

June 4, 2018

By Electronic Delivery

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

Re: Case 18-E-0071 – In the Matter of Offshore Wind Energy

Dear Secretary Burgess:

In accordance with the Notice Soliciting Comments issued by the New York State Public Service Commission on April 11, 2018 in the above-referenced matter, the New York Independent System Operator, Inc. hereby submits the enclosed Comments.

Respectfully submitted,

/s/ James H. Sweeney

James H. Sweeney, Attorney

New York Independent System Operator, Inc.

10 Krey Boulevard

Rensselaer, NY 12144

Tel: (518) 356-6000

JSweeney@nyiso.com

**STATE OF NEW YORK
PUBLIC SERVICE COMMISSION**

In the Matter of Offshore Wind Energy

Case 18-E-0071

COMMENTS OF THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

The New York State Public Service Commission (“Commission”) is “considering adopting a goal that the quantity of electricity supplied by renewable resources and consumed in New York State be increased by the output of 2,400 MWs of new offshore wind generation facilities by 2030.”¹ The New York Independent System Operator, Inc. (“NYISO”) welcomes the opportunity to continue working constructively with New York State Department of Public Service (“DPS”) staff and the Commission to pursue achievement of the State’s clean energy goals, including any new offshore wind generation goals, in a manner that maintains the efficiency of competitive wholesale electricity markets. By leveraging competitive markets, the State can pursue its goals in an efficient manner, while maintaining the high degree of reliability New Yorkers have come to expect. The NYISO hereby submits these comments in response to the Notice Soliciting Comments (“Notice”) issued on April 11, 2018.²

¹ Case 18-E-0071, *In the Matter of Offshore Wind Energy*, Notice Soliciting Comments (April 11, 2018).

² *Id.*

I. BACKGROUND AND PRELIMINARY STATEMENT

Through competitive markets and New York State (“New York” or “State”) energy policy, New York has established itself as a national leader with respect to clean energy production and reduced carbon emissions. Since 1999, New York’s power sector has reduced carbon dioxide emissions rates by 52% and currently generates approximately 60% of its annual electricity needs from non-carbon emitting energy resources.³ The State’s generation fleet is one of the cleanest, in terms of CO₂ emissions, in the country and New York’s commitment to the Regional Greenhouse Gas Initiative (“RGGI”) calls for even further CO₂ reductions.⁴

Since its inception in 1999, the NYISO has worked with the State to achieve these successes.⁵ In 2004, the Commission adopted a Renewable Portfolio Standard (“RPS”) that required 25% of New York State’s electricity needs to be supplied by renewable resources by 2013. The development of the RPS prompted the NYISO and the New York State Energy Research and Development Authority (“NYSERDA”) to co-fund a study that was designed to conduct a comprehensive assessment of wind technology, and to perform a detailed technical study to evaluate the impact of large-scale integration of wind generation on the New York Power System (“NYPS”). In 2008, the NYISO developed procedures and software to collect

³ See *2018 Load & Capacity Data*, a report prepared by The New York Independent System Operator, Inc., available at <https://home.nyiso.com/wp-content/uploads/2018/04/2018-Load-Capacity-Data-Report-Gold-Book.pdf>.

⁴ See <https://www.governor.ny.gov/news/governor-cuomo-unveils-20th-proposal-2018-state-state-new-yorks-clean-energy-jobs-and-climate>.

