NRG Comments on the NYISO Final Recommendations for the Demand Curve Reset (DCR)

NRG provides these comments to the NYISO Staff Recommendations for the 2016 DCR. NRG has submitted comments on the Draft Analysis Group (AG) Report and the NYISO Staff Draft Recommendations. In these final comments, we summarize the key points we have made in previous submissions. NRG also requests time for an Oral Argument before the NYISO BOD on October 17, 2015.

Peaking Unit Assumptions

- **NRG supports the conclusion that the F-Class unit include SCR**

  NRG agrees with both the AG report and the NYISO recommendation that SCR be assumed as part of the proxy unit technology. Given current siting and permitting challenges in NY, and potential retrofit costs stemming from future regulations, it would be imprudent to build a unit without SCR in NY. It is also highly unlikely that a unit would receive a permit under the Article 10 siting process without including emission controls.

- **NRG maintains that the F-Class proxy unit should be Dual Fuel across the State**

  As the AG report points out, there are a number of quantitative and qualitative reasons to assume the proxy unit would choose a dual fuel option. NYISO, in its Consumer Impact discussion,[1] also highlighted that there are a number reasons for a developer choosing to site a dual fuel unit. Most important among these reasons is the challenge of siting additional pipelines in NY. Most generators – and especially peakers – rely on gas purchased and shipped via the secondary markets (i.e. capacity release). The Final AG Report does not state whether it assumes a peaker would be shipping via interruptible or secondary firm transportation on a gas pipeline. The proxy unit is assumed to be located in Zone F. Since there is no interruptible shipping capacity on Tennessee, and no additional pipeline capacity in the region, it would be highly unlikely that a new peaking unit would site without dual fuel capability.

  There are three reasons the upstate proxy unit should be assumed to be DF:

  (1) The upstate unit is assumed to be sited in Zone F. While NYISO argues that there is likely sufficient gas supply upstate, lessening the need for dual fuel resources, the availability of gas supply is different from the availability of shipping capacity. In fact, there are pipelines in upstate NY that are fully utilized most days. Without additional pipeline capacity, any new generators siting in NY will be relying on existing pipeline capacity, and this could make *shipping* gas more challenging.

  For example, the Tennessee pipeline – a key pipeline for generators in the Capital Region (Zone F) – is fully utilized throughout the year. This is because Tennessee is one of two pipelines serving ISO-NE customers from the West. As NRG has pointed out in previous comments, Tennessee operates with restrictions nearly every day of the year. Interruptible transportation is almost never available, and there are days when some secondary firm (i.e.

[1] Consumer Impact Analysis: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-09-28/DCR%20Supp%20CIA.pdf

capacity release) transportation is unavailable.[2] It is highly unlikely that a peaking unit shipping on a fully utilized and fully subscribed pipeline, with 100% of Winter Operating Period days with gas restrictions, and almost as many Summer Operating Period days with gas restrictions, would choose to site without dual fuel.

Winter Days - (%) Restricted

Restriction Point Highly Utilized TGP Paths	Percentage Days Restricted (November - March)	Percentage Days Restricted (November - March)	Percentage Days Restricted (November - March)
	2013/2014	2014/2015	2015/2016
Sta. 200	30.46%	22.52%	64.47%
Sta. 245	100%	100%	100.00%
Sta. 261	30.46%	32.45%	68.42%
Sta. 267	2.65%	5.29%	30.92%
Sta. 315 BH	100%	100%	76.32%
Sta. 321	94.70%	94.71%	86.18%
MLV 336	50.33%	73.51%	57.24%
MLV 355 BH	70.20%	5.96%	9.21%
Sta. 1 BH	50.99%	11.26%	84.21%
Mahwah	49.67%	64.24%	92.76%
Rivervale	80.79%	80.79%	66.45%

Source: Kinder Morgan Pipeline Operations Update, May 10, 2016. Note that the relevant points for NY are on the 200-line, especially Station 245. Restricted gas includes interruptible and some secondary firm transportation.

