

Procedure for Determination
of Potential Solutions
Studies Phase

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Overall Process

- ◆ Selection of the three congestion studies
- ◆ Determination of the potential generic solutions
 - *One potential generic solution for Generation, Transmission, and Demand for each congestion study*
 - *Potential generic solutions provided by Market Participants*
 - *TOs are the backstop*
- ◆ Conduct Benefit/Cost analysis
 - *Conduct Scenario Analysis*

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OATT Attachment Y, Section 11.3c

- ♦ In conducting the CARIS, the NYISO shall combine the component studies selected and assess system congestion and resource integration over the study period, measuring congestion by the metrics discussed in Appendix A to this Attachment Y. The NYISO, in conjunction with the ESPWG, will develop the specific production costing model to be used in the CARIS. ***All resource types shall be considered on a comparable basis as potential solutions to the congestion identified: generation, transmission and demand response.*** The CARIS may include consideration of the economic impacts of advancing a regulated back stop solution contained in the CRP.
 - *Procedure for 11.2.b addresses the selection process for determination of Three Studies*

OATT Attachment Y, Section 11.4

- ♦ **At the NYISO's request, Market Participants shall provide, in accordance with the schedule set forth in the NYISO Comprehensive Reliability Planning Process Manual, the data necessary for the development of the CARIS.** This input will include but not be limited to existing and planned additions to the New York State Transmission System (to be provided by the Transmission Owners and municipal electric utilities); proposals for merchant transmission facilities (to be provided by merchant developers); generation additions and retirements (to be provided by generator owners and developers); demand response programs (to be developed by demand response providers); and any long-term firm transmission requests made to the NYISO. **The relevant Transmission Owners will assist the NYISO in developing the potential solution cost estimates to be used by the NYISO to conduct benefit/cost analysis of each of the potential solutions.**

Determination of Potential Solutions – Three Studies/Three Resource Types

- Request potential generic solutions from Market Participants for each of the resource types for each top 3 congestion studies (3 Studies).
- If no Market Participants offer potential generic solutions for each resource type, the TOs will be requested to provide the specific potential generic solutions.
- If multiple potential generic solutions are suggested for the same congestion study and resource type (example 3 transmission potential projects are proposed to relieve the same congestion study – Study #1), NYISO will recommend to the ESPWG which potential solution should be studied for that resource type. The number of potential generic solutions to be studied will be limited to 1 per congestion grouping per resource type for a maximum total of 9 potential generic solutions. Under the above condition, NYISO's recommendation will be based upon the following:
 - cost, timing, size, location and maximum potential for impact on congestion.
- The Market Participant or TO who proposes a potential generic solution shall provide at a minimum a description of the project, an order of magnitude of the project cost and a timeline for completing the project. The costs are to include but not limited to:
 - engineering, permitting, construction, equipment, materials and supplies, fixed annual operations and maintenance, insurance and taxes
 - Provide the above costs in the year of generic project installation and information to develop annual requirements or the actual annual requirements beginning with the installation date through the ten year period

OATT Attachment Y, Section 11.3d – B/C Analysis

- ♦ In conducting the CARIS, the ***NYISO shall conduct benefit/cost analysis of each potential solution to the congestion identified***, applying benefit/cost metrics that the NYISO will develop in conjunction with ESPWG. The principal benefit metric for the CARIS analysis will be expressed as the present value of the NYCA-wide production cost reduction that would result from each potential solution. Additional benefit metrics shall include estimates of reductions in losses, LBMP load costs, generator payments, ICAP costs, Ancillary Services costs, emission costs, and TCC payments. The NYISO will work with the ESPWG to determine the methodology and models needed to develop and implement those additional metrics, and also to determine the most useful metrics for each CARIS, given overall NYISO resource requirements.
 - A cost/benefit ratio will be developed for each potential generic solution selected for each congestion study and each resource type
 - The benefits will be determined by individually entering each potential generic solution into the base case model and determining the present value of NYCA-wide production cost reduction over the 10 year study period.
 - The cost will be the present value, over the ten year study period, of the revenue requirements for the order of magnitude cost estimate provided by the potential generic solution sponsor.
 - If a potential generic solution(s) has a B/C of <1.0 , upon consensus of the ESPWG, no further study will be completed for that potential solution.

OATT Attachment Y, Section 11.5 - Scenarios

- ♦ The NYISO, in consultation with the ESPWG and TPAS, shall ***develop congestion and resource integration scenarios*** addressing the Study Period. Variables for consideration in the development of these congestion and resource integration scenarios include but are not limited to: ***load forecast uncertainty, fuel price uncertainty, new resources, retirements, emission data, the cost of allowances and potential requirements imposed by proposed environmental and energy efficiency mandates***, as well as overall NYISO resource requirements. The NYISO shall report the results of these scenario analyses in the CARIS.
 - *Consider limiting the number of scenarios to be applied to each of the three congestion studies*

Potential Model Cases - Example

- ♦ Base Model
 - *1 run x 10 years = 10 cases*
- ♦ Congestion Study - Selection of the 3 Studies
 - *3 top elements x **3 iterations each** x 10 years = 90 cases*
- ♦ Potential Solutions
 - *3 Studies x 3 Resource Types x **1 Potential Solution per Resource Type** x 10 Years = 90 Cases*
- ♦ Scenarios
 - *3 Studies x 3 Resource Types x **3 Scenarios** x 2 years (5th and 10th Years) = 54 Cases*
- ♦ Overall Number of Cases
 - *244 Cases x 2 Model Tools (GV and MAPS) = **488 Cases***
 - *Estimate 3 cases/day/PC on 5 PCs yields 32 consecutive days*

Study Phase Guidelines

- ◆ In order to best use the limited time and resources NYISO has to complete the CARIS, the following guidelines are recommended:
 - *Limit the number of iterations to determine congestion study (**3 maximum**)*
 - *Limit the number of potential solutions to be analyzed (**1 per resource type per study**)*
 - *Limit the number of scenarios for study (**3 maximum**)*
 - *Limit the number of scenario years (**5th and 10th years**)*
 - *These limits will yield approximately 488 cases to be run during the Studies Phase of each CARIS cycle*

The New York Independent System Operator (NYISO) is a not-for-profit corporation that began operations in 1999. The NYISO operates New York's bulk electricity grid, administers the state's wholesale electricity markets, and provides comprehensive reliability planning for the state's bulk electricity system.

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