Consumer Impact Analyses: Capacity Exports from Localities

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DRAFT – FOR DISCUSSION PURPOSES ONLY

Background

- The 2015 State of the Market (SOM) report recommended that the NYISO modify its treatment of capacity exports from import constrained zones (SOM Recommendation #8)
- The Roseton plant located in the G-J Locality was awarded a Forward Capacity Market (FCM) obligation of 511 MW in ISO-NE for 2018/19
- Under a rule change that ISO-NE Stakeholders approved and ISO-NE and NEPOOL filed with FERC on August 19, 2016, certain external capacity suppliers, such as Roseton, could potentially participate in reconfiguration auctions and bilaterals beginning 2017/18
- The NYISO agrees with the Market Monitoring Unit (MMU) that the treatment of capacity exports from constrained zones needs to be addressed
- Given the possibility that ISO-NE's new rule could be accepted by FERC, the NYISO filed a limited protest with FERC seeking to delay the possibility of such exports for one capability year
- Because it is uncertain that FERC will agree with the delay, the NYISO is pursuing an aggressive schedule to develop an immediate market design proposal to address the concerns expressed by MMU

Consumer Impact Analysis (IA) Evaluation Areas

- Summary of potential impact on the following four evaluation areas:

RELIABILITY

The NYISO's proposal addresses the G-J Locality requirement by recognizing that a generator that exports capacity continues to operate in the Locality and requirements can be satisfied by replacing a portion of the export capacity with generation located in ROS

This recognition avoids procuring more capacity than necessary to meet the Locational Minimum ICAP Requirements

COST IMPACT/ MARKET EFFICIENCIES

Inefficient cost increases in G-J and J under the current ICAP market design will be avoided or reduced under the NYISO's proposal

While NYISO's proposed ICAP market design avoids or reduces the increase in the G-J and J Locality, the impacts in ROS and LI are efficient

Cost increases in ROS and LI are the same under both the current ICAP market construct and the proposed ICAP market design

ENVIRONMENT/ NEW TECHNOLOGY

No Impact Expected

TRANSPARENCY

No Impact Expected

Consumer Impact Approach

- As a first step, compute the potential cost impact under the current ICAP market design
- Step two is to compute the cost impact based on the NYISO's proposed ICAP market design
- Conduct sensitivities based on changes to variables that may have a significant impact on the results of the impact analysis
- Finally, look at the impact on reliability, the environment and transparency

Analysis Assumptions

- **Load forecast**
  - *2016/17 Capability Year*
- **IRM/LCR Percentages**
  - *2016/17 Capability Year*
- **ICAP Reference Point and Zero Crossing Point**
  - *2016/17 Capability Year*
- **Supply**
  - *Summer: August 2016 ICAP Market Results*
  - *Winter: April 2016 ICAP Market Results*
- **ICAP/UCAP Locational Derating Factor**
  - *Summer: 2016 Capability Period*
  - *Winter: 2015/16 Capability Period*
- **Exports from the G-J Locality**
  - *511 MW (Publically announced, Roseton's 2018/19 obligation to ISO-NE)*
  - *362 MW (Headroom on the NY/NE Interface in 2017/18)*
  - *200 MW (Lower volume sensitivity)*
  - *Generic 5% Resource EFORd*
- **Replace MW from ROS**
  - *100%, 50%*

ISO-NE/NYISO Relative Clearing Prices

- **Comparison of NYISO's 2015/2016 annualized G-J spot market clearing price to recent ISO-NE Forward Capacity Auction (FCA) and Annual Reconfiguration Auction (ARA) results**
  - ***G-J monthly average (2015/16 Capability Year)***
    - **$6.17/kW-month**
  - ***FCA 8 (2017/2018):***
    - **$7.025/kW-month existing capacity – $15/kW-month new capacity**
  - ***FCA 8 – ARA 1:***
    - **$15.819/kW-month**
  - ***FCA 8 – ARA 2:***
    - **$7.125/kW-month**
  - ***FCA 9 (2018/2019):***
    - **$7.967/kW-month**
  - ***FCA 9 – ARA 1***
    - **$8.517/kW-month**

