Coordinated Grid Planning Process Proposal

December 27, 2022

Respectfully Submitted,
Central Hudson Gas & Electric Corporation
Consolidated Edison Company of New York, Inc.
Long Island Power Authority
Niagara Mohawk Power Corporation d/b/a National Grid
New York State Electric & Gas Corporation
Orange & Rockland Utilities, Inc.
Rochester Gas and Electric Corporation

Contents

I. Executive Summary & Background 2
II. Introduction 3
a) Coordinated Grid Planning Process: Defined 5
III. Energy Policy Planning Advisory Council (EPPAC) 7
a) EPPAC Role 8
b) EPPAC Composition 10
c) Timing of EPPAC involvement in the CGPP 11
IV. CGPP Stages and Timeline 11
V. CGPP Stage 1: Data Collection, Determination of Build-Out Scenarios 15
a) Data Collection and Coordination: Purpose 15
b) Determination of Build-out Scenario Assumptions 16
c) Bulk System Needs Identification 18
d) Capacity Expansion Modeling and Selection of Build-Out Scenarios 18
VI. CGPP Stage 2: Network Models 21
a) Network Models: Purpose 21
b) Electric Network Model Development 21
VII. CGPP Stage 3: Local Assessment 24
a) Local Assessment: Purpose 24
b) Assessing the need for measures to address local (LT&D) constraints 25
c) Solutions 26
d) Headroom Assessment 28
e) Application of Advanced Technologies and Non-Wires Alternatives (NWA) . 29
VIII. CGPP Stage 4: Review of Preferred Solutions 30
a) Review of Preferred Solutions: Purpose 30
b) Synergy Assessment 30
c) Statewide System Impact Review 31
IX. CGPP Stage 5: Least Cost Planning Assessment 32
a) Least Cost Assessment: Purpose 32
b) Least Cost Planning 32
c) Intra-Zonal needs and LT&D Solution Assessment. 33
d) Assessment of Bulk Transmission Alternatives 34
X. CGPP Stage 6: Least Cost Plan Report 35
XI. Conclusion 37

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act	**)** **)** **)** **)**	**Case 20-E-0197**

I. Executive Summary & Background

On December 17, 2021 the New York Utilities[1] filed an initial framework for a Coordinated Grid Planning Process (CGPP) and other matters, as directed by Ordering Clauses 1 and 2 of the New York Public Service Commission's (Commission) September 9, 2021 *Order on Local Transmission and Distribution Planning Process and Phase 2 Project Proposals* (Phase 2 Order).[2] That "Initial CGPP Framework" reflected the Utilities' recognition of the planning and investment needed in the coming years to support achievement of the objectives of New York's Climate Leadership and Community Protection Act (CLCPA) and related statutes. The Utilities envision the CGPP as a repeating process, in which each iteration is informed by, and improves upon, prior cycles. As such, the Utilities emphasize the value of informed stakeholder input and the incorporation of lessons learned through experience at each stage of the CGPP.

Throughout 2022, the Utilities have collaborated closely with the New York Independent System Operator, Inc. (NYISO), the Department of Public Service Staff (DPS Staff), and the New York State Energy Research and Development Authority (NYSERDA) to enhance the initial framework. In addition, the modifications to the Initial CGPP Framework have benefitted significantly from the input of stakeholders gained through nine technical conferences, which yielded important insights and constructive changes into the overall process.

---

[1] The Utilities include Central Hudson Gas & Electric Corporation (Central Hudson); Consolidated Edison Company of New York, Inc. (CECONY); Long Island Power Authority (LIPA); Niagara Mohawk Power Corporation d/b/a National Grid (National Grid); New York State Electric & Gas Corporation (NYSEG); Orange & Rockland Utilities, Inc. (O&R); and Rochester Gas and Electric Corporation (RG&E) (collectively, Utilities). Throughout this document, when referring to a single or generic company the term "utility" will not be capitalized.

[2] Case 20-E-0197, Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act (LT&D Planning Proceeding), Order on Local Transmission and Distribution Planning Process and Phase 2 Project Proposals (September 9, 2021) (Phase 2 Order).

Improvements the Utilities have incorporated in the last year include refining and strengthening the process, ensuring that Bulk and Local Transmission and Distribution (LT&D) project development opportunities are informed by the best data available, refining modeling approaches, and providing for more opportunities for stakeholder input and direction during various stages of the CGPP.

The Utilities request that the Commission approve this CGPP Proposal. The Utilities look forward to additional collaboration with DPS Staff, the NYISO, NYSERDA, and stakeholders to develop and implement investment plans that will enable the integration of clean, renewable energy resources and associated advanced technologies across the State. These investments will facilitate the development of a fully decarbonized electric system in New York by 2040 and an eighty-five percent (85%) reduction in greenhouse gas emissions from 1990 levels by 2050.

II. Introduction

On May 14, 2020, the Commission issued the initiating order (May 2020 Order)[3] in this proceeding in response to environmental policy objectives and related requirements set forth in the CLCPA and the Accelerated Renewable Energy Growth and Community Benefit Act (AREGCB Act).[4] The Commission directed the Utilities to undertake planning assessments and make investment proposals to facilitate the cost-effective development of renewable and emissions-free resources while maintaining the State's electric grid reliability.

---

[3] LT&D Planning Proceeding, Order on Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act (issued May 14, 2020) (May Order).

[4] New York Public Service Law §§ 162, 123 and 126.

The CLCPA establishes ambitious objectives for reducing greenhouse gas emissions throughout the State's economy and for the development of renewable and emissions-free electric generation resources. The fulfilment of CLCPA objectives will require the deployment of emissions-free generation capacity at an unprecedented scale, as well as battery energy storage systems (BESS) and other advanced technologies.

The Commission initiated this proceeding to develop an integrated planning process to identify and construct LT&D infrastructure solutions, in coordination with any necessary bulk transmission infrastructure expansion, throughout New York to support the optimal deployment of these investments. As directed by the May 2020 Order, on November 2, 2020, the Utilities proposed a set of CLCPA transmission investment and prioritization criteria, a benefit-cost analysis framework for assessing projects, and cost allocation recommendations.[5] The Utilities' Initial LT&D Proposal had also identified specific Phase 1 and Phase 2 LT&D projects[6] as necessary and appropriate to satisfy the 2030 CLCPA renewable energy objectives.

On February 11, 2021, the Commission issued an Order that provided guidance on the Phase 1 projects and deferred action on the policy recommendations and Phase 2 projects in the Utilities' Initial LT&D Proposal. On September 9, 2021, the Commission issued an Order (the Phase 2 Order) directing revisions and clarifications to the Utilities' investment criteria to support a more comprehensive Commission review of LT&D project proposals using a planning

---

5 LT&D Planning Proceeding, Utility Transmission and Distribution Investment Working Group Report (November 2, 2020) (Utilities' Initial LT&D Proposal).

6 As described in the Utilities' Initial LT&D Proposal, *Phase 1* projects are immediately actionable projects that satisfy reliability, safety, and compliance objectives but that can also address bottlenecks or constraints that limit renewable energy delivery within a utility's system. *Phase 2* projects may increase capacity on the local transmission and distribution system to allow for interconnection and delivery of new renewable generation resources within the utility's system. These projects are not currently in the utilities' capital plans. Phase 2 projects tend to have needs cases that are driven primarily by achieving CLCPA targets.

methodology grounded in capacity expansion modeling. The Phase 2 Order also provided guidance on other aspects of the Utilities' evaluation of proposed projects and directed the Utilities to make a series of filings to support investment recommendations. It also established a requirement that each utility file periodic analyses of headroom availability throughout their service territories.[7] Finally, the Phase 2 Order directed the Utilities to collaborate with Staff, NYSERDA, and the NYISO to develop a coordinated grid planning proposal.

The Utilities filed the Initial CGPP Framework on December 17, 2021.[8] In that filing, the Utilities indicated that they would provide a more comprehensive CGPP Proposal by January 1, 2023. This filing contains the Utilities' revised CGPP Proposal. This proposal represents a significant evolution of existing LT&D planning processes to align analyses conducted statewide with the goal of delivering an electric system capable of meeting New York's clean energy objectives.

a) Coordinated Grid Planning Process: Defined

The CGPP is envisioned to be a repeating 3-year process with approximately two years for a system study followed by Commission review. The process is designed to assess the State's electric grid using a 20-year planning horizon. The CGPP will identify the electric grid expansions that can aid in unlocking renewable generation capacity and provide energy headroom for the purpose of meeting New York State clean energy goals while providing value to customers. Moreover, the CGPP will identify opportunities for expansion of the bulk

---

[7] These Headroom Assessments are to be filed every six months on February 1 and August 1 until the CGPP is approved and its first iteration is underway.

