

**STATE OF NEW YORK
PUBLIC SERVICE COMMISSION**

In the Matter of Assessing Implementation)
of and Compliance with the Requirements)
and Targets of the Climate Leadership)
and Community Protection Act)

Case 22-M-0149

PROPOSAL FOR GHG EMISSIONS REDUCTION PATHWAYS STUDY

On May 12, 2022, the New York Public Service Commission (PSC or Commission) issued an order on Implementation of the Climate Leadership and Community Protection Act directing the Joint Local Distribution Companies¹ (JLDCs) to develop a proposal for a GHG Emissions Reduction Pathways Study (Study Proposal) that analyzes the scale, timing, costs, risks, uncertainties, and customer bill impacts of achieving reductions in GHG emissions from the use of gas delivered by the JLDCs.² The Study Proposal is meant to help the Commission understand the investments, programs, and initiatives needed to reduce the GHG emissions associated with gas delivery systems in New York and prepare for the subsequent impacts to LDCs and their customers. Developing a consistent, statewide vision for decarbonization with individual LDC studies that reflect service territory characteristics necessitates that the JLDCs objectively assess risks, uncertainties, and barriers while constructively seeking solutions to achieving the CLCPA goals.

The JLDCs serve nearly 5 million retail natural gas customers³ in New York State and are committed to pursuing GHG emissions reductions consistent with the CLCPA, the Commission’s

¹ The JLDCs include Con Edison Company of New York, Inc. (Con Edison), Central Hudson Gas & Electric Corporation (Central Hudson), New York State Electric & Gas Corporation (NYSEG), The Brooklyn Union Gas Company d/b/a National Grid, Keyspan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), National Fuel Gas Distribution Corporation (National Fuel), Orange and Rockland Utilities, Inc. (O&R), and Rochester Gas and Electric Corporation (RG&E), Liberty Utilities (St. Lawrence Gas) Corp., and Corning Natural Gas Corporation.

² Case 22-M-0149, In the Matter of Assessing Implementation of and Compliance with the Requirements and Targets of the Climate Leadership and Community Protection Act (CLCPA Proceeding), Order on Implementation of the Climate Leadership and Community Protection Act, issued May 12, 2022 (Order).

³ S&P Capital IQ 2021 Results taken from 10-Ks. Note the customer count may not reflect counts of individual customers within multi-unit dwellings.

directives, and their underlying public-service obligation to provide safe and reliable service at a just and reasonable cost. Throughout the process, the JLDCs will rely on their unique experience and expertise as operators of the State’s energy systems to evaluate the safety, reliability, affordability, and customer impacts of potential ways to reduce GHG emissions. Further, the JLDCs expect the chosen consultant for the Pathways Study to transparently conduct an unbiased, scientific review of existing and emerging pathways, planning, and technical studies to inform selected assumptions, methodologies, ranges of uncertainties, and other aspects of the Pathways Study.

In accordance with the Order, the JLDCs hosted two virtual stakeholder meetings. The virtual format maximized stakeholder attendance by limiting barriers to participation. The first stakeholder scoping meeting occurred on Tuesday, February 28, 2023 and covered background information, the scope of the Study Proposal, and the overall timeline of activities.⁴ The second stakeholder scoping meeting occurred on Thursday, March 16, 2023 to review a comprehensive draft of the Study Proposal.⁵ Besides the JLDCs and Staff, more than 60 different organizations attended one or both stakeholder meetings. Participants were able to submit questions or comments via email in advance, during the meeting through a Q&A function or verbally, and via email after both meetings.

⁴ Tuesday, February 28: 114 individuals registered, and 95 individuals attended the meeting.

⁵ Thursday, March 16: 74 individuals registered, and 66 individuals attended the meeting.

The JLDCs, having consulted with Staff regarding the attached draft Study Proposal in accordance with the Order's requirement for Staff's approval of its underlying methodology and assumptions, hereby submit as directed the attached Study Proposal for public comment.

Dated: March 31, 2023

Respectfully submitted,

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I. Background

The Climate Leadership and Community Protection Act (CLCPA) is shaping the regulatory landscape and transform each sector of New York’s economy. On July 18th, 2019, the CLCPA was signed into law with statewide requirements to reduce greenhouse gas (GHG) emissions 40 percent by 2030 followed by an 85 percent reduction in GHG emissions coupled with net zero emissions by 2050, including 70% renewables in the electricity sector by 2030, 100% zero-emissions electricity by 2040, and allocation of benefits towards disadvantaged communities. The CLCPA established the Climate Action Council (CAC), a twenty-two-member council tasked with preparing and approving a Scoping Plan outlining the recommendations for attaining the statewide GHG emissions limits in accordance with the CLCPA. The CAC issued the final Scoping Plan¹ in December 2022. Those recommendations cover a comprehensive set of topical areas including a Gas System Transition Plan Framework for the strategic downsizing and decarbonization of the natural gas system.