Summer Days – (%) Restricted

Restriction Point Highly Utilized TGP Paths	Percentage Days Restricted (April - Sept)
	2015
Sta. 200	16.39%
Sta. 245	98.91%
Sta. 261	95.08%
Sta. 267	1%
Sta. 315 BH	64.48%
Sta. 321	60.11%
MLV 336	4.92%
MLV 355 BH	15.85%
Sta. 1 BH	48.64%*
Mahwah	95.08%
Rivervale	48.64%

Source: Kinder Morgan Pipeline Operations Update, October 8, 2015. Note that the relevant points for NY are on the 200-line, especially Station 245. Restricted gas includes interruptible and some secondary firm transportation.

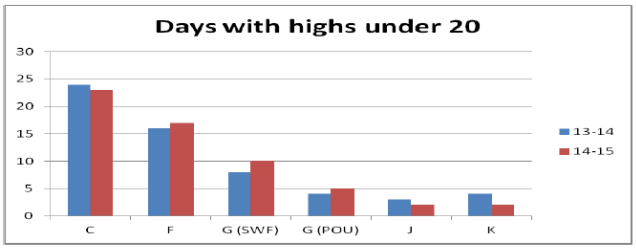
[2] The secondary firm restrictions are dependent on how the gas is shipped throughout the pipeline system. As more and more gas generators are sited in NY, the likelihood of varying gas shipments arrangements increases.

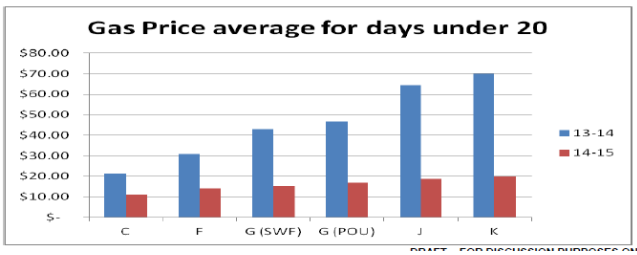
2) The AG net EAS revenue calculations assume gas is always available, and do not account for any days with restricted gas services – e.g. there are no Operational Flow Orders (OFOs) or curtailment days assumed on any pipelines or LDCs. Since the net EAS revenue calculation does not assume any days with gas unavailability, and the unit is assumed to site either directly on an interstate pipeline or behind an LDC, then it follows that the proxy unit must be assumed to be dual fuel.

   NYISO argues that, "*there is a lack of mandatory dual fuel requirements or other factors (such as a need for siting flexibility by assuming interconnections to the LDC system) which would mandate dual fuel technology*" (NYISO Final Recommendations p. 5). Indeed, National Grid's Gas Tariff states that customers (upstate and downstate) under SC9 and SC14 may elect to curtail their operation when requested rather than be subject to the tariff provisions requiring alternate fuel. *However, the customer MUST curtail - i.e. take no gas service for the applicable interruption period.* [See National Grid Gas Tariff Special Provisions Section 3.4].

   Since the net EAS revenue calculations do not assume any gas restrictions, the unit must be assumed to be DF. This is true whether the unit is sited behind an LDC or, as argued above, directly connected to a fully-utilized upstate pipeline.

3) NYISO's Consumer Impact Analysis makes it clear that a Developer siting a new unit would choose to site with dual fuel. Gas prices over the last couple of Winters support the argument that a Developer would seek to manage gas price uncertainty, with the option to run on multiple fuel types. Upstate NY experienced colder-than-average temperatures over the past several years,[3] with very different gas price impacts. Managing this pricing uncertainty with dual fuel is likely to remain a valuable option.





Source: NYISO Consumer Impact Analysis, September 25, 2015.

