

# Carbon Pricing

## Tariff Revisions

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# Background

# Tariff Revision Presentations

Date	Working Group	Link to presentation
01-22-19	Market Issues Working Group (MIWG)	<a href="https://www.nyiso.com/documents/20142/4582875/01222019%20Carbon%20Pricing%20Tariff%20Overview.pdf/9f58ee00-93b9-71f9-226e-473165b3409e">https://www.nyiso.com/documents/20142/4582875/01222019%20Carbon%20Pricing%20Tariff%20Overview.pdf/9f58ee00-93b9-71f9-226e-473165b3409e</a>
01-31-19	Market Issues Working Group (MIWG)	<a href="https://www.nyiso.com/documents/20142/4779557/1.31.2019_MIWG_Carbon_Pricing_Tariff_FINAL.pdf/9aa5b7e0-5566-5d2b-25dc-b28db05e4b4d">https://www.nyiso.com/documents/20142/4779557/1.31.2019_MIWG_Carbon_Pricing_Tariff_FINAL.pdf/9aa5b7e0-5566-5d2b-25dc-b28db05e4b4d</a>
02-28-19	Market Issues Working Group (MIWG)	<a href="https://www.nyiso.com/documents/20142/5256593/2.28.2019_MIWG_Carbon_Pricing_Tariff.pdf/fc24fdfd-9e10-909a-f08a-021fd67d8268">https://www.nyiso.com/documents/20142/5256593/2.28.2019_MIWG_Carbon_Pricing_Tariff.pdf/fc24fdfd-9e10-909a-f08a-021fd67d8268</a>
05-22-19	Market Issues Working Group (MIWG)	<a href="https://www.nyiso.com/documents/20142/6665211/5.22.2019_MIWG_Carbon_Pricing_Tariff_FINAL.pdf/2bccd144-d98e-8458-d28d-267c7aba7960">https://www.nyiso.com/documents/20142/6665211/5.22.2019_MIWG_Carbon_Pricing_Tariff_FINAL.pdf/2bccd144-d98e-8458-d28d-267c7aba7960</a>
05-30-19	Market Issues Working Group (MIWG)	<a href="https://www.nyiso.com/documents/20142/6785167/5.30.2019_MIWG_Carbon_Pricing_Tariff_FINAL.pdf/27401451-f656-df0c-9968-a881fa7029de">https://www.nyiso.com/documents/20142/6785167/5.30.2019_MIWG_Carbon_Pricing_Tariff_FINAL.pdf/27401451-f656-df0c-9968-a881fa7029de</a>

# Draft Tariff Language Revisions since the 5/30/2019 MIWG Meeting\*

\*Link to the 5/30/2019 MIWG meeting materials:

[https://www.nyiso.com/documents/20142/6785167/5.30.2019\\_MIWG\\_Carbon\\_Pricing\\_Tariff\\_FINAL.pdf/27401451-f656-df0c-9968-a881fa7029de](https://www.nyiso.com/documents/20142/6785167/5.30.2019_MIWG_Carbon_Pricing_Tariff_FINAL.pdf/27401451-f656-df0c-9968-a881fa7029de)

# Revisions since the 5/30/2019 MIWG Meeting

- The OATT Section 6.18.4 tariff revisions have been updated to reflect stakeholder feedback.
- Certain OATT tariff revisions mirroring the previously discussed MST tariff language have been posted with today's MIWG meeting materials.

# LBMPc – OATT Section 6.18.4

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- The NYISO shall calculate the LBMPc for each Load Zone and Proxy Generator Bus in Real-Time for each RTC and RTD interval, as well as look-ahead intervals using the formula shown on this slide.
- The following values shall be set in accordance with ISO procedures:
  - Variable operations and maintenance cost (\$/MWh)
  - Fuel indices (\$/mmBTU)
  - Emissions (tons/mmBTU)
  - Minimum Implied Heat Rate (mmBTU/MWh)
  - Maximum Implied Heat Rate (mmBTU/MWh)
- If the LBMP is corrected, then the LBMPc shall be recalculated based on the applicable revised LBMP and updated if necessary.