Cost Impact under Current ICAP Rules

- Slide 8 shows the capacity price impacts if no change is made to the current ICAP market construct
- The price impacts are computed based on varying levels of exports from the G-J Locality
- We start with an assumption of 362 MW export from the G-J Locality based on the available headroom on the New York AC Ties to New England for 2017/18 (1173 MW Capacity Transfer Limit minus 811 awarded obligations)
- The first sensitivity is an export level of 511 MW from the G-J Locality based on the level of obligation Roseton was awarded in ISO-NE's FCM for 2018/19 and the possibility that bilaterals may increase the potential sales from the G-J Locality to New England for 2017/18
- The second sensitivity is an export level of 200 MW from the G-J Locality
- Slide 9 shows the capacity cost impacts based on the prices shown in Slide 8

Price Impacts under Current ICAP Market Design (Do Nothing)

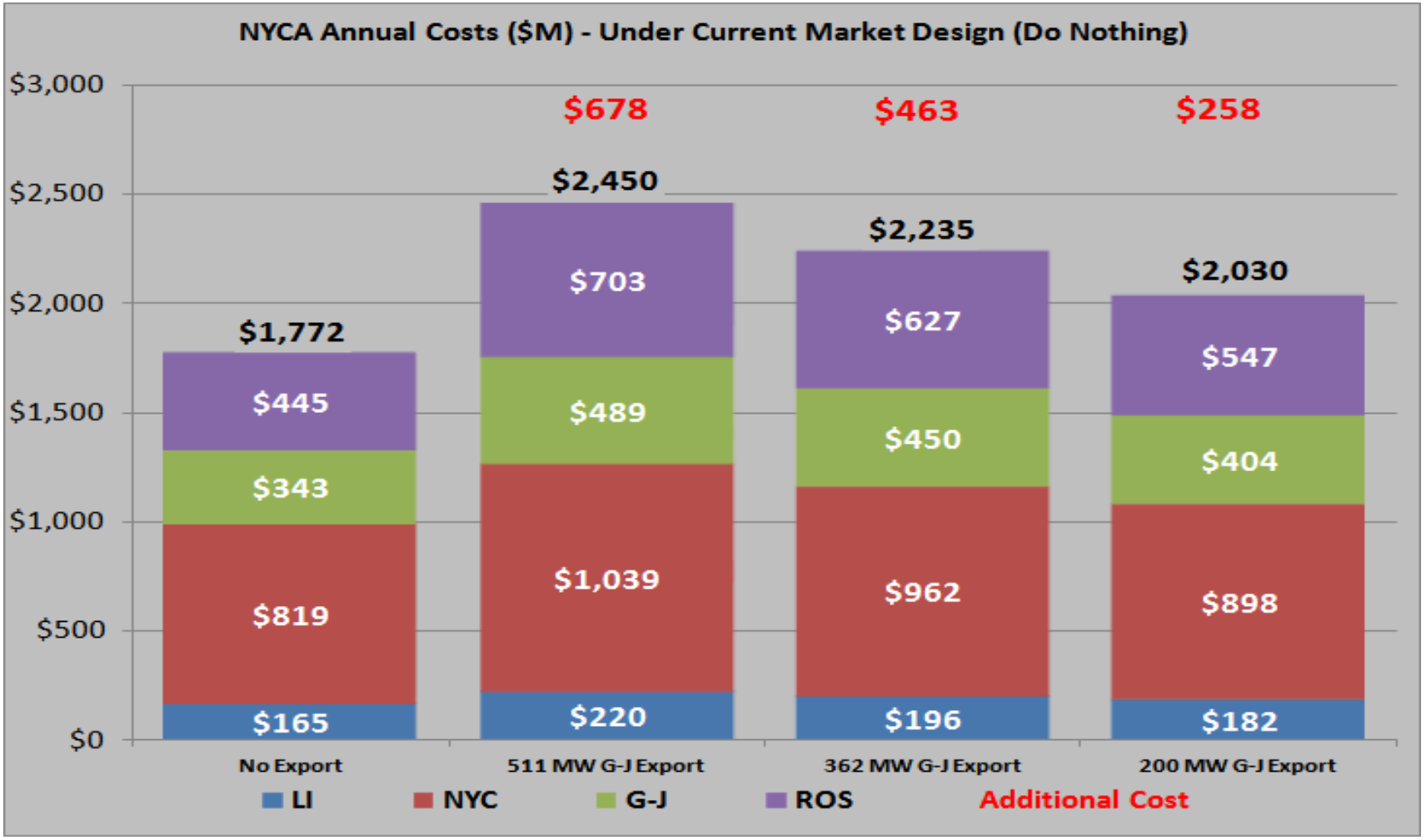
Capacity Market Impact Under Current Market Design (Do Nothing)				
Summer Market Clearing Prices				
	No Export	Do Nothing (511 MW Export)	Do Nothing (362 MW Export)	Do Nothing (200 MW Export)
NYCA	$3.64	$4.81	$4.47	$4.10
G-J	$9.23	$12.53	$11.56	$10.52
NYC	$12.21	$12.53	$12.21	$12.21
LI	$4.42	$4.81	$4.47	$4.42
Winter Market Clearing Prices				
	No Export	Do Nothing (511 MW Export)	Do Nothing (362 MW Export)	Do Nothing (200 MW Export)
NYCA	$0.40	$1.56	$1.22	$0.86
G-J	$2.33	$5.67	$4.69	$3.63
NYC	$2.33	$5.67	$4.69	$3.63
LI	$0.41	$1.56	$1.22	$0.86