[8] LT&D Planning Proceeding, The Utilities' Coordinated Grid Planning Process and Revised Benefit Cost Analysis Proposals (December 17, 2021) (Initial CGPP Framework).

transmission system to advance CLCPA objectives. This will inform the Commission's consideration of whether to establish a Public Policy Transmission Need (PPTN).[9]

The CGPP will be complementary to and, where applicable, coordinated with: (i) NYISO Comprehensive System Planning Processes; and (ii) individual utility T&D planning processes. The process will involve a variety of entities that will collaborate to integrate these related planning processes. Figure 1 briefly describes these entities, which are discussed throughout this CGPP Proposal.

Figure 1: Key entities that will be involved throughout each CGPP cycle

CGPP Participants	Description
Utilities	The Utilities will lead/direct the analyses that must be completed to evaluate system conditions defined by stakeholders (*i.e.*, the Energy Policy Planning Advisory Council).
NYISO	The NYISO operates the bulk power system and conducts a Comprehensive Planning Process that should inform the CGPP. In addition, the NYISO will play a critical role in facilitating bulk transmission projects that are subject to the CGPP (*i.e.*, through the PPTN process).
Energy Policy Planning Advisory Council	The Energy Policy Planning Advisory Council will represent stakeholder interests from across New York State. It will provide input and feedback on assumptions and the technical approach used in the CGPP analysis
Technical Consultant	The Utilities expect to require one or more consulting experts to conduct capacity expansion and power-flow modeling and analysis to examine the need for investment to support achievement of the State's policy goals.
DPS Staff	DPS Staff will provide an oversight advisory role to the EPPAC. In the case that the EPPAC is unable to align on the direction of analyses the Utilities must complete, DPS Staff will, in consultation with NYSERDA, serve as an independent arbiter to resolve such disputes and determine the appropriate path forward.

[9] In addition to a PPTN, the PSC may also consider establishing a New York Power Authority (NYPA) Priority Transmission Project (PTP) where timing or other factors do not allow for a PPTN. The AREGCB Act directs the Commission to determine whether the electric system requires urgent transmission infrastructure development to meet the State's clean energy objectives under the CLCPA. When the Commission determines that needs exist, it works with NYPA to evaluate options for addressing such needs through a Priority Transmission Project (PTP) process.

Critically, the CGPP will provide for stakeholder review and input, including: the assumptions that will be used in the initial stage of the CGPP, the results of scenario development, and, potentially, other materials that can be made public at various other stages throughout the process.

III. Energy Policy Planning Advisory Council (EPPAC)

As part of the coordinated statewide planning process, the Phase 2 Order identified the benefit and the need to establish a stakeholder forum that would facilitate stakeholder input into the process. As the Commission noted, stakeholder input is critical to the success of the CGPP.

> [A]ny grid expansion must both respond to and accurately predict generation development. For this reason, stakeholder engagement should meet certain minimum objectives. First, the process should facilitate education and cross-training of both stakeholders and utility planners to improve mutual understanding of power system characteristics and individual project developments, as well as how these components inter-relate. Second, the process must ensure timely data-sharing to ensure decisions are based on the most current information and sound forecasts. Third, working group forums should be leveraged to share insights and help resolve issues through group collaboration, to the fullest extent possible.[10]

Throughout 2022, the Utilities hosted a series of nine technical conferences, open to the public, to gather insights on specific CGPP topics of interest to stakeholders and solicit broader feedback on the December 2021 CGPP proposal. In addition, the Utilities, working closely with DPS Staff, participated in a stakeholder process steering committee[11] that guided the technical conferences and provided feedback on multiple aspects of the development of the CGPP.

---

[10] LT&D Planning Proceeding, Phase 2 Order, p. 21.

[11] This stakeholder process steering committee that has been working throughout 2022 has included representatives from: one downstate utility (Con Edison); one upstate utility (National Grid); DPS Staff; NYISO, NYPA, NYSERDA, the New York Office of Renewable Siting (ORES), the New York Battery Energy Storage Technology Association (NY-BEST), the New York Solar Energy Industries Association (NYSEIA), the Alliance for Clean Energy New York, Inc. (ACE-NY), the New York State Division of Consumer Protection's Utility Intervention Unit (UIU), the New York City Office of Climate and Environmental Justice, the competitive transmission industry, and the transmission technology industry.

The Utilities propose that the 2022 stakeholder process steering committee should evolve to assume the functions of the proposed EPPAC. If the Commission approves, the stakeholder process steering committee's focus will then shift to providing technical input and feedback on assumptions and the approach used in the CGPP analysis, as described below.

a) EPPAC Role

The Utilities propose the EPPAC as a broadly representative stakeholder group with a primary function of advising the Utilities' system planners on the development of a set of generation build-out scenarios (see Figure 2) that represent potential renewable generation resource development in New York. The Utilities will use such generation build-out scenarios to propose and evaluate LT&D infrastructure investments for inclusion in a portfolio of projects that will facilitate achievement of the CLCPA's objectives.[12] In particular, the EPPAC should:

- Provide input into any lessons learned from prior CGPP cycles for incorporation in future CGPP revisions;
- Provide guidance to the Utilities in the selection of up to three distinct generation build-out scenarios (see Figure 2);[13]
- Inform the need for analysis of bulk transmission sensitivities that may be run on each of the three principal scenarios that may influence the generation build-out required to achieve CLCPA targets (*i.e.*, to inform the need for a PPTN or PTP);
- Provide feedback on the input modeling assumptions used to design the electric system to achieve State objectives; and
- Review the CGPP final report as the Utilities are preparing it to ensure that any stakeholder perspectives that must be explained are captured appropriately.

The importance of each of these roles is described in detail throughout the remainder of this CGPP Proposal.

---

[12] The Utilities may also consider bulk transmission alternatives, as discussed throughout this CGPP Proposal.

[13] Utilities request that the Commission direct DPS Staff to provide guidance and, if necessary, resolve EPPAC disagreements in the case that EPPAC is unable to reach consensus on the specification of scenarios.

Figure 2: EPPAC-Directed Scenario Specifications

The EPPAC will provide input on up to three generation build-out "scenarios" developed by the Utilities that are intended to encompass a range of approaches to comply with the CLCPA. These scenarios will be evaluated in detailed modeling throughout the CGPP cycle. Each scenario will contain assumptions including but not limited to:

1) Load forecasts and shapes for each New York Control Area (NYCA) zone for each year (informed by assumptions related to electrification, etc.);
2) Assumptions beyond statewide requirements for renewable generation and distributed energy resources (DER), specifically behind-the-meter (BTM) photovoltaic (PV) systems; and
3) The scale, technology, and location of large-scale renewable generation build-out in each NYCA zone, as determined by capacity expansion modeling.

(In addition, one or more "sensitivities" may be developed for each of the three scenarios to explore the effect of a modification to a specific scenario feature.)

The EPPAC will also inform assumptions that apply *across* scenarios. These assumptions may include capital and fixed operations and maintenance (O&M) costs for various clean-energy resources, the years in which various technology deployment constraints apply and/or are lifted (*e.g.*, the availability of distributed, emissions-free resources as generation capacity options, limits on the deployment of certain technologies, etc.) and other system features of interest to the EPPAC.

Because the EPPAC is intended to be an independent, stakeholder-led group, the Utilities propose that DPS Staff, NYSERDA staff, a consultant selected by these two parties, or a similar unaffiliated non-utility organization host and coordinate the committee.[14] The Utilities emphasize the need for the EPPAC composition to properly reflect stakeholder interests and note that EPPAC representatives may need to share any relevant materials (*i.e.*, information shared by the Utilities with the EPPAC at any point throughout the CGPP cycle) with the stakeholders they represent.

[14] This consultant role is separate and distinct from the Technical Consultant introduced in Figure 1.

b) EPPAC Composition

In the December 17, 2021 filing, the Utilities proposed that "This new stakeholder forum, the [EPPAC], will consist of a representative and an alternate from each utility, DPS Staff, NYISO, NYSERDA, renewable generation and storage associations, the power authorities, and environmental justice community associations."[15] From the outset, the Utilities have proposed that they should act as a technical consultant to stakeholders, assessing system limitations and developing the optimal portfolio of solutions based on the study scope that the EPPAC will guide. The Utilities continue to support this framework.

DPS Staff will designate the members of EPPAC to ensure that stakeholder interests are appropriately represented in the CGPP process. EPPAC may be composed of organizations such as:

- DPS Staff
- NYISO
- NYPA
- LIPA
- NYSERDA
- New York ORES
- NY-BEST
- ACE-NY[16]
- NYSEIA
- UIU
- IPPNY
- NYC Mayor's Office of Climate and Environmental Justice
- An environmental justice organization
- Each investor-owned utility among the Utilities

EPPAC representatives should have sufficient technical background and/or support to provide meaningful input for this type of analysis. The Utilities propose that DPS Staff periodically review the composition of EPPAC to ensure that participants can represent stakeholder perspectives appropriately. Collaboration with EPPAC will create opportunities for

---

[15] LT&D Planning Proceeding, Utilities' Initial CGPP Framework, p. 19.