$$Emissions\ Cost_{ip} = (Emissions_{ip} * SCC_i)$$

$$\left( \frac{LBMP_{ip} - VOM_{ip}}{Fuel\ Cost_{ip} + Emissions\ Cost_{ip}} \right) = IHR_{ip}$$

$$LBMPc_{ip} = Max\left( (IHR_{ip} * Net\ SCC_i * Emissions_{ip}), 0 \right)$$



# Additional OATT Tariff Revisions

# OATT Tariff Revisions

- **Certain OATT tariff revisions mirror the previously discussed MST tariff language:**
  - OATT Sections 1.3 and 1.19 reflect the new MST definitions
  - OATT Section 2.7.4.2.1 incorporates the same revisions as those proposed in MST Section 7.4.1.1

# Carbon Pricing Timeline

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# Carbon Pricing Timeline

- **The presentation of the completed market design is targeted for the June 20, 2019 BIC meeting.**
  - There will be no vote on the market design at the June 20<sup>th</sup> BIC.
    - The BIC vote on the Carbon Pricing proposal is currently planned for a later date.
    - Market Participants will be provided advanced notice of the vote.
  - Stakeholder discussions regarding the Carbon Pricing Supplemental Analysis will continue at ICAPWG/MIWG.
  - The Carbon Pricing Supplemental Analysis is targeted for discussion at June and July ICAPWG/MIWG meetings.

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# Appendix: Previously Discussed Tariff Language Revisions

# Select Definitions

# Select Definitions

- **New defined tariff terms are necessary to effectuate carbon pricing.**
  - **Carbon Emissions:** Point-of-production carbon dioxide (“CO2”) emissions, in short tons, that result from Energy injected, or start-up to inject Energy, in connection with participation in the ISO Administered Markets.
  - **Cost of Carbon Emissions:** For purposes of the ISO Administered Markets, a dollar per short ton value of Carbon Emissions equal to the Social Cost of Carbon minus the value of any other state, multi-state, or federal charges for Carbon Emissions that the Supplier is required to pay, as set forth in ISO Procedures, including but not limited to carbon dioxide emission allowance costs. If the calculated Cost of Carbon Emissions is negative, the ISO shall set the value to zero.
  - **Social Cost of Carbon (“SCC”):** A value, in dollars per short ton of carbon dioxide, established by the PSC in accordance with the New York State Administrative Procedure Act.

# Annual Updates for Net Energy and Ancillary Revenue Offset (MST 5.14.1.2.2.2)



# Annual Updates for Net Energy and Ancillary Revenue Offset

- For purposes of the annual updates to the ICAP Demand Curves, the NYISO determines updated values for the net Energy and Ancillary Services revenue offset associated with each peaking plant.
- **The Cost of Carbon Emissions under the carbon pricing proposal is included within the variable cost of the applicable peaking plant.**
  - The NYISO has also noted that this cost shall be zero prior to the effective date of the carbon pricing proposal.

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# Carbon Charges for Suppliers – MST Rate Schedule 9, Section 15.9.1 & 15.9.2

# Carbon Charges for Suppliers

- All Suppliers, electrically located in the NYCA, with Carbon Emissions shall be subject to the Supplier Carbon Charge except Demand Side Resources participating as an SCR or EDRP and Suppliers that came into operation after January 1, 2015 and meet the eligibility criteria set forth in Appendix A to the NYPSC Order Adopting a Clean Energy Standard.\*
- The ISO shall calculate a Supplier Carbon Charge based on the Supplier's reported Carbon Emissions data; however, if the Supplier has not provided hourly Carbon Emissions data to the ISO, the ISO shall calculate the Supplier Carbon Charge based on its estimate of the Carbon Emissions.

\*NYPSC Case No. 15-E-0302 – Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard – Order Adopting a Clean Energy Standard (August 1, 2016).

# Carbon Charges for Suppliers

## ■ Section 15.9.1 Carbon Charges

- The NYISO shall charge each applicable Supplier for Carbon Emissions (“Supplier Carbon Charge”).