Denotes price cascading

Annual* Cost Impacts under Current ICAP Market Design

***2017/2018 impacts can only be for 11 months based on the June 1 start of ISO-NE's capacity year**

(Do Nothing)



NYISO's Proposal

- Under the NYISO's current capacity market design, a capacity export from a Locality would result in a matching decrease in supply in that Locality
- However, not all the exported capacity needs to be replaced in the Locality to maintain the same level of reliability
- A portion of the exported capacity from the G-J Locality can be replaced with capacity from the ROS
- For example, exports from the G-J Locality to ISO-NE, take two paths:
  - *Directly over the Southern AC ties to ISO-NE, or*
  - *Over the Zones G and F interface, creating counter-flows, into ROS and over the Northern AC ties to ISO-NE*
- The NYISO proposal decreases the Locality ICAP requirement by the amount of G-J MW that can be replaced by ROS MW or the counter-flow created

Price Impacts under NYISO's ICAP Proposal

- NYISO's proposal recognizes that some of the exports from the G-J Locality can be replaced by ROS megawatts and that would avoid the inefficient cost impact of exporting capacity
- The price impacts under the NYISO's ICAP market design proposal are computed based on the assumption that 100% and alternatively 50% of the exports from the G-J Locality can be replaced by ROS megawatts
- Slides 12, 13 and 14 that show the price impacts for both the 100% replacement and 50% replacement assumptions are computed for the same assumed level of exports from the G-J Locality as shown in Slide 5 (511 MW, 362 MW and 200 MW) respectively

Price Impacts under Proposed ICAP Market Design (511 MW Export)

Capacity Market Impact Under 511 MW G-J Export				
Summer Market Clearing Prices				
	No Export	Do Nothing	NYISO Proposal 100% Replacement	NYISO Proposal 50% Replacement
NYCA	$3.64	$4.81	$4.81	$4.81
G-J	$9.23	$12.53	$9.17	$10.87
NYC	$12.21	$12.53	$12.21	$12.21
LI	$4.42	$4.81	$4.81	$4.81
Winter Market Clearing Prices				
	No Export	Do Nothing	NYISO Proposal 100% Replacement	NYISO Proposal 50% Replacement
NYCA	$0.40	$1.56	$1.56	$1.56
G-J	$2.33	$5.67	$2.04	$3.88
NYC	$2.33	$5.67	$2.04	$3.88
LI	$0.41	$1.56	$1.56	$1.56

Denotes price cascading

Price Impacts under Proposed ICAP Market Design (362 MW Export)

Capacity Market Impact Under 362 MW G-J Export				
Summer Market Clearing Prices				
	No Export	Do Nothing	NYISO Proposal 100% Replacement	NYISO Proposal 50% Replacement
NYCA	$3.64	$4.47	$4.47	$4.47
G-J	$9.23	$11.56	$9.19	$10.39
NYC	$12.21	$12.21	$12.21	$12.21
LI	$4.42	$4.47	$4.47	$4.47
Winter Market Clearing Prices				
	No Export	Do Nothing	NYISO Proposal 100% Replacement	NYISO Proposal 50% Replacement
NYCA	$0.40	$1.22	$1.22	$1.22
G-J	$2.33	$4.69	$2.13	$3.43
NYC	$2.33	$4.69	$2.13	$3.43
LI	$0.41	$1.22	$1.22	$1.22