On May 12, 2022, the State of New York Public Service Commission (Commission or PSC) ordered the Joint Local Distribution Companies (JLDCs)² of New York to develop a proposal for a GHG Emissions Reduction Pathways Study (Study Proposal) to help the Commission better understand the specific programs, initiatives, and investments needed to reduce the emissions associated with gas delivery systems in New York and prepare for the subsequent impacts to LDCs and their customers.³

The GHG Emissions Reduction Pathways Study and any related plans or JLDC actions will be undertaken in compliance with the State of New York Public Service Law and other applicable statutes, rules, regulations, and applicable Commission orders.

II. The JLDCs’ Approach

The JLDCs serve nearly 5 million retail natural gas customers⁴ in New York State and are committed to pursuing GHG emissions reductions consistent with the CLCPA, the Commission’s directives, and their underlying public-service obligation to provide safe and reliable service at a just and reasonable cost. As a part of this process, the JLDCs have identified the following driving considerations to guide the approach for the Study Proposal:

¹ Climate Action Council Scoping Plan – Full Report December 2022, available at <https://climate.ny.gov/resources/scoping-plan/>

² The JLDCs include Con Edison Company of New York, Inc. (Con Edison), Central Hudson Gas & Electric Corporation (Central Hudson), New York State Electric & Gas Corporation (NYSEG), The Brooklyn Union Gas Company d/b/a National Grid, Keyspan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), National Fuel Gas Distribution Corporation (National Fuel), Orange and Rockland Utilities, Inc. (O&R), and Rochester Gas and Electric Corporation (RG&E), Liberty Utilities (St. Lawrence Gas) Corp., and Corning Natural Gas Corporation.

³ Case 22-M-0149, *In the Matter of Assessing Implementation of and Compliance with the Requirements and Targets of the Climate Leadership and Community Protection Act* (CLCPA Proceeding), Order on Implementation of the Climate Leadership and Community Protection Act, issued May 12, 2022 (CLCPA Order).

⁴ S&P Capital IQ 2021 Results taken from 10-Ks. Note the customer count may not reflect counts of individual customers within multi-unit dwellings.

- Support an objective review that does not pre-determine results.
- Evaluate decarbonization alternatives, such as electrification, low carbon fuels, and the strategic downsizing and decarbonization of the gas system, on a cost basis.
- Consider new business models and associated regulatory frameworks or other initiatives and actions that can be implemented in the near term to contribute to the achievement of the CLCPA goals, with sufficient flexibility to adjust over time as technologies and experience evolve.
- Collaborate with stakeholders on decarbonization solutions.
- Objectively assess costs, risks, uncertainties, and barriers⁵ while constructively seeking solutions.
- Consider the needs of the customer to promote policies, funding, and/or other mechanisms to equitably achieve the goals of the CLCPA at a reasonable cost.
- Develop a consistent statewide vision for decarbonization; with individual LDC studies appropriately addressing regional concerns and reflecting service territory characteristics.

Throughout the process, the JLDCs will rely on their unique experience and expertise as operators of the State’s energy systems to evaluate the safety, reliability, affordability, and customer impacts of potential ways to reduce GHG emissions. Further, the JLDCs expect to draw from the significant amount of completed pathways planning work to support the Commission’s vision of a consistent statewide perspective.⁶

III. **Timeline and Expectations**

The Study Proposal will define the scope of the future pathways study. The CLCPA Order directs the JLDCs to file the Study Proposal on or before March 31, 2023, and requires public comment after the Study Proposal is filed. The JLDCs anticipate that the Commission will determine next steps regarding the Study Proposal after comments are filed.

It is important to recognize that the Study Proposal itself represents the beginning of a pathways study process and does not answer questions about specific methodologies or approaches that could be utilized in the pathways study. An overly prescriptive Study Proposal could inadvertently impede advancement of understandings related to key areas and/or creative solutions to leverage potential decarbonization benefits of existing and new technologies.

