

October 31, 2022

VIA EMAIL

Mr. Zachary Smith
Vice President, System & Resource Planning
New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, New York 12144

Re: NYISO Solicitation of Transmission Needs Driven by Public Policy
Requirements

Dear Mr. Smith:

The City of New York (“City”) respectfully submits this letter in response to the New York Independent System Operator, Inc.’s (“NYISO”) August 31, 2022 “Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2022-2023 Transmission Planning Cycle” (“Notice”). The City requests that the proposal set forth below be considered in accordance with the process described in Section 31.4 of the NYISO’s Open Access Transmission Tariff (“OATT”).

The Public Policy-Based Need For Additional Transmission Is Well-Established

There have been notable developments in New York regarding the evolution of the State’s energy policies since the last Public Policy Transmission Planning Process (“PPTPP”) cycle. In accordance with requirements in the Climate Leadership and Community Protection Act (“CLCPA”)¹ and Accelerated Renewable Energy Growth and Community Benefit Act (“Accelerated Renewable Act”),² the New York Public Service Commission (“PSC”) commissioned a series of system studies, collectively referred to as the Power Grid Study, which examined the need for enhancements and expansion of the transmission system in New York.³

Certain of the needs identified therein are now being addressed. The NYISO issued a solicitation to strengthen the transmission ties between Zone K and Zones I and J, thereby facilitating the development of offshore wind and allowing more power to flow from Long Island to New York City and the rest of the State. There appears to have been a robust response to that

¹ Chapter 106 of the Laws of 2019 of New York.

² Part JJJ of Chapter 58 of the Laws of 2020 of New York.

³ PSC Case 20-E-0197, Implementation of Transmission Planning Pursuant to the Accelerated Growth Act, Initial Report of the New York Power Grid Study (filed January 19, 2021) (“Power Grid Study”).

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solicitation, and the NYISO is expected to provide its assessment of the proposals in the first quarter of 2023. Additionally, the New York State Energy Research and Development Authority entered into contracts with two projects to increase the delivery of renewable energy to the New York City load center under Tier 4 of the Clean Energy Standard.⁴

More recently, the NYISO issued a comprehensive overview of potential resource development over the next 20 years.⁵ The Outlook contains eight key findings, a number of which raise concerns about the effect of implementation of State policies on system reliability. The NYISO found that the “current New York transmission system, at both local and bulk levels, is inadequate to achieve currently required policy objectives.”⁶ It also found that the pace of renewable project development is unprecedented and requires an increase in the pace of transmission development.⁷ According to the Outlook, the additional contracted projects would cause a 23% increase in congestion statewide by 2030.⁸ In fact, the NYISO estimates that to meet the 2040 mandate, at least 20 GW of additional renewable capacity should be in service by 2030.⁹

The Outlook also addressed the need for expansion of the transmission system, noting that limitations prevent full delivery of renewable energy throughout the State. At least 5 TWh of renewable energy in 2030 and 10 TWh of renewable energy in 2035 are projected to be curtailed due to transmission limitations.¹⁰ This equates to roughly 5% less renewable energy that can be produced.¹¹ Without significant transmission expansion, four areas with extensive renewable

⁴ Both contracts were approved by the PSC. PSC Case 15-E-0302, Implementation of a Large-Scale Renewable Program and Clean Energy Standard, Order Approving Contracts for the Purchase of Tier 4 Renewable Energy Certificates (issued April 14, 2022). The Champlain Hudson Power Express Project, a 1,250 MW high voltage direct current (“HVDC”) transmission line from Quebec to New York City, has received its permits and approvals and is expected to commence construction shortly; it is expected to commence operation in 2026. The Clean Path New York Project, a 1,300 MW HVDC transmission line from upstate New York to New York City, recently filed an application for a Public Service Law Article VII Certificate; it is expected to commence operation in 2027.

⁵ NYISO, “2021-2040 System & Resource Outlook,” issued September 22, 2022 (“Outlook”).

⁶ *Id.* at 15.

⁷ *Id.* at 8.

⁸ *Id.* at 6.

⁹ *Id.* at 48.

¹⁰ *Id.* at 14.

¹¹ *Id.*

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resource potential will experience persistent and significant limitations in delivering renewable power to customers.¹² Overall, the Outlook finds that there are many transmission needs across New York State over the next 20 years that are specifically driven by public policy.¹³

Most recently, the NYISO Management Committee approved the 2022 Reliability Needs Assessment (“RNA”).¹⁴ The RNA finds that “[t]he margin to maintain reliability over the next ten years could be eliminated based upon likely changes in planned system conditions.”¹⁵ In particular, transmission security margins in New York City are projected to decline to near zero under baseline conditions and to be inadequate under severe weather conditions.¹⁶ In the event of a gas shortage, even with the expected increase in electrification, the statewide system margin is projected to be deficient by winter 2031-32.¹⁷ The RNA also discloses that if any of the planned transmission projects serving New York City are delayed, the system may not be able to meet customer demand in New York City.¹⁸

Although the Power Grid Study concluded that the CLCPA’s 70x30 goal could be achieved without significant bulk transmission upgrades beyond those planned or under development,¹⁹ the NYISO’s studies paint a different picture and indicate that additional transmission is needed. Moreover, all of the studies demonstrate that more transmission is needed to achieve the CLCPA’s 100x40 goal and to maintain a reliable electric system that is capable of serving customer demand for electricity at all times.

There Is A Public Policy-Based Need For Additional Transmission In New York City

The City is particularly concerned about the decreasing and very small transmission security margin in Zone J. Action is needed to preserve system reliability now and in the future. System investments are needed to serve increasing demand as customers continue to electrify their

¹² *Id.* at 63-64, Figure 29. The four areas are: (i) the Finger Lakes, (ii) the Southern Tier, (iii) Watertown, and (iv) Long Island.

¹³ *Id.* at 15-16.

¹⁴ The RNA was approved at the October 26, 2022 Management Committee meeting. It is expected to be formally issued in November 2022.

¹⁵ NYISO, “2022 Reliability Needs Assessment,” Draft Report (October 26, 2022) at 7.

