

Comments on “Proposed NYISO Installed Capacity Demand Curves for the 2021-2022 Capability Year and Annual Update Methodology and Inputs for the 2022-2023, 2023-2024 and 2024-2025 Capability Years”

Submitted by the New York Transmission Owners

August 24, 2020

The New York Transmission Owners (“TOs”)¹ hereby submit the following comments on Proposed NYISO Installed Capacity Demand Curves for the 2021-2022 Capability Year and Annual Update Methodology and Inputs for the 2022-2023, 2023-2024 and 2024-2025 Capability Years (“ISO Staff Draft Recommendations”), released by ISO staff on August 5, 2020.

The TOs believe that the installed capacity (“ICAP”) demand curves included in the ISO Staff Draft Recommendations will provide revenue streams sufficient to ensure that capacity requirements are met.² In many cases, there are a range of reasonable values that ISO staff could have assumed to reflect various aspects of the net cost of developing and building new generating facilities. With one exception discussed below (concerning the inappropriate inclusion of selective catalytic reduction (“SCR”) for the Dutchess County proxy unit located in Zone G), the ISO Staff Draft Recommendations strike a reasonable balance between making assumptions that are too generous, which would thereby support additional investment even when it is not needed, and assumptions that would not provide sufficient revenue to support investment when needed. Our comments below are therefore limited to a few topics.

1. Selective Catalytic Reduction Should Be Removed from the Dutchess County Proxy Unit

The ISO Staff Draft Recommendations are based on the assumption that the cost of building an H Class frame generator would include the cost of selective catalytic reduction if that generator is built in NYC, on Long Island, or in either of the locations considered in Zone G (Dutchess County and Rockland County). The ISO Staff Draft Recommendations also assume that the cost for an H Class frame generator would not include SCR if that generator is built in Zones C or F. The TOs concur with these assumptions with the exception of the Dutchess County location in Zone G. In that case, the TOs believe that ISO Staff should revise its recommendations to assume that the H Class frame generator would not use SCR.

While Rockland County is located inside the severe ozone non-attainment area, Dutchess County is located outside of the severe ozone non-attainment area. Generating units built in Dutchess County are therefore subject to less stringent emissions requirements than are generators built in Rockland County or other locations within the severe ozone non-attainment area. The analysis conducted by the ISO’s

¹ The TOs consist of Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., New York Power Authority, New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation d/b/a National Grid, Orange and Rockland Utilities, Inc., Power Supply Long Island, and Rochester Gas and Electric Corporation.

² In both ISO stakeholder deliberations and in the New York Public Service Commission proceeding on resource adequacy (Case No. 19-E-0530), major resource adequacy and capacity market modifications are under consideration. Any statements in these comments as to the adequacy of the current demand curve reset or potential future resets are predicated on the current rules and design and are not intended to limit or apply to any future resource adequacy or capacity market structure which may be adopted.

consultants indicates that the additional net energy and ancillary services (“EAS”) revenue that an H class frame generator equipped with SCR would have earned over the three-year historical period that was used to estimate the ICAP demand curves for the 2021-22 capability year would not have been sufficient to pay for the additional cost of installing SCR on this generator. For these reasons, the ISO’s consultants originally recommended that the Dutchess County generator would not include the cost of SCR due to economic considerations,³ but the ISO’s consultants reversed this recommendation in their interim final draft report, citing two reasons for doing so.

The Installation of SCR is Unlikely to Cause an Increase in Net EAS Revenue That Would Justify Its Cost

First, the ISO’s consultants noted, “SCR emission controls provide[] optionality to operate above the synthetic minor operating limit, which could be financially valuable in the future. Our three-year analysis does not fully capture value of this optionality. Future net EAS revenues may be greater than net revenues in the historical years evaluated given the potential increases in demand for operation from the peaking plant from increased levels of renewables and potential retirements of gas turbines downstate due to the NYDEC ‘peaker rule.’”⁴ While including SCR may have an impact on net EAS revenues in the future that exceeds its impact in the three-year historical period used for the Interim Final Draft Report, the mere possibility that this may occur does not justify the conclusion that an H Class frame generator in Dutchess County would elect to install SCR.

