STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 23-G-0437 - In the Matter of a Review of the Long-Term Gas System Plan of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation.

ORDER REGARDING LONG-TERM NATURAL GAS PLAN AND DIRECTING FURTHER ACTIONS

Issued and Effective: January 23, 2025

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STATE OF NEW YORK
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At a session of the Public Service Commission held in the City of Albany on January 23, 2025

COMMISSIONERS PRESENT:

Rory M. Christian, Chair
James S. Alesi
David J. Valesky
John B. Maggiore
Uchenna S. Bright
Denise M. Sheehan
Radina R. Valova

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BY THE COMMISSION:

INTRODUCTION

In our Order Adopting the Gas System Planning Process we required each gas local distribution company (LDC or utility) to file a long-term plan for its gas system for consideration through a stakeholder process.[1] New York State Electric & Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RGE) (collectively, the Companies) have engaged with Department of Public Service staff (Staff), a consultant, and stakeholders regarding their proposed long-term plan through technical

[1] Case 20-G-0131, Proceeding on Motion of the Commission in Regard to Gas Planning Procedures, Order Adopting Gas System Planning Process (issued May 12, 2022) (Planning Order).

conferences and comments on the Companies' initial long-term plan (Initial LTP), revised long-term plan (Revised LTP) and final long-term plan (Final LTP or LTP). The consultant, Charles River Associates (CRA), assisted Staff in reviewing the Companies' three iterations of their long-term plan and provided three reports regarding the Companies' plans and stakeholders' feedback.

Ultimately, the Companies' Final LTP has positive aspects and areas where it can be improved. By this Order, the Commission directs the Companies to take a number of actions, including filing proposals for demand response programs and identifying segments of their distribution systems that are potential targets for decommissioning. Directing these further actions will improve the Companies' Final LTP. These actions reflect the analysis performed by CRA and Staff, as well as the significant stakeholder feedback. The actions directed in this Order take important steps in the process of decarbonizing the Companies' systems and toward achieving the greenhouse gas (GHG) emission reduction targets established in the Climate Leadership and Community Protection Act (CLCPA).

BACKGROUND

Gas Planning Process

In the Planning Order, the Commission adopted a modernized long-term natural gas planning procedure to ensure that the State, customers, stakeholders, and all other interested entities have the opportunity to understand and engage in the discussion regarding the future of natural gas service and infrastructure in the State. Furthermore, the gas system planning process is intended to "ensure that the Commission has the necessary information to consider the [local distribution companies'] long-term plans and alternative

solutions to ensure that New York's residents can continue to have safe, adequate, and reliable gas service as we transition to alternative energy sources to reduce GHG emissions" and that the process would be transparent with significant stakeholder participation.[2] National Fuel Gas Distribution Corporation (NFG) was the first local distribution company (LDC) to file its long-term plan, and we considered that plan in December 2023.[3] We also considered the long-term plan filing of Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc. (Con Edison/O&R) in September 2024.[4] This proceeding regarding NYSEG and RGE's LTP began with the Companies conducting an informational session on September 13, 2023, and continued with several rounds of comments and multiple technical conferences to ensure ample opportunity for stakeholder participation.

The Planning Order requires major LDCs to file long-term gas system plans that include a 20-year horizon, including annual and peak day load and any peak hour considerations. The Commission also directed LDCs to include adjustments to demand forecast scenarios that incorporate energy efficiency, electrification, demand response, non-pipes alternatives (NPAs), and other external impacts.[5]

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[2] Planning Order, pp. 17-18.

[3] Case 22-G-0610, In the Matter of a Review of the Long-Term Gas System Plan of National Fuel Gas Distribution Corporation, Order Implementing Long-Term Natural Gas Plan with Modifications (issued December 14, 2023).

[4] Case 23-G-0147, In the Matter of a Review of the Long-Term Gas System Plans of Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc., Order Regarding Long-Term Natural Gas Plan and Requiring Further Actions (issued September 20, 2024) (Con Edison/O&R LTP Order).

[5] Planning Order, p. 29.

The Commission directed that Staff engage a consultant to work at the direction of Staff and to participate in stakeholder meetings, make requests of the LDCs and stakeholders participating in the long-term planning process, help evaluate the economic and environmental tradeoffs associated with different pathways, and work with the LDC to run a reasonable number of versions of the hydraulic modeling.[6] For this proceeding, Staff engaged CRA.

NYSEG and RGE filed their Initial LTP on October 2, 2023. CRA filed its Initial Report on November 22, 2023, followed by stakeholders filing comments on the Initial LTP. The Companies filed their Revised LTP on February 20, 2024, followed by CRA's Preliminary Findings Report on March 15, 2024. Written comments on the Revised LTP were filed by March 29, 2024. Staff convened several technical conferences, as required by the Planning Order, at which attendees discussed and attempted to reconcile differences between the Companies and the stakeholders regarding the Revised LTP, and addressed other issues related to the Companies' long-term plan. NYSEG and RGE filed their Final LTP on April 26, 2024, and CRA submitted its Final Report on May 21, 2024. Two rounds of comments addressing the Final LTP followed the filing of the two reports, which included stakeholders filing comments and reply comments, including the Companies filing reply comments. See Appendix A for a summary and timing of the key events in this proceeding.

Climate Leadership and Community Protection Act

The CLCPA established nation-leading climate and energy goals in the form of GHG emissions reduction targets and standards to ensure that clean energy and energy efficiency programmatic investments benefit disadvantaged communities in

[6] Planning Order, pp. 26-27.

the State that have been disproportionately impacted by climate change. The CLCPA also requires state entities to prioritize GHG and co-pollutant emissions within disadvantaged communities and ensure that administrative approvals or decisions do not disproportionately burden disadvantaged communities. In addition to the statewide targets to reduce GHG emissions by at least 40 percent from 1990 levels by 2030, and by at least 85 percent from 1990 levels by 2050, the CLCPA established specific electric sector targets.[7] Although the CLCPA did not include specific targets for gas utilities, attainment of the CLCPA's targets will require reductions in the use of fossil fuels, including natural gas. To that end, the Commission directed the gas utilities to work with Staff to develop a proposal regarding the content of a GHG Emissions Inventory Report that includes an inventory of total gas system-wide emissions, following the methodology required in the CLCPA and by the New York State Department of Environmental Conservation (DEC) to calculate their system emissions.[8] The gas utilities jointly filed a Proposal for an Annual Greenhouse Gas Emissions Inventory Report on December 1, 2022.[9] After further consultation with Staff, the Joint Utilities supplemented that proposal on May 31, 2023.[10] Public comments were filed on the Joint Utilities' proposal on

[7] Chapter 106 of the Laws of 2019.

[8] 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, Order on Implementation of the Climate Leadership and Community Protection Act (issued May 12, 2022), p. 15.

[9] Case 22-M-0149, supra, Joint Utilities Annual Greenhouse Gas Emissions Inventory Report Proposal (filed December 1, 2022).

[10] Case 22-M-0149, supra, Joint Utilities Proposal for Greenhouse Gas Emissions Reductions Pathway Study (filed May 31, 2023).

September 5, 2023, and the gas utilities filed a joint response to those comments on September 28, 2023.[11]

Among the CLCPA's provisions, CLCPA §7(2) requires that the Commission consider whether its decisions are inconsistent with or will interfere with the attainment of the statewide GHG emission limits established in Environmental Conservation Law (ECL) Article 75. Additionally, CLCPA §7(3) requires that the Commission ensure that its decisions do not disproportionately burden disadvantaged communities and requires that the Commission prioritize reductions of GHG emissions and co-pollutants in disadvantaged communities.

The Commission determined that approval of the Planning Order complied with CLCPA §§7(2) and (3).[12] The Commission further stated that the Planning Order established a foundational process through which it can ensure that the LDCs reduce GHG emissions and that the new planning process would ensure that the Commission, Staff, and stakeholders have the necessary information to evaluate the potential emissions of alternatives. The Commission also stated that the new planning process would allow it to assess the potential impacts of LDCs' long-term plans on disadvantaged communities.

Long-Term Plan Description

The Companies state that the overall objectives of their LTP include: ensuring that residents can continue to meet their energy needs; providing a foundation to reduce GHG emissions; planning consistent with the objectives of the CLCPA; providing information to promote effective customer planning with avoidance of inequities; providing information to the Commission and other government entities to reduce costs and

[11] Case 22-M-0149, supra, Joint Utilities' Response to Comments (filed September 28, 2023).

[12] Planning Order, p. 57.

emissions and minimize impacts on economic development; and improving the ability of the Commission, Staff, and stakeholders to examine long-term plans.

Disadvantaged communities make up 38 percent of RGE's service territory and 26 percent of NYSEG's, and the Companies state they also have low- and moderate-income customers residing outside of disadvantaged communities. The Companies state that, in 2023, NYSEG spent almost $11 million and RGE spent almost $9 million on "Disadvantaged Communities/Low-Income Funding."[13] The Companies state they have also proposed three new energy efficiency programs focused on disadvantaged communities in their recent energy efficiency portfolio proposal.[14]

NYSEG's service territory comprises several non-contiguous communities that span the State from Orange County in the Hudson Valley up to the Canadian border, whereas RGE's is centered on the Rochester area. The Companies state that the design day weather on which they base their peak day load forecasts uses the coldest weather experienced historically at several weather stations throughout the State and dates back to February 1979. The Companies add that the impacts from climate change are expected to be significant in the communities they serve and, given the potential for increased winter storm intensity, changing their planning criteria to reflect a less conservative design day could put reliability at risk. The Companies plan for 71 heating degree days (HDDs) on design day

[13] Case 18-M-0084, In the Matter of a Comprehensive Energy Efficiency Initiative, NYSEG & RGE DAC Reporting Data Collection EE BE EV EAP Redacted (filed January 26, 2024); Case 18-M-0084, supra, NYSEG & RGE DPS NYSERDA Climate Act DAC Reporting Data Collection EE BE EV EAP EV Redacted (filed April 16, 2024).

