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VIA EMAIL – PublicPolicyPlanningMailbox@nyiso.com

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

Re: NYISO 2022-2023 PPR Transmission Planning Cycle
August 31, 2022 Request for Proposed Transmission Needs
Transource New York Response

Dear Mr. Smith:

NYISO Open Access Transmission Tariff (“OATT”) Sections 31.1.1, 31.4.2, and Attachment Y delineate the components of the New York Independent System Operator, Inc.’s (“NYISO”) public policy planning process. In accordance therewith, the NYISO initiated this process’s first step by issuing a notice on August 31, 2022 requesting that parties identify proposed transmission needs driven by Public Policy Requirements (“PPR”).¹ In addition, through the economic planning component of its comprehensive system planning processes, the NYISO has issued a series of reporting establishing New York will not meet its statutorily mandated climate change requirements absent significant transmission infrastructure investment. Transource Energy, LLC and Transource New York, LLC (collectively, “Transource”)² thus hereby submit this response respectfully urging the New York Public Service Commission (“Commission”) to: (i) designate PPRs for the four areas in New York State where significant transfer capability constraints have been quantified, including in particular, the three sub-areas in the Southern Tier/Finger Lakes region referred to as “Pocket Z,” as discussed further herein; and (ii) establish selection metrics ensuring the NYISO adequately considers advanced transmission technology when it chooses each PPR solution.

¹ See New York Independent System Operator, Inc., “NOTICE – Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2022-2023 Transmission Planning Cycle” (dated August 31, 2022).

² Transource, a partnership between American Electric Power (“AEP”) (86.5%) and Evergy, Inc. (parent company of Kansas City Power & Light Company and Westar Energy, Inc.) (13.5%), by way of its parent company, AEP, has utilized proven advanced transmission technologies in electric transmission projects in the Midwest and is working with an affiliate that is currently developing a 350-mile 345-kV double-circuit low impedance transmission line project in Texas to support that State’s extensive renewable energy build-out.

I. INTRODUCTION

The primary public policies driving transmission needs in New York are the climate change initiatives established in the Climate Leadership and Community Protection Act (“CLCPA”). To decarbonize New York’s economy and eliminate emissions, that law mandates the unprecedented transition of electric generation from fossil fuel resources to renewable energy. The CLCPA established nation-leading mandates for carbon reduction in the electric sector of 70% renewable energy by 2030 and an emissions free electric system by 2040.³ Focused on energy consumption levels, not fleet composition (*i.e.*, MWh, not MW), the CLCPA drives the resulting need to effectively address curtailment, bottlenecks, and energy deliverability to ensure reliability and deliverability to load centers. A year after the CLCPA was enacted, the Accelerated Renewable Energy Growth and Community Benefit Act (“ACRE Act”) established a planning mechanism and fast-track for the development of this extensive transmission build-out that will be needed to deliver renewable energy to New York consumers.⁴ The ACRE Act, *inter alia*, directed New York Department of Public Service (“DPS”) Staff to undertake a comprehensive study to identify bulk transmission upgrades in combination with local and distribution system upgrades, and specifically references NYISO programs to support that infrastructure development.⁵

While the CLCPA establishes deadlines to reach renewable energy and emissions free electric consumption levels and mandates the development of specific forms and levels of resources associated therewith, it does not provide funding mechanisms to support their development. As addressed in detail below, as a result, their costs must be recovered from consumers through their electric rates.

To ensure the CLCPA’s mandates can be met, the Commission must consider where and how it can most cost effectively implement transmission projects that deliver renewable energy to New York consumers in a manner consistent with its statutory mandate. In the Power Grid Proceeding, the Commission has called for the development of a coordinated grid planning process to be orchestrated in the first instance by the State’s transmission owners.⁶ While currently under development, a “bottoms up” approach has been proposed for this process pursuant to which the New York transmission owners would identify local needs and the PPR process would be an important complement to address “top down” bulk system needs.

³ See L. 2019, Ch. 106, § 4. The CLCPA, *inter alia*, mandates 70% of the electricity consumed by New Yorkers must be generated by renewable sources by 2030 (“70x30”), specific levels of renewable resource participation by dates certain, a carbon-free electric system by 2040 (“100x40”) and economy-wide reductions in greenhouse gas emissions to 85% below 1990 levels by 2050. Achieving these levels is expected to require beneficial electrification and other steps which will place significantly more demand on an evolving electric system that itself will be far more reliant on resources with intermittent capability.

⁴ See L. 2020, Ch. 58, § 7(2) (establishing the need for study and planning for “distribution upgrades, local transmission upgrades and bulk transmission investments that are necessary or appropriate to facilitate the timely achievement of CLCPA targets”).

⁵ See *id.* at § 7(4) (requiring the Commission to utilize the state grid operator’s [i.e., NYISO] “public policy transmission planning process “to select a project necessary for implementation of the state bulk transmission investment plan, and shall identify such projects no later than eight months following a notice of the state grid operator’s public policy transmission planning process. . .”)