[16] ACE-NY represents the views of merchant transmission developers, among other industry entities.

"education and cross-training of both stakeholders and utility planners to improve mutual understanding of power system characteristics and individual project development" among stakeholders and the Utilities.[17]

c) Timing of EPPAC involvement in the CGPP

Given the technical nature of the EPPAC, the Utilities expect that the EPPAC will have the most significant impact on the study process by providing primary feedback during the data identification and collection phase, as coordination and determination of generation build-out scenarios and sensitivities takes place. EPPAC insights will also be crucial during the evaluation of proposed LT&D and bulk system solutions, and as the final report for each CGPP cycle nears completion. As illustrated in Figure 3, below, these key points of information and insight exchange would correspond to CGPP Stages 1, 5, and 6. Given the span of time between these stages, the Utilities propose additional informational touchpoints with the EPPAC to take place during Stages 2, 3 and 4 to keep the EPPAC informed of the Utilities' ongoing studies and provide opportunities for additional technical feedback as appropriate.

IV. CGPP Stages and Timeline

To meet the CLCPA goals within timeframes established by State policy, the Utilities propose to start the first cycle of the CGPP in mid-2023 subject to a timely Commission Order on this CGPP Proposal. The Utilities propose to complete the planning process described in this filing within approximately 2 years. At the conclusion of a CGPP cycle, the Utilities should initiate the subsequent cycle within 30 days following a Commission Order on the system upgrades that were identified and proposed in the most recently-concluded CGPP cycle. The

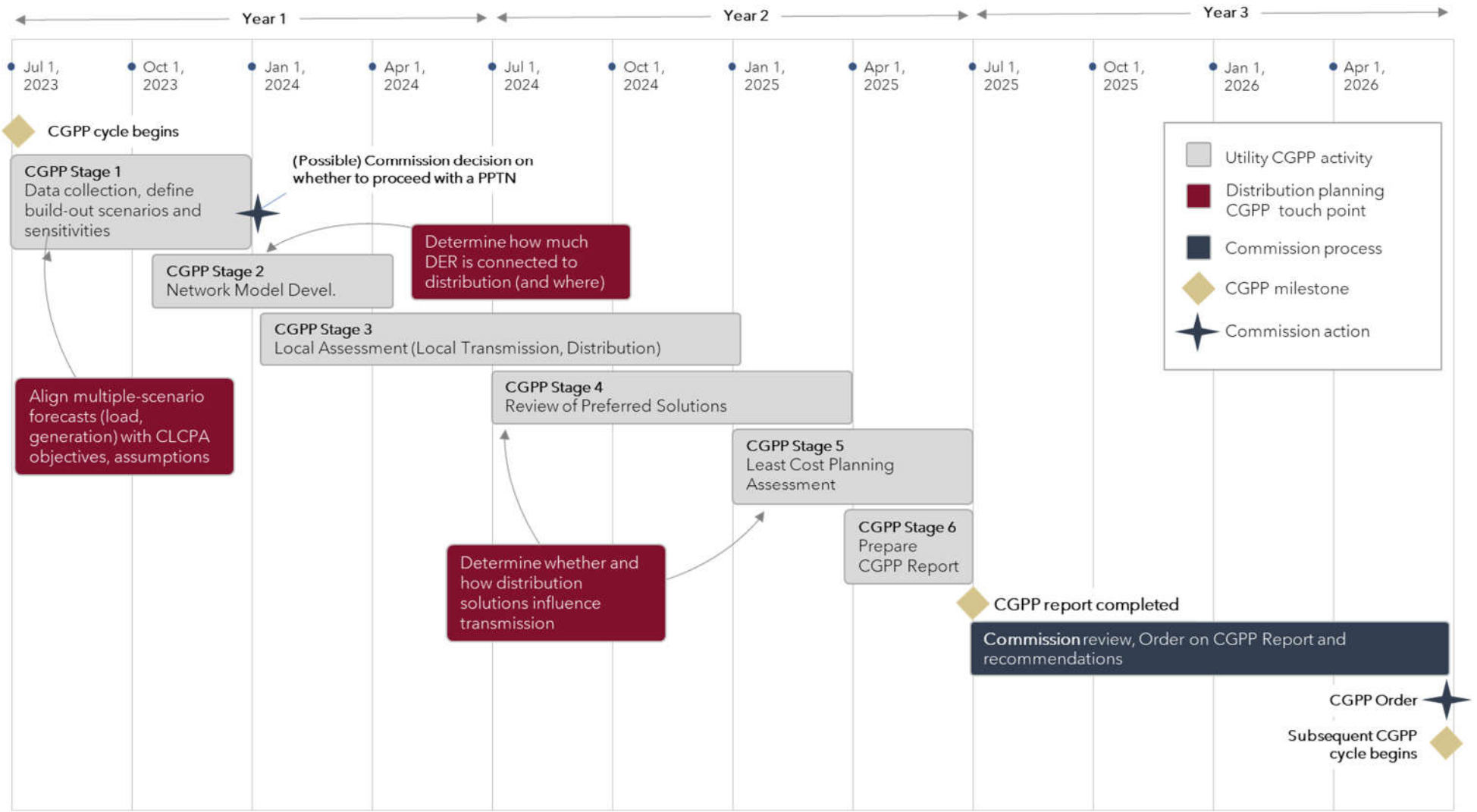
[17] LT&D Planning Proceeding, Phase 2 Order, p. 21.

Utilities have designed the sequence of CGPP stages to provide the Commission time to consider: (i) recommended LT&D projects; (ii) whether an identified PPTN process should continue; and (iii) whether a new PPTN process should be initiated to expand the bulk transmission system.[18] Commission approval at the end of CGPP cycles allows for an efficient and orderly system expansion that builds on prior assessments and eliminates ambiguity regarding project status in subsequent CGPP cycles.

The proposed CGPP timeline is illustrated in Figure 3, below. The timeline is illustrative in nature and may require adjustment based on lessons learned, issues that emerge during a cycle, or on input from EPPAC. The CGPP is intended to be a substantially sequential process in which the initiation of each stage depends on the completion of prior stages. However, the Utilities intend to overlap the six CGPP stages to the extent feasible to complete them within two years. In the illustrative calendar in Figure 3, the Utilities assume a full year for the Commission's review and approval of the Utilities' submissions.

[18] If the Commission determines that a PPTN may be beneficial, the development of such projects would happen in parallel to that of LT&D projects. See Figure 5 for an illustration of this process.

Figure 3: Proposed Calendar of the first CGPP Cycle *(Note: dates that appear in this figure are illustrative only)*



The Utilities expect that certain stages of the first CGPP cycle will require external analytic support[19] from one or more qualified technical consultants selected by the Utilities in consultation with DPS Staff and NYSERDA. The Utilities expect that the NYISO will support these analyses in future CGPP cycles, provided it is able to secure the necessary resources.[20] If resource constraints prohibit the NYISO from being able to complete the requisite analyses, the Utilities may continue to rely on a consultant for analytic support.

New York's electric system will require bulk transmission and LT&D development to meet the CLCPA objectives. The analysis and planning that is required to deliver these projects must be initiated as soon as possible in order for necessary electric system improvements to be in place in time to support CLCPA objectives. Following a CGPP cycle and Commission approval, each proposed project must follow subsequent development steps prior to entering service. This includes: (1) detailed engineering; (2) completion of any required studies under the NYISO Interconnection Process; (3) permitting; (4) procurement; (5) community outreach; and (6) construction. It is imperative that these processes be initiated without delay to influence the achievement of the State's 2030, 2040, and 2050 CLCPA objectives.

---

[19] The modeling support the Utilities envision seeking from an external consulting expert may include but not be limited to capacity expansion modeling preparation (*i.e.*, review and necessary updates to zonal capacity expansion forecasts to reflect any changes in public policy, incorporating estimates of existing headroom and incremental headroom associated with proposed projects developed in the course of the CGPP cycle, assessment of sub-zonal locational feasibility factors translated to sub-zonal capacity limits by technology type or sub-zonal transmission limits, and evaluation of the impact of bulk and LT&D projects on the economics of generation build-out required to meet the State's needs under the CLCPA.

