as the “Parties.”

### RECITALS

**WHEREAS**, Requestor has submitted a completed request form for the Benefit/Cost Analysis, dated \_\_\_\_\_, the requisite \$25,000 refundable deposit and the Project Conceptual Package (“PCP”), included in Attachment A hereto, to the NYISO for the NYISO to conduct an analysis of the benefits and costs (“Benefit/Cost Analysis”), pursuant to Section 31.45.3.3 of Attachment Y to the Open Access Transmission Tariff (“OATT”), of a regulated economic transmission project that will interconnect with or be integrated into the existing New York State Bulk Power Transmission Facilities; and

**WHEREAS**, Requestor and the NYISO have met to discuss and determine the nature of the analysis to be conducted, including any customization that the Requestor may desire for its project’s analysis; and

**WHEREAS**, Requestor desires the NYISO to proceed to conduct the Benefit/Cost Analysis in accordance with this Agreement, and with applicable provisions of Attachment Y to the OATT and ISO Procedures;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 Capitalized terms that are not otherwise defined herein shall have the meaning set forth in Section 1 of the OATT or in Attachment Y to the OATT.
- 2.0 Requestor elects, and the NYISO shall perform or cause to be performed, a Benefit/Cost Analysis consistent with Section 31.4.3.3 of Attachment Y to the OATT. The terms of Section 31.45.3.3 of Attachment Y to the OATT, as applicable, are hereby incorporated herein by reference.
- 3.0 The scope of the Benefit/Cost Analysis shall be specified in Attachment A to this Agreement. The Benefit/Cost Analysis shall use the most recently approved CARIS database and base case assumptions.
- 4.0 The Benefit/Cost Analysis will be based upon the information described in Attachment A to this Agreement, including the information provided by



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Requestor in its request for a Benefit/Cost Analysis dated \_\_\_\_\_, (“Request For Analysis”). The Requestor shall promptly provide to the NYISO additional information as the NYISO in its judgment determines is reasonably necessary to complete the Benefit/Cost Analysis.

- 5.0 The NYISO shall make reasonable efforts to complete the Benefit/Cost Analysis by [calendar date/date point on CARIS cycle time line]. If the NYISO determines that this target date will not be met, the NYISO will promptly inform Requestor and provide Requestor with an updated estimate of the date by which the Benefit/Cost Analysis will be completed. If Requestor modifies the technical information provided in the Request For Analysis, the NYISO may reasonably extend the time to complete the Benefit/Cost Analysis.

### 6.0 Contents of Benefit/Cost Analysis

#### 6.1 [TBD at PCP Review and Scoping Meeting]

### 7.0 Analysis Costs

- 7.1 The NYISO shall charge, and Requestor shall pay, all reasonable costs actually incurred by the NYISO to perform, or cause to be performed, the Benefit/Cost Analysis. Such costs may include the cost of consultants and contractors retained by the NYISO and the cost incurred by Transmission Owner(s) to supply analysis-related data, if any, when requested to do so by the NYISO. Costs shall be computed on a time and materials basis in accordance with the rates set forth in Attachment B to this Agreement.

- 7.2 The initial deposit of \$25,000 submitted by Requestor with its Request For Analysis shall be applied to the cost of the Benefit/Cost Analysis. The NYISO’s good faith estimate of the total cost of the Benefit/Cost Analysis is \$[\_\_\_\_\_]. The Parties acknowledge and agree that the actual total cost of the Benefit/Cost Analysis may differ from this estimate. Upon execution of this Agreement, Requestor shall submit an additional deposit of \$[\_\_\_\_\_] which the NYISO shall also apply to the actual cost of the Benefit/Cost Analysis. If Requestor subsequently modifies the scope of the Benefit/Cost Analysis as specified in Attachment A, and does so in such a way as to increase the estimated total cost of the Benefit/Cost Analysis, the NYISO may request, and the Requestor shall pay, an additional deposit to reflect that cost increase which the NYISO shall apply to the actual cost of the Benefit/Cost Analysis.

- 7.3 Upon completion of the Benefit/Cost Analysis, NYISO shall provide to the Requestor the Benefit/Cost Analysis results.