[14] Case 18-M-0084, supra, Energy Efficiency Portfolio Proposal 2026-2030 (filed January 16, 2024).

in Brewster and Goshen, 74 HDDs in Lockport, 75 HDDs in Binghamton/Olean and Rochester, and 85 HDDs in Lowville and Plattsburgh.

The Companies state that NYSEG has roughly 272,000 customers and RGE has roughly 323,000. The majority of both LDCs' customers are residential, with NYSEG having roughly 11 percent non-residential customers and RGE having roughly seven percent non-residential customers. Non-residential customers represent about 59 percent of gas demand for NYSEG and 46 percent of gas demand for RGE. The industry in the service territories is comprised of food and kindred products, with chemicals, construction materials, glass manufacturing, paper mills, and health and pharmaceutical products also well represented. The Companies add that "several cities located within the Companies' service territories have experienced lower rates of job growth over the past five years compared to the State average."[15]

Regarding demand side management and energy efficiency programs, the Companies offer residential rebate programs for highly efficient gas equipment (which will be discontinued after 2025), a website to facilitate the purchase of products like smart thermostats and water-saving products, a behavioral energy efficiency program, and a multi-family program that provides direct-install measures. The Companies state they also support programs like New York State Energy Research and Development Authority's (NYSERDA) EmPower program and the statewide Affordable Multifamily Energy Efficiency Program.[16] The Companies offer non-residential customers two rebate programs,

[15] Final LTP, p. 25.

[16] Final LTP, p. 21.

one prescriptive and one custom, and state that they are launching three new non-residential programs in 2024.

The Companies state that, pursuant to the Commission's order in Case 18-M-0084,[17] they filed an energy efficiency portfolio proposal for 2026 through 2030 that will offer a home insulation and air-sealing program for market-rate residential and multifamily customers, a retail products residential program and a proactive customer education program for builders of newly constructed homes.[18] The Companies also state they are planning a residential "bring your own thermostat" demand response program anticipated to begin in 2025.

The Companies state that the likelihood of cold weather across their service territories affect their gas planning, with "some areas typically experiencing one to two weeks per year with average daily temperatures at or below 10 degrees."[19]

Although the Companies filed a joint LTP, NYSEG and RGE maintain separate portfolios of gas supply, transportation, storage, and peaking assets. NYSEG relies on compressed natural gas for peaking supplies and RGE relies on winter delivered citygate peaking contracts. The Companies state that they will begin decreasing firm capacity contracts "when meaningful reductions in demand have been observed," but that contract restructuring will depend on where demand is reduced and the timing of contract renewal dates.[20] The Companies provided a table listing their vulnerable locations, or "a portion of the

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[17] Case 18-M-0084, supra, Order Directing Energy Efficiency and Building Electrification Proposals (issued July 20, 2023).

[18] Case 18-M-0084, supra, Energy Efficiency Portfolio Proposal (filed January 16, 2024).

[19] Final LTP, p. 24.

[20] Final LTP, p. 28.

system where gas may not be able to be delivered safely and reliably within the next five years."[21] These areas include Lansing, Canandaigua, Goshen, and some other communities across the service territory of NYSEG, as well as a few communities in the RGE service territory. NYSEG has an ongoing moratorium on new or increased gas service in Lansing. NYSEG pursued a portfolio of non-pipes alternatives (NPAs) in lieu of a traditional infrastructure project that lacked support from the affected community. The NPA portfolio has allowed NYSEG to continue to provide reliable gas service to customers in the community but does not provide capacity for incremental gas load.

The Companies state they proactively replace at-risk infrastructure. Each Company planned to replace 30 miles of leak prone main in 2023, 27 miles in 2024, and 24 miles in 2025.[22] The Companies add that they screen all leak prone pipe (LPP) projects for NPA applicability, and that RGE recently completed an NPA, which allowed it to retire a segment of LPP rather than replacing it. RGE fully electrified three homes in Irondequoit, New York, retiring 119 feet of LPP and reducing design day gas demand. The Companies add that full customer participation is a significant hurdle for electrification NPAs. The Companies provided and compared the following scenarios in their Final LTP, each of which are discussed below: Reference Case, CLCPA scenarios, Delayed Achievement Scenarios, CRA/Stakeholder Driven scenarios, and Companies' LTP scenario.

1. Reference Case

The Companies describe their Reference Case as their baseline, using business-as-usual assumptions, and which does

[21] Final LTP, p. 29.

[22] Cases 22-E-0317 et al., NYSEG and RGE – Rates, Order Adopting Joint Proposal (issued October 12, 2023), pp. 64-65.

not include "the impact of CLCPA actions that have not yet been planned or implemented."[23] They add that the Reference Case assumes no growth in residential and commercial customer counts starting in 2026 and no growth in municipal and industrial customer counts starting in 2029. The demand forecast reflects the cessation of energy efficiency rebate programs starting in 2026 and "a reduced energy efficiency adjustment after 2025."[24]

NYSEG projects capital expenditures to decrease from about $110 million in 2024 to about $90 million in 2026, and then slightly increase every year through the 20-year planning period. RGE projects a slight increase in capital expenditures in 2025 from the 2024 level of about $72 million, then a slight decrease in 2026, and then slight increases every year throughout the planning period. The Companies state that GHG emissions decreased about 11 percent from 1990 to 2024 for RGE and nine percent for NYSEG. Over the 20-year planning period in the Reference Case, the Companies project further GHG emission reductions of about eight percent for NYSEG and one percent for RGE.[25]

The Companies identified several decarbonization actions that were modeled in their planning process, including weatherization, electrification, industrial customer programs, utility thermal energy networks, renewable natural gas (RNG), and green hydrogen.[26]

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[23] Final LTP, p. 40.

[24] Final LTP, p. 41.

[25] Final LTP, pp. 32-33.

[26] The Companies define green hydrogen as being produced by "splitting water into its hydrogen and oxygen elements using electrolysis that is powered by renewable energy sources (e.g., wind and solar energy)." Final LTP, p. 65.

2. CLCPA Scenarios

The CLCPA Scenarios reflect more aggressive implementation of each decarbonization action compared to the Delayed Achievement Scenarios, which are discussed below. There are two CLCPA Scenarios – one that features full electrification of furnaces and boilers through cold climate air source heat pumps (ccASHPs) and the other that includes "hybrid heating," which features customers with furnaces and boilers installing heating systems that rely on ccASHPs above a threshold temperature and gas heating below that threshold. The Companies state these scenarios reduce GHG emissions by 65 percent by 2043. The Companies add that these scenarios assume that the national, regional, and local economy can deliver the labor, technologies, customer equipment, and infrastructure necessary to enable the targets specified in the CLCPA.

3. Delayed Achievement Scenarios

The Companies state these scenarios reduce GHG emissions 50 percent by 2043. The Companies provided two scenarios consistent with their CLCPA scenarios, a full electrification scenario and a hybrid heating scenario. These scenarios assume delays in achieving the CLCPA emissions reduction goals due to issues such as delayed market development and reduced customer participation.

4. CRA/Stakeholder Driven Scenarios

CRA and stakeholders collaborated to specify six scenarios, all of which are "energy efficiency and electrification-only" and exclude RNG, hydrogen and industrial carbon capture.[27]

[27] Final LTP, p. 71. See page 74 for a table comparing the assumptions underlying each of the six CRA/Stakeholder Scenarios.

5. Companies' LTP Scenario

The Companies selected their preferred scenario to develop the LTP, which varies from the scenarios described above. In its LTP, the Companies assessed three key metrics: reductions in GHG emissions; NYSEG and RGE gas bill impacts; and decarbonization policy costs. The latter are "costs incurred as a result of the Companies' decarbonization actions but subject to recovery that will be determined by policy makers."[28] These expenses include the cost incurred by a customer to purchase and install new electric equipment, minus the replacement cost of retired gas equipment, minus gas cost savings, plus electricity bill increases. The increased electricity costs include expenditures to maintain network reliability and resilience and fund ongoing CLCPA-related programs, among others, but the Companies state data from future electric planning studies may increase these costs.

The LTP incorporates these assumptions:

1. Weatherization – Participation rates of one percent of residential customers in 2027 and annual participation increases of 0.25 percent with cumulative participation of 51 percent through Year 20; Commercial participation of 8.5 percent by Year 20; Municipal customers achieve a cumulative 17 percent load reduction by Year 20.
2. Building Electrification – accommodate customer preference through maintenance of gas heat for use on cold days, with the initial focus on converting customers with furnaces but not boiler-based heating systems, peak annual conversions of 75 percent of residential customers that experience equipment failures, 30 percent of commercial customers with equipment failures and 50 percent of municipal customers with equipment failures.
3. Industrial Customer Programs –improve energy efficiency of process load, electrify heating load, and deploy carbon capture for large customers.

[28] Final LTP, p. 76.

4. Utility Thermal Energy Network Projects – one project every other year starting in 2035 with 24 residential buildings and eight non-residential buildings.
5. RNG – both Companies can access the RNG produced in their service territory plus two percent of the RNG produced in Pennsylvania and Ohio.
6. Green Hydrogen – pursue blending at a level of 1.25 percent in 2028 increasing by 1.25 percent each year and achieving a blend of 20 percent by volume in 2043.