⁵ In addition to the energy market and clean energy achievements discussed in this section, the NYISO has worked collaboratively with state, regional and federal entities to integrate environmental policy goals and regulations with the efficient, reliable operation of the energy markets. For example, the NYISO has participated in RGGI since development of the regional cap-and-trade program began in 2003. As a result, the NYISO and electric generators in the State successfully integrated the RGGI cap-and-trade program carbon emission allowance prices into the energy market.

forecasts and real-time meteorological data from wind generation sites to facilitate more accurate predictions of generation output from each wind generation facility.⁶ In 2009, the NYISO became the first grid operator to fully integrate wind generation resources into its economic dispatch system, which mitigates the potential for these resources to be operated out of economic merit.⁷

The NYISO's competitive wholesale market design, in combination with the State's current policies for advancing renewable generation, has a proven track record of success. The amount of electricity generated from New York's wind resource fleet in 2017—4,219 gigawatt-hours⁸—is enough to power more than 500,000 New York homes. The American Wind Energy Association (“AWEA”) describes competitive wholesale electricity markets as “the best way to ensure an efficient and adequate supply of electricity and to meet the nation's economic, energy and environmental challenges.”⁹ Specifically, AWEA notes that:

The design, scope, and independent operation of the organized markets are especially attractive to renewable and other innovative resources such as wind power. Wind power resource development has proven easier in areas with large regional organized markets than in balkanized regions and this fact is confirmed by studies and experiences in Europe and the United States. Nearly 80% of U.S. installed wind capacity is located in regions with organized

⁶ NYISO, *Integration of Wind into System Dispatch* (October 2008) at 2-4, available at: http://www.nyiso.com/public/webdocs/media_room/publications_presentations/White_Papers/White_Papers/wind_management_whitepaper_11202008.pdf.

⁷ See FERC Docket No. ER09-802-000, *New York Independent System Operator, Inc.*, Proposed Tariff Revisions to Enhance Operational Control of Wind Resources, Amend Settlement Rules Applicable to Them and Increase System Reliability (March 5, 2009); and FERC Docket No. ER09-802-000, *supra*, Order Accepting Tariff Revisions (issued May 11, 2009).

⁸ NYISO, *2018 Load & Capacity Data* at 68, available at: http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Planning_Data_and_Reference_Docs/Data_and_Reference_Docs/2018-Load-Capacity-Data-Report-Gold-Book.pdf.

⁹ American Wind Energy Association and Compete Coalition, *Joint Statement Supporting Competitive Wholesale Electricity Markets*, October 28, 2010, available at <http://www.competecoalition.com/resources/compete-awea-joint-statement-supporting-competitive-wholesale-electricity-markets>.

markets while these areas have only 44% of U.S. wind energy potential.¹⁰

The competitive wholesale electric markets have provided, and will continue to provide, significant benefits to the State and its electricity consumers, including fuel cost savings, improved generation efficiency, reduced reserve requirements, reduced emissions, and increased renewable generation. Generation fuel efficiency improved by more than 27%—compared to a national average improvement of less than 9%—as a result of competition, providing estimated fuel cost savings of \$7.8 billion between 2000 and 2017.¹¹ Generation performance and operational improvements have also reduced reserve margin requirements, producing additional savings of approximately \$613 million since 2000.¹² During that time, the NYISO-administered markets have contributed to a reduction in carbon emissions equivalent to removing nearly five million passenger vehicles from the State’s roadways.¹³ These successes have been achieved while maintaining a fundamental tenet of competitive wholesale markets in New York State (*i.e.*, shifting the economic risks of generation investments from rate-paying consumers to investors in independently owned generating companies). To sustain these benefits, State policies should maintain consistency with the policy objectives that led to the creation of the NYISO’s competitive wholesale energy markets.

The NYISO encourages the Commission to continue leveraging competitive markets to pursue New York’s clean energy goals at the lowest cost to consumers, while maintaining

¹⁰ *Id.* (“Currently, the organized wholesale markets operated by the RTOs and ISOs best exemplify well-structured electricity markets. Those markets are keeping consumer prices affordable, improving efficiency, fostering innovation, attracting new resources including demand response, and providing the products and services customers want.”)

¹¹ NYISO, *The Critical Value of New York’s Energy Markets*, available at: <https://home.nyiso.com/wp-content/uploads/2017/10/NYISOValue-Prop2017.pdf>.

¹² *Id.*

¹³ *Id.*

system reliability. Competitive markets provide price signals to incent efficient siting, construction and operation of necessary transmission infrastructure and resources.