- 7.4 The Requestor shall be responsible for all reasonable and actual costs incurred by the NYISO that result from any meeting to review the

Benefit/Cost Analysis or from any requested modifications to the Benefit/Cost Analysis.

- 7.5 The NYISO will provide the “Final Invoice” to the Requestor to cover all reasonable costs the NYISO incurred in the performance of the Benefit/Cost Analysis that have not yet been paid by the Requestor.

#### 8.0 Analysis Results

- 8.1 In accordance with Section 7.3 herein, the NYISO will provide the results of the Benefit/Cost Analysis in a written report to the Requestor.
- 8.2 Upon request, the NYISO will schedule a meeting to review the results of the Benefit/Cost Analysis with the Requestor. Upon completion of the Benefit/Cost Analysis, the NYISO shall confirm that the Requestor is in possession of the final version of the Benefit/Cost Analysis results.
- 8.3 The Requestor acknowledges and agrees that the NYISO will post the final results of this Benefit/Cost Analysis if the Requestor seeks regulated cost recovery under the OATT based upon the results of this Benefit/Cost Analysis, in accordance with Section 31.45.4 of Attachment Y.
- 8.4 In the event that the Requestor either (1) withdraws its Request For Analysis or (2) decides not to seek cost recovery for its regulated economic transmission project pursuant to Section 31.45.4 of Attachment Y, then the results of the Benefit/Cost Analysis shall not be disclosed or posted on the NYISO website.

- 9.0 Requestor may withdraw its Request For Analysis at any time by terminating this Agreement in accordance with Section 10.5 of this Agreement. Upon receipt of such termination notice, the NYISO will cease work on the Benefit/Cost Analysis. Requestor shall reimburse the NYISO for all reasonable costs incurred for the Benefit/Cost Analysis through the effective date of termination. The NYISO will promptly forward to Requestor either (i) an invoice for unpaid analysis work, payable within thirty (30) days, or (ii) a refund of that portion of Requestor’s deposited funds not required to cover unpaid analysis work. The NYISO will forward completed results, if any, to Requestor with the refund, if one is due, or upon receipt of full payment from Requestor for unpaid analysis work.

#### 10.0 Miscellaneous.

- 10.1 Accuracy of Information. Except as Requestor may otherwise specify in writing when it provides information to the NYISO under this Agreement, Requestor represents and warrants that the information it provides to NYISO shall be accurate and complete as of the date the information is provided. Requestor shall promptly provide NYISO with any additional

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information needed to update information previously provided. The Requestor may subsequently update information provided; however, it is within the NYISO's sole discretion whether such updated information is reasonable and whether it will be accepted for purposes of the Benefit/Cost Analysis.

- 10.2 Disclaimer of Warranty. In preparing the Benefit/Cost Analysis, the NYISO and any subcontractors or consultants employed by it and any Transmission Owner that provides study-related data shall have to rely on information provided by the Requestor, and possibly by third parties, and may not have control over the accuracy of such information. Accordingly, neither the NYISO nor any subcontractor or consultant employed by the NYISO makes any warranties, express or implied, whether arising by operation of law, course of performance or dealing, custom, usage in the trade or profession, or otherwise, including without limitation implied warranties of merchantability and fitness for a particular purpose, with regard to the accuracy, content, or conclusions of the Benefit/Cost Analysis. Requestor acknowledges that it has not relied on any representations or warranties not specifically set forth herein.
- 10.3 Limitation of Liability. In no event shall either Party or its subcontractors or consultants or any Transmission Owner that provides study-related data be liable for indirect, special, incidental, punitive, or consequential damages of any kind including loss of profits, arising under or in connection with this Agreement or the Benefit/Cost Analysis or any reliance on the Benefit/Cost Analysis by either Party or third parties, even if one of the Parties or its subcontractors or consultants have been advised of the possibility of such damages.
- 10.4 Third-Party Beneficiaries. Without limitation of Sections 10.2 and 10.3 of this Agreement, Requestor further agrees that subcontractors and consultants hired by NYISO with respect to the Benefit/Cost Analysis and any Transmission Owner that provides study-related data shall be deemed third party beneficiaries of these Sections 10.2 and 10.3.
- 10.5 Term and Termination. This Agreement shall be effective from the date hereof and unless earlier terminated in accordance with this Section 10.5, shall continue in effect for a term of [\_\_\_\_\_] or until the Benefit/Cost Analysis is completed, whichever event occurs first. Requestor may by ten (10) days written notice terminate this Agreement and thereby withdraw Requestor's Request For Analysis.
- 10.6 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to any choice of laws provisions.