¹⁶ *Id.* at 7-8.

¹⁷ *Id.* at 71-72, Figure 50.

¹⁸ *Id.* at 12, 54.

¹⁹ *Id.* at 24.

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heating and transportation. It is important that the transmission system improvements occur on a timely basis so as not to hinder the electrification efforts and to ensure that the State achieves its public policy goals.

From inception to operation, the time frame for a major transmission project can be 10 years or more. For example, the projects that collectively were formerly known as the AC Transmission Project will have taken approximately 11 years once they are completed in 2023. The Champlain Hudson Power Express Project will have taken about 15 to 16 years once it is completed.

As noted above, relatively near term action is needed to address the shrinking transmission security margin in Zone J. While some other transmission constraints may not arise for seven to ten years or more, there is a need to begin planning for them now. Indeed, there will be greater harm if there is not sufficient transmission available when it is needed than adding new transmission one to two years before the need fully matures. Further, as the NYISO observed in the RNA, needs could emerge sooner than projected and the State should prepare accordingly.²⁰

In addition to addressing transmission security, there is a need to strengthen the transmission backbone in New York City against the effects of climate change. The City continues to believe that the best way to address all of these transmission needs is via a “third ring,” or new transmission path through New York City. The City described its third ring proposal in its response to the NYISO’s 2020 PPTPP solicitation.²¹ The City’s proposal has not changed, and in the interests of brevity, the City incorporates herein that description. The City adds that various proposals advanced generally by Consolidated Edison Company of New York, Inc. (“Con Edison”) and other developers to facilitate the interconnection of offshore wind (*e.g.*, Con Edison’s Gateway Substation and the New York Power Authority’s/LS Power Grid’s King’s Spoke project) and by the respondents to the Long Island Public Policy Transmission Needs (“LI PPTN”) solicitation form portions of the third ring, demonstrating that others recognize the same needs as identified by the City.

As discussed in the attachment to this letter, the NYISO and PSC should designate the complete third ring as a public policy-based transmission need and solicit projects to complete that path. The City anticipates that decisions regarding the LI PPTN Project, Con Edison’s proposed Clean Energy Hub and Gateway Substation, and other developers’ proposals to facilitate offshore wind interconnections will be made in 2023 prior to the issuance of any solicitation for this PPTPP

²⁰ *Id.* at 91-92.

²¹ *See* Letter from Susanne DesRoches to Zachary Smith, dated October 2, 2020, attached hereto.

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cycle. Accordingly, the NYISO will be able to tailor the solicitation for the third ring based on the projects already moving forward.

In accordance with the Notice's requirements, the City offers the same criteria and rationale for the third ring that it offered in 2020, as set forth in the attachment. All of those criteria should be applied to each proposal, and the selection of one or more projects should be based on a balancing of all of the criteria rather than a project's suitability under any single criterion.

There Is A Public Policy-Based Need For More Transmission Throughout The State

There can be no question, and no dispute, that the CLCPA will increase the demand for electricity. There also can be no doubt that the CLCPA is a clear statement of New York's energy-related public policy. The Power Grid Study, Outlook, and RNA collectively demonstrate the need for transmission reinforcement throughout New York State to accommodate both the expanded demand for electricity and the fleet of on-shore and offshore resources needed to satisfy that demand. A portion of the need is being addressed by the Tier 4 transmission projects and the LI PPTN project. However, the rest of the need is not yet being addressed.

Whereas in prior PPTPP cycles, the City was able to identify very specific needs, including general termination points for new transmission lines, current and future needs are more general in nature. While the above-referenced studies identified general transmission needs, they did not identify with specificity the paths that require reinforcement.

As to these transmission needs, the City offers two options. First, the PSC could find that there is a general public policy-based need for new transmission in accordance with the aforementioned studies and let the marketplace identify solutions in their responses to a NYISO solicitation. Second, the PSC could identify areas of the State in which there are already identified public policy-based transmission needs.²² For this PPTPP cycle, the PSC could direct the NYISO to solicit proposals for some or all areas of high or high and medium risk of curtailments. Rather than being overly prescriptive, the PSC and NYISO could let the creativity and innovation of transmission developers govern how such needs should be addressed. In other words, rather than specifying the exact locations of transmission needs, the general areas would be identified and developers would have flexibility in proposed solutions that are appropriate for those areas.

In accordance with the Notice's requirements, the City offers the following criteria for evaluation of solutions:

²² The Outlook contains a map and discussion of discrete areas of the State where there are high, medium, and low risks of curtailment of renewable resources. Outlook at 13-15.

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- the extent to which the project ameliorates curtailment risk in one or more of the areas identified in the Outlook or to which it serves the goal of completing a third transmission ring in New York City;
- the benefits to and impacts on environmental justice communities;²³
- the nature and extent of the resiliency and/or reliability benefits provided by the project, including, but not limited to the project's ability to provide ancillary services.

All of these criteria should be applied to each proposal, and the selection of one or more projects should be based on a balancing of all of the criteria rather than a project's suitability under any single criterion.

The Notice further requests that proponents discuss how their proposals would fulfill the identified public policy need. The City submits that the entirety of this proposal does so and no separate discussion is needed.

As observed in the Fourth National Climate Assessment, "climate change and extreme weather events are increasingly affecting the nation's energy systems (including all components related to the production, conversion, delivery, and use of energy), threatening more frequent and longer-lasting power outages and fuel shortages."²⁴ The climate crisis is one of the largest threats facing the United States. The impacts of anthropogenic climate change, including rising temperatures, erratic and shifting weather patterns, and increasingly severe storm events, are stressing the nation's infrastructure in new ways. In identifying public policy-based needs and soliciting proposals to address such needs, the PSC and NYISO should heed this observation and require all proposals to address how the projects will be designed, constructed, operated, and maintained so as to minimize the effects of climate change and maximize their resilience and reliability.

²³ Environmental justice communities are disproportionately impacted by utility infrastructure, and efforts should be taken to minimize the burden of infrastructure construction on environmental justice communities. Doing so would advance the equity goals of the CLCPA and be consistent with the approach to disadvantaged communities discussed in the Draft Scoping Plan prepared by the Climate Action Council.