⁵ In this context, barriers mean the hurdles and challenges to the pursuit and achievement of the CLCPA targets as opposed to the Economics definition of barriers to entry.

⁶ Examples of the JLDC’s existing pathways planning work include: (1) Con Edison: *Long-Range Plan: A Comprehensive View of Our Gas System through 2050*; (2) National Grid: *KEDNY/KEDLI and NMPC CLCPA Studies*; (3) National Fuel: *Meeting the Challenge: Scenarios for Decarbonizing New York’s Economy*; (4) NYSEG RG&E: *Natural Gas and Grid Modernization Study*; (5) Orange & Rockland Utilities: *Long Range Plan*, and (6) CAC: *Final Scoping Plan*.

However, to provide further line of sight to future project phases, the Study Proposal includes sample topics that may be considered as part of the future pathways study.

IV. Study Proposal Objective and Scope

The JLDCs must develop a Study Proposal that analyzes the scale, timing, costs, risks, uncertainties, barriers, and customer bill impacts of achieving reductions in GHG emissions from gas delivery systems operated by LDCs. At least three distinct scenarios will be considered to capture an adequate range of electrification, expanded use of low carbon fuels, and the strategic downsizing and decarbonization of the gas system; one of which will assume a full electrification scenario.⁷ Consistent with the CLCPA Order,⁸ the analysis will result in:

- A coordinated LDC long-term gas sector decarbonization pathways analysis through 2050.
- Individual, long-term LDC (or regional) decarbonization pathways analyses to achieve each LDC's share⁹ of statewide decarbonization targets through 2050.
- A coordinated LDC near-term decarbonization plan to address actions needed to achieve New York's decarbonization targets through 2030.

Further, consistent with the CLCPA Order,¹⁰ each scenario will include the following items from a long-term, near-term, and individual LDC/regional perspective:

- An economic and technical assessment of the LDCs' proposed projects and programs needed to facilitate achievement of the CLCPA's statewide emissions limits, potential carbon dioxide equivalent reductions per year, Million British Thermal Units (MMBTU) reductions in billed annual usage, and the numbers of customers heating with gas in residential, commercial, and industrial classes per year.
- Identification of potential barriers to achieving the targeted GHG emissions reductions and recommended solutions.
- Consideration of how the LDCs can avoid disproportionately burdening disadvantaged communities and how the benefits of investments can be directed towards disadvantaged communities.
- Intended GHG reduction targets for natural gas sector emissions for key milestone years with consideration given to other statewide policy documents and plans and emissions that need to be reserved for other sectors.

⁷ CLCPA Proceeding, CLCPA Order, p. 26.

⁸ *Id.*

⁹ Each LDC's share will be consistent with facilitating achievement of the overall CLCPA targets and will address regional concerns and account for each LDC's service territory characteristics.

¹⁰ *Id.*

The Commission's CLCPA Order also recognizes that (a) energy efficiency, building electrification and demand response must play key roles in the achievement of CLCPA targets, (b) the use of alternative and low carbon fuels must be considered and (c) the Study Proposal should be aligned with the coordinated plan for the strategic downsizing and decarbonization of the gas system within the Gas System Transition Framework included at the end of Chapter 18 of the Scoping Plan.

V. **Anticipated Workstreams**

To accomplish the overall objective and required analysis scope, the Study Proposal anticipates five primary workstreams:

- (i) Pathways Definition and Technical Analysis: Definition and analysis of multiple decarbonization pathways, including a full electrification pathway as required by the Order, to facilitate achievement of the CLCPA's emission reduction goals for the natural gas LDCs and the associated inputs.
- (ii) Customer Outcomes and Journey: Investigate how different customer types may be impacted by the decarbonization of the natural gas system.
- (iii) Energy Systems Transition: Examine critical components of the gas system transition, including but not limited to optimization of the State's energy systems, technical and operational interrelationships with the full energy system, capital structure, regulatory oversight, supporting investments, sustainable business models, and workforce transition.
- (iv) Risks and Uncertainties Analysis: Analyze the key base assumptions in the various study pathways and complete an assessment of the associated risks and uncertainties.
- (v) Barriers and Potential Solutions: An assessment of customer behavior, legislative, regulatory, financial, and technological barriers to gauge the feasibility of the suite of solutions identified to facilitate the achievement of the CLCPA goals in the various study pathways.