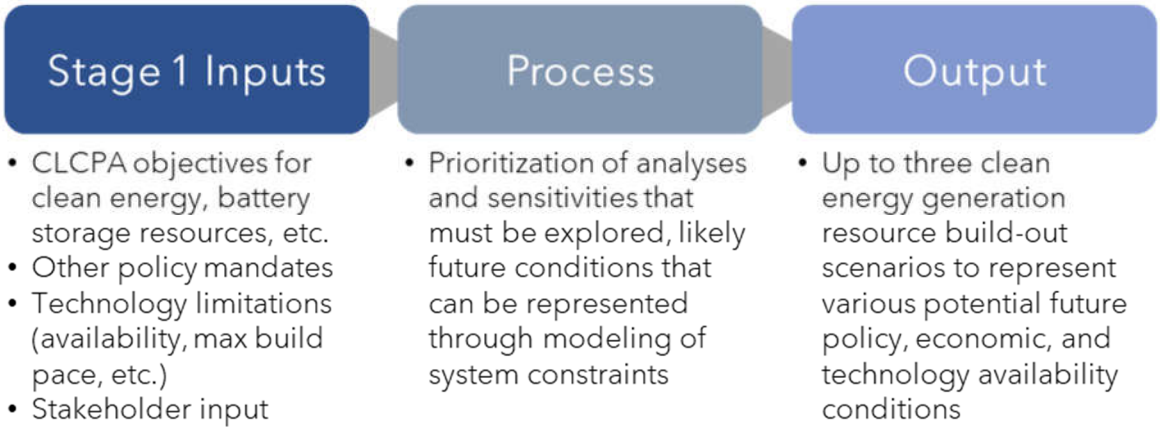
[20] For the 2023 NYISO Project Prioritization Process, the Utilities (with NYISO collaboration) proposed a 'CGPP Support' project that would focus on aligning its current set of processes and deliverables with those that may benefit the CGPP.

V. CGPP Stage 1: Data Collection, Determination of Build-Out Scenarios

a) Data Collection and Coordination: Purpose

The purpose of Stage 1 is to (i) consider information from studies performed in past CGPP cycles or performed by other entities, (ii) review key study assumptions and constraints, and (iii) establish up to three generation build-out scenarios with considerations for generation interconnection points.[21] These emission-free generation build-out scenarios will model assumptions of the New York electric system in the future. Assumptions will also address system features such as zonal load forecasts[22] and the zonal deployment of DER.

Figure 4: CGPP Stage 1 Summary



The scenarios will stipulate various system constraints and will be designed to discover infrastructure development needs that can lead to renewable generation development at the lowest aggregate cost.

Within CGPP Stage 1, the Utilities and the EPPAC will review and, as necessary, enhance the scope of the upcoming planning cycle. In subsequent CGPP cycles, this stage of the

---

[21] LT&D Planning Proceeding, Phase 2 Order, page 21. EPPAC's role in this stage is to facilitate "timely data-sharing to ensure decisions are based on the most current information and sound forecasts."

[22] These forecasts may reflect assumptions related to electrification of transportation and/or home heating, etc.

process will review and build on lessons learned from previous cycles of the CGPP or other State efforts to achieve the CLCPA objectives.

b) Determination of Build-out Scenario Assumptions

The Utilities will propose conceptual generation build-out scenarios that represent different pathways to achieve the State's CLCPA clean energy objectives. EPPAC will consider these scenarios and suggest modifications as needed.

The Utilities will use data collected in this stage to be specified in a capacity expansion model. Zonal[23] capacity expansion modeling will determine the least-cost generation build-out for the scenarios recommended by EPPAC. For modeling purposes, these generation build-outs will be limited by viable physical interconnections and bulk system transfer limits. Each capacity expansion model run will identify the optimal installed capacity of each type of renewable or emission-free resource in each NYCA zone to satisfy the scenario assumptions and CLCPA objectives.

In addition to focusing on large scale clean energy resources, the Utilities will, in collaboration with EPPAC, determine the assumed zonal allocation for future DER development at this stage. The Utilities' transmission and distribution planners will review assumptions and preliminary results of DER forecasts and recommend adjustments as part of this process. Should there be significant differences between zonal and distribution-level DER forecasts, planning experts from the Utilities may provide ranges of more appropriate zonal distributed generation figures in alignment with utility distribution level forecasts.

---

[23] The transmission constraints used in the capacity expansion planning model will, at minimum, represent the zonal constraints between the NYCA Load Zones. https://www.nyiso.com/documents/20142/1397960/nyca_zonemaps.pdf/

The input assumptions used to develop the generation build-out scenarios are critical to the initial capacity expansion modeling results. The Utilities will consider EPPAC's recommendations for how to incorporate CLCPA objectives and other relevant local or state laws or requirements, NYCA load forecasts and shapes, NYCA resource adequacy requirements, publicly available NYSERDA procurement data, known awarded public policy transmission projects, expected generator retirements, forecasted amounts and locations of DER, and other information identified by EPPAC that could help to inform the model results. The Utilities will leverage and incorporate modeling assumptions and results from similar exercises performed by applicable New York State agencies[24] and/or by the NYISO, with modifications as recommended by EPPAC.

The capacity expansion model will not, initially, incorporate known capacity and energy headroom limits on the local transmission system. Rather, the generation buildout scenarios will represent ideal conditions where local constraints do not exist. Generation build-out projected by the capacity expansion model for each scenario will serve as the basis for the "ideal" generation build-out plan. Capacity expansion simulations will identify the amount and type of utility-scale renewable generation, storage, and emissions-free generation that is needed to meet CLCPA objectives. These simulations will distribute that capacity across the NYCA zones in the most cost-effective build-out plan and should not favor only those areas with available hosting capacity or current developer interest.

In CGPP Stage 3 the Utilities will conduct detailed system assessments to determine local system CLCPA needs, which will allow the Utilities to develop feasible and cost-effective

[24] New York State agencies include but are not limited to NYSERDA and DPS.

solutions to address local system limitations that interfere with the ideal generation build-out plan. Ultimately, in the least cost planning stage later in the CGPP cycle, the Utilities will identify (i) capacity and energy headroom limits on the existing local system and (ii) the total incremental headroom and cost of additional bulk transmission and LT&D infrastructure to develop the ideal mix of generation and transmission that will achieve the State's clean energy goals.

c) Bulk System Needs Identification

The capacity expansion modeling simulations will include existing limits on the bulk system's capability to transfer power between NYCA zones. To the extent that the bulk system transfer limits appear to be restricting the economic build-out of renewable generation, the EPPAC may request that the Utilities perform sensitivity analysis to evaluate the effect of relaxing this bulk transfer limit. The results of this sensitivity analysis—with other assumptions held constant—may inform the need to consider expansion of the bulk system.

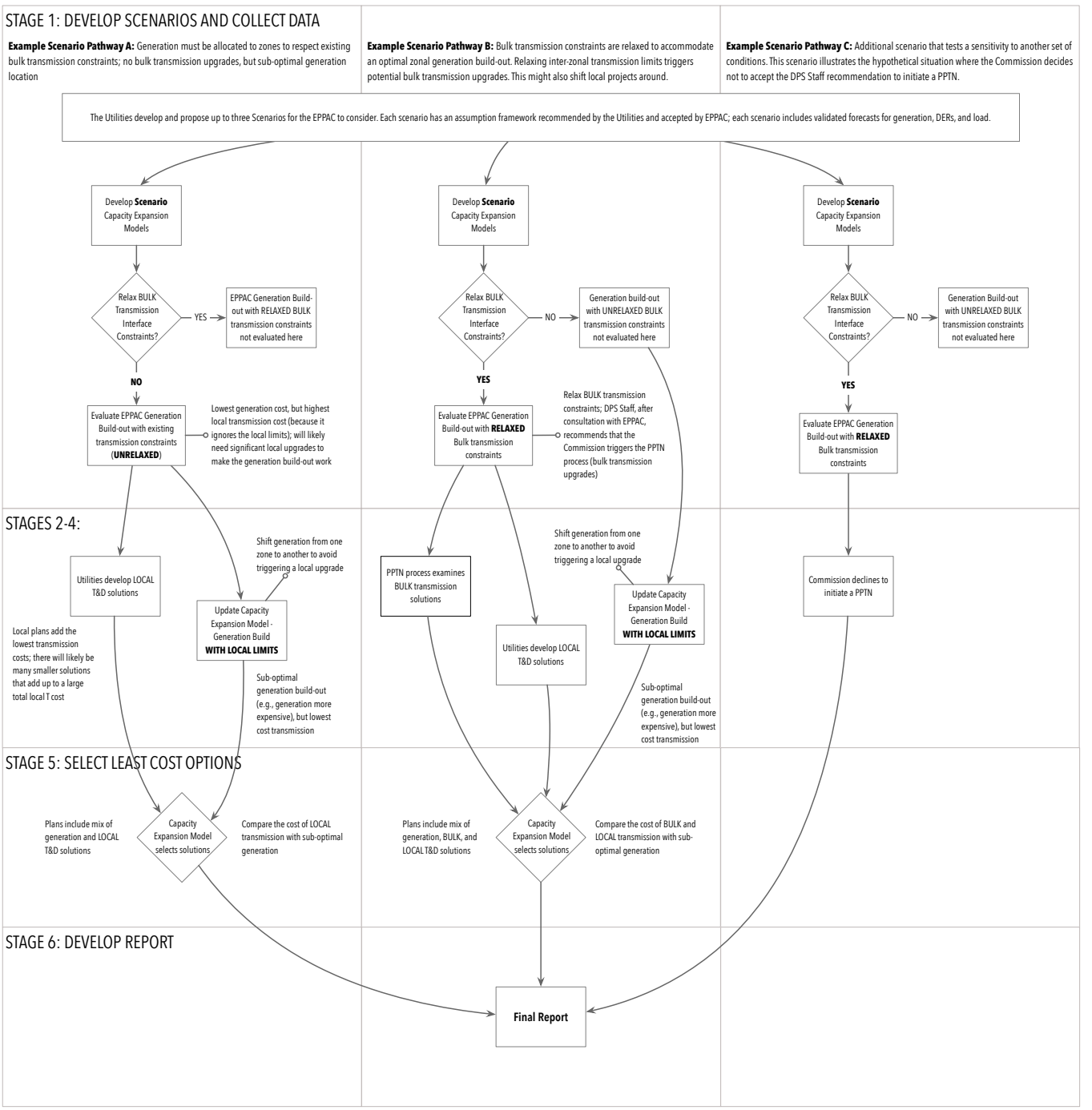
d) Capacity Expansion Modeling and Selection of Build-Out Scenarios