²⁴ Zamuda, C., *et al.*, *Energy Supply, Delivery, and Demand. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II*, U.S. Global Change Research Program, Washington, DC, US (2018) at 178, available at <https://nca2018.globalchange.gov/chapter/4/>. The Fifth National Climate Assessment is currently under development and is anticipated to be released in late 2023.

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Respectfully Submitted,

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Attachment

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October 2, 2020

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Re: NYISO Solicitation of Transmission Needs Driven by Public Policy
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Dear Mr. Smith:

The City of New York (“City”) respectfully submits this letter in response to the New York Independent System Operator, Inc.’s (“NYISO”) August 2, 2020 “Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2020-2021 Transmission Planning Cycle” (“Notice”). The City requests that the proposals set forth below be considered in accordance with the process described in Section 31.4 of the NYISO’s Open Access Transmission Tariff (“OATT”).

New York State Public Policy Goals

Since the 2018-2019 transmission planning cycle, there have been significant developments in New York regarding the evolution of the State’s energy policies. First, on July 18, 2019, the Climate Leadership and Community Protection Act (“CLCPA”) was enacted as Chapter 106 of the Laws of 2019 of New York. Among other things, the CLCPA set statutory targets that a minimum of 70 percent of the State’s electricity generation come from renewable resources by 2030 (“70x30”) and that by 2040, the State’s electric system have zero carbon emissions (“100x40”).¹

Second, on April 3, 2020, the Accelerated Renewable Energy Growth and Community Benefit Act (“Accelerated Renewable Act”) was enacted as Part JJJ of Chapter 58 of the Laws of 2020. Pertinent to this matter, the Accelerated Renewable Act established certain actions to be taken to help achieve the CLCPA targets. One of those actions was the performance of a study of

¹ Chapter 106 at Section 4.

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the State's transmission and distribution systems and the upgrades needed to facilitate achievement of CLCPA targets. Pursuant to Section 7(2) of that Act, the NYISO was expected to provide input and cooperate in the development of that study. Once the initial version of the study is prepared – which the City understands will be by the end of 2020 – the New York Public Service Commission (“NYPSC”) will prepare a bulk transmission system investment plan, which then will be implemented, in part, through the NYISO's Public Policy Transmission Planning Process (“PPTPP;” Accelerated Renewable Act Section 7(4)).

Although the timing of this PPTPP cycle does not entirely coincide with the timing of the State's bulk transmission system investment plan, the City encourages the NYISO and NYPSC to harmonize their actions and determine a means to merge the two efforts so that the CLCPA implementation efforts are not delayed until the next PPTPP cycle. To the extent harmonization of their respective actions would require a tariff waiver or other similar relief from the Federal Energy Regulatory Commission, the City respectfully urges the NYISO to seek such relief expeditiously. The City expects that a vast majority of market participants would support such a request.

Third, on April 8, 2020, the State Energy Planning Board adopted amendments to the 2015 State Energy Plan. Pertinent to this matter, the changes included incorporating the above-mentioned CLCPA targets plus the CLCPA's greenhouse gas (“GHG”) emissions reduction targets of 40% by 2030 and 85% by 2050, and its resource targets of 9,000 MW of offshore wind by 2035, and 3,000 MW of energy storage by 2030.²

Fourth, as of January 16, 2020, the New York State Department of Environmental Conservation promulgated 6 NYCRR Part 227-3, “Ozone Season Oxides of Nitrogen (NO_x) Emission Limits for Simple Cycle and Regenerative Combustion Turbines,” commonly known as the “Peaker Rule.” According to the NYISO, the Peaker Rule will result in the unavailability of 779 MW of generation in Zone J in the summer of 2023 and of an incremental 1,385 MW in the summer of 2025.³ The findings of the draft 2020 Reliability Needs Assessment indicate the Peaker Rule is partially responsible for resource adequacy concerns starting in 2026 – concerns that could be addressed in part by additional transmission into and within Zone J.

City of New York Public Policy Goals

The City has long recognized the need to combat climate change. Given the predominant current reliance on a fleet of fossil-fueled generating facilities in New York City (the “in-City fossil generation fleet”), the City has been a strong advocate for both increasing reliance on carbon-free generation resources and on connecting such resources to Zone J. Large-scale renewable

² The related materials can be found at <https://energyplan.ny.gov/The-Board/Board-Meetings>

³ NYISO, “2020 RNA Appendices,” provided for the Electric System Planning Working Group's September 10, 2020 meeting, at p. 39, Figure 20.

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resources exist and are most likely to be developed outside Zone J – whether in upstate New York, Canada, or offshore – and a more robust transmission system is needed to transmit power from these resources to New York City consumers. Thus, it has been the public policy goal of the City, as evidenced in part by its submissions to the NYISO and NYPSC in each PPTPP cycle, to support expansion of the Bulk Power System in New York.

The City, in parallel with the State, also has a set of decarbonization goals and policies. In 2014, the City announced a commitment to reduce GHG emissions 80% relative to 2005 levels by 2050.⁴ In 2016, the City issued its “Roadmap to 80x50,” a comprehensive report that identified and assessed the actions necessary to achieve the 80% reduction goal.⁵ In 2017, the City adopted the principles of the Paris Agreement and committed to achieving carbon neutrality by 2050.

In 2019, the City enacted a series of local laws to combat climate change, collectively referred to as the Climate Mobilization Act. These laws are among the most ambitious efforts ever undertaken by a major city to reduce GHG emissions and include Local Law 97 of 2019, which requires substantial GHG emissions reductions from large buildings.⁶

Governmental agencies and private entities within New York City are spending billions of dollars to take steps to address climate change and improve the health and welfare of New York City residents. Further, through its NYC Accelerator and other programs, the City is undertaking a multi-faceted effort to promote energy efficiency, building electrification, and the deployment of electric cars, trucks and buses to further reduce GHG emissions.

To reach the City and State’s companion decarbonization targets will require a multitude of components. Achieving a cleaner grid by 2030 and a clean grid by 2040 is a foundational component; otherwise, other priority measures such as electrification may not generate substantive emissions reductions.