Denotes price cascading

Price Impacts under Proposed ICAP Market Design (200 MW Export)

Capacity Market Impact Under 200 MW G-J Export				
Summer Market Clearing Prices				
	No Export	Do Nothing	NYISO Proposal 100% Replacement	NYISO Proposal 50% Replacement
NYCA	$3.64	$4.10	$4.10	$4.10
G-J	$9.23	$10.52	$9.20	$9.87
NYC	$12.21	$12.21	$12.21	$12.21
LI	$4.42	$4.42	$4.42	$4.42
Winter Market Clearing Prices				
	No Export	Do Nothing	NYISO Proposal 100% Replacement	NYISO Proposal 50% Replacement
NYCA	$0.40	$0.86	$0.86	$0.86
G-J	$2.33	$3.63	$2.21	$2.93
NYC	$2.33	$3.63	$2.21	$2.93
LI	$0.41	$0.86	$0.86	$0.86

Denotes price cascading

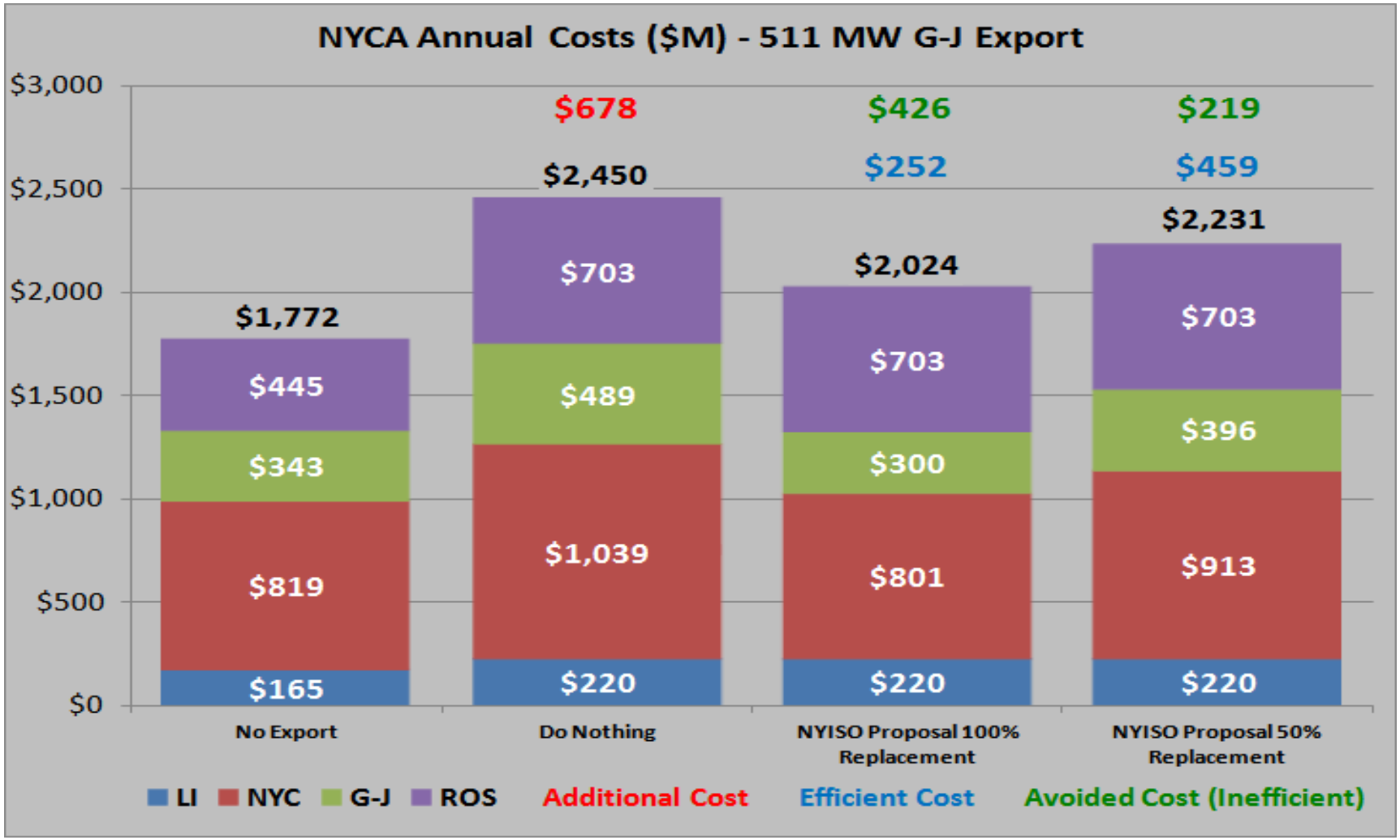
Cost Impacts under NYISO's ICAP Proposal