The Utilities will run the capacity expansion model for up to three scenarios with the potential for several sensitivities on the selected scenarios, which consider the impact of modifying certain assumptions such as, but not limited to, relaxing bulk system transfer limits. The results of these model runs will be shared with the EPPAC. Upon receiving the results, EPPAC will identify up to a total of three generation build-out plans selected from the three initial scenario cases and/or their respective sensitivity cases assumed in capacity expansion model runs. The Utilities will plan to provide to EPPAC information related to the capacity expansion modeling results that are based on the EPPAC-directed scenarios. These three build-out plans will proceed to CGPP Stage 2 for further evaluation.

Where the relaxation of a bulk interface that crosses utility service territories facilitates achievement of CLCPA objectives, a Commission finding of a PPTN and a solicitation for transmission solutions under the NYISO Tariff may be appropriate. To raise this question to the Commission, the Utilities propose that the Commission authorize DPS Staff, after consultation with EPPAC, to file information describing the identified need for the Commission's consideration. If the Commission determines that there is a PPTN, the NYISO will administer the PPTN process for the inclusion of bulk project benefits and their respective cost estimates into CGPP's Stage 5 evaluation (Least Cost Planning Assessment). The parallel process in which the potential need for bulk system solutions is identified, and in which bulk and LT&D projects are developed and ultimately compared is presented in Figure 5, below.

If the Commission decides not to pursue a PPTN related to a sensitivity that has proceeded to Stage 2, then all work on that sensitivity will stop and the Utilities will continue to conduct planning assessments on the remaining scenarios.

Figure 5: Illustration of potential Scenario Pathways for the parallel evaluation of the need, development, and comparison of bulk and LT&D solutions in the CGPP. *Note: The EPPAC could select up to three generation build-out scenarios that follow a single Scenario Pathway. (Each scenario would have a distinct set of assumptions). Alternatively, the EPPAC could select three scenarios that follow a combination of Scenario Pathways.*

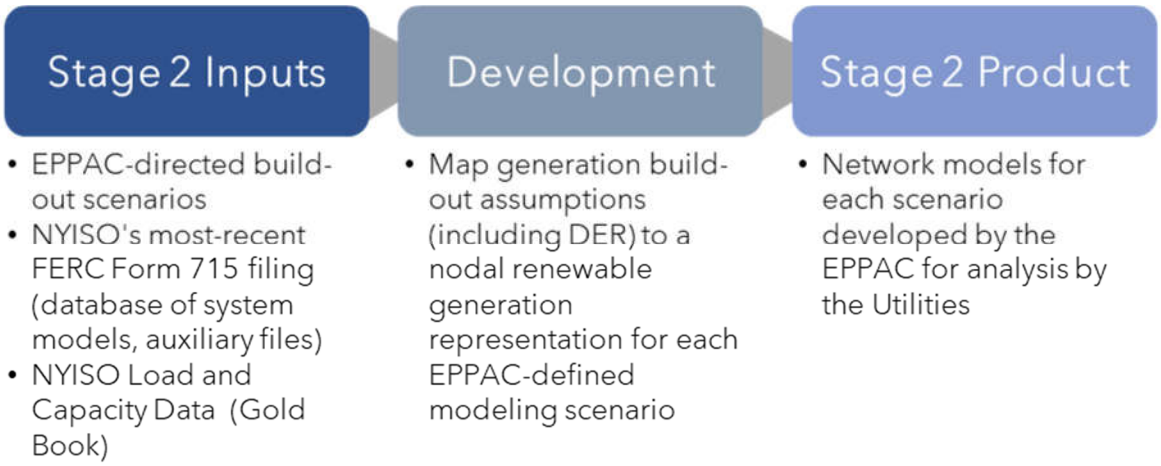


VI. CGPP Stage 2: Network Models

a) Network Models: Purpose

In CGPP Stage 2 the Utilities will develop detailed short circuit and power flow models that will be used in subsequent CGPP stages to assess local transmission systems throughout New York State.

Figure 6: CGPP Stage 2 Summary



b) Electric Network Model Development

Power flow and short circuit assessments examine the electric system's ability to adequately supply power to meet interconnected demand. The Utilities will develop the statewide power flow and short circuit models for each CGPP cycle using the NYISO's most recent Federal Energy Regulatory Commission (FERC) Form 715 submission as a foundation.[25] This data will form the basis for the available transmission topology to be used in the zonal capacity expansion model as well as in the short circuit and power flow assessments.

[25] NYISO's FERC Form 715 data filing is made annually on or before April 1 by the NYISO on behalf of the Utilities.

For the first CGPP cycle, the Utilities will use (i) NYISO's most recent FERC Form 715 database of system models and auxiliary files and (ii) the NYISO Load and Capacity Data[26] (Gold Book) as the starting point in the development of the database for the CGPP. The NYISO's FERC Form 715 database may not include base cases (*i.e.*, reference system models) for the longer term 20-year planning horizon[27] under the various system load conditions that need to be assessed (*i.e.*, summer peak, winter peak, off-peak (shoulder), and light load). Therefore, the Utilities will likely need to develop these longer-term base cases using the NYISO Gold Book forecast, and in collaboration with EPPAC. At this development stage, the Utilities will maintain as much of the NYISO's FERC Form 715 Database information as applicable to establish the short circuit and power flow models on existing and planned "firm" generation and system topology. The proposed list of cases for the first CGPP is as follows:

Steady State (for each build-out scenario with associated auxiliary files):[28]

- Summer 2030 baseline coincident peak demand
- Winter 2030 baseline coincident peak demand
- 2030 off-peak (shoulder) load
- 2030 light load
- Summer 2035 baseline coincident peak demand
- Winter 2035 baseline coincident peak demand
- 2035 off-peak (shoulder) load
- 2035 light load
- Summer year n+20 baseline coincident peak demand
- Winter year n+20 baseline coincident peak demand
- Year n+20 off-peak (shoulder) load
- Year n+20 light load

Short Circuit:

---

[26] *See, e.g.*, the NYISO 2022 Load & Capacity Data Report, available at https://www.nyiso.com/documents/20142/2226333/2022-Gold-Book-Final-Public.pdf/cd2fb218-fd1e-8428-7f19-df3e0cf4df3e

[27] 20-Year Planning Horizon should include years related to CLCPA goals: 2030, 2035; with final year of the planning horizon (ex. if the CGPP is initiated in 2023, then the 20-year case will be established for year 2043).

[28] The proposed list of cases may vary based on experience gained from previous CGPP cycles.

- System Representation (studied-year, as needed)

The next step is for the Utilities to establish three separate and distinct sets of network models (*i.e.*, for 36 total cases) for the three build-out scenarios selected in CGPP Stage 1. The generation build-out assumptions will be mapped into a nodal renewable generation representation. That is, the Utilities will take the zonal build-out (*i.e.*, pipe and bubble) and then overlay it onto a nodal (*i.e.*, substation-level) model. This nodal model will include generation interconnection locations and unit-specific technical specifications. The Utilities will model DER on the distribution system assumed in each scenario as load modifiers placed in suitable and logical locations. That is, distribution planners will "disaggregate" the zonal DER forecasts and distribute those DERs based on local assumptions and techniques. During the first CGPP iteration, the Utilities will discuss the appropriate methodology for translating the zonal utility scale capacity build-out assumptions from the capacity expansion model to nodal power flow models with EPPAC. This methodology will be updated in future CGPP cycles, as necessary. The Utilities will also consider modification of the zonal load being modeled to more closely represent the forecast used in the capacity expansion model to create each of the generation build-out scenarios. The Utilities may also modify the nodal load model within the zone based on input from Distribution planners. As part of the development of the cases the Utilities will develop an initial dispatch of renewable generation resources. In total, thirty-six (36) steady state cases (all with modified associated auxiliary files) and three (3) short circuit cases will be developed in the first CGPP cycle.