The NYISO’s 2020 Power Trends Report shows that 91% of upstate energy production in 2019 came from carbon-free resources, whereas only 31% of downstate production was carbon-

⁴ *One New York: The Plan for a Strong and Just City* (issued April 2015) at 166; available at <http://nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC.pdf>

⁵ See “New York City’s Roadmap to 80x50” (“Roadmap”); available at https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/New%20York%20City's%20Roadmap%20to%2080%20x%2050_Final.pdf.

⁶ Also as part of the Climate Mobilization Act, Local Laws 92 and 94 of 2019 require all new construction to include a solar photovoltaic system and/or a green roof, which is anticipated to increase rooftop solar in New York City.

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free.⁷ Importantly, 25% of the downstate production was from nuclear resources,⁸ and the Indian Point Energy Center will be fully shut down in April 2021. Production from renewable resources, including pumped storage, comprised only 6.5% of the total downstate output.⁹ Within Zone J, the percentage of carbon-free generation is even lower. Previous modeling conducted by the City to assess the impacts of the closure of the Indian Point Energy Center (“IPEC”) revealed that the loss of nuclear production will be replaced predominantly with production from the old and dirty in-City fossil generation fleet.

More recently, the City has conducted an analysis of how it could increase its access to clean power and found that expanding transmission capacity that directly connects the City to carbon-free power is critical. Doing so will displace the in-City fossil generation fleet, reduce grid emissions, improve air quality, and help maintain system reliability and resiliency – all cornerstones of the City’s decarbonization goals. To maximize these benefits, the transmission connections should be to a diversity of clean resources, including resources that can serve as baseload and provide dispatchability and others that are intermittent and/or can be built at scale.

Specifically, the City’s analysis shows that a material shift from fossil-based production to carbon-free-based production in Zone J by 2030 will require thousands of megawatts of offshore wind (directly interconnected into Zone J), thousands of megawatts of onshore wind and solar (also connected to Zone J), and at least 1,000 MW of Canadian hydropower. This shift can occur only with additional transmission from the locations of these resources into Zone J.¹⁰ In addition, achieving the CLCPA 70x30 goal will require hundreds of megawatts of energy storage plus substantial savings from energy efficiency measures within Zone J.

The proposals set forth herein are focused on public policy-based transmission needs required to achieve the CLCPA’s 70x30 goal and for which planning activities should be commenced now (*e.g.*, a transmission connection between Zone J and Canadian hydropower). In future PPTPP cycles, the City plans to identify additional transmission needs required to achieve the CLCPA’s 100x40 goal (*e.g.*, additional upstate to downstate transmission). Generally, expansion of the Bulk Power System will help achieve concurrent State policies related to improving air quality and reducing impacts on environmental justice communities, as expressed in the CLCPA, other legislative enactments including Chapter 735 of the Laws of 2019 of New York, and regulatory actions such as the promulgation of 6 NYCRR Part 227.

Expanding transmission capacity to ensure that the benefits of a clean, reliable grid are shared by New York City residents ultimately requires approvals controlled by the State and

⁷ NYISO, “Power Trends 2020,” issued June 10, 2020, at p. 9.

⁸ *Id.* at p. 29, Figure 14.

⁹ *Id.*

¹⁰ We note that the City’s analysis assumes the AC Transmission Project is in service.

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federal government. Accordingly, a declaration of a policy-based need for such transmission infrastructure will provide a clear pathway for the advancement of these projects.

The Public Policy-Based Need for Transmission Access within Zone J to Clean, Diverse Resources

For many years, one of the strengths of the New York electric system has been its diversity of supply – geographically, operationally, and fuel-wise. The former combination of hydropower, nuclear, coal, gas, oil, and other resources provided an appropriate balance of baseload and peaking capacity spread across the State that allowed for maintenance of system reliability at reasonable cost, even when the availability of any fuel source was restricted. While the generation mix must change, the need for diversity remains the same.

Reaching our carbon emissions reduction and air quality goals requires displacement of the in-City fossil generation fleet. Such displacement must occur in a timely, reliable and diverse manner. Clean resources and the transmission to bring them to Zone J to offset the in-City fossil generation fleet is an immediate need as poor air quality from the fleet impacts public health for local communities today. Also, the sooner that these generation resources can be displaced, the higher the cumulative carbon reduction benefit. However, the resources that are brought online should have the ability to offset fossil generation efficiently (*i.e.*, overbuilding replacement resources should be avoided).

Specific to Zone J, offshore wind, once developed at scale, holds great potential to offset the in-City fossil generation fleet. However, most of the offshore wind farms will be located in the same general areas on the continental shelf and could be similarly impacted by hurricanes, reduction in winds, and other factors. The NYISO's Climate Change Phase 2 Study amplifies this concern and demonstrates the need for diversity. The Phase 2 Study showed that a substantial amount of downstate capacity, including offshore wind, can be shut down during a major weather event, and that the recovery period can last for two weeks or more.¹¹ The analysis also showed that wind lulls, or periods of low wind, could lead to losses of load unless there is sufficient dispatchable generation available to meet the wind shortfall.¹² Severe weather impacts are not limited to generation; transmission lines could be damaged or otherwise shut down. A diversified portfolio of resources – including clean dispatchable generation – spread over a large geographic area and connected to Zone J via multiple transmission paths (above-ground and underground), provide the best means of ensuring a reliable power system and avoiding loss of load events.

Another consideration is that offshore wind is intermittent and has lower potential capacity than dispatchable resources (unless paired with storage). Therefore, in addition to the planned

¹¹ Analysis Group, “NYISO Climate Change Phase II Study,” dated July 23, 2020, presentation to the Electric System Planning Working Group.

¹² *Id.*

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offshore wind, there is a need for clean electricity supplies into Zone J from other locations that are flexible and dispatchable to help maintain system reliability. While offshore wind connected into New York City is a critical component of the multi-faceted approach, Canadian hydropower is another critical component that provides unique attributes to help efficiently achieve a range of public policy goals from reducing emissions to improving public health and provides a complementary balance to intermittent renewable resources.