Instead, to justify this conclusion, it would be necessary to demonstrate that the increased net EAS revenue that the Dutchess County generator would receive due to the installation of SCR is sufficient to financially justify the increased up-front SCR installation cost. This SCR installation cost is large. The consultants estimated that including SCR would cause the Gross CONE for the H class frame generator in Dutchess County to increase from \$134.35/kW-yr. to \$145.77/kW-yr.,⁵ an increase in cost of \$11.42/kW-yr. Meanwhile, the consultants also calculated that including SCR would only have caused the net EAS revenue over the three-year historical period to increase from \$36.00/kW-yr. to \$36.25/kW-yr.,⁶ an increase in net EAS revenue of only \$0.25/kW-yr., which is less than one fortieth (1/40) of the \$11.42/kW-yr. SCR installation cost adder. Therefore, in order to offset the cost of including SCR, the impact of SCR on future net EAS revenues would have to be more than 40 times the impact that SCR had on net EAS revenue during the three-year historical period! The consultants have not conducted any analysis that demonstrates, or even purports to demonstrate, that SCR will have an impact on increasing future net EAS revenue that is vastly larger than the consultants’ analysis of the historical impact. On this basis alone, SCR costs should be removed from the Gross CONE determination for the Dutchess County unit.

³ Analysis Group, Inc. and Burns & McDonnell, Independent Consultant Study to Establish New York ICAP Demand Curve Parameters for the 2021/2022 through 2024/25 Capability Years—Initial Draft Report (“Initial Draft Report”) at 29-30. We note that in their final report, the consultants will revise their calculations of net EAS revenue to reflect revenue that would have been earned over a three-year period ending August 31, 2020.

⁴ Analysis Group, Inc. and Burns & McDonnell, Independent Consultant Study to Establish New York ICAP Demand Curve Parameters for the 2021/2022 through 2024/25 Capability Years—Interim Final Draft Report (“Interim Final Draft Report”) at 30.

⁵ See cells AE38 and AE87 in the “Multiple Scenario Output” tab of the consultants’ demand curve model.

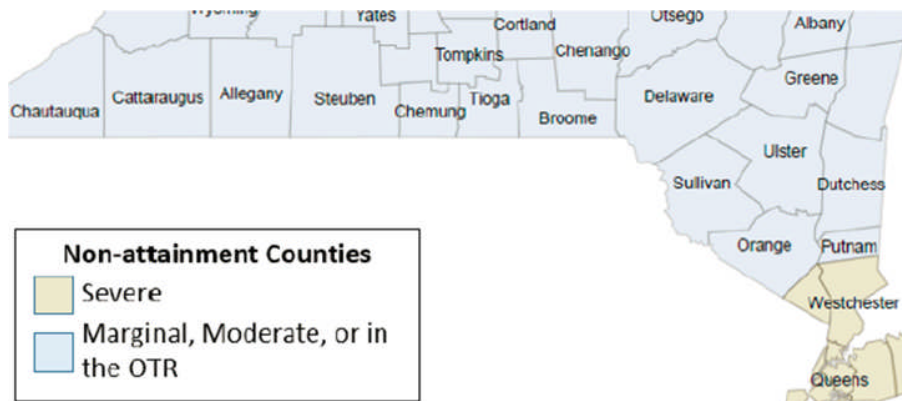
⁶ See cells W38 and W87 in the “Multiple Scenario Output” tab of the consultants’ demand curve model.

With the addition of energy storage systems (“ESS”) to the ISO electric system in the upcoming years and with the planned completion of the T027 and T019 Public Policy Transmission projects by December 2023, which will increase the UPNY-SENY electric transmission interface limit by at least 900 MW and will thereby increase the electric energy import capability into Zone G,⁷ it is more likely the ISO will dispatch the ESS and rely on the additional energy import capability into Zone G before dispatching an H Class frame generator in Dutchess County to operate for more hours than were observed in the three-year historical period. Consequently, it is unlikely that net EAS revenues would increase by the amount that would be required to support the installation of SCR.