If the Utilities observe during the creation of the cases that the bulk system is limiting (*i.e.*, the bulk system is exceeding its limits) when the renewable generation is dispatched, this situation will be noted in the final report for that CGPP cycle. However, these conditions would

be ignored for the purposes of evaluating the local systems under the assumption that a PPTN could resolve the issue.

Subsequent rounds of the CGPP will require development of steady state and short circuit base cases with topology representations for years that may vary from those developed in the first cycle. For example, in the second CGPP cycle potentially starting in 2026 it would not be necessary to develop cases representing 2030, but cases representing 2035, 2040, and cases representing year n+20 would be developed, as guided by EPPAC.

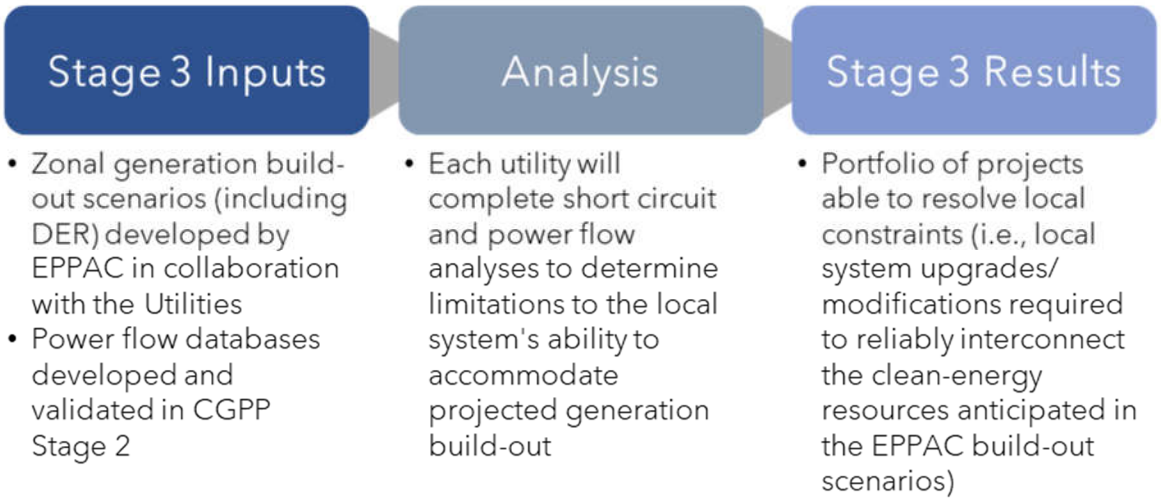
VII. CGPP Stage 3: Local Assessment

a) Local Assessment: Purpose

Each utility must evaluate conditions within its service territory to determine whether LT&D system upgrades are necessary to accommodate the integration of DER and utility scale generation resources described in the build-out scenarios the EPPAC directs the Utilities to assess. Local solutions the Utilities will consider as part of the CGPP include traditional LT&D upgrades, non-wires alternatives (NWA), and the use of advanced technologies[29] that can help increase the capability of T&D infrastructure or otherwise enhance the ability of the system to support the objectives of the CGPP and CLCPA.

[29] Advanced technologies may include, but are not limited to, advanced power flow control devices, dynamic line rating equipment, energy storage, and composite conductors that can be evaluated as potential solutions for CLCPA needs at the transmission level. The Advanced Technology Working Group (ATWG) continues to evaluate these aspects of potential advanced technology solutions.

Figure 7: CGPP Stage 3 Summary



b) Assessing the need for measures to address local (LT&D) constraints

Utility planners design area studies that analyze their local transmission and distribution systems. At both the transmission and distribution levels, area studies simulate future conditions and test the ability of local transmission and distribution networks to operate within applicable standards (*e.g.*, voltage limits, equipment ratings, and reliability parameters).

For each zonal disaggregation from the generation build-out cases to nodal interconnection assumptions, the Utilities will evaluate the need for local system upgrades. At this stage, Utilities will review system performance[30] for the nodal generation assumptions in each of the EPPAC-directed scenarios. The Utilities will conduct short circuit and power flow analyses for each local area as appropriate (*i.e.*, based upon limiting forecasted condition(s) as identified by each utility). To identify local system constraints, all renewable generation within each local pocket, or regionally as required, would be simultaneously dispatched to 100% of

[30] Local Systems are subject to different levels of regional and local reliability criteria that are submitted to the FERC with Form 715 filings.

nameplate capability and offset by an associated reduction in generation outside of the study area, starting with fossil resources.

At the distribution level, the Utilities will apply DERs (primarily PV) and load (electrification) assumptions developed in CGPP Stage 1 to utility distribution network models according to the location, level, and timing of the additions. The Utilities will perform analyses at an appropriate level of detail on the local distribution systems to identify where system constraints may limit the ability to add DERs and electrification load. Criteria violations and constraints indicate grid needs that the Utilities must address through an infrastructure or NWA solution. For near-term distribution system needs (within the next five years), utilities will develop a solution to mitigate the criteria violation or constraint. For longer-term distribution system needs (beyond five years), utilities will characterize the cause and timeframe. The utilities will develop specific distribution system plans for upgrades as the need approaches the near(er) term to increase certainty and confidence in the proposed solution. In future CGPP cycles, the conceptual longer-term distribution solution may become refined into a more detailed near-term plan for execution.[31]

c) Solutions

The Utilities will identify viable solutions to address any observed local constraints based on the nodal generation build-out plan. At the completion of Stage 3, Utilities will have developed an initial solution set to resolve identified constraints in each scenario for further development in Stage 4 and for consideration and possible inclusion in the optimal portfolio of

[31] For example, a utility might identify that a substation upgrade appears necessary in year 8. The utility would track that need over time as forecasts evolve. The utility will develop a more detailed upgrade plan as the grid need enters the Near-term Process. In the meantime, the utility can begin exploring potential alternative solutions for alleviating the substation constraint.

projects in Stage 5. Other solutions could include NWA (*e.g.*, energy storage or other advanced technologies) or a hybrid approach (*i.e.*, an NWA and transmission system upgrades) in accordance with the NWA section below.

Solution development would follow a similar process to other planning efforts and would consider estimated costs (targeted at a +50/-25 percent accuracy), constructability, schedule, operability, expandability, impacts on customer reliability and resiliency, and impacts or synergies with broader capital planning efforts. These solutions could be in the form of local transmission "on-ramps" (*i.e.*, moving renewable energy out of the local system and onto the bulk system highway), "off-ramps" (*i.e.*, moving renewable energy off the bulk system highway to enable delivery to customer load), and "internal" solutions (*i.e.*, moving renewable energy within a local system, typically at the same voltage level). The Utilities will also assess whether any NWA, such as storage or an advanced technology, could viably and cost-effectively replace or reduce the scope of the identified local solutions in accordance with the NWA section, below.

The analysis the Utilities will perform in this, and later, stages will focus on predetermined CLCPA target years (*e.g.*, 2035 and 2040) and in year n+20 (*i.e.*, the last year in a 20-year planning horizon). Because a 20-year planning horizon is beyond the traditional 10-year reliability planning horizon, the Utilities may identify new reliability needs on the local systems (*e.g.*, due to forecasted load growth or generation retirements). If a utility identifies a reliability need in the same area as a constraint due to renewable generation development, the utility may evaluate a comprehensive alternative that efficiently addresses both the reliability need and the renewable constraint with a single, multi-value, project. If the cost of addressing both needs is more expensive than a project that addresses only the constraint on renewable generation, but less than the cost of two distinct projects that separately address: (i) the reliability need; and (ii)

the constraint on renewables, then the project that addresses both needs would be evaluated in CGPP Stage 5 using the lower cost of the project that addresses only the constraint on renewables.[32] This approach facilitates the development of the most efficient projects.