A. Pathways Definition and Technical Analysis

Purpose

To meet the CLCPA Order's requirements¹¹ of having a statewide pathways analysis and LDC (or regional) specific pathways analyses, the approach, methodologies, and key assumptions of the coordinated statewide analysis will be used as the foundation for the bottom-up approach to the LDC (or regional) service territory modeling. The modeling and supporting methods will reflect differentiating regional characteristics (e.g., customer make-up and density, geographic dispersion, building types, industry make-up, income levels, usage levels for various energy/fuel

¹¹ *Id.*, pp. 25-27.

types, climate, etc.) for each LDC service territory. The resulting outputs for each LDC/region will be robust, including the required potential carbon dioxide equivalent reductions per year and MMBTU reductions in billed annual usage.

While the Study Proposal is centered on the GHG emissions reductions from the natural gas LDCs, the analysis framework must adequately capture the inextricable link between decarbonization and state energy consumption/usage (e.g., natural gas, electricity, thermal, propane, oil, etc.). This backdrop is necessary to adequately understand the timing and support needed for electrification initiatives, decarbonization of the natural gas delivery system, as well as to understand the full implications of customer fuel switching away from natural gas and other fuels to lower carbon alternatives. The future pathways study should rely on appropriate existing studies as part of its analysis, but should not be constrained or limited by these studies and should also incorporate appropriate new studies, resources, data, and analysis. The Study Proposal does not, at this point, presume how much new modeling of the broader energy economy will be required or how much existing modeling can be reused. This will only become clear after work on the pathways study commences. Regardless, the ultimate objective is utilization of consistent scenario definitions and inputs, where applicable, to both support a statewide perspective and reflect individual LDC service territory characteristics. Critical to this analysis will be consideration of issues related to safety, reliability, and resiliency of the State's energy systems as coordinated transformation pathways are developed.

The pathways definition and technical analysis will also consider the use of alternative fuels to meet customer needs for space heating or process use and to decarbonize the gas system as it transitions. An evaluation of the use of alternative fuels will include an analysis of how these fuels might contribute to achieving the CLCPA goals related to the decarbonization of the building sector.

Deliverables and expectations

- Identify the investments, programs, operational changes and policies, and initiatives LDCs will need to undertake to facilitate GHG emissions reductions consistent with the CLCPA goals.
- Chart potential carbon dioxide equivalent reductions per year and MMBTU reductions in billed annual usage.
- Evaluation of hybrid heating technologies generally and from a regional perspective, including GHG emissions reduction potential and impacts on reliability, resiliency, and affordability.
- A directional long-term view of the State's energy systems (e.g., peak demand, capacity needs, and incremental infrastructure required).
- Consideration of new technologies and of scalability of existing technologies.

- Results reflecting differentiating characteristics and pathways for LDC service territories including geographic dispersion, socioeconomic make-up, customer density, building typology, usage levels for various energy/fuel types, climate etc.
- Pathways designed to maintain energy system safety, reliability, and resiliency.
- Description of a bottom-up approach, including what factors differ between LDCs and how those factors will be captured in the analysis.
- Characterization of building stock and industrial uses.
- Characterization of low carbon fuels, including hydrogen and renewable natural gas.
- Model a range of GHG emissions accounting methodologies, including full lifecycle GREET¹² analysis, to evaluate emissions reduction potential from reporting and policy perspectives.
- Electric sector (generation and transportation) assumptions and implications for the natural gas sector – i.e., coordination and optimization of the State’s energy systems as the energy transformation unfolds.
 - o Implications for the timing and support needed of those transformations in the natural gas sector as well as to understand the full implications of customer fuel switching to lower carbon energy, where applicable.
 - o Evaluations of tradeoffs associated with avoided grid and local transmission and distribution buildout, and benefits of added resiliency, associated with use of a decarbonized gas delivery system.
- Consider the avoided costs inherent in the pathways analyses (e.g., avoided electricity and gas costs) and review sources of societal avoided costs (e.g., avoided emissions and health costs) in order to indicate the directional magnitude of the benefits relative to the estimated incremental costs needed to facilitate GHG emissions reductions consistent with the CLCPA goals.

Sample topics for future consideration

- Description of the methods and tools that will be used to produce LDC specific pathways.
- Identification of the suite of decarbonization solutions, level of adoption, and sequence of timing required to achieve GHG emissions reductions in identified pathways.
- How pathways will be informed by the JLDCs’ studies that have already been completed, the recommendations in the CAC Scoping Plan, the Commission Order, and appropriate third-party studies, resources and data.