⁶ *Order on Transmission and Distribution Planning Process and Phase 2 Project Proposals* (issued and effective September 9, 2021) (hereinafter, “Phase 2 Order”) at 19-20.

To reasonably define PPRs in the NYISO's fourth PPR cycle, this question cannot be considered in a vacuum; the information the NYISO has provided through its other planning process components must be considered. The NYISO's 2021-2040 System Resource Outlook ("SOS") confirms the need to build transmission to ensure energy deliverability.⁷ Deliverability of power from renewable generation remains pivotal to achieving New York's climate change initiatives. These needs are especially apparent in four areas of the State, including Pocket Z in the Southern Tier/Finger Lakes Region. Meeting these statutory mandates will require substantial transmission build-out in these areas of the State where inadequate infrastructure threatens to bottleneck renewable generation and require its curtailment and where low-impedance lines can be most effectively paired with renewable generation to cost effectively and efficiently deliver renewable power to the bulk system, and on to load centers.

In several orders in its Power Grid Proceeding, the Commission has consistently supported the use of advanced transmission technology to cost effectively achieve its climate change mandates.⁸ The public-policy driven transmission need to address these four areas can further benefit from the use of advanced transmission technology line and tower designs that deliver more power with fewer environmental impacts at lower cost, including Breakthrough Overhead Line Design ("BOLD"), a technology that has been successfully deployed in Ohio, Indiana, and is in right-of-way approval in Texas.

The Commission should thus designate a PPR specifically designed to address these four areas and include a requirement that developers must demonstrate they have evaluated advanced transmission technologies including low impedance lines without series compensation, so the solutions chosen will limit the use of existing rights of way, reduce visual impacts, minimize other adverse environmental impacts, and decrease magnetic field resonance to efficiently and more cost effectively meet system needs, and have the NYISO consider these advanced transmission technology opportunities when applying its viability and sufficiency evaluations of proposed solutions. Such PPRs will provide the needed transmission to allow the energy that can be produced by renewable resources to be deliverable to load centers.

II. BACKGROUND

The CLCPA set statutory mandates for renewable energy and carbon emissions targets laser-focused on energy consumption by setting statutory public policy that 70% of the energy consumed by New Yorkers must be generated by renewable resources by 2030. The CLCPA then

⁷ See https://www.nyiso.com/documents/20142/32663964/2021-2040_System_Resource_Outlook_Report_DRAFT_v15_ESPWG_Clean.pdf/99fb4cbf-ed93-f32e-9acf-ecb6a0cf4841#:~:text=This%20Outlook%20included%20approximately%209%2C500,system%20performance%20in%20the%20future (last checked Oct. 31, 2022).

⁸ See NYPSC Case 20-E-0197, *supra*, *Order on Transmission Planning Pursuant to the ACRE Act* (issued and effective May 14, 2020) (hereinafter, "Power Grid Initiating Order"); see also NYPSC Case 20-E-0197, *supra*, *Order on Phase 1 Local Transmission and Distribution Project Proposals* (issued and effective Feb. 11, 2021), ("Phase 1 Order") Ordering Clauses at 20 (specifying the Joint Utilities "shall consider the applicability of advanced technologies to each of their Phase 1 transmission projects, and provide the results of their evaluations") and Phase 2 Order at 11-12; see also NYPSC Case 20-E-0197, *supra*, *Order on Power Grid Recommendations* (issued and effective January 20, 2022) (hereinafter, "January 2022 Order") at 40 (expressly recognizing "advanced technologies may play a critical part in meeting the State's goals at reasonable cost," noting its work is not complete and establishing its intent to continue to take action to further align investment with the State's clean energy initiatives).

ratchets that level up to 100% from carbon-emission-free sources by 2040. These statutory goals have been implemented in Commission proceedings on New York’s Clean Energy Standard (“CES”) where the Commission has established 2026 and 2027 as the deadlines to issue awards to land-based and offshore renewable projects, respectively.⁹ Accordingly, New York’s public policy approach effectively advances the siting of renewable generation under its CES Program, which in turn implements the CLCPA’s statutory directives.¹⁰

With the exception of offshore wind (“OSW”) and energy storage resources, these generation resources will be located upstate, while large load centers will be downstate. This will require significant build-out of New York’s transmission system. The ACRE Act furthers the CLCPA’s statutory policy initiatives by, *inter alia*, directing the development of transmission plans and requiring that the Commission act on PPR submissions within 8 months.

The NYISO’s current Notice marks the fourth time this process has been initiated since the Commission implemented its ground-breaking CES program, the second since New York enacted the CLCPA and the ACRE Act in 2019 and 2020 respectively, and the first since the Commission issued its most recent modifications to the CES Program in its CES 2.0 Order.¹¹ Importantly, these laws seek to drastically reduce carbon emissions through the siting and interconnection of an unprecedented amount of renewable energy on an accelerated schedule that includes expedited transmission planning requirements.