Further, because of the substantial amount of investment that will be needed to achieve our goals, ensuring an efficient and cost-effective strategy that maximizes per-dollar benefits to energy customers and taxpayers is crucial. Including reservoir-based hydropower in the supply mix to replace the in-City fossil generation fleet provides lower costs and greater efficiency than a strategy that relies solely on onshore resources. Designating transmission that connects dispatchable hydropower to Zone J as a public policy-based transmission need is one way to supplement intermittent renewable resources and provide needed renewable energy in a cost-effective and efficient manner.

Another factor is the timeline for development. Under the CLCPA, the State must meet aggressive goals in less than ten years. However, some resources under consideration may take more than ten years to site and construct. Other resources, such as transmission supporting Canadian hydropower, already have siting approvals in hand and could be on-line within a few years. Even if offshore and/or upstate resources can be available within the next five to seven years, the transmission needed to connect them to Zone J may not be available for a decade or more. Thus, when considering public policy-based transmission needs, the NYISO and NYPSC should consider a mix of projects – those that will help achieve the 70x30 goal, and those with longer lead times that will help to achieve the 100x40 goal.

The NYISO's 2020 Gold Book shows that the Zone J energy production in 2019 was 22,534 GWh.¹³ As noted above, virtually all of this production was from fossil-fueled generating facilities. The City's modeling shows that offshore wind, storage and Canadian hydropower will help reduce this fossil-based energy production, and that including Canadian hydropower provides greater incremental benefits than adding upstate onshore wind and solar.

Specifically, the modeling shows that using the NYISO's baseline load forecast (inclusive of energy efficiency reductions), adding 5,000 MW of offshore wind (3,000 MW in Zone J), 2,500 MW of storage (500 MW in Zone J), and 12,600 MW of upstate renewable resources (collectively, the "base assumptions") would reduce fossil energy production in Zone J in 2030 by 17%. Including 1,000 MW of Canadian hydropower and reducing upstate renewable resources by 3,000

¹³ NYISO, "2020 Load & Capacity Data," issued April 2020 ("Gold Book") at Figure III-1. The Gold Book shows that the baseline energy usage in Zone J in 2019 was 52,003 GWh, and that the forecasted usage in 2030 is 49,450 GWh. *Id.* at Table I-2. In 2040, the baseline forecast increases to 57,242 GWh. *Id.*

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MW would reduce Zone J fossil production by another 9%. Including that 3,000 MW of upstate renewable resources with the 1,000 MW of Canadian hydropower would reduce Zone J fossil production by only an incremental 5.8%. In other words, connecting Canadian hydropower to Zone J provides greater benefits than connecting upstate renewable resources. Overall, these renewable and carbon-free resources would boost the percentage of carbon-free energy available in Zone J from its current small amount to between 60% and 67% by 2030, and allow the State to achieve its 70x30 target.

The City's modeling also examined the GHG reductions associated with the reduced reliance on fossil generation in Zone J. Adding the base assumption quantities of wind, solar, and storage, CO₂ emissions from in-City generation would decline by almost 26% compared to 2019 levels. Including 1,000 MW of Canadian hydropower instead of 3,000 MW of upstate renewable resources would further reduce CO₂ emissions from in-City generation by almost 10%. Adding the upstate renewable resources to the supply mix would further reduce CO₂ emissions from in-City generation by about 5.7%. In the long-term, the combination of Canadian hydropower and upstate renewable resources will be important to achieve substantial CO₂ emissions reductions in Zone J; in the short-term, Canadian hydropower provides greater emissions reduction benefits than upstate renewable resources.

Importantly, Canadian hydropower provides numerous additional benefits that can complement upstate wind and solar in critical ways. First, it is dispatchable and can be ramped up and down as warranted by system conditions and needs. Second, it has the ability to qualify as a Zone J capacity resource and satisfy locational capacity requirements in Zone J, supplanting up to 1,000 MW of the in-City fossil generation fleet. Third, it can lead to local air quality improvements sooner in New York City, particularly in economic justice communities surrounding the existing fleet.¹⁴ Fourth, it provides greater resiliency benefits to New York City because (i) the transmission line connecting Canadian hydropower to Zone J is planned to be constructed underground and will be less vulnerable to severe weather events and other disruptions than aboveground lines,¹⁵ and (ii) the generation resource is not susceptible to the same severe weather events and other disruptions as the in-City fossil generation fleet or offshore resources.

¹⁴ Environmental justice communities have disproportionately higher instances of respiratory and other medical ailments, in part caused by poorer air quality in their neighborhoods. In New York City, most fossil-fueled generating facilities are located in environmental justice communities and contribute to high asthma rates and other medical problems among children and adults living nearby. As evidenced by Chapter 735 of the Laws of 2019 of New York and the CLCPA, it is State policy to take action to reduce impacts on environmental justice communities.

¹⁵ For example, during Superstorm Sandy, there were over 90 transmission outages in the New York Control Area, including all external interconnections to Zone J. See NYISO, "Hurricane

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Collectively, the transmission proposals presented herein allow for Zone J connections to different generation resources with unique and complementary attributes, all of which are needed together to meet the State and City's transformative public policy goals.

The Policy-Based Need to Connect Zone J to Sources of Large-Scale, Dispatchable, Carbon-Free Resources

A. Canadian Hydropower Would Provide Important Balancing Services while Lowering Energy Prices in Zone J

As noted above, one major component of the transmission needs into Zone J is a connection to the large-scale dispatchable hydropower resources in Quebec. The CLCPA and related State policy has mandated the replacement of the State's fossil-based generation fleet with renewable and other carbon-free resources. While the City supports this paradigm shift, the City also recognizes that there are significant differences between the former/existing generation fleet and the expected future generation fleet. Foremost among the differences is that the existing fleet is comprised substantially of dispatchable resources – plants that can be turned on and off and ramped up and down as needed to serve changing load. Many renewable resources do not have similar capabilities. While most can be ramped down, they may not be able to increase their output. Further, they cannot be turned on at will.