**Supplier Carbon Charge for Supplier  $u$  in hour  $h = CE_{uh} * CC_{uh}$**

Where:

$CE_{uh}$  = Carbon Emissions by Supplier  $u$  in hour  $h$

$CC_{uh}$  = The Cost of Carbon Emissions for Supplier  $u$  in hour  $h$

# Carbon Charges for Suppliers

## ■ Section 15.9.2 Reporting Carbon Emissions

- This section refers to the timeframes for emissions reporting outlined in MST Section 7.4.1.1, as well as discusses penalties. Appendix II of this presentation includes examples of potential penalties.
  - Section 15.9.2.1 notes that if Carbon Emissions are not reported timely by day 60, then the Supplier will be charged 0.5 times the applicable Carbon Emissions.
    - This penalty is in addition to the charge for Carbon Emissions on the initial invoice.
  - Section 15.9.2.1 further notes that if Carbon Emissions are not reported timely by day 170, then the Supplier will be charged 1.5 times the applicable Carbon Emissions.
    - This penalty is in addition to the charge for Carbon Emissions on the initial invoice.
    - This penalty is in addition to the charge if Carbon Emissions are not reported timely by day 60.
  - Section 15.9.2.2 notes that if Carbon Emissions are underreported, then the Supplier will be charged 2 times the applicable Carbon Emissions
    - This penalty is in addition to the charge for Carbon Emissions on the initial invoice.
    - This penalty is in addition to the failure to report by day 60 penalty outlined in section 15.9.2.1, if applicable.

# Example - Potential Penalties during Emissions Data Submission

Please Note: This example expands upon tariff revisions in MST 15.9.

# Example 1 Assumptions

- **Assume for purposes of example 1:**
  - The NYISO estimates for the initial invoice that the generator's emissions are 9 tons.
  - The cost of carbon emissions is \$40/ton.
  - The generator has 10 tons of actual carbon emissions.
  - The generator does not report emissions by the 60 day deadline.
  - The generator does not report emissions by the 170 day deadline.
- **Invoice charges in this example show the generator's final position as of the invoice version.**
  - No addition or subtraction between invoice versions are necessary in this example

# Example 1

- **Initial Invoice Version 1 (before 60 day deadline)**
  - Supplier Carbon Charge = \$360
  - Failure to report by 60 day deadline penalty = Not Applicable
  - Failure to report by 170 day deadline penalty = Not Applicable
  - Failure to report accurate final carbon emissions penalty = Not Applicable
- **Total = \$360**



# Example 1

- **Settlement Adjustment Invoice Version 2 (after 60 day deadline, before 170 day deadline)**
  - Supplier Carbon Charge = \$360
  - Failure to report by 60 day deadline penalty = \$180
  - Failure to report by 170 day deadline penalty = Not Applicable
  - Failure to report accurate final carbon emissions penalty = Not Applicable
- **Total = \$540**

# Example 1

- **Final Invoice (after 170 day deadline)**
  - Supplier Carbon Charge = \$360
  - Failure to report by 60 day deadline penalty = \$180
  - Failure to report by 170 day deadline penalty = \$540
  - Failure to report accurate final carbon emissions penalty = Not Applicable
- **Total = \$1,080**

# Example 2 Assumptions

- Assume that at day 165, the generator in example 1 reports emissions of 6 tons, when the generator emissions are actually 10 tons.
- Assume for purposes of example 2:
  - The NYISO estimates for the initial invoice that the generator's emissions are 9 tons.
  - The cost of carbon emissions is \$40/ton.
  - The generator does not report emissions by the 60 day deadline.
  - The generator reports emissions of 6 tons at day 165.
  - The generator has 10 tons of actual carbon emissions.

## Example 2

- **Initial Invoice Version 1 and Settlement Adjustment Invoice Version 2 would be the same as in example 1.**
- **Final Invoice**
  - Supplier Carbon Charge = \$240
  - Failure to report by 60 day deadline penalty = \$180
  - Failure to report by 170 day deadline penalty = Not Applicable
- **Invoice issued after final bill closeout**
  - Failure to report accurate final carbon emissions penalty = \$320
- **Total = \$740**