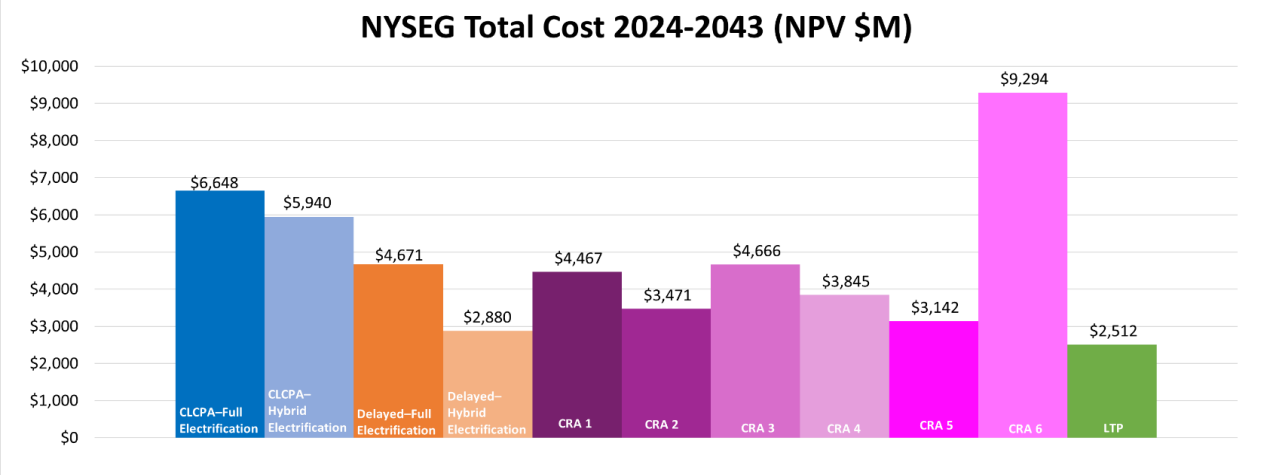
The LTP is projected to reduce emissions by 55 percent for NYSEG and 50 percent for RGE by 2043 compared to 1990 levels. Regarding the benefit-cost analysis (BCA), the Companies calculate a ratio of 0.42 for NYSEG and 0.38 for RGE for the LTP Scenario. Regarding benefits to disadvantaged communities, the Companies refer to reports they have filed to support metrics such as funding related to disadvantaged communities, but do not provide any citations. They also refer to an enterprise-wide Just Transition framework being developed by Avangrid, the parent company of the Companies, that will apply across the entirety of Avangrid, including the Companies and their affiliates in other states. The Companies performed a sensitivity analysis, increasing and decreasing one assumption at a time while keeping all others the same, including impacts from increased gas and electric prices. As a result, the Companies state that as electric prices or heat pump costs increase, LTP total costs increase, but an increase in the cost of natural gas supply decreases the total cost of the LTP.

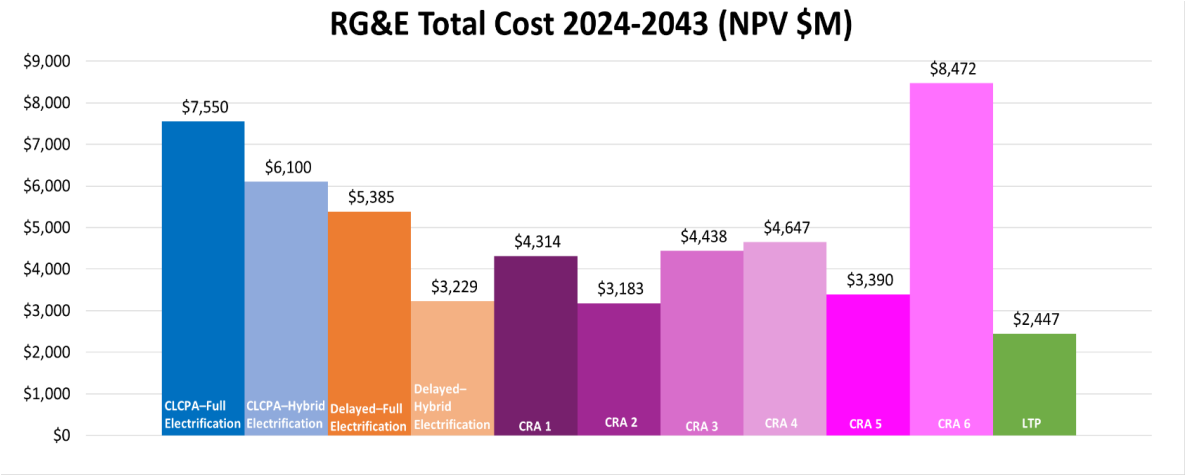
The Companies conclude the filing with a list of implementation actions, including the decarbonization measures listed above, NPAs, monitoring of customer adoption of decarbonization and the State's proposed Cap and Invest

program,[29] continuation of their residential methane detector program, and investments in gas system safety.

6. Comparisons of Scenarios

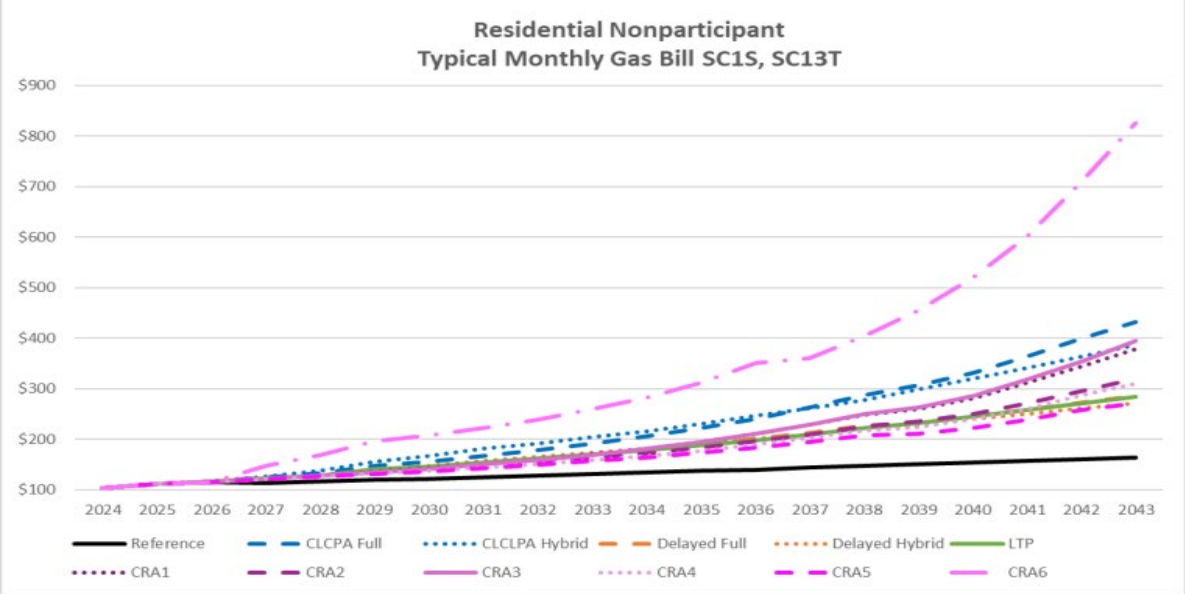
The total costs for all scenarios are presented below for NYSEG and RGE separately:

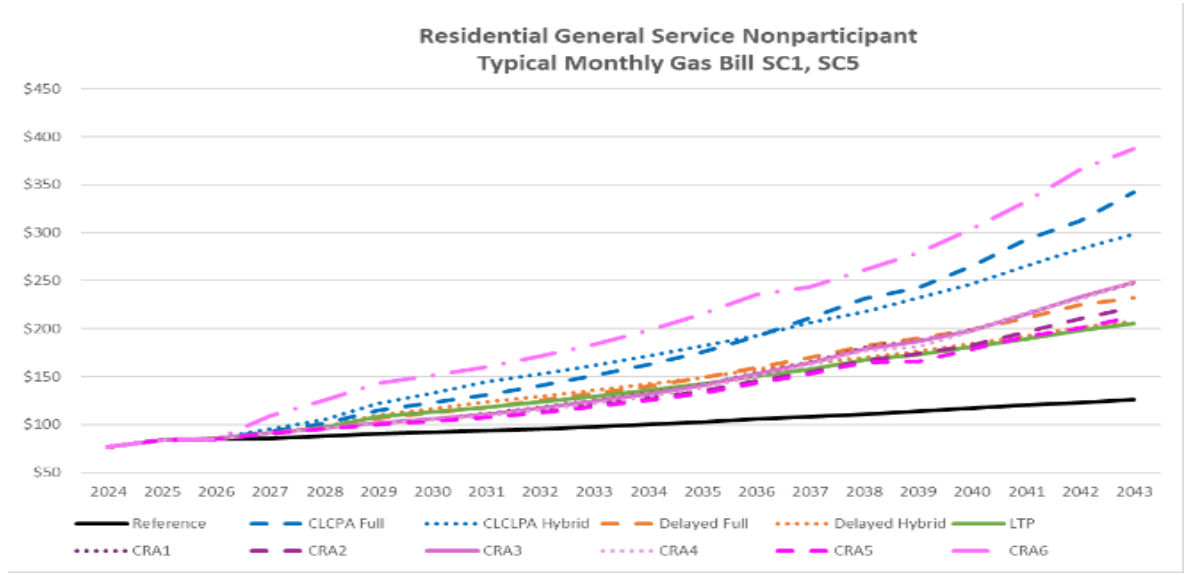




The following graphs compare bill impacts, first for NYSEG and then for RGE, for residential non-participant customers:

[29] See https://capandinvest.ny.gov/





Consultant Reports

CRA filed its Initial Report on November 22, 2023, its Preliminary Findings Report on March 15, 2024, and its Final Report on May 21, 2024. CRA's Final Report incorporates its findings from the two previous reports as well as significant input from stakeholders.