Deployment of storage, another important complement to a clean grid, will help address some of these variability challenges and meet some peak demand needs, but the technology remains costly and currently is limited to a maximum discharge cycle of eight hours. While the City is committed to facilitating deployment of bulk storage at scale, there remain safety and space constraint challenges, especially with real estate and development costs at a premium.¹⁶

In short, there will be a strong need for carbon-free resources that are dispatchable at scale. At present, hydropower resources that rely on reservoirs are the predominant type of generating facility with these attributes. The existing fleet of hydropower resources located in the New York Control Area are already included in the base resource mix, so they cannot provide additional dispatchable capacity. The largest incremental source of such capacity that is capable of serving New York is the hydropower fleet located in Quebec.

Sandy Preparations, Response & Recovery,” a presentation to the Management Committee on November 2, 2012 at slide 12.

¹⁶ Development of storage resources outside Zone J is a consideration. However, their contribution to Zone J would be contingent on the same or similar expansion of the bulk power system as would be needed to connect Canadian hydropower or other large-scale renewable resources.

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The need for access to this fleet is well-established. There are no other technically viable large-scale, carbon-free resources that can provide similar attributes to New York. The Cost Study supporting the Clean Energy Standard evaluated the merits of including this fleet and determined that it would materially reduce the consumer costs of the Clean Energy Standard.¹⁷ In its Climate Change Report, the Analysis Group assumed 1,310 MW of Canadian hydro directly connected into Zone J would be part of the resource mix needed to achieve the CLCPA 2040 targets.¹⁸ The 2020 analysis by The Brattle Group for the NYISO (“BG Study”) similarly noted that hydropower resources provide “a key source” of flexible, dispatchable generation and determined that including 1,300 MW of Canadian hydro could reduce the in-State need for renewable resources by 9,000 MW.¹⁹ Lastly, the State has also acknowledged the benefits of the line, most notably when Governor Cuomo pointed to a transmission project between these end points as a way to promote clean energy and boost the State’s economy.²⁰

Another significant benefit and rationale for this transmission proposal arises from the impacts it will have on reduced reliance on the in-City fossil generation fleet and on the cost of energy. The City’s analysis indicates that this transmission line, in combination with other renewable resources that together achieve the CLCPA’s 70x30 goal, could help reduce fossil-based generation in Zone J by up to 32%. Energy prices in Zone J could decrease by over 10%. In other words, energy consumers could benefit from lower commodity prices, and all New Yorkers would benefit from significantly lower emissions and improved air quality.

A separate consideration relates to timing, as noted above. Completion of a transmission line connecting Canadian hydropower to Zone J could occur within three to four years. In contrast, only about 1,700 MW of offshore wind is proceeding at this time, and regulatory uncertainties

¹⁷ Case 15-E-0302, Implementation of a Large-Scale Renewable Program and a Clean Energy Standard, Clean Energy Standard White Paper – Cost Study (dated April 8, 2016) at slide 286.

¹⁸ Analysis Group, “Climate Change Impact Phase II – An Assessment of Climate Change Impacts on Power System Reliability in New York State,” dated September 2020 (“AG Report”) at p. 9, Table ES-1. The Analysis Group explained that increasing zero carbon imports was needed to develop a resource mix that is capable of serving load requirements in all hours. AG Report at p. 21.

¹⁹ The Brattle Group, “New York’s Evolution to a Zero Emission Power System,” dated June 22, 2020, slides 13 and 44.

²⁰ Governor Cuomo Press Conference, May 26, 2020, available at <https://www.governor.ny.gov/news/video-audio-photos-rush-transcript-amid-ongoing-covid-19-pandemic-governor-cuomo-announces-33>. His specific statement was “[w]e know they have low-cost hydropower in Canada. Let’s run the cable, the transmission lines from Canada to New York City to get that power down here and let’s stop talking and let’s start doing. Let’s invigorate this whole renewable market.”

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raise questions as to the timing of additional offshore wind development. While onshore wind and solar projects are moving forward, there is a need for additional transmission capacity to deliver their carbon-free electricity to Zone J, and such capacity could take a decade or longer to be constructed.²¹

Another consideration is that connecting Canadian hydropower to Zone J would allow emission reduction benefits to begin to accrue sooner than under any other option. Indeed, the sooner that reductions in the operation of the in-City fossil generation fleet can occur, the more air quality improvements with associated health benefits that City residents will realize. Similarly, the timing and quantity of reductions of carbon emissions also matter. The effects of carbon emissions are increasing each year and are, to an extent, additive. Therefore, the benefits of reducing carbon emissions are maximized by actions taken now, or as soon as possible.

The City has taken numerous actions to improve air quality in New York City. Because the in-City fossil generation fleet is a substantial contributor to air pollutants, reducing and eliminating this source of harmful air emissions will provide significant benefits to New Yorkers generally, and in particular to residents of the environmental justice communities surrounding most of the in-City fleet.²²

Finally, Canadian hydropower offers a clear resiliency and reliability benefit. Because of climate change, heat waves are expected to last longer and be more severe. There is a continuous demand for electricity during such events, which can last for multiple days. While storage resources will be important for short-term needs, they are not equivalent to dispatchable resources like Canadian hydropower that can operate continuously for days or weeks. Canadian hydropower also could serve as a geographically diverse source of generation (in case of an extreme climate event), and as a black start resource.

Accordingly, the City urges the NYPSC to designate a transmission line from Quebec to Zone J as needed to reliably achieve the CLCPA targets and serve an important public policy-based transmission need.

²¹ The AC Transmission Project will help to alleviate the UPNY-SENY interface constraint, but that project does not provide additional transmission capacity into Zone J, nor does it provide sufficient capacity to allow upstate renewable resources to displace the in-City fossil generation fleet.

²² These residents historically have suffered disproportionately worse air quality and associated medical ailments.

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B. Project Criteria and Ability to Fulfill the Public Policy Need

In accordance with the Notice's requirements, the City offers the following criteria for evaluation of solutions:

- the extent to which the project allows for the interconnection of Canadian hydropower into Zone J;
- the benefits to and impacts on environmental justice communities;²³
- the ability of the project to lessen the need for the in-City fossil generation fleet, and thereby expedite the reduction of harmful air pollutant emissions; and
- the nature and extent of the resiliency and/or reliability benefits provided by the project.