Currently, the NYISO is engaged in an effort to price the social cost of carbon dioxide emissions from electric generating facilities into NYISO-administered wholesale energy markets with the goal of contributing to the achievement of New York State's public policies, while providing the greatest benefits at the least cost to consumers. This effort could reduce the cost to consumers of offshore wind resource procurement through Offshore-wind Renewable Energy Credits ("ORECs"), by increasing the wholesale energy market revenues paid to offshore wind resources.

The cost of carbon emissions could be incorporated into the NYISO-administered wholesale energy markets using a social cost of carbon dioxide emissions price in dollars per ton of CO₂ emissions. Suppliers¹⁴ would embed carbon charges in their energy offers (referred to as the supplier's carbon dioxide emissions adder in \$/MWh) and the NYISO's existing processes would incorporate the carbon price into the commitment, dispatch, and price formation. Because the Supplier's carbon dioxide emissions adders would increase the variable costs of carbon dioxide-emitting generation dispatched by the NYISO, the market-clearing price of energy would increase whenever carbon dioxide-emitting resources are on the margin (referred to as the carbon effect on Locational Based Marginal Prices or "LBMPs"). All Suppliers, including clean energy resources such as offshore wind resources would receive the higher energy price, net of any carbon dioxide charges due on their emissions, if applicable. Lower emitting resources,

¹⁴ See NYISO, *Open Access Transmission Tariff*, Section 1.19 ("Supplier: A Party that is supplying the Capacity, Energy and/or associated Ancillary Services to be made available under the ISO OATT or the ISO Services Tariff, including Generators, BTM:NG Resources, and Demand Side Resources that satisfy all applicable ISO requirements.").

including efficient fossil burning units, renewables, hydropower, and nuclear generators, would potentially benefit from higher net revenues, and in pursuit of those higher revenues would be incentivized to further lower their respective carbon dioxide emissions.

Wholesale load serving entities would continue to be charged the LBMP for wholesale energy purchases, which would account for the carbon dioxide emissions adder of the marginal units. The NYISO would return to wholesale load serving entities any carbon dioxide emissions adder charge residuals (*i.e.*, the sum of the carbon charges debited from suppliers). Carbon dioxide pricing would leverage competitive markets to pursue New York's clean energy goals at the lowest cost to consumers while maintaining system reliability and providing the best market signals for resource development.

II. COMMENTS

A. Competitive Markets Will Provide the Lowest-Cost, Most Efficient Clean Energy Solutions for the State

1. REC Procurement Mechanisms Provide the Most Compatible Incentives with Wholesale Markets

The NYISO has previously encouraged the Commission to continue to administer renewable energy credits ("RECs") to incentivize renewable resource development, thereby leveraging the competitive markets to the fullest extent possible. In lieu of directly incorporating the social cost of carbon dioxide emissions into the wholesale markets, RECs continue to be the most appropriate incentive structure for renewable resources in areas with competitive energy markets, such as New York. Therefore, the NYISO appreciates the Notice's focus on ORECs as the preferred procurement mechanism for offshore wind resources.

Efficient competitive wholesale markets depend on transparent price signals that accurately reflect system needs and incentivize specific behavior from generating resources. The

price signals in the NYISO markets provide the foundation for economically efficient generation, transmission, demand response, and energy efficiency investment decisions. Supply resources rely on prices to determine whether to bid into NYISO's markets and operate. Investors and developers rely on transparent market signals to determine whether to build new facilities, what type of facility to build, and where to build. Wholesale market prices must, therefore, accurately reflect system needs and resource costs in order to produce the most efficient investment and operational decisions and ultimately the lowest costs for consumers.