¹² The Greenhouse gases, Regulated Emissions, and Energy use in Technologies, developed by the Argonne National Laboratory

- How the model will capture differentiating characteristics (e.g., customer make-up and density, geographic dispersion, building types, industry make-up, income levels, usage levels for various energy/fuel types, and climate) for each LDC service territory.
- Whether and how the pathways analysis will include the smallest gas LDCs in the state.

B. Customer Outcomes & Journey

Purpose

The analysis of customer impacts will include the annual gas bill impacts by major customer class for each LDC. It is important to note that bill impacts are expected to reflect changes in costs and billing units, effects of increasing electrification and strategic downsizing and decarbonization of the gas system, and recovery of LDC investments. The JLDCs will use a consistent framework and, to the extent possible/relevant, a set of consistent inputs from the pathways technical analyses to assess the impacts to customers. Each LDC will assess the impacts to its customer base in order to reflect the customer base and service territory characteristics. The modeling of bill impacts will use current costs as the reference point to be measured against to provide an encompassing perspective to customer bill impacts.

Beyond the traditional bill impacts, there is a need to understand deeper customer impacts. Therefore, a customer journey map for identified customer personas within each LDC or region will be developed to highlight the customer experience. The customer personas generally represent further subsets of the customer base who share similar demographics, needs, and behaviors, which will differentiate the implications for customer groups within the residential, commercial, and industrial customer classes. For instance, multifamily or single-family homes, owners or renters, small businesses, municipalities, office buildings, landlords, manufacturing facilities, and even a gas-fired electricity generator.

The CLCPA requires disadvantaged communities to receive at least 35 percent (with a goal of 40 percent) of overall benefits of spending on energy efficiency, clean energy, and other related investments expected because of the CLCPA. For each LDC pathway, the estimated necessary investments in electrification of end-uses, alternative fuels and related technologies, building efficiency upgrades, end-use efficiency upgrades, and other investments related to gas system decarbonization will be reported.

Deliverables and expectations

- Forecasted annual energy costs of each customer class (residential, commercial, and industrial) for each LDC as feasible, including:
 - o Cost projections for gas delivery (capital and O&M), supply, taxes & fees.
 - o Directional view of cost projections for electric delivery (capital and O&M), supply, taxes and fees.
 - o Upfront costs for customers (e.g., equipment, panel/service upgrade)
- The numbers of customers heating with gas for each major customer class per year.

- The MMBTU reductions in billed annual usage for each customer class for each LDC.
- Annual gas bill impacts for each customer class for each LDC service territory.
- Customer journeys for certain customer types to provide a richer understanding for how different customers will experience the energy transition.

Sample topics for future consideration

- Discussion of incremental costs that would be paid by or borne on behalf of customers for new HVAC and appliance equipment, and for building envelope improvements.
- Approaches and methodology to determine the annual gas bill impacts by major customer class for each utility using current costs as the reference point to be measured against.
- Approaches to develop customer journey maps and which customer types to consider for the analysis.
- Identifying the complexity of electrification for various building types and configurations and opportunities for the use of hybrid heating technologies and alternative fuels.
- How the analysis will consider prioritization and targeting of initiatives to support energy efficiency and hybrid heating solutions.
- Discussion of technical and financial assistance needed to support households in Disadvantaged Communities and low- and fixed-income households for energy efficiency, electrification upgrades, and hybrid heating initiatives.
- Discussion of options to prioritize GHG and co-pollutant reductions in Disadvantaged Communities.

C. Energy Systems Transition

Purpose

The energy systems transition analysis will examine critical components of the gas system environment, including but not limited to optimization of the State’s energy systems, technical and operational interrelationships with the full energy system, capital structure, regulatory oversight, supporting investments, sustainable business models, and workforce transition. The evaluation will reflect each LDCs’ regional and service territory characteristics. As noted in CLCPA Order, the Study Proposal should be aligned with the coordinated plan for the strategic downsizing and decarbonization of the gas system within the Gas System Transition Plan Framework included at the end of Chapter 18 of the Scoping Plan.

Deliverables and expectations

Consistent with the Gas System Transition Framework, the pathways study should evaluate and include the following Key Principles:

- Ensure the energy transition facilitates achievement of GHG emissions reduction targets.
- Reduce energy burdens and address energy affordability concerns.
- Prioritize continued and improved safety and reliability.
- Consider role of alternative fuels and technologies in future gas system planning, including the use of gas infrastructure.
- Ensure close coordination between gas and electric system transformation, including where different LDC service territories overlap between electric and gas services.
- Ensure a just transition for the gas industry workforce.
- Ensure equitable treatment of disadvantaged communities, including prioritization of emissions reductions, consideration of health impacts, and access to alternative heating options.
- Include a detailed timeline for transition.