All of these criteria should be applied to each proposal, and the selection of one or more projects should be based on a balancing of all of the criteria rather than a project's suitability under any single criterion.

The Notice further requests that proponents discuss how their proposals would fulfill the identified public policy need. The CLCPA targets of 70x30 and 100x40 need to be achieved in a manner that preserves the reliability and resiliency of the electric system. For the reasons discussed above, this proposal would provide a large amount of dispatchable, carbon-free energy within Zone J, which will be needed during the periods when offshore wind or other renewable resources serving the millions of consumers in Zone J are unavailable or have reduced output.

**The Public Policy-Based Need for Additional Transmission in
Zone J to Support Offshore Wind and Other Resources**

A. The Bulk Power System In Zone J Will Need To Be Expanded To Accommodate
The Additional Resources

Almost all of the attention on transmission related to offshore wind to date has been on the undersea transmission system, including whether it should be developed on a radial or backbone basis. At an early NYPSC conference on offshore wind, the City raised questions about the onshore portion of the transmission system since many of the areas being considered as landing sites for offshore wind had little to no existing transmission infrastructure in place. At that time,

²³ Environmental justice communities have been disproportionately impacted by the in-City fossil generation fleet, so it is important – and consistent with the CLCPA and other State policies – that the potential benefits and impacts on these communities be considered in the evaluation of projects that would displace the in-City fleet.

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the issue was viewed as an issue for the local utility – Consolidated Edison Company of New York, Inc. (“Con Edison”).

The situation has changed markedly since those early discussions. Offshore wind projections have increased from several thousand megawatts to the CLCPA target of 9,000 MW or more by 2035. In the BG Study, The Brattle Group projects 25,000 MW of offshore wind serving New York in 2040 in its reference case, and 36,000 MW of offshore wind being needed in its high electrification case. Over 70% of the offshore wind would be connected into Zone J. In the AG Report, the Analysis Group projects over 21,000 MW of offshore wind serving New York in 2040, with over 70% connected into Zone J.

Although there has not been any specific study of how offshore wind would connect into Zone J, the above quantity projections far exceed the existing quantity of generation interconnected in Zone J (approximately 9,200 MW, according to the 2020 Gold Book). Accordingly, it seems clear that additional bulk transmission within Zone J will be needed.

The City first began assessing the need for additional transmission within Zone J after Superstorm Sandy. The focus at that time was resiliency, and the concern was that many of Con Edison’s transmission substations are located adjacent to water bodies and are at risk from severe weather events. The assessment later expanded to evaluate service quality problems. In the outer boroughs, the City identified concerns including aging transmission lines that require frequent repairs and, in some areas, insufficient transmission capacity. Areas of local transmission congestion also coincide with communities that have seen the most growth in recent years and are home to larger shares of vulnerable residents. More recently, the City has been analyzing the transmission system upgrades needed to replace the in-City fossil generation fleet with renewable resources.

The City’s analysis to date has revealed that there is little to no terrestrial transmission along Jamaica Bay or other areas adjacent to the New York Bight (where many offshore wind projects have been proposed or are projected to be developed). Similarly, there is relatively little transmission capacity between Zones J and K, limiting the ability of offshore wind interconnected on Long Island to serve New York City. Further, most of Con Edison’s transmission substations on the waterfront are already at capacity, and it may not be cost-effective or practical to expand those substations to accommodate new generation resources.²⁴ Even if some of those substations have capacity available, there continue to be concerns about their vulnerability to sea level rise, coastal flooding, and severe storms.

²⁴ No substation should be so large and so critical that its loss – for any reason – would have catastrophic impacts on the provision of electric service in New York City. Just as diversification of generation sources is important, there should be some diversification in the interconnection of generation to transmission substations.

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A suitable transmission expansion option that the City has identified is the construction of a new 345 kV transmission path within Zone J between Dunwoodie and Fresh Kills. The new transmission path would be constructed further inland to reduce risks to rising sea levels and related climate change impacts. It would consist of newly constructed 345 kV underground feeders, as well as potentially upgrading/converting 138 kV feeders to 345 kV operation. In addition, between two and four 345 kV transmission substations would be added – either new construction or conversion of existing 138 kV substations. Modernizing and strengthening the electric system by placing these substations in close proximity to major load centers within Queens and Brooklyn, such as in Corona and Brownsville, would improve electric service in those areas, better accommodate new power demands that may arise from expanded electrification of buildings and vehicles, and serve as connections to 345 kV tie lines between the new transmission line and the existing transmission system.

The new transmission path also would significantly improve the reliability and resiliency of the electric system, generally, by (i) providing additional transmission capacity to directly serve major load centers within Zone J; (ii) eliminating known congestion points in the southern part of Zone J; and (iii) replacing or bolstering the existing radial 138 kV feeders that presently serve large portions of the outer boroughs.²⁵ The new substations would allow for the interconnection of new generation, including significant amounts of offshore wind or other forms of renewable resources, as well as energy storage facilities (*i.e.*, critical components to meeting the State and the City's clean energy goals).

In addition to reliability, the new transmission path, and especially the strengthening of the transmission system around Greenwood and Corona, has the potential to reduce the need for peaking generation in those areas. The new transmission path would reinforce the transmission system and potentially better serve the load pockets in these areas. Doing so could minimize or eliminate the reliability violations that have been identified as issues starting in 2023 and 2025, and the new transmission line could avoid the need to continue operation of the old, inefficient, and heavily polluting 1970 vintage generating units currently serving these areas.^{26,27} Concomitantly, air quality in the surrounding environmental justice communities would be

²⁵ As the population density and energy demands increase in the outer boroughs, the existing 138 kV feeders will be unable to reliably serve the needs in those areas. Service degradation already is a concern in New York City, and this proposal would improve service throughout Zone J and help to ameliorate the existing concerns.

²⁶ “2020 RNA Con Edison Preliminary Findings,” presentation to the June 19, 2020 Electric System Planning Working Group.