# Social Cost of Carbon – MST

## Section 15.9.3

# Social Cost of Carbon – MST Section 15.9.3

- The ISO shall utilize the Social Cost of Carbon in the ISO Administered Markets.
- The ISO Services Tariff will reference the PSC order setting the initial Social Cost of Carbon.
- The ISO shall maintain a posting on its website that sets forth the effective Social Cost of Carbon.
  - To the extent revised Social Cost of Carbon value(s) are established by the PSC, such revised values will be utilized.
  - The revised Social Cost of Carbon will become effective on the first day of a calendar month following the posting of such revised values to the ISO's website.
- **In the event the PSC establishes Social Cost of Carbon value(s) through only a specified date and has not established a revised value(s) beyond such specified date, the ISO shall continue using the last value set by the PSC.**

# Carbon Charges, Carbon Payments, and the Allocation of the Carbon Residual - OATT Rate Schedule 18

# Carbon Charges, Carbon Payments and Allocation of the Carbon Residual

- Section 6.18.1 Carbon Charges for Import Transactions and Wheels Through
  - The ISO will charge each Transmission Customer scheduling Imports and Wheels Through the LBMPc at the relevant Proxy Generator Bus (“Transmission Customer Carbon Charge”).

$$\text{Transmission Customer Carbon Charge}_{icp} = \text{InjectionUnits}_{icp} * \text{LBMP}_{cip}$$



# Carbon Charges, Carbon Payments and Allocation of the Carbon Residual

- Section 6.18.2 Carbon Charges for Export Transactions and Wheels Through
  - The ISO will pay each Transmission Customer scheduling Exports and Wheels Through the LBMPc at the relevant Proxy Generator Bus (“Transmission Customer Carbon Payment”).

$$\text{Transmission Customer Carbon Payment}_{icp} = \text{WithdrawalUnits}_{icp} * \text{LBMP}_{c_{ip}}$$

# Carbon Charges, Carbon Payments and Allocation of the Carbon Residual

## Section 6.18.3 Calculation of Carbon Residual Payments/ Charges

- Calculation of the Carbon Residual:
  - Transmission Customer Carbon Payments for Export Transactions and Wheels Through subtracted from the sum of all Supplier Carbon Charges and Transmission Customer Carbon Charges for Import Transactions and Wheels Through
- This section defines the calculation of the Carbon Residual credit for each Transmission Customer through the proportional allocation methodology.

$$\text{Carbon Residual Credit}_{ch} = \frac{\sum_z (\text{WithdrawalUnits}_{czh} * \text{HourlyLBMPC}_{zh})}{\sum_z (\text{TotalWithdrawalUnits}_{zh} * \text{HourlyLBMPC}_{zh})} * \text{CarbonResidual}_h$$

- This section also defines the Carbon Residual charge if there is a Carbon Residual Shortfall as allocated through load ratio share.

$$\text{Carbon Residual Charge}_{ch} = (-1) * \text{CarbonResidual}_h * \frac{\text{WithdrawalUnits}_{ch}}{\text{TotalWithdrawalUnits}_h}$$

# Revisions to MST section 7.4.1.1 ISO Corrections or Adjustments and Customer Challenges to the Accuracy of Settlement Information

# Emissions Data Submission

- **New MST Section 7.4.1.1.2**
  - A Supplier shall provide the NYISO with all Carbon Emissions data within 60 days from the date of the initial invoice for the month in which service is rendered.
    - The ISO shall post Carbon Emissions data to the Supplier's account for review as soon as practicable after it is received.
- **New MST Section 7.4.1.1.6**
  - A Supplier shall provide to the ISO any final updates or corrections to Carbon Emissions data within 170 days from the date of the initial invoice.
    - The ISO shall process final updates or corrections to Carbon Emissions data as soon as practicable after it is received, after which time it shall be finalized.
- **Revision to MST Section 7.4.1.1.7**
  - Add a reference to Carbon Emissions data in order to treat Carbon Emissions data like metering data throughout the review periods.

# Mitigation & Reference Level Language (MST 23.3.1.4, 23.3.3.3.2, 30.4.5.3.2, 30.6.2.2)

# Mitigation & Reference Level Language

- Emissions rates and emissions costs are included within the data that the NYISO may request from Market Parties.
- The Cost of Carbon Emissions may be included within Supplier reference levels.

# The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits 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 policy makers, stakeholders and investors in the power system



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