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November 30, 2017

Hon. Kathleen H. Burgess, Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, NY 12223-1350

Dr. Nicole Bouchez, Principal Economist
New York Independent System Operator
10 Krey Boulevard
Rensselaer, NY 12144

Re: Matter 17-01821 – In the Matter of Carbon Pricing in New York Wholesale Markets

Dear Secretary Burgess and Dr. Bouchez:

National Grid appreciates the opportunity to participate in the Integrating Public Policy Task Force (the Task Force). This process is a positive step towards achieving carbon reduction goals in New York State in an economical fashion - a matter that is fundamentally important to National Grid and our approximately two million customers.

National Grid intends to play an active and constructive role in the process and hereby submits these comments on the carbon adder concept which has been discussed by the Brattle Group in its report, "Pricing Carbon in NYISO's Wholesale Energy Market to Support New York's Decarbonization Goals" ("Brattle report"). In addition to providing feedback on the Brattle report, National Grid would also like to submit the concept of a Dynamic Forward Clean Energy Market ("DFCEM") as an alternative, or as a complement, to a carbon adder.

Whichever design is eventually adopted by the Task Force, National Grid believes that any solution should be calibrated to achieve NY State's clean energy policy. National Grid believes wholesale market solutions are the most economically efficient method of meeting NY State clean energy policy goals. In the nearly two decades since their inception, wholesale markets in NY have proven themselves by transparently and equitably meeting bulk power system needs at the most efficient costs to ratepayers. NYISO proudly reports that the wholesale energy and capacity markets have saved ratepayers over $8 billion since their inception.[1]

[1] Power Trends 2017, NYISO

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National Grid Comments on the Carbon Adder Approach:

National Grid asks that the following concerns be addressed as the Task Force considers a carbon adder. These concerns can be summarized as follows:

FERC Approval

National Grid notes at the outset that any proposal to include a carbon adder in the wholesale markets will require FERC approval. National Grid urges the Task Force to seek early input from FERC Staff on any carbon adder proposal.

Calculating the Social Cost of Carbon

National Grid presumes that the primary purpose of a carbon adder or any other wholesale market solution adopted by the Task Force would be to achieve NY state carbon reduction goals. As such, any carbon adder component of Locational Based Marginal Price ("LBMP") should be set in a manner that is consistent with achieving the NY State carbon reduction policies. Further, it seems that a wholesale market solution would be one without the need for continued contracting. As noted in the Brattle report,[2] a $58/ton price for Social Cost of Carbon ("SCC") is forecasted to be insufficient in meeting the CES goals of 50% renewable generation by 2030. Moreover, Clean Energy Standard ("CES") goals are just one component of the State Energy Plan to reduce carbon emissions from all sectors by 80% by 2050. Therefore, not only should the SCC that is incorporated into the energy market be able to meet CES goals by incentivizing investment in NY zero-emission generation, but it should be consistent with state-directed carbon reduction goals across the transportation and heating sectors as well. National Grid encourages the Task Force to direct further study into the establishment of a SCC that takes into consideration the state carbon reduction goals across sectors and to use this study as the basis for the carbon adder component of LBMP.

Carbon Revenue Allocation:

The Brattle report forecasts that if all of the carbon revenues that were collected by the NYISO were returned to ratepayers, it would offset the ~$19/MWh increase to LBMP by roughly 50%.[3] National Grid believes that the most equitable and transparent way to implement a carbon charge is for these revenues to be directly refunded back to zonal load on a pro-rata basis according to that zone's share of carbon revenues paid.

Energy Market Leakage:

In its report, Brattle recommends a Border Adjustment Tax ("BAT") on imports and exports to and from neighboring regions to prevent energy market "leakage." A BAT would be necessary on imports to prevent imported generation from fossil generators in neighboring regions from avoiding the cost of their carbon emissions. Conversely, a BAT would have to be added on fossil generation exporting to a neighboring region to prevent fossil generation from avoiding the NY

[2] Brattle Report at 47
[3] Brattle Report at 44

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carbon charge in the case that it was unable to clear the NYISO energy markets and sought to clear in the neighboring energy market.