Claims that the Proxy Unit Would Include SCR to Mitigate Permitting and Siting Risk Are Unsupported

The ISO’s consultants also claimed that “the installation of SCR emissions control could mitigate potential permitting and siting risk associated with building a new dual fuel unit in the lower Hudson Valley ... without back-end emissions control technology. Within this context, a potentially relevant consideration is that the lower Hudson Valley also contains severe non-attainment areas and that selecting a plant without SCR emissions controls would not accommodate potential new plants throughout the region.”⁸ But, as shown in Figs. 1 and 2, there is simply no requirement to use SCR on generators built in Dutchess County or in any of the four other Zone G counties that are located outside of the severe ozone non-attainment area (i.e., Greene County, Ulster County, Orange County, and Putnam County).

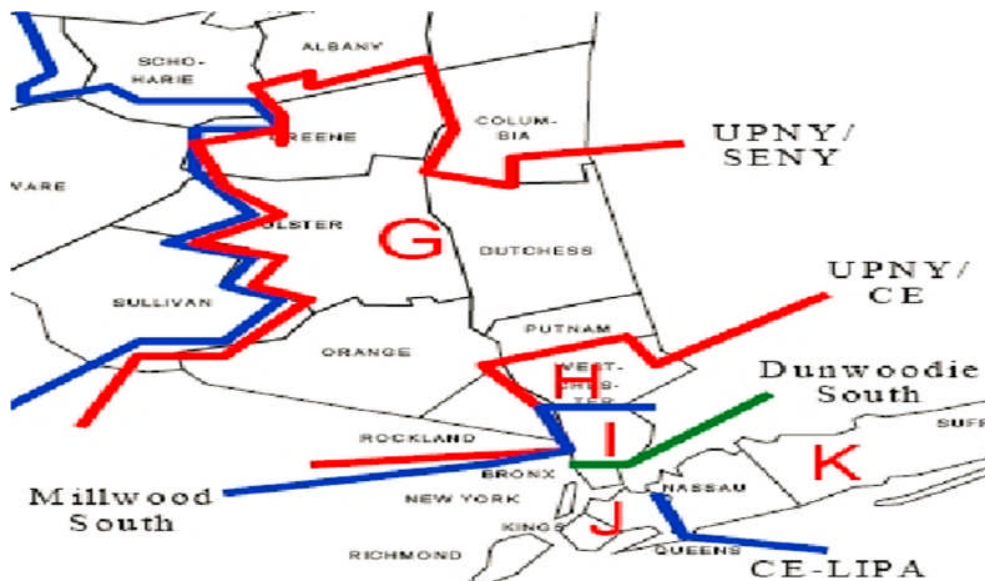
Fig. 1: Map of Ozone Non-Attainment Zones



⁷ NYISO Board of Directors’ Decision on Approval of AC Transmission Public Policy Transmission Planning Report and Selection of Public Policy Transmission Projects (April 8, 2019) at 1-2.

⁸ Interim Final Draft Report at 30.

Fig. 2: Map of Load Zones in Southeastern New York



Claims that generators will nevertheless have to adhere to such unwritten quasi-regulations are wholly speculative. And it is difficult to understand why the consultants assume that a generator without SCR could not be built in Zone G. While Rockland County is the only county in Zone G located within the severe non-attainment area, many Zone G counties are located outside of the severe non-attainment area. It will be less expensive, all other things held equal, to build a generator outside of the severe non-attainment area from an emissions perspective. If that cost advantage is large enough to outweigh any other revenue or cost differences that might result from building inside rather than outside of the severe non-attainment area, then one would expect that generation developers would build outside of the severe non-attainment area in Zone G, because it would be more profitable. There would be no need to set the demand curve in a manner that would support development inside the severe non-attainment area, because that is not where generation developers would choose to locate and build new units. In other words, if it is cost-prohibitive to build in a given location—due to environmental regulations or for whatever other reason—then the demand curve does not need to support development in that location.

