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**VIA EMAIL**

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Re: Grid in Transition Whitepaper

Dear Michael and Debbie:

On behalf of the City of New York (“City”), we submit these comments on the New York Independent System Operator, Inc.’s (“NYISO”) *Reliability and Market Considerations for a Grid in Transition* Report (“Whitepaper”). The City appreciates that the NYISO recognizes the need to conduct a comprehensive evaluation of its markets in context of the important and necessary changes occurring in the State, the environment, the economy, and the electric industry. With the Public Service Commission’s Reforming the Energy Vision, Clean Energy Standard, and Value of Distributed Energy Resources initiatives, and the recently enacted Climate Leadership and Community Protection Act (“Act”), there can be no question that the electric industry is and should be undergoing significant changes. The urgent necessity of reducing greenhouse gas emissions while ensuring climate resiliency of critical energy infrastructure will require new and different approaches.

Accordingly, the City applauds the NYISO for undertaking this effort and supports a holistic consideration of how the wholesale energy markets must transform to function effectively while serving the needs and interests of consumers and other market participants. From the City’s perspective, there are three paramount issues: (i) preserving system reliability and increasing resiliency; (ii) taking significant and timely measures to address climate change (including reducing greenhouse gas emissions and planning for the impacts of climate change); and (iii) minimizing costs to consumers to ensure that electricity remains affordable for all.

A. The Core Inquiry Should Be Broadened

At this time, to meet the State's public policy goals and accommodate the broader transition in the energy industry toward renewable resources, it is questionable whether the NYISO's current least cost economic dispatch-based markets will continue to be an appropriate, or viable, construct in the future. As the State becomes more reliant on renewable resources – most of which have zero fuel costs and low operating costs – the potential exists that energy prices could further decline and additional sources of revenues will need to be identified so that adequate levels of resources will be available when needed. Also, because of transmission limitations and the intermittency of some resources, future dispatch may be based more on resources' ability to serve load during a given time period than on least cost.

To be clear, cost is an important consideration. However, markets that are not addressing public policy needs, or the needs and preferences of consumers, are not sustainable. Outside of the electric industry, it is well established that markets and market participants must adapt over time to the changing needs of consumers in order to remain relevant and viable. Concerns over climate change are growing, and consumers are becoming less accepting of the continuation of the status quo – that is, reliance on fossil fuel-based generation. City and State public policy, reflected most recently in the Act, provides further evidence that markets based on fossil fuel-based energy production will not remain viable over the long-term.

The NYISO's May 30, 2019 presentation to the Market Issues Working Group regarding the Whitepaper posited the core question as:

How can the wholesale energy market in New York continue to provide pricing and investment signals necessary to reflect system needs and to attract and retain enough controllable and flexible resources to balance the electric system and provide grid services necessary for reliability? (Slide 8)

The City agrees that this is part of the core question, but it does not fully capture the scope of the inquiry that should occur. We respectfully submit that the core question should be modified as follows:

How can the wholesale energy market in New York continue to (i) provide pricing and investment signals necessary to reflect system needs and to attract and retain enough controllable and flexible resources to balance the electric system and provide grid services necessary for reliability and resiliency; (ii) be consistent with, and foster or facilitate the State's public policies; and (iii) provide the products and services desired by consumers?

The City acknowledges that the NYISO's markets involve many different types of market participants, and that the NYISO should balance the needs and interests of all of the market participants. However, the core purpose of the energy markets, and the energy industry generally,

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is to provide a reliable supply of power to consumers. Indeed, without consumers, there would be no need for generators, transmission owners, marketers, or other energy market participants. Accordingly, part of the inquiry for the Grid in Transition should be how to remain relevant to consumers.

As to the second item added above, the NYISO is a single-state system operator. As such there can be no legitimate question regarding the need for the NYISO's markets to be consistent with State policies. If there are inconsistencies, there is little doubt that the State policies will take precedence. The City does not dispute that the markets have been valuable. However, as the State's policies and goals change, the markets must adapt correspondingly.

The most significant policy change, and an issue driving changing consumer interests, pertains to climate change. As noted above, there are two aspects to this issue. First, dispatch considerations should be based on more considerations than least economic cost. In particular, environmental impacts should be taken into account. The demand for resources that do not emit greenhouse gases is growing. Some of the growth is due to implementation of public policies, and some is due to organic demand – as people and businesses better understand the impacts they have on the environment and the many benefits of renewable energy sources, many seek to change their behavior. Accordingly, precedence should be given to resources that do not emit greenhouse gases or other harmful emissions.