- 10.7 Severability. In the event that any part of this Agreement is deemed as a matter of law to be unenforceable or null and void, such unenforceable or void part shall be deemed severable from this Agreement and the Agreement shall continue in full force and effect as if each part was not contained herein.
- 10.8 Counterparts. This Agreement may be executed in counterparts, and each counterpart shall have the same force and effect as the original instrument.
- 10.9 Amendment. No amendment, modification or waiver of any term hereof shall be effective unless set forth in writing signed by the Parties hereto.
- 10.10 Survival. All warranties, limitations of liability and confidentiality provisions provided herein shall survive the expiration or termination hereof.
- 10.11 Independent Contractor. NYISO shall at all times be deemed to be an independent contractor and none of its employees or the employees of its subcontractors or consultants shall be considered to be employees of Requestor as a result of this Agreement.
- 10.12 No Implied Waivers. The failure of a Party to insist upon or enforce strict performance of any of the provisions of this Agreement shall not be construed as a waiver or relinquishment to any extent of such Party's right to insist or rely on any such provision, rights and remedies in that or any other instances; rather, the same shall be and remain in full force and effect.
- 10.13 Successors and Assigns. This Agreement, and each and every term and condition hereof, shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

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**IN WITNESS THEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**The New York Independent  
System Operator, Inc.**

**[Insert name of Requestor]**

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**ATTACHMENT A  
PROJECT CONCEPTUAL PACKAGE and  
SCOPE OF WORK FOR THE BENEFIT/COST ANALYSIS**