At the same time, the Commission has repeatedly expressed concerns over cost and the potential impact to ratepayers that the transition from fossil fuel generation to renewable generation poses. In both comments during the Commission’s sessions and in orders, the Commission has often emphasized that the implementation of these statutory mandates requires scrutiny to ensure the cost effectiveness and efficiency of system upgrades.¹² While unprecedented low supply costs in recent years have shielded consumers from escalating costs, the combination of extended periods of cold weather and the corresponding increased demand, coupled with geopolitical instability in foreign natural gas markets, contributed to climbing natural gas prices and caused a marked spike in electric supply costs in January 2022 and February 2022. These dynamics persisted through the summer as extended periods of warm weather and high gas prices

⁹ See NYPSC Case 15-E-0302, *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, Order Adopting a Clean Energy Standard* (issued and effective August 1, 2016) (hereinafter, “CES Proceeding” and “CES Order,” respectively), and *Order Adopting Modifications to the Clean Energy Standard* (October 15, 2020) at 9-10, 24, 40-41 (“CES 2.0 Order”).

¹⁰ See CES 2.0 Order at 49.

¹¹ See, *supra*, n. 8. The program adopted pursuant to the CES Order (“CES Program”) contains multiple tiers and is designed, in part, to ensure the procurement of land-based and offshore wind renewable resources. (See also, CLCPA, Ch. 106, L. 2019, and ACRE Act, L.2020, ch. 58, Part JJJ. On the same date that the CLCPA was enacted, New York State announced the largest offshore generation awards in the nation in response to the OREC solicitation conducted under the CES Program, and currently has issued a procurement notice for additional ORECs.

¹² See 2021-22 Winter Assessment & Winter Preparedness (Nov. 17, 2021). The NYISO, based on US Energy Information Administration data, showed that regional oil and natural gas supplies were low for the 2021-2022 heating season. Samantha Maldonado, *Utility Debt Mounting for New Yorkers Looking for Current Help*, The City (Feb. 17, 2022), available at <https://www.thecity.nyc/economy/2022/2/17/22940015/utility-debt-mounting-for-new-yorkers-looking-for-current-help> (last checked Feb. 18, 2022).

continued to drive electric supply price increases.¹³ Reacting to those cost increases as recently as this past spring at the very time major steps must be taken to build out the system to implement the CLCPA, Commission Chair Rory Christian cautioned, “[t]his experience serves as a reminder that we must consider energy affordability in every action we take.”¹⁴ Most recently, in its July 14, 2022 Order approving National Grid’s petition seeking to implement Phase 1 transmission projects, the Commission made clear that it would scrutinize proposed transmission projects for their ratepayer impacts.¹⁵

Concurrent with its concerns over rising costs, the Commission has embraced the potential cost savings associated with advanced transmission technologies. In implementing the ACRE Act, the Commission has emphasized that the transmission owners must “endeavor to use” advanced transmission technology where appropriate. In January 2021, DPS Staff issued the New York Power Grid Study, which confirmed that advanced transmission technologies can offer significant CLCPA benefits by increasing transfer capabilities.¹⁶ The Commission, in turn, has stated that it would continue to require the utilities to “review the application of these technologies going forward, and to explain why the adoption of these technologies is appropriate when they seek funding approvals, either in rate cases or petitions.”¹⁷ The Commission has also noted that many existing advanced transmission technologies can be implemented more quickly than traditional transmission upgrades, and may provide un-bottling of curtailed renewable generation where it is “most urgent.”¹⁸ As a result, in its transmission planning, the Commission has required utilities to consider “advanced transmission technology to un-bottle renewable generation where it may . . . permanently expand the transfer capabilities of existing grid facilities as a lower-cost alternative to traditional upgrades[.]”

Consistent with the emphasis the Commission has placed on utilizing proven advanced transmission technologies throughout the Power Grid Proceeding, the Commission again specified transmission owners must “demonstrate both that the upgrades are the least cost or highest value options as compared to advanced technology solutions and other potentially viable alternatives[.]” In petitioning the Commission for approval of such upgrades, the transmission owners have addressed the advanced transmission technologies listed in the Power Grid Study, but not other advanced transmission technologies such as line and tower designs. The Commission has stated

¹³ See <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/052722-nyiso-prepared-for-31765-mw-forecast-summer-peak-power-demand> (noting that the NYISO found a total of 41,049 MW of power resources available to meet forecast peak demand of 31,765 MW. However, reliability margins could thin to “concerning levels” beginning in 2023).

¹⁴ See *supra* n. 11.

¹⁵ See NYPSC Case No. 20-E-0197, *Order Authorizing Development of Phase 1 Transmission Projects and Cost Recovery Measures* (issued and effective July 14, 2022) at 20 (finding that Phase 1 projects are to be excluded from certain reconciliation mechanisms, and requiring the use of deferred customer credits to offset consumer rate impacts).

