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Independent System Operator

Internal Controllable Lines: Energy Market Tariff

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Agenda

- **Project Review**
- **New Tariff Revisions**
  - Residual Payments (OATT 6.1.8)
  - Rate Schedule 2 (OATT 6.2)
  - Definition of Actual Energy Withdrawals (MST 2.1)
- **Updated Tariff Revisions**
  - Deviation Charges (MST 32)
  - TCC exclusion (OATT 20.1. & 20.2)
  - Definition of Withdrawal Billing Unit (OATT 1.23)
    - ❖ previously proposed changes deleted
- **Summary of Previously Posted Energy Market Tariff Revisions**
- **Next Steps**

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Project Review

Previous Discussions

Date	Working Group	Discussion Points and Links to Materials
February 21, 2023	ICAPWG/MIWG	Internal Controllable Lines: 2023 Kickoff: https://www.nyiso.com/documents/20142/36339783/ICL_MIWG_022123.pdf/3859d78e-68aa-e5fc-3a7a-fba6f1ed552d
June 27, 2023	ICAPWG/MIWG	Internal Controllable Lines: Proposed Energy Market Tariff Revisions https://www.nyiso.com/documents/20142/38423065/7%20ICL_Energy%20MarketTariff%20Revisions_ICAPWG_MIWG_6.27.23.pdf/c97ff397-07d3-7897-99f1-d7817688623a
August 9, 2023	ICAPWG/MIWG	Internal Controllable Lines: Proposed Energy Market Tariff Revisions 2 https://www.nyiso.com/documents/20142/39257338/ICL_Energy%20MarketTariff%20Revisions_ICAPWG_MIWG_8.9.23.pdf/92824fa6-cfdb-52da-71cf-b1828791ece1
September 18, 2023	ICAPWG/MIWG	Internal Controllable Lines: Proposed Energy Market Tariff Revisions 3 https://www.nyiso.com/documents/20142/40044890/4%20ICL_Energy%20MarketTariff%20Revisions_ICAPWG_MIWG_9.18.23_final.pdf/ef3f459f-ffc6-31f7-9e14-d7674931edda
October 12, 2023	ICAPWG/MIWG	Internal Controllable Lines: Proposed Energy Market Tariff Revisions 4 https://www.nyiso.com/documents/20142/40559142/ICL_Energy%20Market%20Tariff%20Revisions%20final.pdf/effe6135-aacd-d15d-ccf8-9fbcf0ef2d34
October 19, 2023	ICAPWG/MIWG	Internal Controllable Lines: TCC Market Considerations https://www.nyiso.com/documents/20142/40696384/ICL%20TCC%20Market%20Considerations%20-%2010192023%20MIWG.pdf/3ab9f868-b8ce-1093-9048-ba8223975547

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Project Review

- NYSERDA's Tier 4 REC initiative has driven the prioritization of this project to develop market participation rules for an Internal Controllable Line (ICL)
- The 2022 project reached Market Design Concept Proposed (MDCP)
  - ICL MDCP Presentation
- The 2023 project milestone is Market Design Complete (MDC)
  - Today's presentation summarizes additional energy market-related Tariff revisions

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Summary of Market Design Concept

- **The NYISO will optimize ICL flows based on economic dispatch, meeting New York State load at least as-bid cost, taking account of the incremental bids and incremental losses of ICL operation**
  - The amount of power delivered at the point of injection will be less than the amount of power withdrawn at the source due to line losses
  - The ICL owner retains congestion rents (the LBMP differential) created by the operation of the line, which could include losses
  - Any Renewable Energy Credit (REC) payments will occur outside of the NYISO settlement system

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Draft Tariff Revisions

MST 2.1

- As previously reviewed in revisions to OATT 1.9 and 1.23, for the purposes of assessing fees ICLs will be billed based on Injection Billing Units
- Definition of Actual Energy Withdrawals in MST 2.1 is revised to clarify that simultaneous withdrawals and injections by ICLs will be treated as Injection Billing Units for the purpose of assessing fees

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OATT 6.1 and 6.2

- Inclusion of ICL Deviation Charges in the calculation of residual payments in OATT 6.1.8
- ICL may be eligible to provide Voltage Support Service based on technology chosen for the ICL. OATT 6.2, Charges for Voltage Support Service, revised to allow for compensation to Internal Controllable Lines

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Updated Draft Tariff Revisions

Deviation Charges

- Generators and other Resources may be charged when deviating from their basepoint signal beyond allowable tolerances
  - For example, see NYISO Market Services Tariff Section 15.3A
- Initial proposal based ICL deviation charges on out-of-market payments
  - Deviation charges for ICLs defined in MST 32 (“Attachment Q”)
- Revised proposal ties ICL deviation charges to (a) energy market incentives, and (b) cost to the system

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Deviation Charges (continued)