**I. [PCP to be provided.]**

**| II. [Scope, based upon Section 31.45.3.3 of Attachment Y of the OATT, to be provided.]**

ATTACHMENT B

HOURLY RATES FOR PERSONNEL WORKING ON THE BENEFIT/COST ANALYSIS

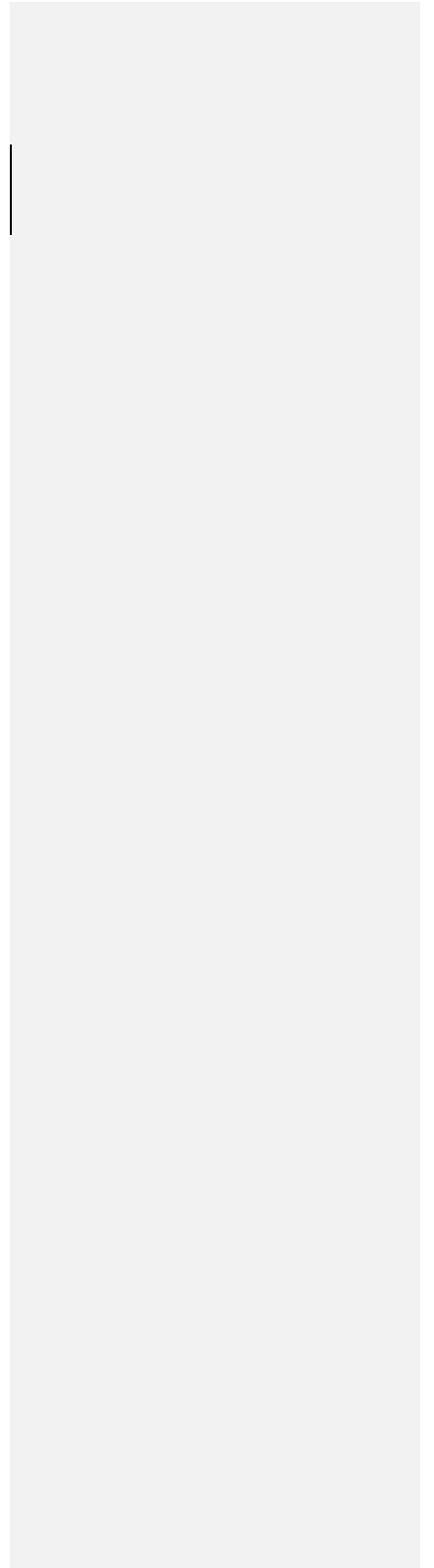
<u>Position</u>	<u>Hourly Rate</u>





F.

~~Attachment E~~ Appendix F. **Study Replication Request Form**



## REQUEST FOR REPLICATION

1. The undersigned interested party (the “Requestor”) submits this request for the NYISO to conduct, pursuant to Attachment Y to the Open Access Transmission Tariff (“OATT”), a replication of the [Study to be designated by Requestor, referencing the applicable Section(s) 31.2.3.1, 31.2.6.1, 31.3.2.1 and/or 31.45.3.5 of Attachment Y] (“Study Replication”).
2. Requestor shall be responsible for all reasonable actual costs incurred by the NYISO for the Study Replication. Such costs may include the cost of consultants and subcontractors retained by the NYISO, and the cost, if any, incurred by Transmission Owner(s) to supply study-related data when requested to do so by the NYISO.
3. Requests for a Study Replication will be handled on a first-come, first-serve basis within the resource constraints of the NYISO. This provision shall not be construed to mean that the NYISO must complete and report the results of the Study Replications in the order that they were received.
4. When the scope and subject matter of two or more contemporaneous Study Replications overlap to any material degree the NYISO, with the prior written agreement of each affected Requestor, will conduct the overlapping study replication work on a consolidated basis and allocate the cost of such overlapping work equally to each affected Requestor. Upon execution of the Study Replication Agreement, the Requestor will designate whether it is willing to entertain a joint study at any point in the future.
5. This Request For Replication must be accompanied by a refundable deposit of \$25,000 payable to “The New York Independent System Operator, Inc.” The Study Replication Agreement will require Requestor to deposit additional money as needed to cover the actual cost of the Study Replication. The NYISO will apply all deposits toward the costs it incurs for the Study Replication.
6. The NYISO will post on its website the following facts regarding this Request For Replication: (i) the identity of the Requestor; (ii) a general description of the Study Replication requested, and (iii) the date the NYISO received this Request For Replication.
7. The NYISO will conduct Study Replications throughout the year using the information, applicable database and base case used in the study to be replicated.
8. The NYISO will acknowledge receipt of this Request For Replication within ten (10) business days and at that time will also tell Requestor whether additional information regarding the Study Replication needs to be submitted.
9. Following receipt of a complete Request For Replication, and the required deposit, the NYISO will meet with Requestor at a mutually agreeable time to discuss and determine

NYISO ECONOMIC PLANNING PROCESS MANUAL

the nature and scope of the Study Replication. The Study Replication scope will be recorded in the Study Replication Agreement.

10. The NYISO shall use Reasonable Efforts to complete the Study Replication by the date specified in the executed Study Replication Agreement.
11. Requestor may withdraw this Request For Replication by terminating the Study Replication Agreement in accordance with its Section 10.5 therein or, if the Study Replication Agreement has not yet been executed, the Requestor may terminate this Request For Replication by written notice to the NYISO. In the event that the Study Replication Agreement has been executed prior to termination, the NYISO, upon such termination, will cease work on the Study Replication and forward to Requestor either (i) an invoice for unpaid Study Replication costs or (ii) a refund of that portion of the deposit not required to cover unpaid Study Replication costs.
12. This Request For Replication shall be submitted to [StudyReplicationRequest@nyiso.com](mailto:StudyReplicationRequest@nyiso.com). The currently designated representative of the NYISO is:

*Name:* *Howard Tarler*

*Name/Title:* Manager – *Long Term Economic* Planning

*Address:* New York Independent System Operator  
10 Krey Blvd.  
Rensselaer, NY 12144