Sample topics for future consideration

Consistent with the Gas System Transition Framework, the pathways study should evaluate and include the following Strategies:

- Include a review of the costs associated with greater electrification and adoption of alternative fuels for decarbonizing the gas system to evaluate the impact on overall affordability. These could include, but are not necessarily limited to a review of electric grid and related electric transmission and delivery system buildout costs; avoided costs of appliance electrification; gas system investments and appliance modifications to enable use of alternative fuels; fuel production costs; and costs at the homeowner/business level.
- Include an analysis on what technologies will be necessary to maintain the safety and reliability of the energy systems as the state transforms the gas system including, but not limited to, zero-emission dispatchable generation.
- Ensure both energy supply and demand are considered in parallel.
- Evaluate the use of alternatives such as district thermal energy systems, heat pumps and hybrid heating solutions, etc., as well as demand management and load reduction, for customer space heating and electricity needs to facilitate decarbonization and reduce current and future constraints on the electric grid.
- Include a clear path for the just transition of the gas industry workforce, including what the current workforce can expect as part of the transition and the opportunities associated with it and to mitigate negative workforce impacts.
- Leverage gas utility workers' and other workers reliant on the gas industry skillsets for the decarbonization and operation of the gas delivery system with alternative fuels, build

out and operation of district thermal energy systems, and for support of dual or hybrid heating pathways.

- Review the creation of new or modifications to existing statutory provisions or regulations needed to accomplish the decarbonization of the gas system and potential use of alternative fuels like renewable natural gas and green hydrogen.
- Identification of innovative uses of capital and alternative funding mechanisms, including federal funding, for building electrification, energy efficiency, decarbonization of the gas system, and workforce impacts analysis.
- Consideration of recovery of LDC investments in alignment with existing regulatory and legal constructs.

D. Risks & Uncertainties Analysis

Purpose

The intent of the risk and uncertainties analysis is to identify the key base assumptions in the various study pathways and complete an assessment of the associated risks and uncertainties. Both quantitative and qualitative analyses are expected, which will be accompanied by a description of the process used to identify and assess these factors. The analysis will include what technologies will be necessary to maintain the safety, reliability and resiliency of the energy systems as the state increases electrification and strategically downsizes and decarbonizes the gas system including, but not limited to, zero-emission dispatchable generation.

Deliverables and expectations

- Description of the process by which factors were identified and an assessment of the corresponding impacts of those factors.
- Define risk profiles for the potential pathways based on the ranges of outcomes and underlying uncertainties.
- Compare the risks and uncertainties between the LDCs based on the differentiating characteristics.
- Description of which risks could interfere with the Commission's core responsibility of ensuring safe, adequate, and affordable energy service.

Sample topics for future consideration

- Which risks and uncertainties have been adequately explored in existing studies, and which risks and uncertainties need to be explored further or added.

E. Barriers & Potential Solutions

Purpose

A comprehensive approach will be employed to assess customer behavior, legislative, regulatory, financial, and technological barriers to gauge the feasibility of the suite of solutions identified to meet CLCPA goals and continue to provide safe and reliable service in the various study pathways. Where possible, potential solutions for the barriers will also be identified and the barriers and solutions will be assessed according to the relative urgency and impact.

Deliverables and expectations

- A list of barriers that may impact the feasibility of achieving the GHG emission reduction targets along with potential solutions.
- Assessment of barriers and solutions according to relative urgency and impact.

Sample topics for consideration

- Discussion of how the recommended solutions will be grounded in practicality for LDCs and New York.
- Discussion of how to identify interdependent or overlapping barriers and recommended solutions.
- Potential timelines for solution implementation.
- Concern that investments in building decarbonization may increase the rental cost of housing, particularly for low-income customers and Disadvantaged Communities.
- Assessment of legislative and regulatory barriers to alternative fuel development and analysis of potential solutions.

VI. **Soliciting Stakeholder Feedback**

New York's decarbonization goals have far reaching implications for how residents' relationship with energy will change. In implementing the CLCPA, additional policies will need to be changed and diverse stakeholders need to be part of the process. Therefore, future opportunities for additional stakeholder feedback are expected. The form and frequency of future stakeholder feedback will be defined based on the ultimate scope and timeline of a future pathways study.