¹⁶ See *Initial Power Grid Study Report* (dated Jan. 19, 2021) (“Power Grid Study”); see also, e.g., Phase 1 Order at 18.

¹⁷ Power Grid Study at 36.

¹⁸ *Id.*

its intent to explore other advanced transmission technology solutions more completely in a future determination.¹⁹

In this vein, the Commission previously has expressly correlated potential cost reductions associated with eliminating congestion with the need to implement advanced transmission technology solutions, noting that misconceptions about advanced technology solutions “threaten to limit deployment of advanced technologies that could help increase utilization of the transmission system to integrate clean energy and reduce congestion cost effectively[.]”²⁰ For that very reason, the Commission has demanded that utilities in New York must “demonstrate both that the [proposed transmission] upgrades are the least cost or highest value options as compared to advanced technology solutions and other potentially viable alternatives[.]”²¹

Last year, in addressing NYISO proposed Public Policy Transmission Needs for 2018 and 2020, the Commission noted that further consideration of the Power Grid Study was necessary before identifying additional transmission needs, but reserved “the right to identify additional transmission needs in the future, which may be informed by the Commission’s final action on the Power Grid Study that recommends several actions related to the local and bulk transmission systems.”²²

In its January 2022 Power Grid Order, the Commission addressed the Power Grid Study findings. The Commission agreed with the authors of the Power Grid Study that as renewable generation is rapidly developed, local and bulk transmission needs will develop more quickly in some areas, especially given the probability that other studies have understated the potential for “real-world transmission congestion and renewable generation curtailments.”²³ In its January 2022 Power Grid Order, the Commission continued to reaffirm its commitment to required evaluation of advanced transmission technologies and further committed to find ways to deploy existing technology solutions, especially in the areas of improved transmission utilization and compact tower design. Noting favorably that many proven technologies can be implemented more quickly than traditional transmission upgrades and may unbundle curtailed renewable generation where it is “most urgent,” the Commission again found that the transmission owners must consider “advanced transmission technology to un-bottle renewable generation where it may. . . permanently expand the transfer capabilities of existing grid facilities as a lower-cost alternative to traditional upgrades[.]”²⁴

¹⁹ See NYPSC Case Nos. 20-E-0197, 18-E-0071, and 15-E-0302, *Order on Power Grid Study Recommendations* (issued and effective January 20, 2022) (“2022 Power Grid Order”) at 36 (reiterating the Utilities must “review the application of these technologies going forward, and [] explain why the adoption of these technologies is appropriate when they seek funding approvals, either in rate cases or petitions.”)

²⁰ *Power Grid Study* at 49.

²¹ See Phase 2 Order at 11-12.

²² See NYPSC Case Nos. 20-E-0497 and 18-E-0623, *Order Assessing Public Policy Requirements for Transmission Planning Purposes* (issued and effective March 19, 2021) at 26.

²³ 2022 Power Grid Order at 28-29.

²⁴ *Id.* at 36-37.

Meanwhile, the NYISO economic and reliability planning work has continued a parallel track in accordance with NYISO tariff requirements. The NYISO's findings repeatedly show that those four areas will need both local and bulk transmission expansion to meet the pace of renewable generation buildout. The NYISO has studied the potential for renewable energy curtailments and has determined that such curtailments were already occurring in the New York Control Area, and, based on the assumptions of renewable energy development used as the bases to support analysis in the CES proceedings, projected additional future transmission congestion. In the 2019 CARIS, the NYISO confirmed major system constraints were already curtailing the delivery of renewable energy, worsening over time with additional renewable energy development.²⁵ After taking into account the transmission upgrades under development including as the result of two PPRs previously named by the Commission, the NYISO confirmed in the 2021 SOS that the public-policy driven need to construct transmission upgrades persists in the four previously identified constrained areas.²⁶ Paramount among them are the needs identified in the Southern Tier Pocket Z, an area with three sub-areas of constrained renewable generation where the New York State Electric & Gas Corporation ("NYSEG") has proposed a series of local Phase 1 system upgrades to the Commission that could be complemented by bulk system upgrades, but no significant transmission upgrades have been completed to date.²⁷

The 2021 SOS establishes that, by 2030, curtailment of solar generation may exceed 20% absent significant transmission upgrades.²⁸ Without transmission upgrades, the three sub-areas in the Southern Tier Pocket Z are projected to experience over 10,000 congestion hours under NYISO study conditions.²⁹

III. COMMENTS

A. A PPR Should Be Issued for the Southern Tier/Finger Lakes Pocket Z.

In accordance with New York's statutory mandates that 70% of the energy consumed by New Yorkers must be generated by renewable resources by 2030, and in light of the findings in the 2021 SOS Report that renewable generation resources face significant curtailment in certain areas of the State absent significant transmission development, the Commission should issue a PPR for Southern Tier Pocket Z to ensure its mandates can be met efficiently and cost effectively.³⁰

²⁵ See CARIS at 86, *Figure 75: Map of Renewable Generation Pockets and Constraints*.