*Email:* *HTarler@nyiso.com*

*Telephone:* 518-356-~~8544~~6000

*Fax:* ~~518-356-7524~~

13. Representative of Requestor to contact:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Email: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

14. This Request For Replication is submitted by:

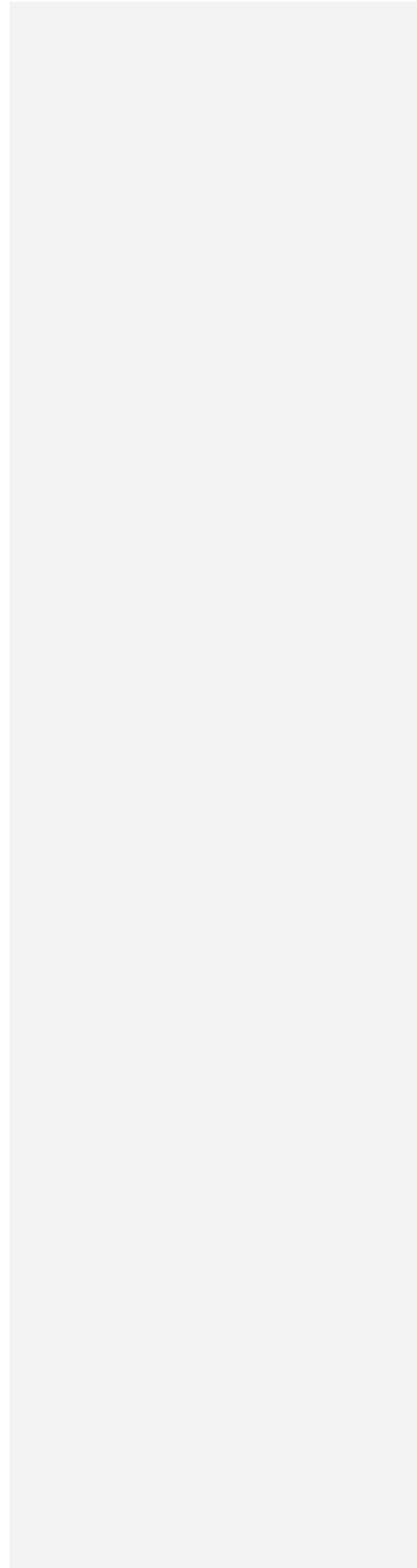
Requestor: \_\_\_\_\_

By (signature): \_\_\_\_\_

Name of  
Representative  
(type or print): \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



G

~~Attachment F~~ Appendix G **Study Replication Agreement Form**

## STUDY REPLICATION AGREEMENT TEMPLATE

**THIS STUDY REPLICATION AGREEMENT** (this “Agreement”) is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, (“Requestor”), and the New York Independent System Operator, Inc., a not-for-profit corporation organized and existing under the laws of the State of New York (“NYISO”). Requestor and NYISO each may be referred to as a “Party,” or collectively referred to as the “Parties.”

### RECITALS

**WHEREAS**, Requestor has submitted a completed request form, dated \_\_\_\_\_ and the requisite refundable deposit to the NYISO for the NYISO to replicate the [Study to be designated by Requestor, referencing the applicable Section(s) 31.2.3.1, 31.2.6.1, 31.3.2.1, and/or 31.45.3.5 of Attachment Y] (“Study Replication”) pursuant to Attachment Y to the Open Access Transmission Tariff (“OATT”) and the NYISO has posted the date and expected occurrence of the Study Replication; and

**WHEREAS**, Requestor and the NYISO have met to discuss and determine the nature and scope of the Study Replication, as designated in Attachment A hereto; and

**WHEREAS**, Requestor desires the NYISO to perform, or cause to be performed, the Study Replication in accordance with this Agreement, and with applicable provisions of Attachment Y to the OATT and ISO Procedures;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 Capitalized terms that are not otherwise defined herein shall have the meaning set forth in Section 1 of the OATT or in Attachment X or Attachment Y to the OATT.
- 2.0 Requestor requests, and the NYISO shall perform or cause to be performed, a Study Replication consistent with Attachment Y to the OATT. The terms of Attachment Y to the OATT, as applicable, are hereby incorporated herein by reference.
- 3.0 The scope of the Study Replication shall be specified in Attachment A to this Agreement, including certain information upon which the Study Replication shall be based. The Study Replication shall use the information, applicable database and base case used in the study to be replicated.
- 4.0 The Study Replication will be based upon the information provided to the NYISO by Requestor in its request for a Study Replication dated \_\_\_\_\_.