CRA points out that the Companies identified "Customer Choice" as a guiding principle in their LTP and the Companies stated that mandates restricting choice "are likely to be met

with customer opposition which will impact end-use equipment and energy decisions in the future."[30] CRA recommends that the Companies address this issue more directly to understand its impact on various decarbonization measures.

CRA summarized some of the key results of the Reference Case, the Scenarios, and the Revised LTP for each company as follows:

Scenario	**2030 Emissions Reductions (percent below 1990)**	**2043 GHG Emissions Reductions (percent below 1990)**	**2043 Affordability (Typical residential gas bills - $ per month)**
NYSEG			
Long-Term Plan	-24 percent	-55 percent	$284
CLCPA Full-Electrification Scenario	-25 percent	-65 percent	$433
CLCPA Hybrid Scenario	-26 percent	-65 percent	$386
Delayed Full-Electrification	-21 percent	-50 percent	$287
Delayed Hybrid	-22 percent	-50 percent	$272
RGE			
Long-Term Plan	-24 percent	-50 percent	$205
CLCPA Full-Electrification	-25 percent	-65 percent	$342
CLCPA Hybrid Scenario	-28 percent	-65 percent	$299
Delayed Full-Electrification	-21 percent	-50 percent	$232
Delayed Hybrid	-24 percent	-50 percent	$208

[30] CRA Final Report, p. 17.

Regarding reliability, CRA points out that both Companies have transmission pipelines with established maximum allowable operating pressures (MAOP) that are subject to the final rule of the Pipeline and Hazardous Materials Safety Administration (PHMSA).[31] CRA echoes NYSERDA's comment that the Companies have not developed a suitable and cost-effective method for reconfirming the MAOP of these pipelines, and notes that the Companies will need to develop a spending forecast for this activity. CRA recommends that the Companies develop a comprehensive compliance plan that identifies and justifies the reconfirmation methods to be used, providing detail at the segment and project level for each impacted year of the LTP, and update this information in each Annual Update and next LTP submission.

CRA notes that the Companies' service territories are geographically dispersed and therefore subject to the use of different levels of heating degree days for design day planning. CRA states that the Companies indicate they will increase the design day heating degree days if a new colder peak day occurs, but do not plan to lower the number of heating degree days on design day. CRA continues that the Companies are forecasting annual growth rates of natural gas demand of -0.68 percent for NYSEG and -0.33 percent for RGE over the planning period. CRA further states that the planning methodology used by the Companies is consistent with the approaches used by other LDCs to meet design day demand, but also states that the methodology the Companies used to forecast design day demand, including the calculation of use per customer and how it changes over time,

[31] 2011 federal Pipeline Safety Act, changes incorporated into 49 CFR Parts 190-199. See https://www.phmsa.dot.gov/rulemaking-implementation/rin-1/safety-gas-transmission-pipelines-rule-fact-sheet-maop-reconfirmation-expansion-of-assessment-requirements-and-other-related-amendments-RIN1-objectives.

should be reviewed and revised to incorporate updated information. CRA opines that consideration of long-term climate change patterns is appropriate in developing design winter planning criteria and design day standards. Accordingly, CRA recommends that the Companies investigate the impact of incorporating temperature trends and discuss tradeoffs of doing so as part of the ongoing LTP process and inform stakeholders of the implications and tradeoffs. This assessment should include the review of the New York State Climate Impact Assessment.[32] CRA also states that the Companies should update their design and normal degree day calculations to incorporate recent data on customer usage and usage per degree day including the effects of increased energy efficiency in LTP updates.

CRA discusses the pooling areas used by the Companies for supply planning based on the pipelines serving each area and notes that NYSEG relies on compressed natural gas for peaking supplies. CRA adds that NYSEG has three active RNG facilities directly connected to its distribution system at the time CRA filed its report, with two more under construction and four additional RNG projects in various stages of development. NYSEG purchases Local production, landfill gas, and RNG volumes on an interruptible basis and does not rely upon such volumes to meet design day requirements, according to CRA. CRA states that both Companies rely on delivered peaking services to supplement their supply and capacity portfolios and are expected to have sufficient resources to meet the Reference Case design day demand over the planning period. CRA states that interruptible customers are a form of demand response because they reduce usage when requested. However, CRA determined that the

[32] Goff, Amarakoon, and Curtis, New York State Climate Impact Assessment: Chapter 2, January 9, 2024. Available at https://nysclimateimpacts.org/.

Companies incorporate an operating reserve margin as part of their design day planning, which is calculated by dividing an area's firm requirements into contracted firm deliverability.

The Companies provided information that indicates they use five percent and two percent as guidelines for reserve margins for all operating areas. CRA states that LDCs do not generally incorporate a reserve margin in addition to use of a design day standard. CRA calculates that for the NYSEG Reference Case, the difference between firm peak day capacity and design day demand increases from 9.45 percent in 2024 to 20.51 percent in 2043, although it decreases to 6.38 percent in 2043 under the LTP Scenario because the Companies reduce fixed pipeline and storage costs as design day demand decreases. For RGE, the difference between firm peak day capacity and design day demand increases from 3.51 percent in 2024 to 4.82 percent in 2043.

CRA states that the Companies indicate changes in decarbonization policies or markets may cause sustained peak day demand reductions and they would then restructure their supply portfolios; in the meantime, they must maintain safe and reliable service. CRA recommends that the Companies perform a study to justify the current levels of reserve margin. CRA also recommends that the Companies review their current capacity portfolios and evaluate alternative approaches to meet the needs of the LTP. Further, CRA recommends the Companies file a report that includes metrics regarding cost reduction benefits achieved by capacity release transactions and asset management agreements to provide stakeholders information on tradeoffs the Companies considered in evaluation of portfolio options and provide weighted performance criteria for delivered service contracts. Regarding forecasts of pipeline and storage capacity costs, CRA recommends the Companies adjust these to reflect declining

design day demand and potential increased rates charged by pipelines and recommends use of the average annual percentage change experienced in the prior 10-year period to adjust the forecasted annual fixed costs.

CRA states that the Companies evaluate all gas capital infrastructure by conducting a screening process to determine if a project can be replaced with a NPA, including projects covering load growth, main or service replacements and replacement of LPP. In response to a data request from CRA, the Companies state that in 2022-2023 they evaluated 474 projects and deemed 26 to be feasible for further evaluation. CRA points to the Companies' experience with NPAs in Lansing, where a moratorium on new gas customer attachments remains in place. The portfolio of NPA projects pursued by NYSEG has maintained reliability in Lansing and featured significant grassroots community participation.[33] RG&E is also pursuing an NPA solution for its Southeast Phase 1 & 3 project according to CRA. CRA also points to the Companies' Whole Home Electrification Program and its application in RGE's service area in Irondequoit where RGE decommissioned 119 feet of leak prone main.

CRA recommends that the Companies report on the areas they are targeting under the Whole Home Electrification Program and how they can incorporate this program into their long-term planning process. CRA also recommends that the Companies include information on the evaluations conducted and metrics used to identify vulnerable locations (where future moratoria may be necessary) where NPAs could be deployed in their Annual Updates and future long-term plan filings. CRA suggests that

[33] Case 17-G-0432, Petition of New York State Electric & Gas Corporation for Authorization to Construct a Natural Gas Compressor Pilot Project in Tompkins County, NY, Order Approving Petition for Non-Pipe Alternative Projects, with Modifications (issued June 21, 2021).

the Companies should proactively conduct community outreach and education with stakeholders interested in working on NPA solutions. CRA further recommends that the Companies provide specific quantifiable thresholds for their criteria for identifying vulnerable areas including the reliability metrics utilized.

CRA recognizes that Fossil Free Tompkins presented a document in a technical conference in this proceeding that outlined some key considerations for strategic decommissioning of parts of the Companies' natural gas distribution system, featuring annual GHG reduction targets, coordinated gas and electric planning and other elements. CRA notes that NYSERDA points out that 75 percent of NYSEG customers and 85 percent of RGE customers live in areas where the respective utility has overlapping gas and electric service territories and that the Companies should coordinate further between their gas and electric operations. CRA points out that the Companies will complete their LPP replacement program in the coming years, yet the Companies do not expect capital expenditures to decrease at any point in the planning period. Although the Companies state that they anticipate their LPP replacement program will continue, despite evidence that it is concluding, CRA questions the need to continue the LPP replacement program beyond its planned completion. CRA continues that the Companies have not provided sufficient information to support the current capital expenditure forecast, which continues to increase over time.

CRA points to expected increases in electrification of heating loads and relatively high costs of low-carbon fuels such as hydrogen and RNG as contributing to reduced need for gas infrastructure. CRA highlights that the Companies' LTP does not forecast any customer conversions to full electrification, only customers opting for the hybrid heating system with gas furnace

backup. CRA states that assuming all customers will use hybrid heating appliances is not appropriate and CRA and stakeholders provided six additional scenarios for modeling that include full electrification with strategic downsizing. CRA recommends that the Companies assume a portion of their customer base will fully electrify, and that the Companies update their capital expenditure and operating cost forecasts to reflect downsizing opportunities from full electrification.

CRA discusses a "neighborhood approach" for evaluating and implementing NPAs, and areas where the Companies could address LPP by implementing an NPA instead of replacing the infrastructure. CRA also states that stakeholders are supportive of the identification by the Companies of areas where their gas systems could be strategically decommissioned. CRA recommends a pilot program that employs an exercise conducted with customers and stakeholders, including local community members, to define obstacles and costs associated with eliminating natural gas service in a small defined area and assessing its feasibility. CRA also recommends that the Companies develop a joint planning approach across their electric and gas companies to develop cost-effective solutions and to support strategic downsizing.