An appropriate OREC incentive mechanism will incentivize offshore wind generators to select locations of the highest value and to operate in response to market price signals. "Fixed ORECs" (as described in the Notice) provide the best approach to finance offshore wind resources that will participate in the wholesale electric markets as long as wholesale markets do not directly incorporate the social cost of carbon dioxide emissions. Fixed ORECs require developers to consider market signals for investment decisions and to retain the financial risk associated with new projects. "Index ORECs" (as described in the Notice) could also be a potentially workable approach to finance offshore wind resources that provides appropriate performance incentives for these resources. However, Index ORECs shift investment risk away from developers and to consumers. A "carbon indexed OREC" variant of the Index OREC, which limits the indexed reference price to the carbon dioxide emissions adder-related cost component of the wholesale market LBMPs, could be an efficient alternative structure. This approach would require developers to consider market signals for investment decisions, while minimizing concerns with overpayments to renewable resources should the social cost of carbon dioxide emissions be priced within the wholesale markets. Any such carbon indexed ORECs

would need to possess the necessary incentives for offshore wind resources to respond to prices signals and dispatch instructions.

The NYISO recommends that the Commission consider the carbon indexed OREC concept, described above, as compatible with carbon pricing within the wholesale market, or in the alternative focus on the Fixed OREC incentive structure. Carbon indexed ORECs would incentivize offshore wind generators to select locations of the highest value and to operate in response to market prices. This incentive structure minimizes the risks shifted to consumers and away from offshore wind developers. This approach also depends heavily on NYSERDA selecting an accurate wholesale index price of carbon dioxide emissions adder-related costs that appropriately reflects the variable nature of offshore wind generation. An inaccurate index could further increase costs to New York consumers. In addition, carbon indexed ORECs would require an additional incentive for resources to limit their output when real-time prices are negative.

Alternatively, Fixed ORECs maintain appropriate economic risk allocation between consumers and facility owners. Under this approach, facility owners would continue to bear the economic risk of estimating the costs and revenues of its project and, thus, its financial viability. To ensure financial viability, offshore wind generator owners will have to manage resources to maximize availability when the facility is most likely to earn the highest revenues. This helps to reduce the level of any additional consumer funded incentives deemed necessary to help spur the development of renewable facilities.

The four remaining types of ORECs, as described in the Notice (*i.e.*, “Market ORECs,” “Forward ORECs,” “Fixed/Index ORECs,” and “Capped ORECs”), do not warrant further consideration as they do not improve on the elements of the Fixed ORECs, carbon indexed

ORECs or Index ORECs. These alternative structures introduce unnecessary risk or complication without adding value to the overall incentive approach. Certain types of alternative OREC structures also suffer from many of the same issues as “bundled” power purchase agreements (“PPAs”) and utility-owned generation, discussed further below.

2. Market ORECs, Forward ORECs, Bundled Power Purchase Agreements, and Utility Owned Generation Could Adversely Affect Energy Market Efficiency and System Reliability

Market ORECs, Forward ORECs, bundled PPAs, and utility-owned generation would insulate offshore wind developers from market prices and shift financial risk to consumers. While bundled PPAs and utility-owned generation are discussed in the Offshore Wind Policy Options Paper,¹⁵ the Notice excludes discussion of these procurement mechanisms. The NYISO supports exclusion of these approaches, which are not efficient mechanisms to develop renewable resources in a manner compatible with competitive markets.

Incentive constructs such as Market ORECs, bundled PPAs and utility-owned generation alter the allocation of risk that is fundamental to competitive markets, obscure additional consumer funded payments to renewable resources, and impede the market’s ability to procure the most efficient resources that minimize costs to consumers. These arrangements do not eliminate the risk associated with renewable resource development; instead, they shift risk from developers to consumers. Consumers could be forced to pay the price for offshore wind resources regardless of how/when (or if) the resources perform in the wholesale electric market. Consumers could also be subject to higher costs even if energy market prices decrease in the future, due to the Market OREC’s payment structure, the bundled PPA contract price or the

¹⁵ Case 18-E-0071, *In the Matter of Offshore Wind Energy*, Offshore Wind Policy Options Paper Submitted by New York State Energy Research and Development Authority (January 29, 2018).

utility's cost for owning generation assets. As the State policy objectives that led to the creation of the NYISO's wholesale markets recognized, the entities best suited to manage and mitigate the risks of resource investment are developers/investors, not consumers.