At present, energy and capacity prices are largely based on the costs of a gas-fired generating unit. In the future, this must change, and the carbon pricing proposal as currently configured appears to have limited impacts in advancing the State's goals and achieving the required changes. That is, the analyses of the Brattle Group and other experts have revealed that carbon pricing is unlikely to cause significant additional investments in carbon-free resources or support the repowering of existing generation. However, as proposed, carbon pricing is likely to result in substantial rate increases and economic impacts on consumers within New York City without commensurate increase in access to renewable energy, improvements in air quality, or other benefits.

Second, as we have discussed in working groups and in meetings with the NYISO, the NYISO should consider climate change impacts in its planning activities to identify the need for new investments and/or new or different approaches to preserving the reliability and resiliency of the Bulk Power System. The NYISO is in a unique position in that it can provide dispassionate, objective information to policy makers, generators, transmission owners, and other interested parties. The Climate Change Study now underway is a good first step, but the NYISO needs to adjust its planning activities to consider potential future conditions as well as trends based on historic conditions.

Although the NYISO does not own the physical assets, the NYISO's planning activities can help inform rate cases and other regulatory proceedings and decisions regarding necessary expenditures. Moreover, the planning activities can identify needs that perhaps can be addressed by market actors. We have already seen multiple instances of merchant transmission developers being selected to address public policy needs via new transmission lines. Similar opportunities to

develop new substations or other facilities that are designed with consideration of changing climatic conditions should be considered to ensure that the system is reliable and resilient over its useful life.

A final observation pertains to the first aspect of the core question. There is no question that we need a generation fleet that can maintain system reliability and resiliency. Historically, that fleet was comprised of large central generating facilities. In the future, that fleet is likely to be very disaggregated and include a mix of facilities – some serving individual or a few customers, some serving communities, and others serving broader areas.

In New York City, the generation fleet includes facilities that are almost 70 years old, and the median age of the fleet is about 48 years old. The markets should not be designed to perpetuate old, inefficient, and heavily polluting generating units. At present, the markets are not inducing sufficient levels of new development, and the projects that have recently been proposed emanate far more from State actions, such as the Department of Environmental Conservation's Peaker Rule, than from the markets. Buyer-side mitigation continues to present a concern, and a potential impediment, to new development. It was instituted to protect against monopsony power, an economic-based action. The Act, and related State actions, are wholly unrelated to monopsony power; rather, they are based on broad public interest motives and a need to address environmental impacts. As part of the first component of the core question, and given the Act and the State's plans for the future of the electric industry, the NYISO should consider whether and to what extent buyer-side mitigation continues to be relevant or necessary. As the State reduces its reliance on fossil fuel-based generating facilities, there is less and less need for measures whose primary purpose has been to protect their market shares.

**B. There Is A Need For Integrated Transmission Planning**

Discussions have already commenced within the Electric System Planning Working Group regarding the need to reconsider the manner in which the NYISO conducts transmission planning. It is questionable whether any projects will be undertaken via the NYISO's economic planning process. That process, however, requires substantial effort by the NYISO and market participants. Moreover, as the grid changes, it likely will not be practical or easy to define transmission needs as neatly falling into one of the three existing buckets – reliability, economic, or public policy.

The NYISO should expand its planning activities to consider the impacts of climate change, including how it could affect the operation of the transmission system in the future and potential changes to the system that may be necessary. These changes should include making substations more resilient to sea level rise, increasing intense precipitation and extended heat waves, and making transmission facilities more resilient to high winds, icing, extended high temperatures, and greater loading in the summer and winter.

The City recommends that the NYISO continue to consider ways to integrate its transmission planning activities into a single process. Such an approach is likely to be the most efficient process for the NYISO and market participants, and it should provide the best picture of the system's future needs.

C. Additional Transitional Considerations

The City has identified several items that should be added to this effort. First, existing market participants and developers interested in investing in New York would benefit from a timeline. While the City recognizes that any timeline will be at least partially conjectural, enough information now exists regarding the State's plans over the next 20 or so years to provide indications of the likely topics, issues, and other matters that need to be addressed to properly account for current and future risks and public policy goals. Such topics may include changes to market designs and pricing, new or modified market products, and new or expanded facilities (transmission and generation).