- **Slides 16, 17 and 18 show the cost impact under the NYISO's proposed ICAP market design for export capacity levels of 511 MW, 362 MW and 200 MW respectively with both the 100% and 50% replacement assumptions**
  - ***Capacity cost impacts based on the NYISO's ICAP market proposal with 100% replacement:***
    - **The cost increases under the different MW export assumptions that G-J and NYC consumers may incur under the current ICAP market construct (shown in Slide 9) will be avoided under the NYISO's proposal**
    - **A change in exports from any Locality is accounted for in the NYCA requirements. While the NYISO's ICAP market design proposal avoids the increase in the G-J Locality and NYC, it appropriately does not address the impact in the NYCA-wide and LI clearing prices**
    - **The cost increases under the different MW export assumptions that customers may incur for satisfying NYCA-wide and LI requirements are the same under both the current ICAP market construct and the proposed ICAP market design**
  - ***Capacity cost impacts based on the NYISO's ICAP market proposal with 50% replacement:***
    - **The cost increases under the different MW export assumptions that G-J and NYC consumers may incur under the current ICAP market construct (shown in Slide 9) will be reduced under the NYISO's proposal**
    - **A change in exports from any Locality is accounted for in the NYCA requirements. While the NYISO's ICAP market design proposal reduces the increase in the G-J Locality and NYC, it appropriately does not address the impact in the NYCA-wide and LI clearing prices**
    - **The cost increases under the different MW export assumptions that customers may incur for satisfying NYCA-wide and LI requirements are the same under both the current ICAP market construct and the proposed ICAP market design**

Annual* Cost Impacts under NYISO Proposed ICAP Market Design

2017/2018 impacts can only be for 11 months based on the June 1 start of ISO-NE's capacity year