CRA states that the Companies' RNG supply assumptions are based on the Potential of Renewable Natural Gas in New York State study completed by ICF Resources, LLC, specifically the Optimistic Growth Scenario included in that study, and the Companies also assumed they can access two percent of the RNG produced in Pennsylvania and Ohio, the allocation of which to each service territory not yet determined.[34] CRA concludes that

[34] ICF Resources, Potential of Renewable Natural Gas in New York State, prepared for the New York State Energy Research and Development Authority, NYSERDA Report Number 21-34.

the approach to developing a system-wide blend of RNG appears to be reasonable overall, but the basis for some of the Companies' assumptions appears to be very aggressive and would require a significant level of effort to develop. CRA states that the Companies should provide more discussion and detailed investigation into the actual cost for acquiring RNG and adds that it is unlikely that the Companies will be able to acquire RNG at the production costs assumed in the ICF report. CRA recommends that the Companies target using RNG supply only for hard to electrify end-use market segments such as industrial processes. This will require discussions with major industrial customers as well as the development of a transition plan for these customers. CRA warns that the Companies should not employ a system-wide blend of RNG due to the cost, and noting that working with customers who do not have alternatives to natural gas will allow the development of the end-use market for RNG and assessment of their willingness and ability to pay any required premium for RNG and accompanying environmental credits.

Regarding hydrogen, CRA points to the Companies' assumption of blending of up to 20 percent of hydrogen and states that no evidence yet suggests their specific systems can safely deliver this hydrogen/natural gas blend. CRA recommends that the Companies consider a study or pilot program to assess safe hydrogen blending limits assuming such a pilot program can be completed at a reasonable cost. CRA acknowledges that the Companies have stated that they will engage with industrial customers regarding the energy future of those customers. Thus, CRA recommends that the Companies discuss the future use of hydrogen with their industrial customers and provide publicly available updates on these conversations. CRA also emphasized the fact that the Companies were not able to provide copies of the studies they relied on to develop their assumptions about

the future role of hydrogen in their LTP and urged that they should do so going forward.

CRA states that the Companies filed their energy efficiency and building electrification program proposal in November 2023.[35] Their proposal, which they updated in January 2024, will be considered by the Commission after seeking input from stakeholders in Case 18-M-0084. After CRA recommended in its Preliminary Findings Report that the Companies include more residential weatherization in their Final LTP, as initially they had relied on levels of weatherization from a source different from their filing in January 2024, the Companies did update the level of weatherization in the Final LTP and the cost-effectiveness of residential weatherization. The Companies also identified three new non-residential programs they plan to launch in 2024. CRA states that, regarding demand response, the Companies do provide interruptible gas service to customers that meet the criteria under their tariffs. CRA recommends that the Companies work to accelerate the rate of weatherization and provide a more thorough discussion of the implementation plan for their energy efficiency programs including plans for community outreach and education. CRA also recommends that the Companies review existing demand response programs at other utilities and report the status of their evaluation in their Annual Updates and future long-term plan filings. CRA further recommends that the Companies could develop new tariff offerings and incentives focused on demand response, while undertaking customer outreach and education. Additionally, CRA suggests the

[35] Case 18-M-0084, Proceeding on Motion of the Commission to Consider a Clean Energy Fund in the Matter of a Comprehensive Energy Efficiency Initiative, Order Directing Energy Efficiency and Building Electrification Proposals (issued July 20, 2023).

Companies explore the use of advanced metering infrastructure to inform rate design and program implementation.

CRA states that the Companies' LTP estimates that roughly 75 percent of residential gas customers will install hybrid heating systems and 25 percent of residential gas customers will fully electrify their space heating through the planning period. The Companies also state that higher conversion rates may be possible for municipal customers where a policy might mandate that government lead by example. CRA states that the adoption of single-building geothermal is not included in any of the Companies' scenarios or in the LTP and points to the Companies' inclusion of one network geothermal project encompassing 24 homes plus eight non-residential buildings every year starting in 2035 installations. CRA states the LTP should assume customers will install single building geothermal systems or New York's All Electric Buildings Act, which prohibits the use of fossil fuel appliances in new buildings, with exceptions, starting in 2026. Consequently, this led to the Companies treating the net installation and operating costs of electrification as incremental and distorted calculations. Ultimately, the Companies adjusted this in the Final LTP. Also, in modeling building types for residential customers, the Companies assumed a limited number of types and that no buildings constructed before 1970 will install heat pumps. CRA recommends that the Companies add additional building demographic details to their models to be more representative of the homes and buildings in their service territories. CRA also recommends that the Companies evaluate the partial and full electrification of buildings that have boilers, which were largely excluded from modeling. CRA asserts that the Companies should review principled recent studies regarding customer and market adoption of heating

electrification, and use the studies to inform future pilot programs involving electrification. Additionally, CRA states that the Companies should assume that customers weatherize prior to electrification. Further, CRA recommends that the Companies model efficiency improvements of heat pump technology over time because it states that not doing so biases the LTP against electrification.

CRA describes the Companies' approach to carbon capture, which assumes participating industrial customers will capture 100 percent of their emissions and will permanently store those emissions in geological formations in and around New York State. The LTP modeled a 0.5 percent annual increase in carbon capture participation starting in 2028. CRA suggests this assumption may be speculative and recommends that the Companies provide annual updates on the progress of carbon capture and make appropriate adjustments in future long-term plans.

CRA acknowledges that, if implemented, the Companies' LTPs would significantly reduce emissions compared to a 1990 baseline, by 55 percent and 50 percent for NYSEG and RGE respectively. However, CRA also cautions that the Companies' LTP does not reduce emissions at a level consistent with statewide 2030 goals or on a trajectory to achieve GHG emissions reductions consistent with the CLCPA's 2050 goal. Further, CRA states that two of the Companies' alternative scenarios do place them on a path to achieve 85 percent emissions reductions by 2050 compared to 1990 levels. CRA asserts that the recommendations throughout its report will reduce the Companies' peak demand, allow them to strategically downsize their systems, reduce operations and maintenance costs, maximize emissions reductions, and put the Companies on a better path to helping the State achieve the CLCPA's emissions reduction targets.

CRA notes that it encouraged the Companies to develop a gas-specific BCA Handbook, and the Companies have indicated they will do this and include it as an appendix to their next LTP filing. CRA states that the Companies should treat federal incentives for electrification as a benefit in the calculation of BCA ratios. CRA performed a BCA ratio calculation treating federal incentives as a benefit, and the ratios for the Companies' preferred LTP scenario improved from 0.42 and 0.38 to 0.50 and 0.48 for NYSEG and RGE, respectively. CRA states that the Companies provided results from the Rate Impact Measure (RIM) and Utility Cost Test (UCT), in addition to the Societal Cost Test (SCT) in accordance with the Commission's BCA Framework Order, in their Final LTP.[36] CRA adds that there should be avoided pipeline and storage fixed costs in full electrification scenarios, but the Companies did not reduce these costs despite forecasting reductions of these costs in the LTP itself.

CRA states that the Companies' models show significant rate increases through 2043 for each scenario. For NYSEG, the LTP projects residential non-participant monthly costs to increase by 173 percent and for RGE the LTP projects increases of 166 percent. The CLCPA Full Electrification scenario forecasts the greatest level of emissions reductions but projects the greatest cost increases over the 20-year planning period. CRA explains that state and federal incentives make residential weatherization and heat pump installations significantly less expensive and including this in scenario

[36] Case 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework (issued January 21, 2016) (BCA Framework Order).

modeling would provide a more accurate picture of costs customers face for each scenario.

CRA emphasizes that the LTP lacks specific discussion and quantification of benefits to disadvantaged communities as called for in the Planning Order. CRA thus recommends that the Companies quantify total benefits to disadvantaged communities and compare it to the total plan benefits.

Working with stakeholders, CRA developed a set of alternative scenarios that the Companies modeled. These alternative scenarios maximize electrification of heating load using cold-climate air source heat pumps, include incentives as customer benefits, reduce pipeline and storage fixed costs over time, introduce strategic downsizing and resulting reductions to operation and maintenance and capital costs, increase rates of customer weatherization, and adopt increased efficiency of heat pumps over time. The results were emissions reductions by 2043 ranging from 42 percent to 65 percent for both Companies and typical 2043 monthly gas bills ranging from $272 to $826 for NYSEG and from $213 to $387 for RGE. Current monthly average residential gas bills are $104 for NYSEG and $77 for RGE.

CRA acknowledges that the Companies added detail in their Final LTP regarding actions required to achieve LTP objectives. These actions are divided into nine categories: weatherization; electrification; industrial customer programs; utility thermal energy networks; RNG; hydrogen; NPAs; disadvantaged communities; and Other Activities. Many of these categories of actions include future study and the proposal of programs for Commission approval. CRA also emphasizes that the Companies indicate in their Final LTP that they will look for innovative solutions and consider factors other than cost-effectiveness when evaluating NPAs in disadvantaged communities. CRA also highlights the Companies' commitment in its Final LTP

to monitoring the Cap and Invest program, to adopting of decarbonization technologies, and to distributing residential methane detection devices to low-income customers along with outreach and educational support to those customers. Finally, CRA concludes its report by stating that stakeholders played a key part of the review and assessment of the Companies' LTP in this proceeding.