As a threshold issue, National Grid notes that any "tax" on imports and exports would need to be consistent with federal interstate commerce regulations. A BAT could be found to be an unconstitutional restraint on interstate commerce under the Dormant Commerce Clause or a proscribed wheeling fee.

With regard to the mechanics of the BAT, the NYISO/NY DPS have requested feedback from stakeholders about whether a BAT on imports and exports should be set uniformly or be generator specific. National Grid has concerns with each approach. A uniform price might provide perverse market incentives as resources might decide to import or export depending on whether the BAT was higher or lower than their Marginal Emissions Rate ("MER"). Also, a unit-specific BAT seems to be administratively costly. If a carbon adder is pursued, National Grid encourages the Task Force to initiate a project that assesses the constitutionality and the feasibility of different strategies to implement unit-specific BATs on imports and exports.

Lastly, National Grid supports further exploration into collaboration with neighboring regions on carbon pricing mechanisms, which may eliminate the potential for energy market leakage.

RGGI Market Leakage:

The Brattle report points out that leakage could occur in the Regional Greenhouse Gas Initiative ("RGGI") market if NY reduces its emissions without retiring RGGI allowances accordingly;[4] otherwise neighboring RGGI states could emit more without a corresponding increase in demand for allowances in the RGGI market. National Grid agrees with Brattle on this point and encourages the Task Force to consider that New York's RGGI allowance allocation be reduced on a commensurate basis with the carbon emissions reductions resulting from the carbon adder.

Issues

While the concerns expressed above have potential solutions, National Grid remains concerned that there may be fundamental shortcomings with a carbon adder. Specifically:

1) It may not lead to strong enough price signals to encourage sufficient zero-emission generation build in the immediate future to fully meet CES goals. Even if a methodology is produced to determine the optimal SCC, it should be done expeditiously in order to prevent losing time that is vital to meeting the CES goals.
2) It lacks a forward investment signal, which has the potential to increase customer bills immediately but not result in substantial and immediate zero-emission resource investment needed to meet CES goals because of investor aversion to energy market volatility.

[4] *Id.* at 26

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National Grid's Proposed Alternative to a Carbon Adder – a Dynamic Forward Clean Energy Market (DFCEM)

National Grid suggests that a DFCEM is a potential solution that could overcome the two abovementioned shortcomings and encourages the Task Force to consider the following as rationale for further exploration of this concept during this process.

First, the DFCEM would be a NYISO-administered forward energy auction in which the energy demand is set by the NY PSC in accordance with CES goals. It would be a reverse auction, with the lowest cost zero-emission energy resources needed to meet CES goals clearing the auction. As such, it would encourage competition among all zero-emission technologies while providing a price signal that would incentivize the necessary zero-emission generation to fully meet CES goals. This would address National Grid's concern that a carbon adder would not achieve fulfillment of CES goals without a difficult and time consuming analysis to determine the optimal SCC.

Second, the DFCEM auction would be forward looking; National Grid believes a 3-year forward period is sufficient but this could be extended if stakeholders found it desirable. This would provide some price certainty to new zero-emitting resource investors to provide a forward investment signal. This would address National Grid's concern that a carbon adder in the wholesale energy market would not provide investors sufficient certainty in order to achieve CES goals, thereby potentially increasing energy market prices without a corresponding carbon reduction.

The specific mechanics of the DFCEM are described in more detail below.

Mechanics of a DFCEM:

The DFCEM would be a NYISO-administered forward energy auction in which demand is set by the NY PSC in accordance with CES goals to procure the zero-emission resources needed to achieve necessary carbon reductions. The NYISO would establish what annual megawatt-hour amount of zero-emission energy would be necessary to reduce marginal emissions in the state below a desired level. Then, a reverse auction would be run with the lowest marginal offer for zero-emission generation setting the "Anchor Price." The Anchor Price would be set to start some period of time into the future (e.g. 2018 auction sets the anchor price for 2021 – 3 years into the future). In this way, the market would have full transparency into the demand and price of new zero-emission resources while harnessing competition with a forward investment signal to fully achieve CES goals at the lowest cost.

