

NRG supports efforts to align the wholesale energy market with New York’s energy policy goals. Achieving desired state policy outcomes through the wholesale market ensures that consumers get the largest possible environmental benefits at the lowest possible prices, while ensuring that shareholders – not ratepayers – bear the consequences of their investment decisions.

The Brattle Study proposes to price carbon in the NYISO’s commitment and dispatch model as one mechanism to achieve New York’s carbon objectives. While NRG generally supports economy-wide pricing of carbon, we have concerns that many of the consequences laid out in the Brattle Study appear to conflict with, or undermine, the long-term harmonization of wholesale markets with New York’s policy goals.

Some of NY’s energy policy goals include:

- Reducing economy-wide greenhouse gas emissions 40% by 2030
- Generating 50% of its electricity production from renewable sources by 2030
- Ensuring continued operation of existing upstate nuclear units in support of its decarbonization goals
- Developing distributed generation resources under Reforming the Energy Vision (REV).

A carbon price may help internalize the cost of emission reduction options in market participants’ economic decision-making, but a carbon price is not a panacea to achieve all of the state’s policy goals, and the Brattle Report makes clear that this version of carbon prices does little to “harmonize” those goals with NYISO’s markets.

I. The Long-Term Dangers of Carbon Emission “Lock-In” Must be Addressed:

The Brattle Report suggests that pricing carbon is likely to bring on new combined cycle gas-fired generation units. While this may produce marginal carbon abatement, bringing on new gas-fired generation endangers the State’s long-term energy policy goals. The point of the ZEC program, after all, was to avoid the loss of zero-emission nuclear units that would merely be replaced by gas units. As the PSC itself found:

Losing the carbon free attributes of this generation before the development of new renewable resources between now and 2030, would undoubtedly result in significantly increased air emissions due to...the construction of new gas plants to replace the supplanted energy. The added emissions would complicate the State’s compliance with likely federal carbon standards and would result in dangerously higher reliance on natural gas, radically reducing the State’s fuel diversity.¹

Yet the Brattle Report shows that a \$40/ton carbon price would do exactly what the NYPSC said was unacceptable in the ZEC context: attract additional NGCC generation in New York. Currently, low natural gas price already makes NGCC to be the lowest cost of new generation asset.² Brattle demonstrates that additional economic incentives provided by carbon price will risk having too much natural gas resources deployed and lock in emissions for the next 30 to 50 years. Though natural gas units are low emitting

¹ Order Adopting a Clean Energy Standard.

² EIA AEO 2017, Table 1a. estimated LCOE for new generation resource, page7, https://www.eia.gov/outlooks/aeo/pdf/electricity_generation.pdf

assets compared to existing resources today, achieving long-term deep decarbonization requires non-emitting resources to produce much more generation in the future grid and provides only a limited role for natural gas units.

This “lock-in” of carbon emissions is particularly problematic when looking past 2030. While the carbon lock-in does not affect New York’s 2030 carbon targets, the lock-in is fatal to New York making its 80% by 2050 GHG reduction goal. A NGCC unit built today will expect to run for 20 – 50 years into the future. Should large amounts of new NGCC units get built, then New York will either have to retire those units prematurely or its emissions will exceed 2050 goals. Therefore, having a carbon pricing mechanism that incents new natural gas units will likely trade the opportunity to achieve long term grid deep decarbonization to short term emission decline.

II. The Carbon Adder Proposal Fails to Eliminate the Need for Nuclear Subsidies:

One of the main goals the NYISO espoused in its Integrating Public Policy effort was to develop a program that alleviated the need for the ZEC program. The NYISO has asserted that, despite the devastating impacts on non-subsidized units operating in the New York market, that the ZEC program is needed as a “*bridge until a market-based mechanism to address state policy objectives can be explored.*”³ However, the Brattle Report makes clear that a carbon adder does very little to make nuclear units operating in New York economic based on market revenues alone. The ZEC program thus will continue to exist for several years before a carbon price is actually adopted, and, even once adopted, the carbon adder does not eliminate the ZEC program. Instead, it simply provides yet another windfall for the targeted nuclear units.

To fully achieve all of the state’s energy policy goals and “harmonize” them with the NYISO markets, a study would have to determine the carbon price that is needed to allow NY to meet each of these goals within the competitive wholesale energy markets. The Brattle report assumes a \$40/ton carbon price is sufficient to provide additional lower-cost carbon abatement solutions, but it does not demonstrate that the \$40/ton carbon price is sufficient to reach all of the state’s policy goals.