NOTICE OF PROPOSED RULE MAKING

Pursuant to the State Administrative Procedure Act (SAPA) §202(1), a Notice of Proposed Rulemaking was published in the State Register on October 18, 2023 [SAPA No. 23-G-0437SP1]. The time for submission of comments pursuant to the Notice expired on December 18, 2023. Moreover, the Commission issued Notices Establishing Comment Deadlines on October 6, 2023, December 29, 2023, February 21, 2024, February 29, 2024, and May 21, 2024. Comments on the Initial LTP were received on December 18, 2023, and reply comments were received on January 19, 2024. Comments on the Revised LTP were filed by March 29, 2024. Stakeholder initial comments on the Final LTP were received by June 14, 2024, with reply comments received by July 10, 2024.

Comments are summarized in Appendix B, and particular comments are discussed as applicable in the Discussion section of this Order. Comments were filed in this proceeding by: Alliance for a Green Economy (AGREE), Fossil Free Tompkins, Ratepayer and Community Intervenors, New York Geothermal Energy Organization (NY-GEO), New Yorkers for Clean Power, Campaign for Renewable Energy, and Climate Solutions Accelerator, along with 48 additional community and environmental organizations (AGREE et al.); NY-GEO separately; Fossil Free Tompkins separately; International Brotherhood of Electrical Workers Local 10 (IBEW);

New York State Energy Research and Development Authority (NYSERDA); Sierra Club and Earth Justice (SC/EJ); Tompkins County Department of Planning and Sustainability (Tompkins); and Multiple Intervenors (MI). In addition, over 20 comments were received by members of the public, including from the Democratic members of the Monroe County Legislature. Generally, the public comments urged the Commission to reject the long-term plan filed by the Companies.

LEGAL AUTHORITY

Public Service Law (PSL) §5(1)(b) provides the Commission with broad authority over "the manufacture, conveying, transportation, sale or distribution of gas ... for light, heat or power, to gas plants ... and to the persons or corporations owning, leasing or operating the same." Of particular importance to the Commission's action in this Order, PSL §5(2) also provides that "[t]he commission shall encourage all persons and corporations subject to its jurisdiction to formulate and carry out long-range programs, individually or cooperatively, for the performance of their public service responsibilities with economy, efficiency, and care for the public safety, the preservation of environmental values and the conservation of natural resources." PSL §65 requires that LDCs provide "service, instrumentalities and facilities as shall be safe and adequate and in all respects just and reasonable." Furthermore, PSL §66(1) states that the Commission has general supervision of all gas corporations. Additionally, PSL §66(1-a) provides that the Commission may order "such improvement in the manufacture, conveying, transportation, distribution or supply of gas ... or in the methods employed by such corporation as in the commission's judgment is adequate, just and reasonable."

DISCUSSION

As mentioned previously, the Commission has considered long-term gas plan filings made by NFG and Con Edison/O&R in previous orders. Unlike Con Edison/O&R, the Companies chose a plan designated as their preferred long-term plan.[37] We also noted in the Con Edison/O&R LTP Order that the Commission's core responsibility at this time remains to ensure the utilities are providing safe and adequate gas service at just and reasonable rates and reminded stakeholders that there are no state laws requiring existing buildings discontinue using natural gas.[38] We also recognized that gas planning will be an iterative process, with the Companies filing annual updates and a new long-term plan in three years' time.[39]

The Commission recognizes that NYSEG was the first utility to successfully deploy a portfolio of NPA projects in lieu of a traditional gas main extension.[40] NYSEG responded to community opposition to the then-proposed gas main by working with community members to develop an acceptable alternative. In this case, many of those same community members are asking the Companies to consider decommissioning segments of the gas distribution system and replace those segments with NPAs, including full home electrification. The Commission recognizes this joint community and utility support and cooperation opportunity to evaluate decarbonization strategies. The Commission is optimistic that the right mix of community support, utility expertise, outreach and education, and funding

[37] Con Edison/O&R LTP Order, p. 29.

[38] Id., p. 31.

[39] Id., p. 34.

[40] Case 17-G-0432, Petition of New York State Electric & Gas Corporation for Authorization to Construct a Natural Gas Compressor Pilot Project in Tompkins County, NY.

for alternatives can produce the desired outcomes. We note that, although ratepayers are funding certain authorized energy efficiency and electrification programs, utility ratepayer funding alone may not be sufficient; as such, it will be important to identify all available funding sources.

While the Planning Order indicated that the Commission "could adopt, reject, or modify the revised plan, in whole or in part," experience with other gas utilities demonstrates that it is not necessary or appropriate to approve a plan with this level of detail and a 20-year horizon this far in advance. Instead, we focus on actions the Companies must take in the near future to advance the decarbonization of their systems while ensuring they can continue to provide safe, adequate, and reliable service to their customers. We will address recovery of costs for specific proposals and actions associated with this LTP in the Companies' rate filings, or when addressing specific filings as required as part of this proceeding. We note that if a rate case proposal relates to an element of the Companies' LTP, such proposal will be subject to thorough review through the traditional rate case process, without any presumption as to the outcome.

In issuing this Order, the Commission has considered all comments received. We discuss specific issues below, including the further actions we direct the Companies to take regarding their Final LTP.

Demand Forecast

The Planning Order requires LDCs to include adjustments to demand forecast scenarios that reflect energy efficiency, electrification, demand response, NPA, and other external impacts. Further the Planning Order directed LDCs to provide estimates of the expected sources of growth and/or reduction in peak demand resulting from demand-side investments,

clarifying that qualitative discussion is not sufficient. We note that both Companies have customers taking service through interruptible service classifications. As these customers have agreed not to consume natural gas during peak periods in exchange for lower distribution rates during the remainder of the year the Companies do not include the demand of these customers in peak day forecasts.

After reviewing the Companies' demand forecasts, CRA opines that the Companies should evaluate the "NYS Climate Impact Assessment" document and incorporate relevant data for its service territories into a study that includes sensitivities of the long-term impacts and implications on the LTP process and assumptions. CRA also recommends that the Companies update their design day and normal degree day calculations to reflect recent data on customer usage and use per degree day to include the effects of increased energy efficiency.

NYSERDA critiques the Companies' "asymmetrical" approach to design day forecasting because of its receptivity to lowering the average temperature on design day based on experienced colder weather but on the other hand, its resistance to raising design day temperature. NYSERDA asserts that this approach is inappropriate, "particularly given the projected impacts of climate change on extreme conditions."[41] NYSERDA confirms that the technical chapters of New York State's 2024 Climate Impact Assessment "illustrate a marked decline in the projected number of extreme cold days in the Companies' service territories by the 2040s" and that the Companies derive their current design day temperature of -10°F "solely" from "extreme temperatures experienced historically," with some "from as much as 45 years ago." NYSERDA recommends the Companies to develop

[41] NYSERDA comments, p. 7.

design day standards from longer-term climate patterns, as opposed to extremes and that the current design day approach may "overstate the requirements of the gas system" and "resul[t] in excess and unnecessary costs to customers."[42]

The Companies state that they conduct an analysis after each winter to determine whether a new coldest day has occurred that would change the design day weather for future years. The Companies also state that the impacts from climate change are expected to be significant to the assets the Companies operate and the communities they serve and there is potential for increased winter storm intensity. The Companies continue that a less conservative design day introduces the possibility that the Companies would not have secured adequate supply and jeopardize reliability.

NYSERDA recommends that the Companies work with the Commission and potentially other utilities in the State to develop a framework for updating their definition of design day demand conditions to align with empirical data and the latest climate science. In their reply comments, the Companies stated that there is no indication that the intensity of extremely cold design day weather is expected to be impacted by climate change and the fact that the frequency of the number of days below a certain temperature may be decreasing is irrelevant for design day because the focus must be on how cold the weather could be on a single extremely cold day. The Companies add that it would be irresponsible for the Companies to change their design day forecasts to plan for less extreme design day weather without considerable certainty.

The Commission finds that the Companies' demand forecasting appears adequate to ensure continued reliability.

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[42] Id.

Use of the coldest actual weather experienced to define design day is reasonable. The occurrence of extreme weather events, including extreme cold, is more likely in the future. A gas utility must be prepared to serve firm load during extreme cold, even if an individual winter or series of winters does not include extreme cold.

Supply Forecast/Components

Supply forecasts include the various assets used to meet design day load, including pipeline and storage capacity and peaking assets. In the Planning Order, the Commission emphasized that the LDCs' supply forecasts must align with the demand forecast, and that they must contain demand response programs and be explicit regarding the level of demand-side programs included. Furthermore, the Commission encouraged LDCs to explore novel approaches to meeting demand, such as using innovative rate design to reduce or shift demand through seasonal or peak day rates rather than simply acquiring more gas to meet the initial forecast of demand.

CRA states that the Companies maintain portfolios of gas supply, transportation, storage, and peaking assets necessary to reliably serve customers on the coldest days of the year. Additionally, CRA notes that the Companies purchase local production, landfill gas, and RNG supply on an interruptible basis, but that they do not rely on these sources to meet design day loads. Both Companies rely on delivered services to meet peaking requirements. NYSEG also relies on compressed natural gas, according to CRA. CRA also highlights that the Companies include a reserve margin in their procurement of supply assets and add that LDCs do not generally incorporate a reserve margin and instead rely on planning for design day. CRA notes that the Companies project that design day demand for both Companies will decrease by at least nine percent by 2043 in the reference case

and roughly five to six percent in the LTP. CRA recommends that the Companies perform a study to justify the need for a reserve margin above design day planning and evaluate the tradeoffs associated with incorporation of an operating reserve margin. CRA also recommends that the Companies develop an approach to reconfiguring their firm capacity portfolios that includes a ranking criterion for contract restructuring and de-contracting to reflect the demand reductions in the LTP. Moreover, CRA recommends development of a report that is shared with stakeholders and summarizes cost reduction achieved through capacity release transactions and asset management agreements.