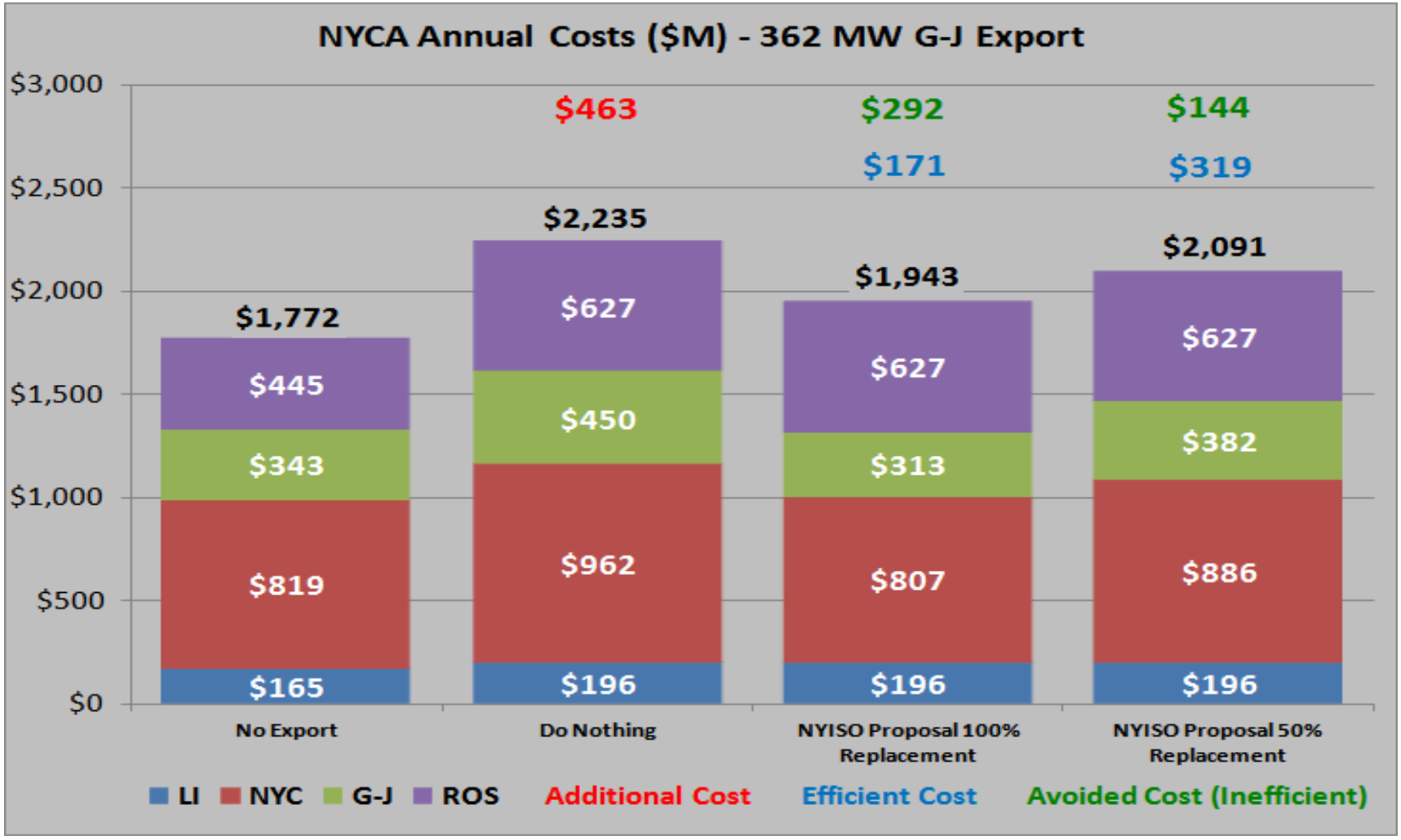
(511 MW Export)



Annual* Cost Impacts under NYISO Proposed ICAP Market Design

2017/2018 impacts can only be for 11 months based on the June 1 start of ISO-NE's capacity year

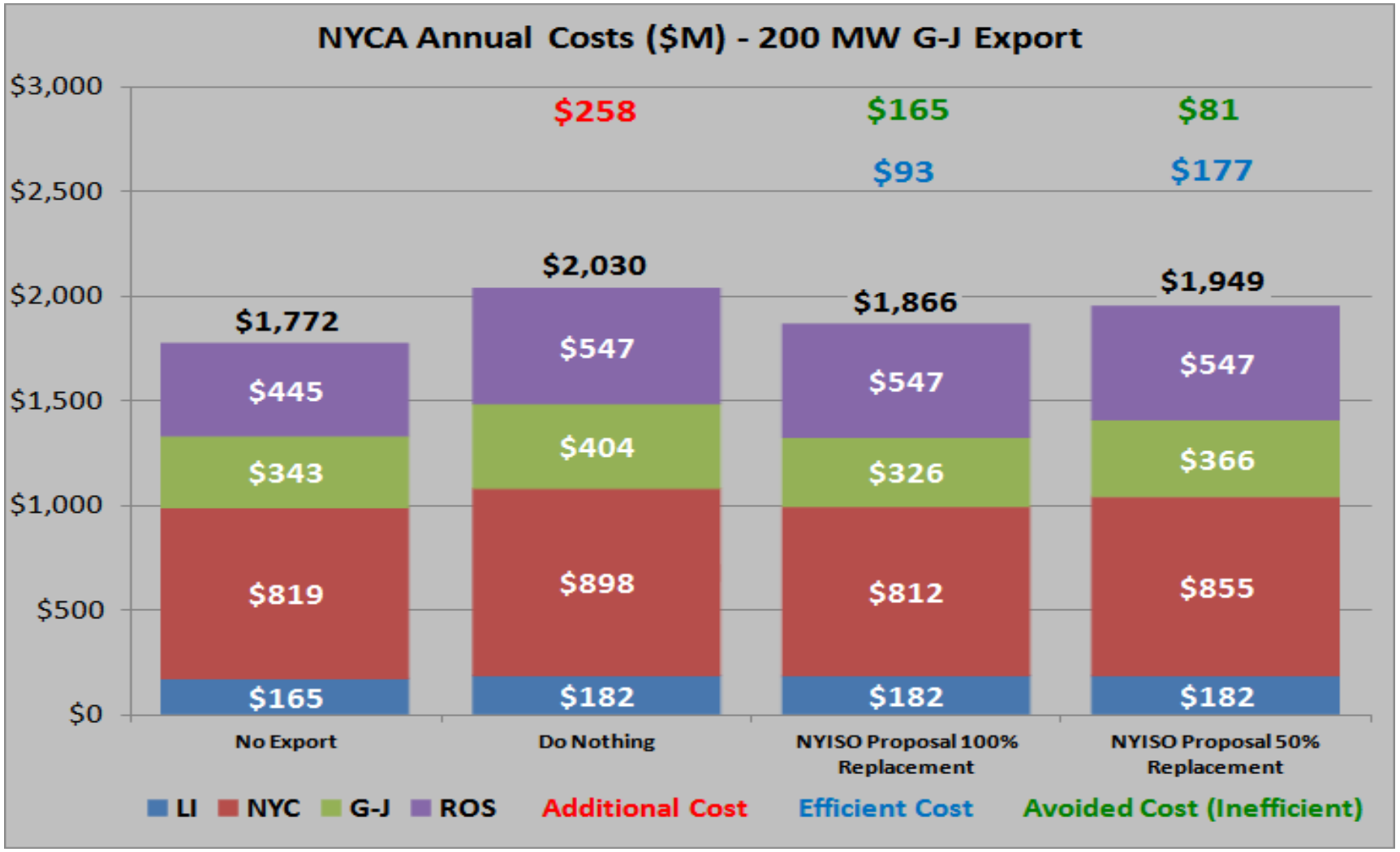
(362 MW Export)