The ISO Staff Draft Recommendations also addressed this issue, stating, “Even within the portions of the lower Hudson Valley subject to the less restrictive 100 tons/year NO_x emissions limit, such as Load Zone G (Dutchess County), the allowable hours of operation could be as low as only 300 hours annually depending on the number of hours a dual-fuel design may be required to operate on [ultra-low sulfur diesel]. As a result, reliance on a ‘synthetic minor source’ approach for a dual-fuel plant design in Load Zone G (Dutchess County) is likewise not practical for a resource needed to maintain reliability.”⁹ It is not clear why ISO Staff has reached that conclusion. A unit that can operate for 300 hours per year can run for 6 hours a day on the 50 highest-load days of the year. And as ISO staff noted, such a unit might in fact be able to run for more than 300 hours per year, so this is a conservative scenario.

Finally, it is important to note that while the monthly reference price (“MRP”) that the consultants calculated for their preliminary report using an H class frame generator in Dutchess County without SCR

⁹ ISO Staff Draft Recommendations at 13-14 (footnote omitted).

was slightly higher than the MRP they calculated using an H class frame generator in Rockland County with SCR,¹⁰ that is no longer the case. The current demand curve model indicates that the MRP for an H class frame generator in Dutchess County without SCR is \$12.28/kW-mo.,¹¹ while the MRP for an H class frame generator in Rockland County with SCR is \$12.83/kW-mo.,¹² which is \$0.55/kW-mo. higher. Therefore, assuming that a generator would install SCR even if it were located in Dutchess County, despite the absence of any regulatory requirement for it to do so and despite the lack of evidence of a compelling economic reason why it might elect to do so, will unnecessarily increase the MRP for the G-J demand curve by \$0.55/kW-mo. This could produce an increase in capacity costs borne by customers of about \$17 million per year at the level of excess supply conditions assumed by the ISO and its consultants when developing the proposed ICAP demand curves.

Consequently, in its final recommendations, ISO staff should return to the assumption that this H class frame generator would not require SCR if it is built in Dutchess County, and if that continues to yield a lower MRP than would result from the use of an H class frame generator in Rockland County with SCR, then the demand curve for the G-J Locality should reflect the revenue required to support development of an H class frame generator in Dutchess County without SCR.

2. The ISO and its Consultant Chose Appropriate Natural Gas Price Indices

The ISO Staff Draft Recommendations calculate the net EAS revenue that would have been realized by the H Class frame generator over the three-year historical period under the assumption that the unit would have purchased gas at the TGP Zone 4 (200L) price if the unit is located in Zone C; at the Iroquois Zone 2 price if the unit is located in Zone F, Dutchess County in Zone G, or Long Island; at the TETCO M3 price if the unit is located in Rockland County in Zone G; or at the Transco Zone 6 price if the unit is located in NYC. The TOs concur with these assumptions.

The Geography Criterion is the Most Important Criterion

The TOs believe that the Geography criterion is the most important of the four criteria that the consultants and ISO staff used to evaluate potential gas price indices,¹³ a view that is shared by the Market Monitoring Unit (“MMU”). The ISO’s consultants indicated that the Geography criterion indicates whether a pipeline has “an appropriate geographic relationship to potential peaking plant locations going forward, or otherwise ha[s] a logical nexus to prices at relevant delivery points.”¹⁴ The gas price indices recommended in the Draft Report meet this criterion at all six of the locations considered in the Draft Report. This is critical because, in order to determine “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,” as required by Section 5.14.1.2.2 of the Services Tariff, it is necessary to determine the cost that a gas-fired generator in a specific location would have incurred to purchase gas. Using indices that do not indicate the cost that such a generator would

¹⁰ Initial Draft Report at 9, Table 2.

¹¹ See cell AI87 in the “Multiple Scenario Output” tab of the consultants’ demand curve model.

¹² See cell AI37 in the “Multiple Scenario Output” tab of the consultants’ demand curve model.

¹³ The other three criteria are Market Dynamics, Liquidity and Precedent/Continuity. See ISO Staff Draft Recommendations at 30 and Interim Final Draft Report at 91.