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(“Request For Replication”). The Requestor shall promptly provide to the NYISO additional information as the NYISO in its judgment determines is reasonably necessary to complete the Study Replication.

- 5.0 The NYISO shall perform, or cause to be performed, this Study Replication on a first come, first served basis in the order in which its respective completed Request for Replication was received. The NYISO shall make Reasonable Efforts to complete the Study Replication by **[calendar date/date point on Comprehensive Reliability Plan cycle time line]**. If the NYISO determines that this target date will not be met, the NYISO will promptly inform Requestor and provide Requestor with an updated estimate of the date by which the Study Replication will be completed together with an explanation of the reasons why additional time is required. If Requestor modifies the technical information provided in the Request For Replication, the NYISO may reasonably extend the time to complete the Study Replication.
- 6.0 Contents of Study Replication to be provided to Requestor:
  - 6.1 **[TBD]**
  - 6.2 **[TBD]**
  - 6.3 **[TBD]**
- 7.0 Study Replication Costs
  - 7.1 The NYISO shall charge, and Requestor shall pay, all reasonable costs actually incurred by the NYISO to perform or cause to be performed, the Study Replication. Such costs may include the cost of consultants and contractors retained by the NYISO and the cost, if any, incurred by Transmission Owner(s) to supply analysis-related data, if any, when requested to do so by the NYISO. Costs shall be computed on a time and materials basis in accordance with the rates set forth in Attachment B to this Agreement.
  - 7.2 The initial deposit of \$25,000 submitted by Requestor with its Request For Replication, shall be applied to the cost of the Study Replication. The NYISO’s good faith estimate of the total cost of the Study Replication is \$[\_\_\_\_\_]. The Parties acknowledge and agree that the actual total cost of the Study Replication may differ from this estimate. Upon execution of this Agreement, Requestor shall submit an additional deposit of \$[\_\_\_\_\_] which the NYISO shall also apply to the actual cost of the Study Replication. If Requestor modifies the scope of the Study Replication as initially specified in Attachment A to this Agreement, 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 to reflect that cost increase, which the NYISO shall apply to the actual cost of the Study Replication.

7.3 Upon completion of the Study Replication, NYISO shall provide to the Requestor a final invoice setting forth all of the reasonable costs actually incurred by the NYISO for the Study Replication. Any difference between the total of the deposits submitted by Requestor and the actual costs set forth in the final invoice shall be paid by or refunded to Requestor, as applicable, within thirty (30) days of the final invoice.

#### 8.0 Study Replication Results

8.1 Upon receipt of the final payment by the applicable Party of any amount due pursuant to Section 7.3 of this Agreement, the NYISO will deliver the results of the completed Study Replication to Requestor, and if so requested by Requestor, the Parties will meet at a mutually agreeable time and place to review the results of the Study Replication.

8.2 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.

9.0 Requestor may withdraw its Request For Replication at any time by terminating this Agreement in accordance with Section 10.5 of this Agreement. Upon receipt of such termination notice, the NYISO will cease work on the Study Replication. Requestor shall reimburse the NYISO for all reasonable costs incurred for the Study Replication through the effective date of termination. The NYISO will promptly forward to Requestor either (i) an invoice for unpaid costs related to the Study Replication, payable within thirty (30) days, or (ii) a refund of that portion of Requestor's deposited funds not required to cover unpaid costs related to the Study Replication. The NYISO will forward completed results, if any, to Requestor with the refund, if one is due, or upon receipt of full payment from Requestor for unpaid costs related to the Study Replication.