²⁶ See SOS at 63, *Figure 29 Renewable Generation Pocket Map*.

²⁷ See NYPSC Case No. 20-E-0197, *Petition of NYSEG for Approval of Phase 1 Local Transmission Projects and Associated Cost Recovery* (dated December 23, 2021) ("NYSEG Phase 1 Petition"), and comments of Transource thereto (PSC Dkt. No. 134). Notably, while constraints remain, transmission upgrades have been completed in Western New York and the development of transmission upgrades in the North Country are currently underway.

²⁸ See SOS at 67-68.

²⁹ CARIS at 84-101.

³⁰ In 2020, the NYISO previously confirmed the need for additional transmission capability to support land-based renewable projects in upstate New York. (See NYPSC Case No. 20-E-0197, *Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act*, "Comments of the New York Independent System Operator, Inc. on Petition Requesting Adoption of Criteria for Guiding Evaluation Whether a Bulk Transmission Investment Should Be Designated as a Priority Transmission

In its 2021 SOS Report, NYISO evaluated four areas with groupings of congested lines and generators that are likely to be curtailed within localized pockets.³¹ The SOS Report assumed sufficient transmission expansion between 2035 and 2040 to relieve transmission constraints at lower voltage level, as well as transmission owners' efforts to meet CLCPA transmission requirements, thus allowing the NYISO to "examine the impact of the addition of new resources on the bulk power system constraints" and to highlight the bulk system expansions that will be necessary to efficiently deliver power to New Yorkers.³² New resources were assumed at available interconnection points using the NYISO interconnection queue for wind and solar generators.³³ The SOS Report further found, based on these assumptions, that "energy deliverability levels in four pockets . . . will benefit from transmission expansion: Finger Lakes (Z1), Southern Tier (Z2), Watertown (X3), and Long Island."³⁴

The "vast majority" of new resources between now and 2030 will be land-based wind generation, and transmission constraints under a 70x30 policy scenario will result in lower energy deliverability by 2030 in Pockets X3, Z1, and Z2.³⁵ And, these constraints occur under both of the NYISO's scenarios.³⁶ Of course, setting aside modulation in demand assumptions, the constraints on renewable generation could be even higher if more renewable resources are built than assumed in either Scenario 1 or Scenario 2.³⁷

Pocket Z is the locus of significant activity for renewable energy siting and is illustrative of the potential transmission solutions to anticipated renewable generation constraints. Pocket Z contains a mix of bulk transmission and lower kV lines that connect local resources to the bulk transmission system through major interfaces such as Central East and Marcy-South.³⁸ A review of the NYISO Interconnection Queue shows that 36 renewable energy projects are proposed in Pocket Z. This is correlated with a 69% use of single-circuit lines in Pocket Z over roughly 20 miles of line.³⁹ As a result of this congestion, both wind and solar generation resources will be curtailed over 20% by 2030.⁴⁰ And, recent NYSERDA REC awards and the issuance of new REC

Project" (dated September 14, 2020) at 3, 12 (characterizing the addition of transmission infrastructure as "essential to achieving New York State's climate change policy targets under the CLCPA and the [ACRE Act].")

³¹ SOS Report at 64.

³² *Id.*

³³ *Id.* at 65.

³⁴ *Id.* at 66.

³⁵ *Id.* at Appendix J at 6. Note that we do not address potential OSW constraints here, as those potential deliverability impacts are being addressed elsewhere.

³⁶ Scenario 1 utilized industry data, NYISO load forecasts, and assumed fewer restrictions on renewable buildout. Scenario 2 aligned its assumptions with New York's Climate Action Council.

³⁷ See SOS at 46-47, and Figure 20. Indeed, the assumptions in both Scenario 1 and 2 assume between roughly 30 and 45 GWs of "dispatchable emissions-free resources" other than nuclear which do not currently exist or operate. Were more intermittent resources to be developed to meet market demand than currently anticipated, the constraints on those resources could be even worse.

³⁸ *Id.* at Appendix J at 29.

³⁹ *Id.* at 30-35.

⁴⁰ *Id.* at 66, Figure 30.

Procurements show that more projects are likely coming down the pike.⁴¹ Without transmission upgrades connecting the local transmission to the bulk system, these resources will face significant curtailment that will undermine New York’s CLCPA mandate.

Now pending before the Commission is NYSEG’s Phase 1 Petition seeking approval for accelerated development of 23 Phase 1 local transmission projects intended to meet the CLCPA and ACRE Act goals.⁴² These local projects include circuit re-builds from 69 kV to 115 kV, transformer replacements, circuit reconfigurations, other upgrades that will help un-bottle renewable generation in Pocket Z.⁴³ However, consistent with the criteria the Commission established for Phase 1 projects, these local upgrades unlocking 2,800 MWs of headroom on the bulk system do not solve the larger issue of eliminating potential constraints on the much larger amount of renewable generation anticipated over the next several years.⁴⁴ A PPR addressing the needs in Pocket Z – and indeed in all four areas identified in the SOS Report – would complement and enhance the efforts of transmission owners such as NYSEG, and help ensure deliverability of the renewable power generated in constrained load pockets like Pocket Z.