[3] NYISO Winter Operations 2016.
http://www.nyiso.com/public/webdocs/markets_operations/committees/mc/meeting_materials/2016-03-30/Agenda%2004_Winter%202016%20Cold%20Weather%20Operations.pdf

Net Energy and Ancillary Services Revenue Calculations

NRG remains concerned with the assumptions of optimal dispatch and optimal market offers assumed in the net EAS revenue model, the intraday fuel prices used, the Level of Excess-Adjustment Factor (LOE-AF) assumption, and the cost of capital and amortization period that do not adequately reflect the risks associated with project development in NY.

- As explained in previous comments, the model assumes optimal dispatch and optimal market offers, set at the opportunity cost of producing energy or reserves. This approach likely *overstates* the expected EAS revenues. Especially given the transition to a high penetration of renewables, some expected within the next four DCR years from the Clean Energy Standard targets, and some expected within the existing NY-Sun program, peakers will likely run outside of an optimal dispatch pattern, either kept on/turned off to handle intermittent resources.

- In addition, since the NYISO market model is not set up to optimize all emissions limitations, these units will have to manage emissions limitations via market offers. Indeed, NYISO has recognized these limitations in its market and had a market design initiative to allow for bids to better reflect potential fuel or emissions limitations. However, this market design will not be place within this reset period. Assuming perfect dispatch and perfect offers overstates revenue estimates.

- Finally, while the MMU recommends a blended gas rate for Zone G, this is not practical. The AG recommendation was for liquid trading point prices with easily available data points, and therefore chose Iroquois Zone 2. There is no publicly available blended rate that combines Millennium and Iroquois. This recommendation should not be adopted.

Financial Parameters

- The financing assumptions used in calculating the cost of new entry do not adequately reflect the risks of investing in the NY electric market.

    - The report points out that appropriate cost of capital and amortization period assumptions should reflect the specific financial risks faced by the developer, given the nature of the project, its technology, *and the NY electricity market context.* While several key assumptions attempt to reflect the risks associated with project development in the NY electricity market, these assumptions do not fully capture the risk to future cash flows, and thus the financial risk of electricity project development in NY.
        - AG states that the appropriate WACC for the peaking plant should be greater than the WACC of established IPPs, and less than the WACC of a project-financed project. However, the final After Tax WACC is only slightly higher than the ATWACC assumed in previous resets, and similar to the ATWACC assumed in ISO-NE and PJM despite the report's recognition that "*relative to other RTOs, developers within the NYISO region may face greater project-specific risk."*
        - In addition, the report concludes that the ATWACC is consistent with "fairness opinions" that evaluated the NRG/GenOn merger. There, the cost of capital for NRG ranged from 7% to 8.5% and GenOn from 8.5% to 9.5%. The report stresses that the appropriate WACC should be somewhere *between* that of an

established IPP and a project-financed project, yet ultimate ATWACC is closer to an established IPP.

- Relying on studies conducted in 2003 and 2008, the report concludes that the cost of equity for project financed projects range from 15%-20%.
- Given the concerns raised in the report about development in the NY market, uncertainty over the exit of nuclear units, as well as the significant amount of contracted capacity likely to enter the NY market in support of the State's Clean Energy goals, the cash flow risk to project-finance projects is likely to be ***much higher*** than the 15% assumed for projects developed in 2003 or 2008.
    - The upper bound of the cost of equity should be increased, and the assumed cost of equity for the peaking plant should be increased.
    - Additionally, the assumed amortization period should be shortened, given the uncertainty about the amount of capacity in the NY market (nuclear units may be kept on, and new contracted capacity may enter the market).

- Finally, the LOE-AF is another factor unique to NY. Since there are concerns that the net EAS revenues are already overstated, using the LOE-AF to *increase* the revenues received by the proxy unit further strains the link between NYISO's CONE calculations and the costs and risks actual project developers face. In fact, the LOE-AF introduces even more uncertainty, this time associated with the demand curve net EAS model itself.

- To account for this additional risk, the financing parameters should be adjusted to increase the overall cost of capital to get to an after-tax WACC that better reflects the risks associated with merchant investment in NY.