#### 10.0 Miscellaneous.

10.1 Accuracy of Information. Except as Requestor may otherwise specify in writing when it provides information to the NYISO under this Agreement, Requestor represents and warrants that the information it provides to NYISO shall be accurate and complete as of the date the information is provided. Requestor shall promptly provide NYISO with any additional information needed to update information previously provided.



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- 10.2 Disclaimer of Warranty. In preparing the costs related to the Study Replication, the NYISO and any subcontractor or consultant employed by it and any Transmission Owner that provides study-related data shall have to rely on information provided by the Requestor and third parties, and may not have control over the accuracy of such information. Accordingly, neither the NYISO nor any subcontractor or consultant employed by the NYISO nor any Transmission Owner that provides study-related data makes any warranties, express or implied, whether arising by operation of law, course of performance or dealing, custom, usage in the trade or profession, or otherwise, including without limitation implied warranties of merchantability and fitness for a particular purpose, with regard to the accuracy, content, completeness or conclusions of the Study Replication. Requestor acknowledges that it has not relied on any representations or warranties not specifically set forth herein.
- 10.3 Limitation of Liability. In no event shall either Party or its subcontractors or consultants or any Transmission Owner that provides study-related data be liable for indirect, special, incidental, punitive, or consequential damages of any kind including loss of profits, arising under or in connection with this Agreement or the Study Replication or any reliance on the Study Replication by either Party or third parties, even if one of the Parties or its subcontractors or consultants have been advised of the possibility of such damages.
- 10.4 Third-Party Beneficiaries. Without limitation of Sections 10.2 and 10.3 of this Agreement, Requestor further agrees that any subcontractor or consultant hired by NYISO with respect to the Study Replication and any Transmission Owner that provides study-related data shall be deemed third party beneficiaries of these Sections 10.2 and 10.3.
- 10.5 Term and Termination. This Agreement shall be effective from the date hereof and unless earlier terminated in accordance with this Section 10.5, shall continue in effect for a term of [\_\_\_\_\_] or until the Study Replication is completed, whichever event occurs first. Requestor may by ten (10) days written notice terminate this Agreement and thereby withdraw Requestor's Request For Replication.
- 10.6 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to any choice of laws provisions.
- 10.7 Severability. In the event that any part of this Agreement is deemed as a matter of law to be unenforceable or null and void, such unenforceable or void part shall be deemed severable from this Agreement and the Agreement shall continue in full force and effect as if each part was not contained herein.

- 10.8 Counterparts. This Agreement may be executed in counterparts, and each counterpart shall have the same force and effect as the original instrument.
- 10.9 Amendment. The terms and conditions of this Agreement (including all Attachments and the executed Request for Replication) may be modified, amended or waived only by a prior written instrument that has been signed by an authorized representative of each Party and delivered to both Parties. Any purported modification, amendment or waiver that fails to comply with the foregoing shall be void and of no effect.
- 10.10 Survival. All warranties, limitations of liability and confidentiality provisions provided herein shall survive the expiration or termination hereof.
- 10.11 Independent Contractor. NYISO shall at all times be deemed to be an independent contractor and none of its employees or the employees of its subcontractors or consultants shall be considered to be employees of Requestor as a result of this Agreement.
- 10.12 No Implied Waivers. The failure of a Party to insist upon or enforce strict performance of any of the provisions of this Agreement shall not be construed as a waiver or relinquishment to any extent of such Party's right to insist or rely on any such provision, rights and remedies in that or any other instances; rather, the same shall be and remain in full force and effect.
- 10.13 Successors and Assigns. This Agreement, and each and every term and condition hereof, shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

**IN WITNESS THEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**ATTACHMENT A  
SCOPE OF STUDY REPLICATION**

**I.** [Study to be Replicated. Identify study and specify the applicable Section(s) 31.2.3.1, 31.2.6.1, 31.3.2.1 and/or 31.45.3.5 of Attachment Y.]

**II.** [Scope, including data to be analyzed.]

**ATTACHMENT B**

**HOURLY RATES FOR PERSONNEL WORKING ON THE STUDY REPLICATION**

<u>Position</u>	<u>Hourly Rate</u>