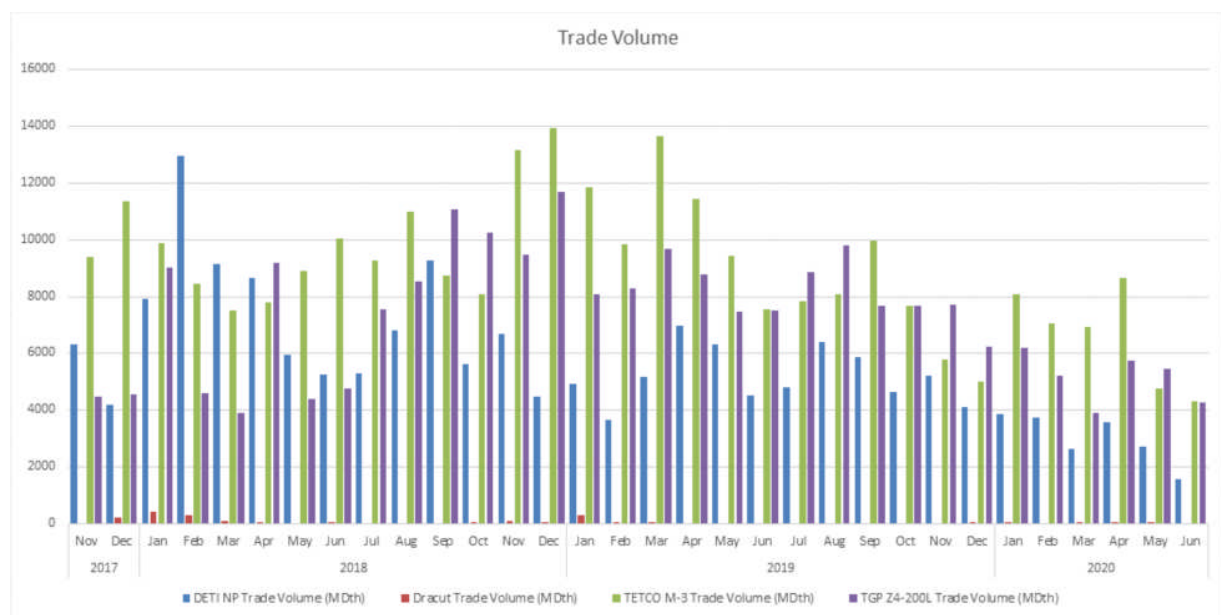
¹⁴ Interim Final Draft Report at 91.

have incurred to purchase gas at that location would produce invalid results. Ignoring the primary, and arguably most fundamental criterion for selecting a gas price index for peaking units in various regions would undermine the underlying demand curve framework and process.

Dominion North and TGP Zone 4 (200L) Are the Most Reasonable Gas Price Indices for a Generator in Zone C

Dominion North and TGP Zone 4 (200L and Marcellus) were the only two gas price indices considered by the consultant for Zone C that met the Geography criterion.¹⁵ Based on deals reported to Platts Gas Daily since 2017, the TGP Zone 4 (200L) index also met the Liquidity criterion. As shown in Fig. 3, during the winter and summer peaks, liquidity for the TETCO M3 and TGP Zone 4 (200L) indices were very closely correlated, and in several months, liquidity for TGP Zone 4 (200L) was superior to TETCO M3.

Fig. 3: Trade Volume for Selected Natural Gas Hubs



In comments on the Initial Draft Report, some market participants claimed that the TGP Zone 4 (200L) index should not be considered as a potential source of gas for a generator in Zone C. In fact, Northeast gas supply is constrained in general. Similar statements could be made for all other gas price indices that have been suggested as alternatives to the TGP Zone 4 (200L) index, such as the TGP Zone 6 and Iroquois Zone 2. Consequently, this liquidity argument is not a valid basis for selecting one of these other indices instead of the TGP Zone 4 (200L) index.