Dynamic Zero-Emission Energy Payments

While the anchor price would be an indication of the value of zero-emission generation state-wide, the payment received by a zero-emitting resource would be based on the efficacy of the resource in reducing emissions at the time and place of generation. The zero-emission resource would be paid the Anchor Price times the ratio of the Marginal Emissions Rate ("MER") / Reference Emissions Rate ("RER") at that hour and in that zone, with the MER being defined as the hourly and zonal emissions rate at the time of generation and the RER being defined as the system-wide average emissions rate over the course of a year. Therefore, zero-emitting resources

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that generated in areas or times with higher than average marginal emissions rates would be paid more than the Anchor Price while clean-emitting resources that generated at locations or times with lower than average marginal emissions rates would be paid less than the Anchor Price. This dynamic element is an important facet of the DFCEM, ensuring that zero-emitting resources would enter the market in locations where they are needed to reduce emissions and not where they would simply displace other zero-emitting resources.

National Grid believes that the dynamic nature of the payments would also incentivize energy storage to co-locate with intermittent zero-emitting resources. This is because it would enable those intermittent zero-emitting resources that generally generate at hours/locations that already have low MERs to store their clean energy and discharge it during hours that have higher MERs. This potential for energy storage to engage in carbon arbitrage is another desirable aspect of the DFCEM.

Price Lock

One additional feature might be to lock in the Anchor Price, MER or the RER to provide additional investor certainty for new zero-emission resources – the merits of which National Grid suggests the merits should be debated by the Task Force.

Interaction with the Capacity Market

Generally speaking, the DFCEM would operate independently from the capacity market. The DFCEM would be an energy auction that procures the amount of generation (MWh) needed to meet CES goals, while the ICAP market capacity auction procures the necessary capacity (MW) needed to meet resource adequacy requirements (i.e., 0.1 Loss of Load Expectation or LOLE). The primary connection between the DFCEM and the capacity market would be with regard to how the revenues are treated for the purposes of Buyer-Side Mitigation (BSM); whether the revenues from the DFCEM are considered valid revenues when resources that are subject to BSM develop their capacity market bids. National Grid would argue that, as long as the DFCEM auction is being performed on a state-wide basis (not location constrained) and on a technology agnostic basis, the DFCEM revenues should be considered valid for inclusion in the Net Energy and Ancillary Services calculation and resources should be able to lower their capacity market offers accordingly.

To the extent there are technology- or location-specific variations of the DFCEM auction performed, those revenues may not be considered valid and therefore unable to lower a mitigated resource's offer floor.

Leakage

Leakage is a difficult phenomenon to overcome but needs to be overcome for any of these solutions to work. A BAT on exports to neighboring regions might be necessary to prevent energy market "leakage." Because the DFCEM revenues will incent new zero-emissions resources to come online that will bid into energy markets at low prices, those resources might push fossil generators out of the energy market. This would incent these fossil generators to export into neighboring markets. In order to prevent this leakage, a BAT could be added on fossil generation that exports to a neighboring region. As with the carbon adder comments above,

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National Grid encourages the Task Force to assess the efficacy and constitutionality of different structures to overcome leakage during its overall assessment of any of the wholesale market solutions.

Cost Allocation

There are a variety of ways in which the costs associated with the DFCEM payments could be allocated across New York. National Grid believes this is an issue that should be discussed and decided through the stakeholder process.

Carbon Adder and DFCEM – a Dual Solution

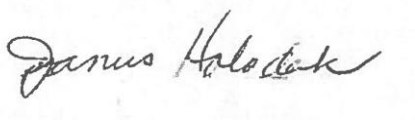
National Grid notes that the implementation of the DFCEM would not necessarily preclude the inclusion of a carbon component into the calculation of LBMP, as currently discussed in the Brattle report. In fact, there are desirable characteristics of a carbon adder that are not present in a DFCEM, such as an incentive to invest in cleaner fossil fuel baseload generation and industrial energy efficiency. In this way, the DFCEM could be viewed as a complementary proposal to a carbon adder as opposed to an alternative. National Grid acknowledges that details would need to be worked out about the interaction of the two market structures before the feasibility of a dual solution can be assessed.

Conclusion

National Grid believes that there are sufficient benefits of a DFCEM that the Task Force should consider the concept for further evaluation during this Integrating Public Policy process.

Thank you for your attention to these comments.

Sincerely,



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