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September 24, 2020

Robb Pike  
Vice President, Market Operations  
NYISO

Re: Gas Pricing Logic Correction to Modeling Error in Demand Curve Model

Dear Mr. Pike,

On behalf of its members that are market participants in the New York Independent System Operator, Inc.'s ("NYISO") administered markets, Independent Power Producers of New York, Inc. ("IPPNY") urges the NYISO to remedy a tariff violation and Market Problem in its Installed Capacity ("ICAP") market resulting from the error embedded in its gas pricing logic in the existing Demand Curve model before it conducts the October 2020 ICAP Spot Market Auction to calculate accurate ICAP Demand Curve reference prices and result in just and reasonable rates as approved by the Federal Energy Regulatory Commission ("FERC"). The NYISO has acknowledged that the model used to calculate the energy and ancillary services revenue offset component of the reference prices for the proxy peaking plant in each zone (the "Net EAS Model") for the 2017-2021 ICAP Demand Curve Reset ("17-21 DCR") has misaligned the gas price with the electric price each day since the first day of the 17-21 DCR period (the "Modeling Error"). Repeated again in the Demand Curve model for the 2021-2025 DCR ("21-25 DCR"), the NYISO has already corrected the Modeling Error in that model. Inexplicably, however, the NYISO has not yet indicated it will correct it for the remaining months of the 17-21 DCR or seek other remedies. As demonstrated below, the Modeling Error violates the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff") and is also a Market Problem that the NYISO is obligated under its Services Tariff to remedy as soon as reasonably possible and not exacerbate by delaying a remedy.

On September 18, 2020, the NYISO notified market participants via e-mail that it had identified a "potential Market Problem" concerning the Net EAS Model for the 17-21 DCR ("September 18 Notice"). This realization was in response to stakeholder comments in August associated with the current DCR process. As established in the September 18 Notice, the Net EAS Model has, and continues to, incorrectly calculate the revenue earnings used to calculate the Demand Curve reference price points in all zones based on the incorrect belief it was using trade day data (and shifting forward one day to account for it) when, in fact, the model was already using flow day data. The NYISO specifically acknowledged this fact in the September 18 Notice, stating that the model incorrectly was built to take the gas price data for a specific date published by S&P Global Market Intelligence ("S&P"), which is used to determine hourly energy and reserve market operating outcomes, and shift it one day forward "to better align the

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gas price data with the operating day on which such gas would be used by the hypothetical peaking plants.”

The NYISO further acknowledged that, based on its assessment of the pricing alignment logic of the Net EAS Model and discussions with S&P and stakeholders, “shifting the published gas price forward one day is not needed to align the gas price data with the [operating] date such gas would be used by a generator.” It is important to recognize that the NYISO’s Demand Curve consultant for the 17-21 DCR, Analysis Group, Inc. (“AGI”), and the NYISO thought that aligning the gas delivery day costs with the Locational Based Marginal Price (“LBMP”) was so important that they wrote this software logic to shift the prices to create what they believed was alignment with what they believed was trade date data. As we now all understand, this software logic is actually what resulted in misaligning the gas prices and LBMPs, not aligning them as was intended. The NYISO stated that it has coordinated with the independent consultant in the current DCR, AGI, and, in NYISO Staff’s Final Recommendations for the 21-25 DCR, has proposed to revise the Net EAS Model to remove the pricing alignment logic of shifting gas prices forward one day and eliminate the erroneous misalignment of the gas prices and LBMPs.<sup>1</sup>

The Modeling Error violates the requirement in Section 5.14.1.2.2 of the Services Tariff that the Demand Curve reference point be calculated based on “the likely projected annual Energy and Ancillary Services revenues of the peaking plant for the first Capability Year covered by the periodic review, net of the costs of producing such Energy and Ancillary Services, . . . including the methodology and inputs for determining such projections for the four Capability Years covered by the periodic review.” Due to the Modeling Error, the Net EAS Model does not align gas costs and LBMPs and, therefore, the model does not accurately reflect the hypothetical unit’s revenues. It is fundamentally flawed to estimate the net revenues for a unit operating on a Saturday when Delivery Day gas costs are more than \$15/mmBtu by assuming that the unit can buy gas at the previous day’s delivery day gas cost of \$3+/mmBtu. This is exactly what the Net EAS Model has been doing, and will continue to do, unless corrected, due to the NYISO’s error in misaligning the gas costs. Given its current structure, the modeling logic on the unit being committed when it was economic and burning gas based on the posted price cannot accurately reflect the price the unit would pay for gas. The model to set the gas cost used for the analysis must be corrected to equal the *delivery day* price, i.e., the flow day price.