The Commission has previously emphasized that “...it is important that the design and operation of the bulk electric system and wholesale markets be modernized, much like is being done at the distribution level.”⁴⁵ OATT Attachment Y, Section 31.4.2.1 authorizes the Commission to identify criteria the NYISO must use when it completes its viability and sufficiency evaluation. The CLCPA expressly mandates a carbon-free grid by 2040. To most efficiently address the transmission needs driven by this sweeping public policy mandate and bring a state-of-the-art revitalized transmission system to New York cost effectively, the Commission should tailor these PPRs to ensure the NYISO assesses system configuration in its evaluation and chooses solutions that utilize advanced transmission technologies, where possible. This approach is consistent with the Commission’s PPR designations to date.⁴⁶

Renewable resources can only be located in certain areas in New York with the geographic characteristics to provide the necessary fuel and generation footprint (*e.g.*, sufficient land in open areas to site solar farms, and in-land areas with sufficient wind characteristics). The topography in many parts of the three sub-areas in Pocket Z meets these siting criteria, further emphasizing the pressing need to address policy-driven transmission needs in that area. In fact, the AC PPR Order anticipated that the CES standard in place at that time would drive renewable generation siting in the northern and western portions of New York, and that the need to serve load with

⁴¹ <https://www.nyserda.ny.gov/About/Newsroom/2022-Announcements/2022-08-16-Governor-Hochul-Announces-Third-Opportunity> (last checked Oct. 20, 2022).

⁴² NYSEG Phase 1 Petition.

⁴³ *Id.* at 7.

⁴⁴ *Id.* at 17.

⁴⁵ See CES Order at 75; see also *id.* at 3 (highlighting as major factors driving the implementation of the CES Program the related needs to “combat climate change and modernize the electric system to improve the efficiency, affordability, resiliency and sustainability of the system.”)

⁴⁶ See, *e.g.*, NYPSC Case No. 12-T-0502, *Proceeding on Motion of the Commission to Examine Alternating Current Transmission Upgrades*, Order Finding Transmission Needs Driven by Public Policy Requirements (issued and effective December 17, 2015) (hereinafter, “AC PPR Order”) at Appendix B (explicitly proscribing the acquisition of new permanent transmission rights of way); see also fn. 16, *supra*, *Order Assessing Public Policy Requirements for Transmission Planning Purposes* at 25.

renewable generation “further heightens the public policy need for transmission constraint relief and cross-state power flows” and that “increased transmission capacity will allow these resources to deliver their energy to downstate load centers and avoid being curtailed.”⁴⁷

The subsequent passage of the CLCPA and the ACRE Act, along with the NYISO’s CARIS and SOS studies, only further underscore the policy-driven transmission need in Pocket Z. Having evaluated the recommendations in the Power Grid Study and made a series of findings, and in light of updated study results that continue to identify the severe need for transmission buildout, now is the opportune moment to name PPRs that will reduce curtailments, bottlenecks, and congestion, that are the least-cost and highest-value options, and that provide the most prudent investment for ratepayers. The clear take-away from the 2019 CARIS and 2021 SOS studies is that, absent significant transmission upgrades, much of the renewable generation that New York’s energy policy has incentivized will be frequently curtailed and delivery of its energy to the bulk system thwarted. The issuance of a PPR provides an optimal opportunity for the Commission to address these issues with the NYISO so that state-supported renewable resources will not face curtailment because of insufficient transmission and distribution infrastructure.

To utilize existing rights of way and augment transmission system capability effectively and most efficiently, the Commission should designate as a selection metric that must be applied by the NYISO in its viability and sufficiency evaluation when identifying the solution for the Pocket Z PPR, a selection metric that encompasses specific criteria to most effectively integrate the large number of new renewable resources mandated by the CLCPA into New York’s transmission system, including the degree to which the proposed advanced transmission technology:

- Uses existing rights of way to increase transfer capability or to install higher voltage upgrades
- Streamlines siting and construction activities
- Increases energy deliverability output and system efficiency by reducing line losses
- Reduces visual impacts (*e.g.*, by utilizing shorter towers)
- Ameliorates environmental impacts (*e.g.*, by limiting avian impacts)
- Reduces electromagnetic field impacts
- Avoids installing costly series compensation equipment and any issues or shortcomings associated with its operation over the long term
- Provides ongoing operational benefits (*e.g.*, by shortening maintenance outages to install new and replacement circuits)

Also consistent with the need to limit costs to consumers reflected in prior PPRs, the present PPR should further ensure that the NYISO selects technologies that are cost-competitive.⁴⁸

⁴⁷ AC PPR Order at 18-19.

⁴⁸ See AC PPR at 18 (“The Commission expects that the NYISO will select . . . the most cost-effective and efficient [transmission] solution. . .”)