SC/EJ state that "the Companies' whole approach to contracting for gas transmission capacity is incompatible with the inevitable decline in gas demand stemming from the Climate Act." SC/EJ add that the Companies revealed in discovery that they are hesitant to turn back capacity due to its value and the unlikelihood of being able to procure pipeline and storage capacity in the future.[43] SC/EJ adds that "in a world of reduced customer count and lower gas demand, excess pipeline capacity is, simply, excessive."

The Commission finds that the Companies have sufficient supply assets to meet forecasted demand. Discussion of some specific supply assets is described below.

1. Reserve Margin and Contract Restructuring

The Commission notes that employing design day criteria for reliability planning is conservative, in that design day conditions are unlikely to occur in a given winter. For this reason, employing a reserve margin on top of design day

[43] Turning back capacity is the process of returning capacity to a pipeline company when a firm transportation contract expires. Pipelines may request turnback capacity during open seasons to use their existing infrastructure before building new facilities.

conditions may impose unnecessary costs on ratepayers. The Companies are directed to file a report within 120 days of this Order which provides the following information: design day load forecast for each Company for each year of the planning period in the Final LTP; the total amount of assets currently secured, broken down by type (daily deliverability, storage, peaking, etc.) and their contribution to design day demand; calculation of the reserve margin on design day for each year of the planning period; and cost per dekatherm of each asset on an average basis. Stakeholders will then have the information necessary to provide meaningful input on the need for the reserve margin and what assets can be recommended for shedding over time.

Additionally, as noted above, as demand decreases, the Companies will no longer require all of the capacity and supply assets they currently employ. The Commission directs the Companies to file a report on contract restructuring as recommended by CRA within 120 days of this Order. The report must list all pipeline and storage capacity contracts along with their termination dates and daily, monthly, and annual deliverability as applicable and provide criteria that the Companies will use to identify which pipeline or storage contracts they can terminate without jeopardizing reliability as demand decreases.

2. Low Carbon Fuels

The Commission noted in the Planning Order that RNG remains a developing issue, and it should remain in consideration for planning purposes. The Commission also stated that each LDC should identify the potential for use of RNG in its long-term plan and the larger questions of studies or trading programs for RNG would be deferred to a future phase of

the planning proceeding.[44] The Companies assume they will procure RNG from within their service territories as well as two percent of the total RNG produced in Pennsylvania and Ohio, with the allocation of that out-of-state RNG between the two service territories to be decided later, and state that they currently receive RNG from some farms and additional projects are in various stages of development.[45]

IBEW states that RNG offers potential employment opportunities in the future. AGREE, et al. state that the LTP includes the replacement of 18 percent of gas throughput with RNG, which accounts for about 28 percent of the LTP's emissions reductions (along with blending hydrogen into the natural gas supply) and points to CRA's recommendation that RNG be focused on hard-to-electrify customers. AGREE, et al. echo CRA's comments that the Companies likely underestimated the future cost of RNG and likely overstated the emissions reductions attributed to use of RNG. Moreover, AGREE, et al. assert that reliance on low carbon fuels like RNG is not a viable solution. SC/EJ state that the Companies continue to rely on unreasonably optimistic assumptions about RNG availability and cost, and that further analysis is needed to understand the emissions and environmental justice impacts of RNG.

Regarding hydrogen, the Companies state in the Final LTP that they will pursue green hydrogen blending starting at a level of 1.25 percent in 2028, increasing by 1.25 percent each year and achieving a blend of 20 percent by volume in 2043. CRA states that "relevant research suggests that at blending levels above five percent by volume, there is a greater chance of pipeline leaks and embrittlement, and that such a level of

[44] Planning Order, p. 57.

[45] Final LTP, p. 98.

blending could require modifications of end-use appliances."[46] CRA recommends that the Companies focus their efforts on hydrogen use by targeting industrial customers to identify applications that would not require system-wide blending and that the Companies provide further information on the studies they relied on to validate their proposed blending levels.

The stakeholders made several comments about hydrogen. AGREE, et al. state that fossil fuel combustion in homes presents major health risks, and the LTP's plan to blend hydrogen could increase these risks. SC/EJ state that there are practical limits on hydrogen blending and the LTP rests on unproven and unrealistic assumptions about hydrogen blending. IBEW states that hydrogen and other emerging technologies must be included in "the first iteration of the longer-term plan."[47] NYSERDA states that it is unclear whether the Companies' projection of hydrogen costs include storage and distribution infrastructure costs, which may be substantial, and clean hydrogen is expected to be a scarce and valuable resource, which may be better suited to hard to electrify users like transportation, industrial processes, or electricity generation rather than blended into the general gas supply.

In their reply comments, the Companies maintain that RNG and hydrogen blending is significantly less expensive than electrification on a cost per unit of GHG emissions reduction. The Companies add that hydrogen blending has been employed in some places for years and that certain states and the federal government have "fervent optimism ... for hydrogen as a method of decarbonizing."[48]

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[46] CRA Final Report, p. 104.

[47] IBEW Comments on Final LTP, p. 3.

[48] Companies' Final Reply Comments, p. 32.

CRA recommends that RNG supply be targeted only to hard-to-electrify end-use market segments, such as industrial processes that require natural gas. CRA also recommends that the Companies continue to investigate RNG supply options and costs, while working with their customers that do not have alternatives to natural gas for reducing GHG emissions and develop the end-use market. Regarding hydrogen, CRA recommends that the Companies pursue a pilot program to determine safe levels of hydrogen blending and work with industrial customers to potentially focus hydrogen use in applications that do not require blending into the Companies' systems in general and provide public reports updating the progress of this work.

As mentioned above, the Climate Action Council saw a potential role for low carbon fuels for hard-to-electrify customer sectors in its Final Scoping Plan. The Commission notes that the Companies, like others in the State, are currently blending RNG in their distribution systems. The cost of RNG compared to traditional sources is a concern, and customers may find electrification options more economical. Hydrogen blending is currently an unproven technology for the State's natural gas distribution systems, but the Companies may consider proposing pilot programs as recommended by CRA. The Commission directs the Companies to report annually on the output of conversations with large commercial and industrial customers regarding the development of a market for focusing RNG and/or hydrogen use for their hard-to-electrify applications. The Companies shall include this reporting in the first Annual Update to this LTP and then every year thereafter in either the Companies' Annual Update or LTP filing.

3. Peaking Services

The Companies rely on winter delivered citygate peaking contracts and compressed natural gas at one site for

peaking supplies.[49] CRA states that customers could benefit from supply cost savings if the Companies employed demand response programs and could reduce their reliance on or avoid utilizing market-priced commodity delivered/peaking gas services and/or compressed natural gas.

Demand Response Programs

The Planning Order stated that LDCs should continue to consider the use of interruptible gas service to minimize the need to build new infrastructure, but that LDCs should prioritize developing innovative clean demand response programs. The Companies state they are considering a residential demand response pilot in the form of a "bring your own thermostat" demand response program and anticipate submitting an implementation plan proposal to the Commission, although we note that as of this date no filing has been received. The Companies state they are also collaborating with other gas utilities to gain insights and lessons learned from their gas demand response programs and they assure they will provide further information on their implementation and lessons learned in future annual updates and LTP filings.

SC/EJ state that ratepayer money would be better spent on demand response programs than a hydrogen pilot project. MI recommends that the Companies investigate the cost effectiveness of developing demand response programs for industrial customers, as industrial customers' high demand may allow for a significant reshaping of the daily demand curve. In their reply comments, the Companies state that they are "in the process of developing and implementing a residential natural gas demand response pilot

[49] Delivered citygate peaking contracts are contracts entered into between the utility and a gas marketer whereby the marketer uses pipeline capacity it owns bundled with commodity the marketer purchases to supplement the utility resources during a small number of high demand days during the winter.

program."[50] The Companies add in their reply comments that they will consider including the impacts of demand response programs in their modeling once they have sufficient experience and data to predict customer participation and impact on design day demand.

The Commission agrees that the Companies should explore firm customer demand response programs by developing new tariff offerings and programs that would provide appropriate incentives for customers to participate, including new rate designs and payment structures that incentivizes sustained consumer engagement, while undertaking consumer outreach and education. At present, it is uncertain when the Companies plan to deploy a bring your own thermostat demand response program for residential customers. The Commission also agrees with MI that the Companies should consider opportunities to provide cost-effective demand response programs to non-residential gas customers. Accordingly, we direct the Companies to file a proposal to implement a residential demand response program, which may include a bring your own thermostat component, in the instant proceeding, within 30 days of this Order.

Energy Efficiency

In the Planning Order, the Commission stated that LDCs must include adjustments to demand forecast scenarios that include energy efficiency. Additionally, the Companies state they will continue to pursue energy efficiency and clean energy programs focused on low- and moderate-income customers regardless of whether these customers reside within a disadvantaged community. They add that they have proposed three new energy efficiency programs focused on disadvantaged communities within their recent Energy Efficiency Portfolio

[50] Companies' Final Reply Comments, p. 23.

Proposal filed in the Commission's Energy Efficiency Portfolio proceeding.[51] The Companies state they currently offer a range of gas energy efficiency programs to residential and non-residential customers, and the joint proposal adopted in the NYSEG/RGE Rate Order includes terms related to enhancing education to increase awareness and participation in energy efficiency programs.[52] The Companies also point to energy efficiency programs included in the portfolio of NPAs that NYSEG implemented in response to the moratorium in Lansing. The Companies state that existing gas energy efficiency rebate programs have made measurable impacts on customer usage and the Companies have adjusted their demand forecasts to account for reductions related to energy efficiency measures in the future, but state that many existing gas energy efficiency programs are being eliminated. As a result, the Companies reduced contributions from energy efficiency programs after 2025 in their Reference Case.

