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Independent System Operator

# Constraint Specific Transmission Shortage Pricing : Project Kickoff


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WebEx

# Agenda

- Project Background
- Recap of 2019 Market Design Concept Proposal
- Next Steps

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# Previous Presentations

| Date | Working Group | Discussion points and links to materials |
|---|---|---|
| Nov 21, 2019 | Market Issues Working Group (MIWG) | Constraint Specific Transmission Shortage Pricing |
| Feb 15, 2019 | Market Issues Working Group (MIWG) | Constraint Specific Transmission Shortage Pricing - Market Design Concept Proposal |
| October 2, 2018 | Market Issues Working Group (MIWG) | Constraint Specific Transmission Shortage Pricing – Study Review |
| August 7, 2018 | Market Issues Working Group (MIWG) | Constraint Specific Transmission Shortage Pricing – High Level Design Considerations |
| June 25, 2018 | Market Issues Working Group (MIWG) | Constraint Specific Transmission Shortage Pricing – Analysis Update |
| April 10, 2018 | Market Issues Working Group (MIWG) | Constraint Specific Transmission Shortage Pricing – Study Approach |

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# Project Background



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# A Grid in Transition – The Plan

- **Carbon Pricing**
- **Comprehensive Mitigation Review**
- **DER Participation Model**
- **Energy Storage Participation Model**
- **Hybrid Storage Model**

**Aligning Competitive Markets and New York State Clean Energy Objectives**

- **Enhancing Energy & Shortage Pricing**
  - Ancillary Services Shortage Pricing
  - **Constraint Specific Transmission Shortage Pricing**
  - Enhanced Fast Start Pricing
- **Review Energy & Ancillary Services Product Design**
  - More Granular Operating Reserves
  - Reserve Enhancements for Constrained Areas
  - Reserves for Resource Flexibility

**Valuing Resource & Grid Flexibility**

- **Enhancements to Resource Adequacy Models**
- **Revise Resource Capacity Ratings to Reflect Reliability Contribution**
  - Expanding Capacity Eligibility
  - Tailored Availability Metric
- **Capacity Demand Curve Adjustments**

**Improving Capacity Market Valuation**

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# Background - Current Transmission Constraint Pricing (TCP) Logic

- **The NYISO assigns a constraint reliability margin (CRM) to facilities and interfaces to help manage transmission modeling uncertainty.**
  - The CRM value represents a reduction to the otherwise applicable transmission facility rating or interface limit that is used to set the effective limit in the market software
  - A zero value CRM is applied to facilities that are generally located within a generation pocket, as well as external interfaces
- **The following limits on Shadow Prices are applied in instances of transmission shortages (implemented on June 20, 2017)**

| Facility Type | Demand (MW) | Demand Curve Price ($/MWh) | Price Cap |
|---|---|---|---|
| Non-Zero CRM | Up to 5 | $350 | $4000 |
| | >5 to 20 | $1175 | |
| Zero CRM | N/A | N/A | $4000 |

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# Background - Current Transmission Constraint Pricing (TCP) Logic

- For facilities with a non-zero value CRM, the software will seek redispatch at a shadow price up to $4,000 per MW, with consideration of the 20 MW of relief afforded by the two-step demand curve mechanism.
- For zero value CRM facilities, the software will seek redispatch at a shadow price up to $4,000 per MW, without consideration of any demand curve mechanism.
- For all facilities, in situations where insufficient resource/demand curve capacity is available to fully resolve a constraint, "relaxation" is applied
  - To determine the applicable shadow cost for the transmission constraint, the applicable limit for the facility is increased to a value equal to the flow that can be achieved on the constraint by the available resources (including the 20 MW of relief from the demand curve mechanism, if applicable), plus 0.2 MW

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# Background – Progress so far

- The NYISO completed a study of the current transmission constraint pricing logic in September 2018.[1]
  - The study included a number of recommended considerations with respect to potential enhancements to the current TCP logic
- The NYISO presented a Market Design Concept Proposal in February 2019.[2]