Annual* Cost Impacts under NYISO Proposed ICAP Market Design

2017/2018 impacts can only be for 11 months based on the June 1 start of ISO-NE's capacity year

(200 MW Export)



Reliability Impact

- **Under the NYISO's current capacity market design, the impact of a generator exporting capacity from a constrained Locality is not accurately reflected**
- **The NYISO's proposal addresses the G-J Locality requirement by recognizing that a generator that exports capacity continues to operate in the Locality and requirements can be satisfied by replacing a portion of the export capacity with generation located in ROS:**
  - ***No additional need is created by the portion of the locational export capacity that can be substituted with ROS capacity***
  - ***Continue to be available for SRE by the NYISO***
- **This recognition avoids procuring more capacity than necessary to meet the Locational Minimum ICAP Requirements**

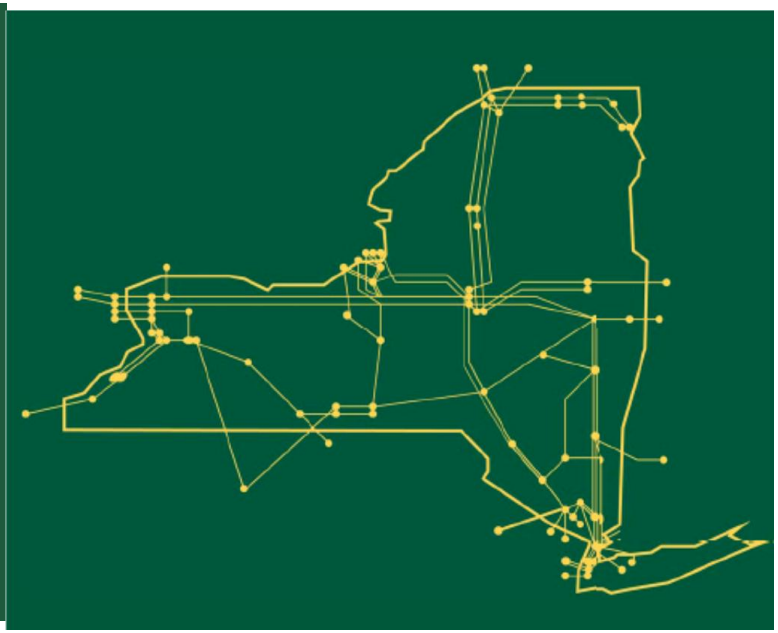
Environmental Impact

- No impact expected

Impact on Transparency

- No impact expected

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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