The TOs’ preferred gas price index for Zone C is Dominion North, which ultimately is the most efficient and appropriate index for a Zone C peaking plant. We acknowledge that the selection of a gas index for the Zone C unit is challenging. In contrast with the Zone J gas index, which is simple and clear, none of the gas price indices considered for Zone C perfectly meets all of the selection criteria. Given this challenge, we find the work of the consultant, Potomac Economics, and the ISO to be sufficiently

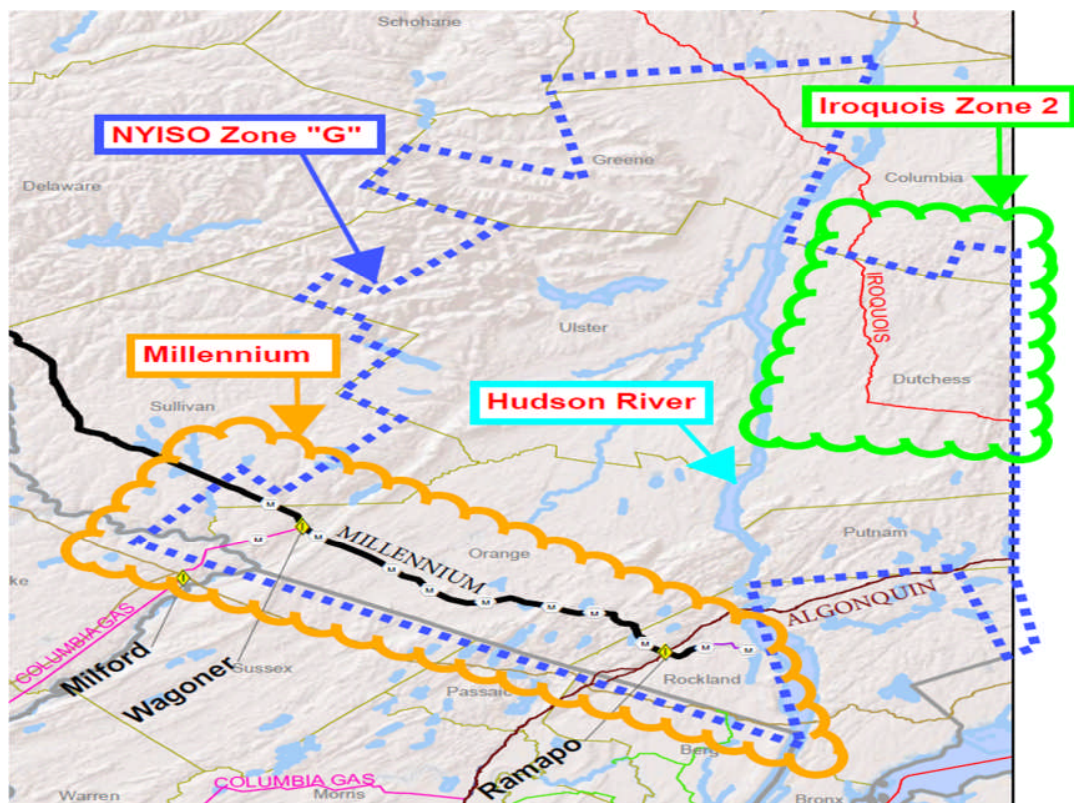
¹⁵ *Id.* at 96, Table 43.

compelling and balanced. While the TGP Zone 4 (200L) index is a reasonable choice, we continue to support Dominion North as the preferred option.

TETCO M3 is the Most Reasonable Gas Price Index for a Generator in Rockland County

As Fig. 4 shows, Zone G is bisected by the Hudson River. Marcellus shale gas is more directly available on the west side of the Hudson River than on the east side of the Hudson River. This causes the price of gas on the west side of the Hudson River (where Rockland County is located) to be lower than gas prices on the east side of the Hudson River (where Dutchess County is located). For this reason, it is important to select gas price indices for generators in Rockland County and in Dutchess County that reasonably reflect the price of gas in each location. Based on our discussions with natural gas sellers, we conclude that the natural gas indices that ISO Staff adopted for Rockland County and Dutchess County in the ISO Staff Draft Recommendations reasonably and fairly represent the cost of natural gas purchased at these locations.