If this price is insufficient to achieve all of these goals, then New York should follow the example of neighboring ISOs and consider market reforms that will facilitate long-term procurement of resources that are needed to meet state energy policy targets. If a significantly higher carbon price would be needed to attract sufficient renewables and distributed resource investment from the market, state policy efforts, such as ZECs and NYSERDA REC procurements, will continue and be priced higher than the NYISO wholesale markets, leading to the need for price mitigation to protect the NYISO markets for market-based investment.

III. Adding a Carbon Adder onto New York’s Existing Carbon Pricing Scheme adds Unnecessary Complexity:

At a minimum, New York must recognize that pricing carbon in a state that already participates in RGGI further complicates the already messy energy policy environment in NY, and complicates interactions with neighboring regions. While pricing carbon is directionally helpful in the overall effort to decarbonize the economy and may help the state achieve some of its energy policy goals, it is not the

³ NYISO Post-Technical Comments. FERC Public Policy Technical Conference.

panacea to achieving ***all*** of its stated policy goals, and may achieve very little net benefit compared to the cost and complexity of implementation.

As the report outlines, there are several other carbon pricing mechanisms, including tightening the RGGI cap or developing a NY-specific cap-and-trade auction, that could also be explored. NRG notes that there are mechanisms under consideration in the ISO-NE and PJM regions that would work with the more fully-developed forward capacity markets in those regions to accommodate resources whose investment/retirement decisions are driven by state actions.

Likewise, the Report suggests that a carbon price, at the levels discussed, does little to procure new renewables. Instead, the Report simply assumes that the NYSERDA program to procure RECs annually to meet increasing Clean Energy Standard requirements will continue (albeit at a slightly lower procurement cost). It would be vastly preferable were the NYISO to focus on determining what carbon price is sufficient to meet the State's goals, rather than assume the carbon price, and catalog the effects.

IV. Specific Questions Regarding the Brattle Report:

NRG has the following comments/questions on the Brattle Report:

- The report focuses on one carbon abatement strategy, but the state has identified multiple energy policy goals. While pricing carbon may provide directional price signals to encourage additional carbon abatement strategies, the prices assumed by the NYISO do not lead to the attainment of these goals. What carbon price would be necessary to achieve each of the NYPSC's main policy goals (including eliminating the ZEC program, procuring renewables, REV goals, and reducing long-term carbon emissions to 2050 levels)?
- Does a \$40/ton carbon price attract sufficient renewables to achieve the 50% renewable energy target, do away with the ZEC subsidy, and attract sufficient distributed resources?
- The study concludes that additional carbon abatement value will come from the addition of new natural gas capacity in the state. How does the NYISO envision managing the resulting gas/electric coordination challenges, particularly given the State's reluctance to site new gas pipelines, if a carbon price is expected to bring on additional gas units?
- The study assumes the same conversion factor (going from short tons to \$/MWh) used by the PSC in its CES report. This conversion factor was developed by looking at the NYISO system in 2012. The Brattle Study does not update this conversion, even as the carbon intensity of the system is changing over the time period of the report, specifically as a result of the State's explicit goals and actions.
 - Why was the system carbon intensity assumed to be static even as the State directs more renewable and low-carbon resources?
 - How do the study results change if Brattle assumes a more realistic declining carbon intensity on the grid?
 - Can Brattle perform various sensitivities based on various renewable scenarios that reflect New York's renewable goals?

- The report highlights the significant carbon reductions that have already been achieved within the electricity sector, including already achieving a 40% carbon reduction from 1990 levels. What is the specific reduction target for the electricity sector, given the state's economy-wide carbon reduction goals?
- Does the carbon pricing mechanism drive additional deployment of low-carbon resources and retirement of high emitting resources in NY? Given that most generation assets have a life expectancy of 30 years or longer, will the generation fleet, including the carbon pricing driven addition and retirements, sufficient to achieve the state's 2050 carbon emission goals?
- The report assumes an LMP of about \$20/MWh in 2025. Initial NYISO analysis of the upstate RT LMP in 2030, given the state's CES goals for 50% renewables, is \$0/MWh.
 - How can we reconcile these analyses?
 - What is the impact on energy prices of pricing carbon with a reduced marginal carbon intensity?
 - Can Brattle perform sensitivities on the role of the carbon pricing over a wider range of LMPs that more accurately reflect future projections?