Market ORECs, bundled PPAs and utility-owned generation also may result in adverse market and reliability impacts because they effectively insulate renewable resources from temporal and location-based wholesale market price signals. These arrangements essentially guarantee that renewable resources receive a certain level of revenue for each MWh of output. This market insulation distorts the incentive for renewable resources to properly locate their facilities in areas of highest value and respond to dispatch instructions. Because a fixed revenue guarantee is tied, in part, to production, Market ORECs and long-term bundled PPAs may provide a perverse incentive for renewable resources to generate regardless of system conditions in order to maximize their revenues.

Specifically, renewable resources may submit large negative offers to ensure their dispatch regardless of market prices, system conditions, or their actual marginal cost of generation. This behavior exacerbates the potential for very low and even negative energy prices, which in the long run increases the cost to consumers. Reduced energy prices resulting from resources that are not responsive to price signals may place additional financial strain on other existing resources (renewable or otherwise). If reduced market prices cause or accelerate the retirement or mothballing of other resources, or stall the development of new resources, such outcomes could adversely affect reliability. The insulated renewable resources, however, remain unaffected because the level of revenue received is fixed regardless of market outcomes. This is a significant concern where other resources (including existing conventional generation) must

remain available to backstop intermittent renewable resources to maintain system reliability, especially in southeastern New York.

Insulating renewable resources from price signals and reducing incentives to follow dispatch instructions may also undermine the efficiencies gained by fully integrating wind resources into the NYISO's economic commitment and dispatch software. If renewable resources that receive market insulating incentives submit offers that seek to maximize their dispatch, the NYISO dispatch software may be unable to distinguish which units should be re-dispatched to maintain reliability based on the economics of all submitted offers. As more resources are developed off the coast of southeastern New York, this could require system operators to manually redispatch offshore wind resources to ensure continued system reliability. Manual actions often result in the removal of larger amounts of renewable capacity for longer periods of time than could otherwise be accomplished through the real-time dispatch and commitment software.

The Forward OREC approach may also be of limited value and increase risk to consumers. While the Forward OREC is conceptually similar to the Zero-Emission Credit program used for nuclear generation, the operational differences between offshore wind resources and nuclear generators limit the effectiveness for offshore wind resources and increase the risk to consumers. Nuclear generators generally produce a consistent output across all hours of the day compared to intermittent offshore wind resources whose output can vary significantly throughout the hour, day and year. This approach could also incent resources to continue operating when prices are negative.

III. CONCLUSION

New York has established itself as a leader in addressing climate change and growing a clean energy economy. The NYISO is proud of the role that competitive wholesale markets have played in New York's progress. To maintain reliability, minimize economic risk to consumers, and incent carbon dioxide emissions reduction, the procurement mechanisms chosen to support a new offshore wind generation goal must be strategic and appropriately designed. The NYISO looks forward to continuing to work closely with DPS staff and the Commission to fashion the most economic solution to a clean energy future that fully leverages the benefits of wholesale competitive electricity markets, while maintaining system reliability on behalf of all New York electricity customers.

Dated: June 4, 2018

Respectfully submitted,

/s/ Rana Mukerji

Rana Mukerji, Senior Vice President, Market Structures

James H. Sweeney, Senior Attorney

New York Independent System Operator, Inc.

10 Krey Boulevard

Rensselaer, NY 12144

Tel: (518) 356-6000

RMukerji@nyiso.com

JSweeney@nyiso.com

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Rensselaer, NY this 4th day of June 2018.

/s/ Joy A. Zimmerlin

Joy A. Zimmerlin

New York Independent System Operator, Inc.

10 Krey Blvd.

Rensselaer, NY 12144

(518) 356-6207