²⁷ The NYISO's 2020 Reliability Needs Assessment (“RNA”) analysis shows thermal issues on the Rainey 345/138 kV circuits under the 70x30 scenario, and Con Edison's preliminary findings related to the RNA show deficiencies starting in 2023 as a result of the shut-down of the peaking generating units at Astoria, Gowanus and Narrows

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improved as would the overall reliability of their electricity supply. More broadly, by facilitating the direct interconnection of thousands of megawatts of offshore wind into Zone J, the new transmission path would allow for reduced reliance on the in-City fossil generation fleet, including a concomitant reduction in harmful air emissions (*e.g.*, NO_x, SO₂, and fine particulates).

By locating the new transmission path further east from the current corridor, another benefit is that the new substations would provide primary connection points for new tie lines between Zones J and K. At present, the connections from Zone K with Con Edison's transmission system in Zone J are comprised only of two 138 kV transmission lines controlled with phase angle regulators. This minimal level of interconnection would be replaced with a robust interconnection that creates a loop between the Zone K connections to upstate transmission lines and the Zone J connections to upstate transmission lines.

The City is not alone in advocating for strengthening the transmission system in Zone J as a public policy-based need. Recently, the Long Island Power Authority submitted a letter to the NYPSC stating that “there is a need to increase the export capability of the LIPA-Con Edison interface, which connects Zone K to Zones I and J.... The foregoing transmission needs are driven by the interconnection of [offshore wind] to LIPA's system, regardless of the specific locations at which the OSW projects may be connected.”²⁸

The current electric system in Zone J meets all applicable reliability criteria and requirements. However, Con Edison must constantly upgrade the system in order to meet the growing energy needs throughout New York City. This new transmission path proposal would meet anticipated system changes and needs in the future, including accommodating significant amounts of offshore wind. It also would provide near-term benefits as it would allow Con Edison to move feeders from some of its most heavily-loaded substations (*e.g.*, Farragut) to the new transmission line, thus improving both local and bulk system reliability.

The City recognizes that the development of the new transmission line and new 345 kV substations in heavily populated areas will be a difficult and lengthy undertaking. Indeed, it is precisely because of the time that will be required to develop this project that work on it should start now, not when the need becomes imminent in seven to ten years.²⁹

²⁸ Case 18-E-0623, In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2018, Letter from LIPA to Chair Rhodes (dated July 30, 2020), p. 2.

²⁹ The development of the AC Transmission Project demonstrates that the time frame from inception to in-service could be ten years or more. Therefore, the development of the onshore transmission infrastructure needed to support offshore wind should start now so that it is in place and operational by 2030, when significant quantities of offshore wind are expected to be available. Delaying this effort could prevent timely achievement of the CLCPA targets.

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The City further recognizes that development and construction of a new transmission path is a major undertaking that involves the cooperation and coordination of multiple stakeholders. It is anticipated that the entire path will be completed in phases, likely in parallel with the advancement of offshore wind development plans. The changes contemplated to the electric system in New York and the need to preserve and improve system reliability to protect the health, safety, and welfare of millions of New Yorkers provide further impetus and justification for the NYISO and NYPSC to begin to take steps now to address the substantial additional transmission that will be needed within Zone J.

B. Project Criteria And Ability To Fulfill The Public Policy Need

In accordance with the Notice's requirements, the City offers the following criteria for evaluation of solutions:

- the extent to which the project facilitates the interconnection of offshore wind in Zone J;
- the extent to which the project increases transfer capabilities between Zones J and K;
- the extent to which the project facilitates the interconnection of energy storage facilities in Zone J;
- the benefits to and impacts on environmental justice communities;
- the nature and extent of the local resiliency and/or reliability benefits provided by the project;
- the costs of the project as compared to alternatives; and
- the extent to which the project eliminates or reduces congestion limitations within Zone J.

All of these criteria should be applied to each proposal, and the selection of one or more projects should be based on a balancing of all of the criteria rather than a project's suitability under any single criterion.

The Notice further requests that proponents discuss how their proposals would fulfill the identified public policy need. The CLCPA establishes significant targets for adding new renewable resources downstate, and the transmission system needs to be capable of accommodating those resources. The proposed third transmission path in Zone J is specifically designed and intended to help achieve the CLCPA goals – both the 70x30 goal and the air quality improvement goal discussed therein – by facilitating the connection and delivery of offshore wind and other renewable resources into and throughout Zone J and reducing operation of the in-City fossil generation fleet. This proposal simultaneously would strengthen the transmission system in Zone J, improving the reliability and resiliency of that system. By increasing the connections between Zones J and K, the proposal also would improve the reliability and resiliency of the electric system on Long Island. Finally, the proposal should help to reduce localized power issues

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in New York City. Under Public Service Law § 65(1), it is the policy of the State that the provision of electric service should be adequate and reliable. This proposal would serve that policy.

In summary, both of the above proposals fulfill the following set of identified public policy needs. First, the analyses discussed above demonstrate the need and the value of increasing the transmission capability between the locations of large-scale renewable resources and Zone J. Second, the CLCPA 70x30 and 100x40 targets cannot be achieved unless the in-City fossil generation fleet can be displaced by carbon-free resources, and such replacements must occur in a reliable manner via a diverse mix of resources that seamlessly function to avoid any gaps that could arise in the production of electricity by intermittent generation resources. Third, Chapter 735 of the Laws of 2019 of New York requires state agencies to be guided by environmental justice considerations in their decision-making. By reducing or eliminating reliance on the in-City fossil generation fleet, particularly in the environmental justice communities surrounding the fleet, this proposal would advance the public policy of the State as set forth in Chapter 735. Fourth, this proposal would assist in improving air quality and public health within disadvantaged communities in New York State, a public policy need that is one of the purposes of the CLCPA as well as a broader objective of the State through legislative enactments and regulatory action.

For all of the foregoing reasons, the City respectfully requests that the NYISO submit the proposals described herein to the NYPSC pursuant to Section 31.4.2 of the OATT and that these proposals be designated as transmission needs driven by the State's public policies.

Respectfully Submitted,



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