1 Link to the Constraint Specific Transmission Shortage Pricing study:
https://www.nyiso.com/documents/20142/2549789/Constraint%20Specific%20Transmission%20Shortage%20Pricing%20-%20Paper_Final.pdf
2 Link to the Constraint Specific Transmission Shortage Pricing Market Design Concept Proposal:
https://www.nyiso.com/documents/20142/5020603/Constraint%20Specific%20Transmission%20Shortage%20Pricing%20_MDCP_021519.pdf

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# Recap of 2019 Market Design Concept Proposal



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# Summary of the 2019 Proposal

- **The NYISO proposed to implement a revised approach to the current TCP logic consisting of the following components:**
  1. Establish a revised six-step transmission demand curve mechanism for facilities currently assigned a non-zero CRM value.
  2. Apply a non-zero CRM value to internal facilities currently assigned a zero value CRM, with a separate demand curve mechanism for such facilities.
  3. Maintain the current single value $4,000 shadow price capping method for external interface facilities (zero value CRM) permitting the continued use of constraint relaxation.

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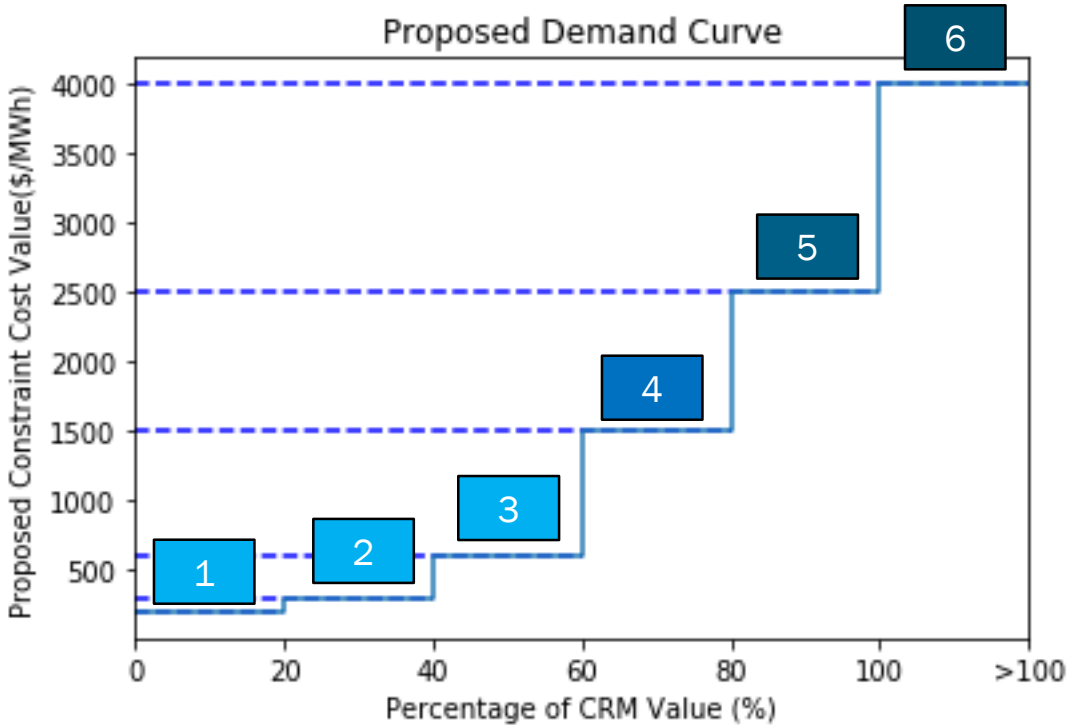
# Proposal for Non-Zero CRM Value Facilities

- The NYISO proposed following transmission demand curve for facilities currently assigned a non-zero value CRM:




**1, 2, 3**
- Steps 1, 2 & 3 are priced at $200, $300 and $600 per MWh, respectively
- These are based on historical cost of solving the transmission system through physical re-dispatch (study period July 2017 – Feb 2018)

**4**
- Step 4 is priced at $1,500 per MWh
- This step is based on appropriate tradeoff between transmission constraints and reserve products