B. The Commission Should Recognize Additional Forms of Proven Advanced Transmission Technology That Are Efficient and More Cost Effective and Direct NYISO to Address This Parameter Holistically to Achieve This Much Needed Transmission Build-out for the Benefit of New York Consumers

Where, as here, New York public policy is driving a drastic increase in solar and wind generation development, BOLD's reduced inductance and impedance, together with its increased transfer capability, make it an ideal complement to support these generation technologies. AEP – a parent of Transource – has actively and cost effectively deployed BOLD across the United States. BOLD is currently meeting and exceeding design criteria with over 90 miles of infrastructure energized and in service in Ohio and Indiana at this time, and an additional 30 miles in construction or design. These 90 miles of projects, ranging from 345 kV double circuit lattice and monopole to 138 kV double circuit monopoles, are energized and are exceeding design criteria. As discussed in more detail below, BOLD also is currently under design in an approximately 350-mile, double-circuit 345 kV project in Texas for a total of over 470 miles of BOLD application upon its completion. In these applications, BOLD has been or will be deployed and has exceeded expectations, minimized aesthetic and environmental impacts, and, equally importantly, it has achieved these results with cost savings of up to 5% over traditional line and tower designs.

BOLD's application in projects to date has been designed to address similar conditions and circumstances presented by New York's system needs. New York's Southern Tier and the southern portion of the Finger Lakes, where the sub-areas in Pocket Z are located, consists of agricultural land, scenic rolling hills, lakes, and includes portions of the Susquehanna and Delaware river valleys. The region is home to over 600,000 residents⁴⁹ occupying a wide range of communities and topographies. These topographical characteristics make the area attractive for both land-based wind and solar projects; but these generation sources must be connected to New York's bulk system over long distances.

Traditional overhead lines, especially larger latticed towers, tend to take more space and rights-of-way, and sit above the tree canopy, making them more visible and creating a greater impact on community character. In needing to traverse the region's range of topography, from lakeshore to deciduous forests to farmland, a more advanced line and tower design like BOLD with its patented line and pole designs minimizes the use of rights-of-way, sits at or below the tree canopy, and has lower electromagnetic fields, can help maintain the scenic beauty of the area, as well as minimize impacts on agricultural land use. By minimizing aesthetic and environmental impacts, BOLD can facilitate siting while better maintaining the look and feel of a host community.

BOLD is being successfully deployed in Indiana and Ohio, where it is meeting or exceeding design criteria, and a major 350+ mile project is being designed in Texas pursuant to an Energy Reliability Council of Texas ("ERCOT") order intended to ensure system reliability without series compensation as project requirements. There are existing advanced transmission technologies such as BOLD that are cheaper, more efficient, and have fewer aesthetic and

⁴⁹ See https://www.health.ny.gov/statistics/vital_statistics/2018/table02.htm (last checked Oct. 31, 2022).

environmental impacts than traditional transmission technology. By establishing parameters consistent with past practices, the Commission can effectively and efficiently encourage the use of advanced transmission technologies where appropriate, like BOLD to support the integration of renewable generation in the New York Control Area, and especially areas like Pocket Z, where significant curtailment is a certainty absent significant transmission build-out.

BOLD's Texas deployment is particularly probative here. In Texas, focus was placed on pairing renewable generation with tailored advanced transmission technology solutions to enhance reliability and resilience. Texas was faced with emergent system reliability needs as well as the need to improve system resilience in the Lower Rio Grande Valley to support significant existing wind power resources.⁵⁰ Upon careful analysis, in 2021, it announced its 350-mile Lower Rio Grande Valley System Enhancement Project (the "LRGV Project").⁵¹ ERCOT fast-tracked the LRGV Project, designating low-impedance 345-kV circuit technology to effectively address the planning reliability criteria violations and enhance the system reliability and resilience, less rights-of-way at a lower cost compared to traditional 345-kV circuits, and effective transfer capabilities without series compensation as project requirements.⁵² Given these necessary parameters to deliver Texas wind power to urban load centers, BOLD was selected and land acquisition is now underway, along with line design, and the project will begin construction thereafter.

Operationally, BOLD has demonstrated it can be maintained as easily as traditional lines. The BOLD design includes maintenance vangs and working holes on the structure, working holes on the yoke plates, and select hardware connections. A climbing hot box is also provided. These features for live line maintenance, when and where warranted, allow maintenance of the lines to be addressed effectively. Additionally, line maintenance contractors have also developed live-line maintenance techniques to maintain BOLD lines. In extreme weather events, traditional structures can be temporarily utilized on up to 5% of the total line length without altering system performance to accommodate emergency storm repairs.