At the June 24, 2019 Joint Market Issues/Installed Capacity Working Group meeting, Sue Tierney provided some initial analysis of carbon pricing. Relevant to this comment, she observed that New York will need to approximately triple its carbon-free capacity to achieve the State's goal of 70 percent renewables by 2030. The NYISO could aid the marketplace by providing information on the generation and transmission that will be needed – and by when – to achieve the State's goals.

Second, as a corollary to the above discussions about climate change, the NYISO should place more focus on resiliency planning as it pertains to the Bulk Power System. We believe that the Bulk Power System faces more uncertainties and risks in the future than it has in the past, and that the NYISO is not properly planning for those uncertainties and risks.

The NYISO is in a unique position in that it has access to information about the operation of the entire system, and how weaknesses in any part of the system could impact other parts of the system and the system as a whole. To the extent weaknesses are identified in a NYISO process, action can be taken to eliminate the weakness. Such action could include investments by the New York Transmission Owners or merchant developers. The information developed by the NYISO could form the basis for recommendations in the Transmission Owners' rate cases (either before the Public Service Commission or the Federal Energy Regulatory Commission) or for a solicitation similar to that available if a reliability or public policy need is identified.

Third, the issues confronting the NYISO are not altogether new or unique. Other regions and other countries have faced or are facing similar issues. For example, although offshore wind is a nascent technology for New York, it is a mature and robust technology in Europe, and presumably European electric grid operators have experience in how to operate their electric systems reliably with large quantities of intermittent resources. California has thousands of megawatts of installed solar farms, and the California Independent System Operator presumably has experience in operating its electric system reliably with such resources. On the resiliency side, the Electric Reliability Council of Texas also manages a significant portion of wind and other intermittent resources, and has dealt with heat waves that persist for weeks and multiple consecutive days with temperatures in excess of 100 degrees. The NYISO should examine the mechanisms employed in other regions and countries and discuss these matters with their counterparts in order to identify best practices and products and market designs that may be best

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suited for the expected future composition of the State's electric grid, and for the future changes in climatic conditions that New York may experience.

Fourth, at page 39 of the Whitepaper, the NYISO discusses the need to better engage with load and demand-side resources. The City agrees with this assessment and encourages the NYISO to do so. As demonstrated by the Public Service Commission's Reforming the Energy Vision proceeding, the future electric system is expected to be multi-dimensional. The role of flexible loads could be as important as the role of generators in keeping the system in balance and providing (or reducing) power where and when needed.

Fifth, the City concurs with the identified need to reconsider the capacity markets. The amount of capacity needed over the course of a day, week, and month varies, but capacity prices do not reflect the changing value of capacity over these time periods. Moreover, as reliance on intermittent resources increases, there is a concomitant need to increase attention to resource adequacy. Arguably, there is less need for material changes to the capacity markets immediately than in the future, but it is preferable to proceed in a planned, organized manner. Therefore, considerations of the potential future changes should occur now rather than in a rushed manner when the need is imminent.

Sixth, the NYISO's Master Plan discusses more than a dozen potential new market products and/or market design changes, many of which pertain to ancillary services, and some of which may overlap or otherwise attempt to achieve similar purposes. The City submits that there should be a comprehensive examination of the ancillary services markets and products. This examination should consider the changing needs of the system due to the increasing role of renewable resources and in context of the expected evolution of energy and capacity prices. The result of this examination should be the development of a holistic plan for revising existing ancillary services and/or adding new ancillary services, as appropriate, to send appropriate price signals for services and products needed to achieve decarbonization, preserve system reliability, and increase system resilience.

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D. Conclusion

There are many issues to be considered as the industry, and the markets, evolve. The effort will be challenging and complex. Nevertheless, it is an effort that must be undertaken, and the Whitepaper appears to be a good starting point for the discussion of the changes that should be considered and evaluated. The City looks forward to participating in the discussions associated with this Whitepaper and the broader effort to ascertain whether and how the NYISO's markets and other activities need to evolve over time as the industry, itself, evolves.

Sincerely,

CITY OF NEW YORK



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