Indeed, customers benefit when projects address multiple needs, and the Commission should encourage identification of projects with multiple benefit streams. The development of CLCPA-driven projects that also provide reliability benefits (including resilience), however, can present challenges, as the timing need of reliability drivers may not always align with those of the CGPP. The Utilities thus recommend that the Commission direct the Utilities to develop a process for taking these timing needs into account.

d) Headroom Assessment

In lieu of the existing interim requirement to assess both capacity and energy headroom every six months,[33] the Utilities will include headroom assessments as part of the CGPP cycle. The capacity and energy headroom assessments[34] will identify the headroom available on the existing system and the additional capacity and energy headroom that would be created by the identified solutions to the local system constraints. The headroom available on the existing system, as well as the new headroom created by proposed projects, are important inputs for CGPP Stage 5, the Least Cost Planning Assessment.

---

[32] We note that the Commission has recognized, in the Phase 2 Order, that projects that support CLCPA objectives may simultaneously provide reliability or resilience benefits. (*See* LT&D Planning Proceeding, Phase 2 Order, note 37.)

[33] LT&D Planning Proceeding, Phase 2 Order, pp. 3, 50.

[34] LT&D Planning Proceeding, Staff Straw Proposal for Conducting Headroom Assessments (March 16, 2021). *See also* LT&D Planning Proceeding, Addendum to Staff Straw Proposal for Conducting Energy Headroom Assessments (June 8, 2021).

e) Application of Advanced Technologies and Non-Wires Alternatives (NWA)

In accordance with the Phase 1 and Phase 2 Orders, Utilities will consider the sufficiency of advanced technologies and NWA solutions that may be suitable for mitigating CLCPA needs. The Utilities will evaluate NWA and advanced technology opportunities within CGPP Stage 3 prior to identifying the preferred solution to system constraints. If, based on the application of NWA suitability criteria, the Utilities determine that an NWA is not suitable for a particular CLCPA need, then no NWA solution will be developed for consideration in later stages. The Utilities will solicit the advice of the ATWG concerning the consideration of NWA and advanced technologies as solution opportunities.

The ATWG was established to analyze new and emerging power system technologies that may help achieve New York State's CLCPA objectives. The ATWG, with the help of NYSERDA and NYPA, "will work to address technical barriers and challenges associated with developing and deploying advanced technologies on the New York electric T&D systems.[35]" This will include developing guidance, methodologies, and tools to help the Utilities identify opportunities where advanced technologies can offer cost-effective solutions. The ATWG will develop and apply standard approaches to scout for and evaluate emerging technologies that can improve the functionality and capabilities of New York's T&D system.

The Utilities will collaborate with ATWG to develop processes and guidelines for evaluating and implementing NWAs in the unique context of CGPP, building on the Utilities'

[35] LT&D Planning Proceeding, Research and Develop Plan for Advanced Transmission and Distribution Technologies, Utilities of New York, July 20, 2022, p. 3.

existing NWA programs, which are described in Distributed System Implementation Plan[36] filings.

VIII. CGPP Stage 4: Review of Preferred Solutions

a) Review of Preferred Solutions: Purpose

The purpose of CGPP Stage 4 is to optimize across the portfolio of solutions, ensuring that there are no negative and/or unintended impacts from the complete portfolio of projects. CGPP Stage 4 will begin with the Utilities modifying the database of power flow and short circuit cases established in Stage 2 to include all local solutions so that the aggregate impact of local solutions (as a portfolio of projects as opposed to as individual projects) may be established. This will be done separately for all scenarios.

b) Synergy Assessment

CGPP Stage 4 will begin with a qualitative review of the entire portfolio of solutions to identify potential interactions or conflicts between them. If a potential solution scope adjustment is necessary due to a negative interaction (*e.g.*, two projects interacting to create a thermal overload), or if the Utilities identify a different alternative that does not have a negative interaction, projects may be modified or removed from the analysis. This would then lead to an

---

[36] Case 16-M-0411, *In the Matter of Distributed System Implementation Plans* (DSIP Proceeding), Order on Distributed System Implementation Plan Filings (issued March 9, 2017) (DSIP Order). Pursuant to the DSIP Order, the Joint Utilities (*i.e.*, the Utilities, excluding LIPA) filed utility-specific NWA Suitability Criteria matrices on March 1, 2017. In addition, the Joint Utilities filed additional information on NWA identification and sourcing practices in 2017. (*See* DSIP Proceeding, *Supplemental Information on the Non-Wires Alternatives Identification and Sourcing Process and Notification Practices* (May 8, 2017) (NWA Filing). The Joint Utilities revise company-specific NWA process matters in periodic Distributed System Implementation Plan (DSIP) filings in proceeding 16-M-0411 (*In the Matter of Distributed System Implementation Plans*). LIPA addresses similar matters through PSEG Long Island's annual Utility 2.0 Long Range Plan & Energy Efficiency and Demand Response Plan.

iterative assessment to determine the viability of a more comprehensive solution set that can address all local CLCPA needs across more than one generation pocket. The Utilities will review the local system solution set and identify opportunities to perform cost-effective scope combinations or reductions to any of the individual local solution components. This is particularly appropriate in areas where the local systems of multiple utilities are closely tied. If any projects are modified, the cost, as well as the capacity and energy headroom created by the projects, will be recalculated. It should be noted that any project cost estimates developed or revised in Stage 4 may necessarily have a wider accuracy range than those developed in CGPP Stage 3, due to the time limitations that may prohibit development of higher accuracy cost estimates.

This review does not replace any requirements that may exist for projects to go through the NYISO-administered interconnection process.

c) Statewide System Impact Review

The database of power flow and short circuit cases may require an update to include modifications to projects as identified in the Synergy Assessment. This is to be done separately for all scenarios.

The statewide system impact review will confirm that the inclusion of all local solutions (as a group of projects vs. individual project) does not result in any material adverse impact on neighboring systems or the bulk transmission system. If the Utilities identify adverse reliability impacts, they will modify their solutions accordingly. If projects are modified, the cost and capacity and energy headroom created by the projects will be recalculated. As with the Synergy Assessment, if project costs are revised during the Statewide System Impact Review, the revised

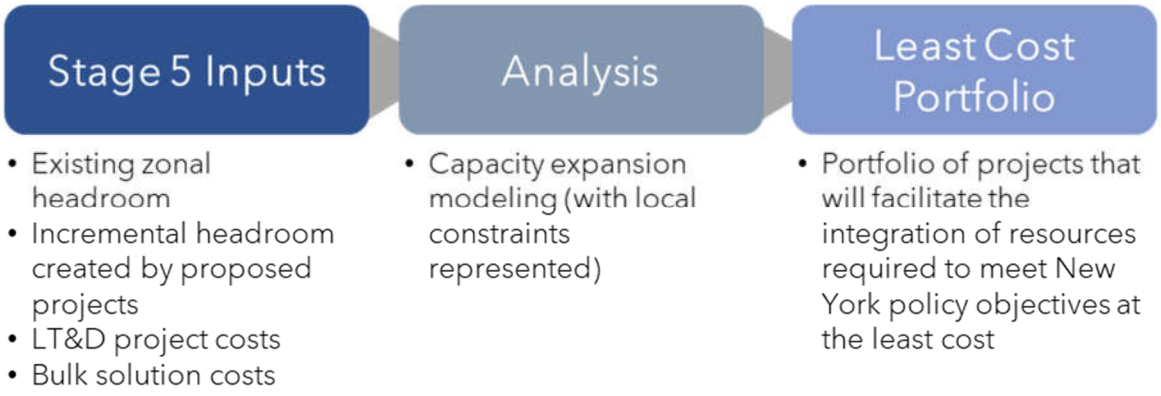
cost estimates may have a wider accuracy range compared to project cost estimates developed in CGPP Stage 3 due to time limitations.

IX. CGPP Stage 5: Least Cost Planning Assessment

a) Least Cost Assessment: Purpose

In CGPP Stage 5, the Utilities will identify a portfolio of LT&D and bulk projects that will facilitate the achievement of the State's policy objectives at the least cost to customers. This will be achieved by comparing the results from a capacity expansion model that includes the expected local headroom limits to the results from a capacity expansion model that starts with the expected local headroom limits but that is given the ability to select, at a cost, transmission projects that create additional local system headroom.

Figure 8: CGPP Stage 5 Summary



b) Least Cost Planning

In CGPP Stage 1, a capacity expansion model is used to develop the least-cost generation build-out scenarios to be studied in the subsequent CGPP stages. The generation build-out produced through this capacity expansion exercise ignores any local system constraints that would limit the interconnection of these cost-effective generation resources. That is, the generation build-out represents an ideal (*i.e.*, lowest cost) generation build-out plan. In CGPP

Stages 2, 3, and 4 the Utilities develop the portfolio of local solutions that are necessary to achieve the ideal generation buildout for each scenario.