Positioning itself at the forefront of renewable energy development, New York has adopted arguably the most stringent set of carbon reduction mandates in the nation. At this pivotal time in New York's evolution of its electric system to effectively combat climate change, the NYISO and the Commission should not allow New York to fall behind other States in its transmission infrastructure planning and design. Given the 2026- and 2027-time frame to complete all renewable energy project solicitations and issue project awards,⁵³ New York must make a series

⁵⁰ Texas has the most wind power of any State but also faces transmission constraints, such that wind energy generated in rural areas cannot be delivered to urban load centers in Dallas, Fort Worth, Houston, or Austin. See <https://www.texastribune.org/2022/08/02/texas-high-plains-wind-energy/>. As discussed above, BOLD helps solve these constraints by providing a lower impedance line design with higher transfer capability using shorter structures and less space in rights of way.

⁵¹ See Item 20: Lower Rio Grande Valley (LRGV) System Enhancement Regional Planning Group Project, Board of Director Meeting, December 9-10, 2021 (located at https://www.ercot.com/files/docs/2021/12/02/20_Lower_Rio_Grande_Valley_System_Enhancement_Regional_Planning_Group_Project.pdf) (last checked Oct. 31, 2022).

⁵² *Id.* at 20.

⁵³ See *supra* n. 8.

of important near-term transmission planning decisions to achieve CLCPA mandates in the accelerated time frames set forth therein.

It has long been recognized that the costs to make the necessary upgrades to the system and implement the CLCPA mandates will be significant and must be contained wherever possible. As discussed above, spiking supply costs due to extended periods of cold weather and high demand drove up natural gas prices last winter. As geopolitical concerns, natural gas supply constraints, and erratic weather patterns continue, price volatility will be a concern for the foreseeable future.⁵⁴ Thus, to meet its CLCPA mandates efficiently and cost effectively, it is now more important than ever before for New York to embrace proven advanced transmission technologies and the significant benefits from the improved performance that these technologies indisputably provide for the benefit of New York consumers.

The Power Grid Study, and the subsequent Commission Orders, make clear New York's commitment to advanced transmission technologies as a key component to CLCPA implementation. While the Power Grid Study listed some advanced technologies that would be potential project candidates for use in Phase 1 transmission projects, such as Dynamic Line Rating, advanced monitoring and control, topology optimization software, FACTS devices, and smart inverters,⁵⁵ it did not exhaust the full scope of proven technologies that would benefit New York. In issuing a PPR to address the pockets where transmission constraints will lead to renewable generation curtailment, the Commission should direct NYISO to broadly and holistically review proven and operational advanced transmission technologies that can cost-effectively and efficiently contribute to the solution of the transmission constraints within these pockets. In its declaration of a PPR, the Commission should clarify that there is no exhaustive list of potential, existing advanced transmission technologies, and find that NYISO should consider advanced transmission technologies in its viability and sufficiency assessment of proposed solutions.

The BOLD technology thus provides benefits New York needs – lower impedance and inductance, lower electromagnetic fields, improved environmental and aesthetic impacts – all at a lower cost. BOLD is advanced transmission technology in the form of innovative line and tower design that is available, deployable, and proven. It may be sited in existing transmission corridors to provide enhanced performance over long distances with fewer impacts. Because it provides a unique set of attributes to deliver New York's CLCPA and ACRE Act mandates, it warrants consideration. Transource respectfully urges the Commission to have NYISO consider advanced transmission technologies in its viability and sufficiency assessment of proposed solutions.

IV. Conclusion

The CLCPA, the ACRE Act, and the Commission's proceedings implementing those laws are combatting climate change through the nation-leading build-out of renewable generation resources. But it must be paired with adequate transmission solutions that allow these renewable

⁵⁴ See, e.g., <https://hudsonvalleypost.com/cost-of-electric-in-hudson-valley-new-york-is-quadrupling/> (noting the consumer electricity prices are anticipated to quadruple in the 2022-2023 winter season).

⁵⁵ Power Grid Study at 53-54.

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generation sources to produce power that is delivered to load centers and consumed by New Yorkers many miles away. Nowhere is this more apparent than in the three constrained sub-areas in Pocket Z in the Southern Tier/Finger Lakes region, and thus, Transource respectfully urges the Commission to name PPRs for the four areas identified in the NYISO 2021 SOS. To efficiently and more cost effectively pair transmission with renewable resources and to minimize the aesthetic and environmental impacts of transmission and distribution build-out necessary to achieve New York's 70x30 and 100x40 mandates, Transource respectfully urges the Commission to include in the PPR the direction that the NYISO consider advanced transmission technologies in its viability and sufficiency assessment of proposed solutions and include a requirement that developers must demonstrate they have evaluated advanced transmission technologies that use existing rights of way, increase system efficiency by reducing line losses, minimize visual impacts (e.g., by utilizing shorter towers), minimize environmental impacts (e.g., by utilizing less intrusive towers more favorable to avian interaction), reduce electromagnetic field impacts, avoid costly series compensation equipment, and provide streamlined operation and maintenance.

Very truly yours,

A handwritten signature in blue ink, appearing to read "David E. Rupert". The signature is fluid and cursive, with a large initial "D" and "R".

David E. Rupert
Vice President