Fig. 4: Map of Gas Pipelines in Zone G



One stakeholder at an ICAP Working Group meeting suggested that an adder should be added to the TETCO M3 natural gas index price to determine the delivered cost of gas to a generator located in Rockland County. The TOs believe that including such an adder would be incorrect and speculative, and would contradict observed price differentials between natural gas purchases in Rockland County and in Dutchess County. The proposed adder disregards the fact that the price that a generator in Rockland County would be willing to pay for gas is based on the availability of transportation capacity on the Millennium pipeline to serve a Rockland County generator. While the Millennium Pipeline has sold all

of its firm natural gas transportation capacity, approximately 42 percent (456,875 MMBtu/day) of this gas transportation capacity was sold to non-Gas Local Distribution Companies (“LDCs”), who use this pipeline capacity to buy natural gas from the Marcellus shale supply area and resell this gas to interested natural gas buyers anywhere between the Marcellus shale supply area and Rockland County using the Millennium pipeline. Even if the proxy generator proposed for Zone G was scheduled to operate for all 24 hours per day, its maximum daily natural gas usage would be approximately 74,000 MMBtu/day,¹⁶ which is far less than the amount of Millennium pipeline transportation capacity (456,875 MMBtu/day) that was purchased by non-Gas LDCs; in almost all cases, the actual daily gas consumption of the proxy generator, which will be dispatched as a peaking unit, would be significantly less than this. Therefore, the Millennium pipeline has more than enough natural gas transportation capacity to supply the proposed peaking generator if it is located in Rockland County.¹⁷

Additionally, the MMU analyzed this issue, concluding, “Pipeline data supports the finding that gas transported from the TETCO M3 zone via [the] Algonquin [pipeline] is available in Rockland County.... In 2019, Algonquin announced restrictions on interruptible nominations sourced from points west of its Stony Point Compressor Station for delivery east of Stony Point on 363 days, but did not announce restrictions on west-to-east transport for delivery west of Stony Point on any days. Stony Point is located on the west shore of the Hudson River at the eastern border of Rockland County.... Hence, while transport on Algonquin is frequently restricted, the main bottlenecks are located downstream. Transport to points in Rockland County such as the interconnect with Millennium Pipeline at Ramapo is generally available.”¹⁸ Fig. 5 shows the relevant portion of the Algonquin pipeline. Together, these analyses demonstrate that it is reasonable to use the TETCO M3 index for a generator located in Rockland County.¹⁹

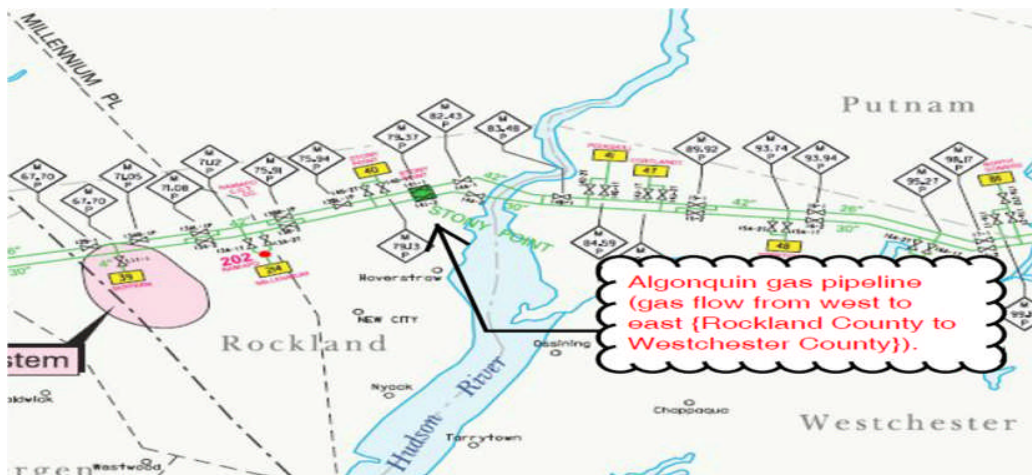
¹⁶ The H class frame generator proposed in the Draft Report is rated at 347 MW, with a heat rate of 8,890 btu/kWh, so its maximum daily gas consumption is $347 \text{ MW} \times 24 \text{ hrs.} \times 8,890,000 \text{ btu/MWh} = 74,036 \text{ MMBtu}$.