- **For over-injections an ICL may be charged the LBMP at the point of injection**
  - Intended to disincentive price chasing in the energy market
- **For over and under-injections an ICL may be charged shortage cost for 30-minute Reserves**
  - An ICL that is not following schedule may cause post-contingency overloads, which could be an unpriced violation of security limits
  - The NYISO uses Operating Reserve Demand Curves (ORDCs) as proxy costs for violations of security limits
  - The proxy cost for the unscheduled flow of an ICL is proposed to be the shortage value of the Eastern 30-minute ORDC (currently $40/MW)
  - A detailed description of the development of ORDCs can be found here: Ancillary Services Shortage Pricing (nyiso.com)

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Proposed Deviation Charges (MST 32)

Over-Injection Charge formula:

$$\sum_{i=1}^{N}\left[Max(AEI_i - (RTB_i + DT), 0)\ x\ Max\left(RDC_{East}, LBMPI_i^{RT}\right)\ x\ (s_i \div 3600\ seconds)\right]$$

Under-Injection Charge formula

$$\sum_{i=1}^{N}\left[Max\left((RTB_i - DT) - AEI_i, 0\right)\ x\ RDC_{East}\ x\ (s_i \div 3600\ seconds)\right]$$

Where,

N	= Number of intervals in the hour
AEI_i	= Average Actual Energy Injection in RTD interval i, expressed in megawatts.
RTB_i	= RTD Real-time Basepoint in interval i, expressed in megawatts
DT:	= Deviation Tolerance, expressed in megawatts
s_i:	= Length of RTD interval i, expressed in seconds.
$LBMPI_i^{RT}$	= Real-Time LBMP at the injection bus in interval i, expressed in $/MWh
RDC_{East}	= Price on Eastern 30-Minute Reserves demand curve when the 30-minute requirement is less than or equal to the target level of the requirement (the first step of the Eastern 30-Minute Reserves demand curve).

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OATT Revisions for TCC Modeling

- At the October 19 MIWG the NYISO proposed to minimize the potential for inadvertent impacts to the TCC market and related processes by excluding consideration of ICLs from the TCC auction models
- Sections 20.1.1, 20.2.1 (including Formula N-1) and 20.2.2 have been revised to clarify this exclusion
  - Revisions made to better clarify that ICL congestion-related settlements will be excluded from the determination of Day-Ahead Market (DAM) net congestion rent for the settlement procedures under Attachment N of the OATT
    - DAM settlements for ICLs shall be determined pursuant to MST Section 32.4.1

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Removal of Revisions to OATT 1.23

- At the October 12 MIWG revisions to OATT 1.23 “Withdrawal Billing Units” were proposed
- With the proposed changes to MST 2.1 “Actual Energy Withdrawals” the revisions to OATT 1.23 are no longer required

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Summary of Previously Posted ICL Energy Market Tariff Revisions

Definitions (MST 2)

- 2.2 – Basepoint Signals, Bid Price, Bilateral Transactions
- 2.3 – Controllable Transmission
- 2.4 – Dispatchable
- 2.9 – Internal Controllable Line, Incremental Energy Bid, ISO-Committed Flexible
- 2.12 – Lower Operating Limit
- 2.14 – Marginal Losses, Minimum Generation
- 2.15 – Out-of-Merit
- 2.19 –Start-up, Supplier

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Market Services (MST 4)

- 4.1 – Zonal Uplift Report, Operator-Initiative Commitment Report, Customer Responsibilities, Commitment for Reliability
- 4.2 – Bidding Requirements, Bid Parameters, Operating Limits, Bilateral Transactions
- 4.4 – Real-Time Bids
- 4.5 – Real-Time Settlements (defined in MST 32)
- 4.6 – Bid Production Cost Guarantees

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Market Services Tariff Sections 5 – 25

- 5.2 – Suspension of the Ability to Increase Bids in Real-Time
- 13 – Revenue quality meters at each terminal
- 15.2 – Payments for Voltage Support Service
- 17.1 – Real-Time LBMP Calculation Procedures
- 18 – Bid Production Cost Guarantee Payments
- 21 – Bid Restrictions
- 25 – Day-Ahead Margin Assurance Payments

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OATT Revisions

- 1.9 – An ICL will be charged Rate Schedule 1 NYISO Budget and FERC fees based on its Injection Billing Units
- 2.7 – An ICL will not be charged TSC or NTAC
- 3 – ISO schedules transmission service over an ICL
- 19 – ICLs will not be modeled as part of the TCC market (19.2, 19.8 and 19.9)
- 20 – ICLs and related DAM settlements will not be considered as part of the Attachment N settlement procedures (20.1 and 20.2)

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Next Steps

Next Steps

- November BIC and MC Vote
- Target FERC filing Q1 2024

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Our Mission & Vision

Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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