Likewise, Services Tariff Section 5.14.1.2.2.2 addressing the annual update process (of which the current Capability Year 2020-2021 is the fourth year) requires the Net EAS Model to determine the proxy peaking plant’s net revenues based on “historical prices and variable costs for each peaking plant.” Specifically addressing the fuel component, this section expressly provides the fuel cost “will be based on the *applicable daily spot* price for Load Zone *z* published in the specified data source determined as part of the periodic review.” Thus, the Services Tariff is clear that the actual gas prices must be used (which, again, the NYISO and AGI erroneously thought it had replicated by adding its “plus 1 day” modeling command to modify what it believed was trade date data).

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<sup>1</sup> 2021-2025 ICAP Demand Curve Reset: NYISO Staff Final Recommendations presented at the September 22 ICAPWG meeting, at P. 11. Available at <https://www.nyiso.com/documents/20142/15473217/2019-2020%20NYISO%20Staff%20Final%20Recommendations.pdf/9b61975a-0eba-fd27-3151-9aab5e383a81>

Focusing on its Services Tariff requirement to assess the likely net EAS revenues earned by the proxy peaking plant in each zone, the NYISO specified to FERC 2016 DCR Filing that its model included coincident fuel prices, stating:

Generally, for each hour of the historic period, the model determines whether each peaking plant should be committed and dispatched to produce Energy or provide Operating Reserves based on a consideration of historic LBMPs and reserve prices (both as adjusted to account for the tariff-prescribed level of excess conditions), *coincident fuel* and emission allowance prices, non-fuel variable costs, start-up costs and the operational characteristics of the peaking plant.<sup>2</sup>

The NYISO also focused on the fact that the model used coincident fuel price data in its Final Demand Curve Recommendations, published on September 15, 2016, which were included in its FERC 2016 DCR Filing as an attachment to David Allen's affidavit:

#### 10.1. Net Energy and Ancillary Services Revenue Model

The Consultants developed and deployed a simulated dispatch model to project the net EAS revenues for the units evaluated. *The model uses a rolling 3-year historical set of LBMPs and reserve prices (both adjusted for tariff-prescribed level of excess [LOE] conditions), coincident fuel and emission allowance prices, and non-fuel variable costs and operational characteristics of the peaking plant technology. This same model will be used as part of the annual update process to derive updated net EAS revenue estimates on an annual basis...*

The Consultants have addressed key considerations in dispatch model design and implementation, as well as specific considerations that were raised by stakeholders. *The NYISO concurs with the commitment and dispatch logic of the net EAS revenue model developed by the Consultants and addresses certain, specific aspects of the model in the following sections.*<sup>3</sup>

Addressing the NYISO's net EAS revenue mechanism in its order accepting the NYISO's proposed Demand Curves, FERC pointed to the NYISO's Services Tariff requirement and noted NYISO's confirmation in its Filing that gas prices and LBMPs were aligned, establishing:

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<sup>2</sup> See NYISO FERC 2016 DCR Filing at 23.

<sup>3</sup> See NYISO FERC 2016 DCR Filing at 22.

The Services Tariff requires NYISO to assess “the likely projected annual [energy and ancillary services] revenues of the peaking plant . . . net of the costs of producing such” energy and ancillary services for each ICAP Demand Curve (net energy and ancillary services revenue offset). NYISO states that the net energy and ancillary services revenues model that the independent consultant developed determines the estimated annual net energy and ancillary services revenues that would be earned by each peaking plant based on the prior 36 months of historic data on market prices and variable costs (i.e., September through August). NYISO explains that, generally, for each hour of the historic period, the model determines whether each peaking plant should be committed and dispatched to produce energy or provide operating reserves based on a consideration of historic locational based marginal prices (LBMP) and reserve prices (both as adjusted to account for the prescribed level of excess conditions), *coincident fuel* and emissions allowance prices, non-fuel variable costs, start-up costs, and the operational characteristics of the peaking plant. . . . NYISO contends that the net energy and ancillary services revenues model achieves the desired objectives of transparency and predictability, while simultaneously ensuring that the estimates it produces are reasonable and appropriate.<sup>4</sup>