¹⁷ Additionally, it would not be appropriate to add a lateral pipeline transportation charge to account for the cost of a natural gas pipeline lateral extension, as was proposed by one stakeholder at an ICAP Working Group meeting, because the cost of such a pipeline lateral extension is already included in the capital cost for the proposed generator.

¹⁸ David Patton and Pallas LeeVanSchaick, MMU Comments on Independent Consultant Initial Draft ICAP Demand Curve Reset Report and the forthcoming draft of NYISO Staff DCR Recommendations (Aug. 5, 2020) (“MMU Comments”), at 13.

¹⁹ As noted above, if ISO staff revises its position on whether the cost of the H class frame generator in Dutchess County would include the cost of SCR, then (all other things held equal) which gas index is used for a generator in Rockland County would not affect the demand curve for the G-J Locality, because the demand curve would reflect the net cost of developing an H class frame generator in Dutchess County.

Fig. 5: Map of Algonquin Pipeline in Rockland County and Adjoining Counties



3. Amortization Periods for Fossil Units in Future Resets Should Better Account for Post-2039 Alternatives

The ISO Staff Draft Recommendations are based on a 17-year amortization period for a fossil fuel peaking plant technology to calculate the proposed MRPs, based on the Climate Leadership and Community Protection Act (“CLCPA”) requirement that all electricity be produced by zero-emissions resources as of 2040. While the ISO Staff Draft Recommendations recognize that newly constructed fossil fuel units may not need to retire in 2040, as they may be able to operate using alternative fuels, they conclude “that there is not sufficient clarity as to which alternative fuels or other operational modifications would qualify as ‘zero-emission’ under the CLCPA, the cost of procuring those fuels for use in generating electricity, and the potential capital costs associate[d] with retrofitting an existing plant to permit continued operation beyond December 31, 2039.” Given this potential for fuel conversion, setting this amortization period at 17 years, which effectively assumes that investors would not assign any value whatsoever to their ability to continue operation after 2039 in any configuration, is a conservative approach.²⁰ The ISO Staff Draft Recommendations go on to note, “As additional data and information becomes available over the coming years regarding resources/technology eligibility and program rules to implement the CLCPA’s zero-emission requirement for 2040, this information will be considered in future resets.”²¹ The TOs agree that it will be very important for future resets to do this.²²

4. Conclusion

Based on the analysis presented above, the TOs:

²⁰ The MMU Comments indicate several other areas where the MMU believes that the consultants’ recommendations, almost all of which were adopted in the ISO Staff Draft Recommendations, were conservative.

²¹ ISO Staff Draft Recommendations at 25.

²² Additionally, while it does not appear as though it will affect the demand curves that emanate from this reset, the TOs are concerned that the 15-year amortization period assumed for battery storage technology is too short. The ISO Staff Draft Recommendations state (at 26), “As additional data and operational experience regarding battery storage resources in New York becomes available over the coming years, this information will be considered in future resets.” Once more, the TOs agree that it will be very important for future resets to do this, as there is an excellent chance that such resources may be the least-cost option for adding capacity in the near future.

- Urge the ISO to remove the SCR cost from the Dutchess County proxy unit located in Zone G, because inclusion of SCR was based on speculation and is not supported by facts or evidence;
- Support the use of the ISO's and its consultant's natural gas price indices as rational and well supported; and
- Do not oppose the 17-year amortization period for the H Class frame generator, but emphasize the need for future ICAP demand curve resets to account for the potential that natural gas-fired generating units may be converted to alternative fuels in a post-2039 environment.

Subject to removing the SCR cost from the Dutchess County proxy unit located in Zone G, the TOs support the ISO Staff Draft Recommendations.