At CGPP Stage 5, the capacity expansion models for each scenario selected by EPPAC will be updated to represent the system *with existing local limits included in the model*. This system, with the existing local limits included, will represent the actual local system limitations and result in a higher-cost generation build-out plan relative to the ideal case.[37]

The capacity expansion models for each scenario selected by EPPAC *with existing local limits included in the model* are then run a second time. In this second iteration, local transmission projects that create additional headroom and the associated cost of these projects are made available to the model. The model can then select the least-cost combination of generation and transmission to achieve New York's policy goals, which the Utilities may consider along with other supplementary analyses in recommending projects.

c) Intra-Zonal needs and LT&D Solution Assessment.

The least-cost integrated resource plan is informed by a capacity expansion model. This model sites generation to cost-effective system locations by maximizing the use of existing headroom and adding any needed local and bulk solutions based on their cost and incremental headroom benefits. In CGPP Stage 5, the capacity expansion model will be run with existing headroom limitations included and the model will consider the estimated cost and incremental headroom value of the solutions to existing headroom limitations identified in Stages 3 and 4 and by the NYISO. With these local solutions available, the energy and capacity headroom may be increased should the model select them as being economic relative to building generation in

[37] Modeling the local system limits will be achieved using the calculated local system headroom limitations for the existing system.

alternative areas and after consuming all existing available headroom. The resulting generation build-out plan and any incremental local solutions will represent the least-cost integrated investment plan for achieving the CLCPA objectives. This new build-out represents the optimal combination of generation and local system upgrades that minimizes the total capital cost of the combination of policy-driven generation and local system investments necessary to achieve the CLCPA objectives.

The assessment will produce: (i) the total capital cost of policy-driven resource additions for each scenario; and (ii) a proposed investment plan comprising the least cost portfolio of projects.

d) Assessment of Bulk Transmission Alternatives

If, in CGPP Stage 1, one of the selected scenarios was a sensitivity that included relaxed bulk system transfer limits and a PPTN was identified by the Commission, the costs and benefits of the proposed bulk solutions would be added for consideration in the capacity expansion model in Stage 5. While the local transmission projects would increase the number of resources that could be placed within a NYCA zone, the bulk projects would increase the capability between NYCA zones.

At this point, the Utilities will compare the local projects identified in CGPP Stage 3 to any viable and sufficient bulk projects that are identified from PPTN process. The PPTN solutions and the local projects will individually be entered into the capacity expansion models with their associated costs. The capacity expansion model will then inform what mix of generation, local solutions, and PPTN solutions will be the preferred path forward. (See Figure 5 for an illustration of the parallel process in which bulk and LT&D projects are developed and compared.) Should the CGPP results favor a PPTN solution, the Utilities may provide NYISO

with information on local projects that could address the PPTN or parts of the PPTN more efficiently or cost-effectively, which NYISO may use in its assessment of the PPTN solutions.

The Utilities, with input from EPPAC, will determine the most appropriate and efficient means to consider multiple PPTN solutions in the model. It may be necessary to represent the multiple options with one proxy project. The model will also require a project cost be provided for the PPTN solution. The final report will identify whether the capacity expansion model finds the PPTN solution to be cost effective, allowing the Commission to determine whether the NYISO process should continue with its selection and award.

X. CGPP Stage 6: Least Cost Plan Report

The Final CGPP Report will identify the projects that were found to be beneficial in the Least Cost Planning assessment and rank the portfolios of solutions using Capacity Headroom ($/MW) and Energy Headroom ($/MWh). The report will also identify whether the project(s) that were solicited through the NYISO PPTN process were found to be cost effective for the Commission to consider whether the PPTN process should continue.

Projects that are found to be beneficial in the Least Cost Planning assessment are needed to ensure the timely and cost-effective attainment of CLCPA policy goals under one of the identified generation build-out scenarios. Projects that were found to be beneficial in multiple scenarios may be recommended as "no-regrets" solutions. Projects that have secondary benefits that include, but are not limited to, addressing reliability needs, asset condition, resiliency, or safety will be noted and discussed. The CGPP Report will provide accurate and actionable information to the Commission, market participants, policy makers, and other key stakeholders.

The report will describe: (i) the recommended LT&D system solutions[38] under each EPPAC scenario for which the Utilities seek Commission approval for development and funding; (ii) the risks and benefits of each generation build-out and project portfolio;[39] and (iii) the benefits of pursuing a bulk solution to Public Policy Transmission Needs for the Commission to consider pursuing in accordance with the NYISO planning process.

The report will also identify: (i) portions of the bulk system that limited cost-effective generation build-out in the capacity expansion model in CGPP Stage 1 or Stage 5; (ii) any bulk system limitations that the Utilities identified in the development and analysis of the power flow cases in Stage 2 and Stage 3; and (iii) any bulk system solutions that were identified in CGPP Stage 4 and selected in the Least Cost Planning Assessment in Stage 5.

Transmission solutions identified in the CGPP Report, and that are subsequently approved by the Commission, will be included in the NYISO planning processes in accordance with the NYISO Open Access Transmission Tariff. This includes, but is not limited to, inclusion of approved projects in Local Transmission Plan (LTP) updates and initiation of any necessary interconnection studies.

---

[38] The CGPP report will include a full portfolio of the LT&D infrastructure solutions that are required to enable the clean energy transition as envisioned by the EPPAC-approved scenarios. The portfolios will include distribution solutions required to accommodate the specified build-out of large-scale renewables and DER.

A subset of distribution solutions contained within the portfolios may be introduced in (and/or described in detail in) other utility reports. For example, a utility may describe such solutions in Distributed System Implementation Plan (DSIP) reports or filings made in the Cost Share 2.0 process. The CGPP project portfolios will include references to any detailed documentation of these solutions to facilitate review by the Commission and stakeholders.

For information on the Cost Share 2.0 process, refer to Case 20-E-0543, *Petition of Interconnection Policy Working Group Seeking a Cost-Sharing Amendment to the New York State Standardized Interconnection Requirements*, Order Approving Cost-Sharing Mechanism and Making Other Findings (July 16, 2021) (Cost Share 2.0 Order).

[39] In addition to other factors, this risk discussion may include an emphasis on needs related to timing for some or all projects (*i.e.*, an indication that projects must be approved in that cycle of CGPP to complete the necessary upgrades in time to support the development of renewable and emission free resources envisioned through the scenarios studied).

The final report will also identify the lessons learned from that cycle of the CGPP for consideration of process improvements in the next cycle.

XI. Conclusion

The Utilities request that the Commission approve this CGPP Proposal so that work on planning and developing the infrastructure needed to support the clean energy resources to meet the milestones stipulated in the CLCPA can begin without delay.

In addition, the Utilities request that the Commission:

- Approve the structure and purpose of the EPPAC to ensure stakeholder representation remains a strong and constructive component of the LT&D planning process.
- Provide DPS Staff authority to propose one or more PPTNs in CGPP Stage 1, as may be advised by the Utilities and/or EPPAC.
- Direct the Utilities to propose a process regarding timing for reliability/multi-purpose projects.
- Provide guidance concerning the recovery of reasonable costs that will be incurred throughout each iteration of the CGPP.[40]

The Utilities look forward to commencing the initial iteration of the CGPP following a Commission Order and to working with DPS Staff and other parties to implement measures that will accelerate achievement of New York's clean energy objectives.

[40] For instance, the Utilities expect to incur costs associated with external modeling support for capacity expansion modeling, etc.

Respectfully submitted,

CENTRAL HUDSON GAS & ELECTRIC CORPORATION

By: */s/ Paul A. Colbert*
Paul A. Colbert
Associate General Counsel - Regulatory Affairs Central Hudson Gas & Electric Corporation
284 South Avenue
Poughkeepsie, NY 12601
Email: pcolbert@cenhud.com

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. and ORANGE AND ROCKLAND UTILITIES, INC.

By: /s/ Susan J. LoFrumento
Susan J. LoFrumento
Associate Counsel
Consolidated Edison Company of New York, Inc.
4 Irving Place, Room 26-610
New York, N.Y. 10003
lofrumentos@coned.com

NEW YORK STATE ELECTRIC & GAS CORPORATION and ROCHESTER GAS AND ELECTRIC CORPORATION

By: */s/ Amy A. Davis*
Amy A. Davis
Senior Regulatory Counsel
89 East Avenue
Rochester, New York 14649
Email: amy.davis@avangrid.com

NIAGARA MOHAWK POWER CORPORATION d/b/a/ NATIONAL GRID

By: */s/ Carlos A. Gavilondo*
Carlos A. Gavilondo
Assistant General Counsel
300 Erie Boulevard West
Syracuse, New York 13202
Email: carlos.gavilondo@nationalgrid.com

LONG ISLAND POWER AUTHORITY

By: */s/ Lisa Zafonte*
Lisa Zafonte
Assistant General Counsel
Long Island Power Authority
333 Earle Ovington Boulevard, Suite 403
Uniondale, New York 11553
Email: lzafonte@lipower.org