**5**
- Step 5 is priced at $2,500 per MWh
- Provides transition step between Step 4 and 6

**6**
- Step 6 is priced at $4,000 per MWh
- Sufficient value to facilitate efficient re-dispatch of higher cost physical resources
- Applies to all shortages in excess of the applicable CRM value

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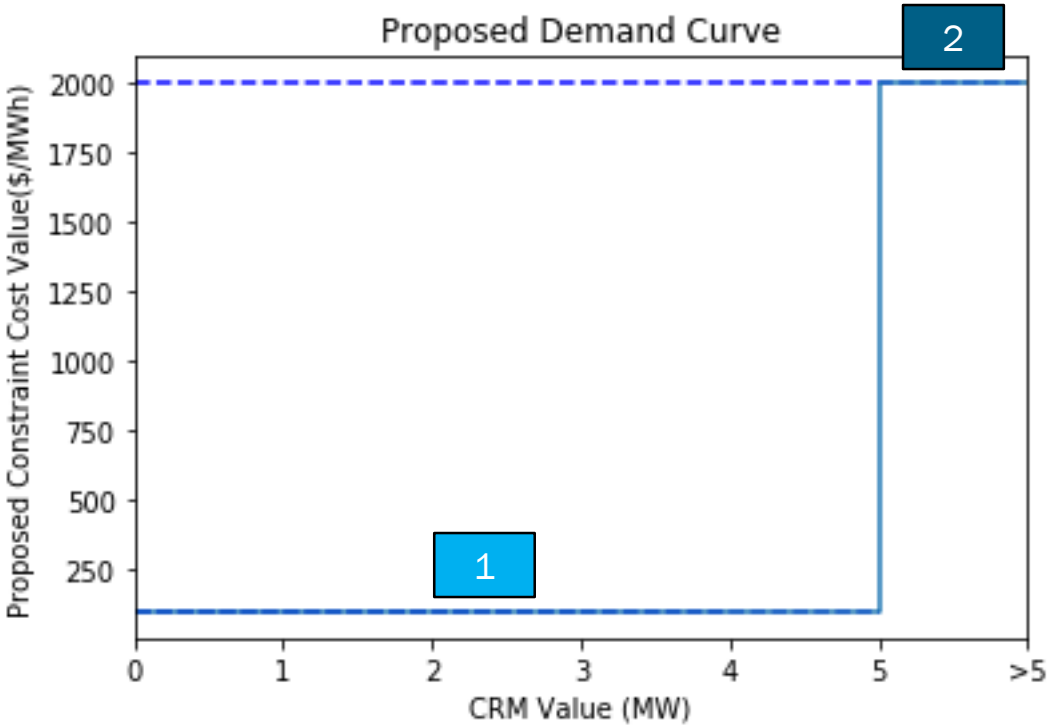
# Proposal for Current Zero Value CRM Internal Facilities

- The NYISO proposed to apply a small non-zero CRM value (5 MW) to internal facilities currently assigned a zero value CRM and apply the following demand curve :




1

- Step 1 is priced at $100 per MWh
- This value is based on historical cost of solving the transmission constraints through physical re-dispatch in zero value CRM facilities (study period July 2017 – Feb 2018)

2

- Step 2 is priced at $2000 per MWh
- Sufficient value to facilitate efficient re-dispatch of higher cost physical resources

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# Next Steps



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# Next Steps

- **Project Deliverable: Market Design Complete in Q4 2021**
- **Q2/Q3 2021**
  - Update prior analysis with more recent data and assess whether adjustments to the proposal may be warranted
    - The demand curve pricing values for the 2019 proposal utilized data from July 2017 – February 2018
  - Evaluate feedback received on the past proposal
  - Continue discussions on the design proposal with stakeholders

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# Next Steps

- **Q3/Q4 2021**
  - Finalize design proposal
  - Develop associated tariff revisions
  - Present Consumer Impact Analysis
  - Seek stakeholder approval at BIC and MC

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# Questions?

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# Our mission, in collaboration with our stakeholders, is to serve the public interest and provide benefit to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policymakers, stakeholders and investors in the power system

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