Addressing related natural gas pricing considerations, FERC emphasized revenues must reflect the historical prices and variable costs for the proxy peaking plant in each zone.<sup>5</sup>

Moreover, aligning gas costs with LBMPs was a focal point of the 17-21 DCR process itself. During the development of the Net EAS model in the stakeholder process, AGI identified that it was aligning gas costs and LBMPs to get a realistic estimate of the Net EAS revenues. In its June 2, 2016 presentation on the Net EAS model, AGI explained:

To run the model you must:

1. Update the model input sheets, including gas price data and emissions costs data;
  - See Slide 14 for additional information on the alignment of gas and market data
2. Set the working directory and output file name in the SAS 9.4 code, then run the code; and
3. Either view raw output or link the raw output to the results tables
  - Gas data used in model are from SNL
  - SNL [Financial] gas prices reflect prices for delivery on the following day (one day after the date stamp)
  - SAS 9,4 model aligns SNL gas prices with electricity prices *by incrementing the SNL gas date by one day*

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<sup>4</sup> *New York Independent System Operator, Inc.*, 159 FERC 61,028 (2017) at P 118.

<sup>5</sup> *Id.* at P 157 & n.355 (quoting NYISO Services Tariff, Section 4.14.1.2.2.2) (emphasis added).

- Note: Gas prices from SNL should be downloaded for the same period (May 1, 2013 through April 30, 2016) as the model period
- *Gas prices from alternative sources that do not reflect similar date structure to SNL will require data or model modification to ensure gas-electricity date alignment*
- SAS 9.4 model is compatible with gas series from any data source
- Note, however, that SNL Financial has been recommended as the gas price source<sup>6</sup>

Unfortunately, because AGI misinterpreted the SNL data they had received, they did not, in fact, ensure the gas electricity date alignment that they themselves emphasized was necessary in step 3, sub-bullet two.

As the realistic and appropriate alignment of gas costs with LBMPs was important to the calculation of the Demand Curve reference prices during the 17-21 DCR process, the model currently in place embedded with the Modeling Error violates the NYISO's Services Tariff and must be corrected by extracting the Modeling Error as soon as possible. Correcting the modeling error to comport with the Services Tariff does not require any change to the NYISO's Services Tariff. Thus, the NYISO should immediately make the same correction to the Net EAS Model for the 17-21 DCR as it made for the 21-25 DCR Net EAS Model, issue a notice to Market Participants confirming the Modeling Error has been removed and recalculate reference prices for the remainder of the months in the 17-21 DCR using the corrected model, i.e. October 2020 through April 2021.

Notwithstanding the foregoing, assuming, arguendo, that the NYISO nevertheless believes the Modeling Error is not a tariff violation, which, as discussed above, it is, it is most certainly a Market Problem under the NYISO's Services Tariff which must be remedied as soon as reasonably possible. The Services Tariff defines a Market Problem as:

An issue which requires notification to Market Participants, the Commission and the Market Monitoring Unit pursuant to Section 3.5.1 of this Services Tariff. It includes market design flaws, software implementation and modeling anomalies or errors, market data anomalies or errors, and economic inefficiencies that have a material effect on the ISO-administered markets or transmission service. The term does not include erroneous Energy or Ancillary Services prices (which are managed through procedures outlined in Attachment E to the Services Tariff) or erroneous customer settlements.

The Modeling Error is a modeling anomaly or error that has a material effect on the NYISO's ICAP market. According to statements by the NYISO at the September 22 ICAP Working Group and the September 23 Management Committee meetings, the NYISO now has

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<sup>6</sup> NYISO 2015/2016 ICAP Demand Curve Reset: Net EAS Revenue Model (emphasis added). Available at [https://www.nyiso.com/documents/20142/1409354/ICAP%20DCR%20Net%20EAS%20Model%206-2-2016%20FINAL%205%2022%202016%20\(2\).pdf/7e6bd6cc-7791-3bd3-74ec-f4f53baf54b2](https://www.nyiso.com/documents/20142/1409354/ICAP%20DCR%20Net%20EAS%20Model%206-2-2016%20FINAL%205%2022%202016%20(2).pdf/7e6bd6cc-7791-3bd3-74ec-f4f53baf54b2).

the revised software model and is rerunning it for the 17-21 DCR with the Modeling Error removed to determine the market price impact over the past 3 years. Although the results of the NYISO's software re-run, which should be completed expeditiously, have yet to be presented to stakeholders, it is apparent that the market impact will be material given that the NYISO's presentation on Staff's Final Recommendations for the 21-25 DCR establishes the market impact of removing the erroneous logic added \$0.38 and \$0.61 to the Zone J and Zone K reference point prices for the 2021-2022 Capability Years.<sup>7</sup> While we expect the impact will be different for the 2017-2021 period due to, *inter alia*, different Proxy Plant definitions, the impact is likely to be in the same ballpark. Such a significant level of decrease in the reference point prices has an obvious material effect on the ICAP market.

Pursuant to Section 3.5.1. of the Services Tariff, if the NYISO does not make an exigent circumstances filing implementing the corrected model on one day's notice, which, as discussed above, one is not needed because the tariff does not need to be changed, the NYISO is obligated to "provide an opportunity for Market Participants to comment prior to a request to FERC for a tariff waiver or *other remedy*."<sup>8</sup> The NYISO is also obligated to "provide an explanation to all Market Participants of its proposed steps to address the Market Problem as soon as reasonably possible."

IPPNY urges the NYISO to adopt the remedy that it make the same correction to the Net EAS Model for the 17-21 DCR as it made for the 21-25 DCR Net EAS Model, issue a notice to Market Participants confirming the Modeling Error has been removed and recalculate reference prices for the remainder of the months in the 17-21 DCR. To do so, the NYISO should schedule a meeting as soon as possible to provide Market Participants with the information delineated in Section 3.5.1 and obtain comments at the meeting thereon. If the NYISO cannot implement the correction prior to the close of the October Spot Market Auction tomorrow night, it should issue a notice to market participants before the auction is closed that the October Spot Market Auction may be rerun once its correction to the Modeling Error is implemented and it should submit a filing to FERC advising FERC that its review of this issue could not be completed before the October spot auction was closed and it may seek FERC authorization to rerun the auction with the corrected model.<sup>9</sup>

Since the NYISO replaced the econometric approach with a historic data approach to calculate the Net EAS revenue offset, it has been well-recognized that Net EAS revenues must be calculated to reflect the cost a unit at that location would incur to purchase gas because this component "has a major effect on the Net EAS revenue the unit can earn and, consequently, on the relevant demand curve."<sup>10</sup> The Modeling Error must be corrected to produce accurate Demand Curve prices for the remainder of the 2020-2021 Capability Year. We appreciate your

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<sup>7</sup> 2021-2025 ICAP Demand Curve Reset: NYISO Staff Final Recommendations presented at the September 22 ICAPWG meeting, at P. 8. Available at <https://www.nyiso.com/documents/20142/15473217/2019-2020%20NYISO%20Staff%20Final%20Recommendations.pdf/9b61975a-0eba-fd27-3151-9aab5e383a81>

<sup>8</sup> See NYISO Services Tariff, Section 3.5.1 (emphasis added).

<sup>9</sup> In response to this request which was first made during yesterday's MC meeting, the ISO agreed to take it back for consideration. Information on this request should be provided during the meeting NYISO has scheduled for tomorrow afternoon at 1:00 P.M.

<sup>10</sup> See, e.g., FERC Docket ER17-386, *supra*, "Motion to Intervene and Protest of New York Transmission Owners" (dated December 9, 2016) at 5.

immediate attention to expeditiously correct this Modeling Error and stand ready to assist in any way possible.

Regards,

A handwritten signature in black ink, appearing to read "Gavin J. Donohue". The signature is fluid and cursive, with a prominent initial "G" and a long, sweeping tail.

Gavin J. Donohue

cc: Richard Dewey  
Robert Fernandez  
Emilie Nelson  
Mike DeSocio  
Zachary T. Smith