In their scenarios, the Companies included weatherization for residential and commercial customers and energy efficiency of industrial process load to varying degrees. The Companies point out that the CRA/Stakeholder scenarios include energy efficiency and electrification at the exclusion of RNG and hydrogen. The Companies' LTP includes energy efficiency programs for industrial process load beginning in 2027, weatherization of one percent of residential homes per

[51] Case 18-M-0084, supra, NYSEG & RGE DAC Reporting Data Collection EE BE EV EAP Redacted (filed January 26, 2024); Case 18-M-0084, supra, NYSEG & RGE DPS NYSERDA Climate Act DAC Reporting Data Collection EE BE EV EAP EV Redacted (filed April 16, 2024).

[52] Cases 22-G-0318 et al., NYSEG and RGE - Rates, Order Adopting Joint Proposal (issued October 12, 2023) (NYSEG/RGE Rate Order).

year in 2027 growing by 0.25 percent per year thereafter, and weatherization of commercial and municipal buildings. The Companies state that pursuant to the NYSEG/RGE Rate Order they will file a report at the end of each Rate Year that provides participation, cost, and savings information related to energy efficiency and electrification programs. The Companies also state that they are providing GHG reduction and economic benefits to disadvantaged communities and low- and moderate-income customers through several policies and programs.

SC/EJ state that the Companies failed to assess opportunities for industrial customers to decarbonize through electrification and expanded energy efficiency programs, and that the Companies' Final LTP discussion of industrial decarbonization is limited to efficiency programs at the exclusion of electrification opportunities. NYSERDA opines that the value of energy efficiency programs has been understated by the Companies because they ignored the impact of such programs on pipeline and storage capacity costs. NYSERDA adds that the Companies should include a sensitivity analysis in which the costs for electrification and energy efficiency decline over time or as the number of completed projects increases.

Regarding energy efficiency, CRA recommends that the Companies accelerate the rate of weatherization in its LTP due to its cost-effectiveness compared to other decarbonization measures. CRA also recommends that the Companies provide a more thorough discussion of the implementation plan of their program, including plans for community outreach and education. CRA highlights the Companies' mention of designing programs that will achieve the forecasted levels of adoption and gaining a better understanding of customer adoption issues. CRA recommends that the Companies provide updates on these initiatives in their Annual Updates to this LTP.

The Commission agrees that the Companies should provide an update on the implementation efforts of their proposed energy efficiency programs and plans for community outreach and education and thus directs that the Companies provide these updates in each of their Annual Update filings to the Final LTP. The Companies are also directed to file findings related to their investigation of customer adoption rates in their Annual Updates to the Final LTP.

Reliability Standards and Hydraulic Modeling

In the Planning Order, the Commission required that long-term plans identify the methodology by which LDCs will forecast and measure reliability, and that design day standards be considered in each long-term plan and revalidated in a frequency proposed by the LDC.[53] The Companies state in the Final LTP that design day weather is based on the coldest weather experienced historically at several weather stations throughout the state, which correspond to the Companies' service areas, that the coldest days date back to February 1979, and that the Companies conduct an analysis after each winter to determine whether a new coldest day has occurred that would change the design day weather for future years. The Companies also state that the impacts from climate change are expected to be significant to the assets the Companies operate and the communities they serve. The Companies continue that "(g)iven the potential that winter storm intensity could increase, if a less conservative design day is used, there is a chance that the Companies would not plan for enough supply, which would put reliability at risk, and reliability is non-negotiable."[54]

[53] Planning Order, p. 34.

[54] Final LTP, p. 42.

NYSERDA recommends that the Companies work with the Commission and potentially other utilities in the State to develop a framework for updating their definition of design day demand conditions to align with empirical data and the latest climate science. NYSERDA also discusses the rule promulgated by PHMSA requiring reconfirmation by 2035 of the MAOP of all gas transmission pipeline segments that do not have traceable, verifiable, and complete records demonstrating how the MAOP was established. NYSERDA states that the Companies are in the early stages of planning for MAOP confirmation, and the Companies have not established a system to determine which reconfirmation method is most suitable and cost-effective for compliance.

In their reply comments, the Companies stated that there is no indication that the intensity of extremely cold design day weather is expected to be impacted by climate change and the fact that the frequency of the number of days below a certain temperature may be decreasing is irrelevant for design day because the focus must be on how cold the weather could be on a single extremely cold day. The Companies add that it would be irresponsible for the Companies to change their design day forecasts to plan for less extreme design day weather without considerable certainty. Regarding MAOP reconfirmation, the Companies state that they are working diligently to develop plans to comply with the 2020 PHMSA rule, and are on track to meet PHMSA's 2035 deadline, but state that it is premature to provide detailed compliance plans at this time or in the first Annual Update, but that they could "provide an update on the compliance plan development process in future LTPs."[55]

Regarding MAOP, CRA recommends that the Companies develop a comprehensive compliance plan that identifies and

[55] Companies Final Reply Comments, p. 10.

justifies which MAOP reconfirmation method is most suitable, technically feasible, and cost-effective. CRA recommends that status reports should be included in the Companies' Annual Updates and incorporated in the Companies next LTP submission to inform stakeholders of potential impacts and tradeoffs.

The reliance by the Companies on the coldest actual weather experienced in their service territories is reasonable for design day planning. The Companies are directed to continue to evaluate use per customer as demand-side management programs increase over time and reflect the Companies' updates in their next LTP filing in 2028. Regarding reconfirmation of MAOP, the Companies are directed to include a status update in their Annual Update to this LTP and in all future Annual Updates and LTPs until all impacted segments are reconfirmed.

No Infrastructure Option and Non-Pipe Alternatives

In the Planning Order, the Commission required that LDCs include a no infrastructure scenario but allowed an LDC to assert that a no infrastructure scenario may not be feasible for a particular project or portion of its long-term plan. The Companies claim that their CLCPA and Delayed Achievement Scenarios do not require gas infrastructure to accommodate load growth, therefore, each of these scenarios qualifies as a no-infrastructure scenario. Regarding NPAs, the Companies state that they issue requests for proposals (RFP) seeking NPA solutions when they identify a vulnerable location for which they may not be able to reliably serve expected load within five years. The Companies state that the Lansing NPA portfolio has informed the LTP by providing insights into the planning and implementation process associated with NPAs. The Lansing NPA portfolio includes residential and non-residential heat pumps, a ground-source heat pump community loop, energy efficiency, and education and outreach. In addition, the Companies state that

RGE recently completed an NPA allowing it to retire a segment of leak prone main instead of replacing it. The Companies also reference their two-prong approach for evaluating infrastructure projects for potential NPA application using $2 million as a threshold to determine which approach is used. The Companies evaluate projects above that threshold through a competitive solicitation process and include a BCA framework. The Companies add that identifying portions of their systems where NPAs can be implemented and obtaining consent from all impacted customers, when required, can be difficult.

SC/EJ state that the Companies' Final LTP makes unreasonable excuses for their failure to scale up renewables and NPAs, and that the Companies should "work with their sister utilities, such as [Con Edison] and National Grid to replicate their creative NPA programs."[56] SC/EJ state that while customer behavior choices can present challenges to NPA implementation, the Commission should require the Companies to confront this dilemma by deploying a robust education plan around electrification.

In their final reply comments, the Companies state that over the last two years they screened 454 projects for potential NPA alternatives. Further, they indicate that they will continue to screen all main-related capital projects for NPA treatment and continue to look for potential suitable NPAs that could result in a targeted retirement of segments of main in the distribution system. The Companies reference a report prepared for the California Energy Board that emphasizes limited application of NPAs, and a report prepared by the Rocky Mountain Institute for National Grid that states "no U.S. utility has successfully completed this type of NPA under the existing

[56] SC/EJ Final Comments, p. 30.

regulatory framework for projects serving greater than five customers."[57] The Companies state they will reflect additional NPA adoption in the future if projects are implemented that provide more understanding of market conditions and demonstrate that NPAs have the potential to make meaningful, cost-effective impacts. The Companies add that they agree with CRA's recommendations on this topic.

Specifically, CRA recommends that the Companies incorporate generic NPA projects and model their impacts on demand and cost reductions in the LTP and all scenarios, drawing from their experience with the NPA process. Additionally, CRA highlights that the Companies have identified several areas to target for the leak-prone main NPA Whole Home Electrification Program and have engaged a third-party expert with experience educating customers on electrification solutions for their homes and businesses to perform outreach to customers located within targeted LPP areas to promote full-building electrification incentives. Further, according to CRA, the third-party expert will provide feedback to the Companies regarding program development and implementation. CRA recommends that the Companies report on these areas of feedback and discuss how this program can be incorporated and modeled into their long-term gas planning procedures and Annual Updates.

The Commission recognizes NYSEG's successful deployment of NPAs in Lansing in lieu of a previously proposed new gas main. As discussed, the Companies have agreed to consider NPAs in lieu of infrastructure upgrades in their recent rate proceeding. The Commission notes that the 2023 Rate Order

[57] Non-Pipeline Alternatives: Emerging Opportunities in Planning for U.S. Gas System Decarbonization, RMI/National Grid, May 2024, p. 3. Available at: https://www.nationalgridus.com/media/pdfs/other/CM9904-RMI_NG-May-2024.pdf.

required the Companies to consider NPAs and propose projects for Commission approval.[58] The Commission further encourages the Companies to consider NPAs for infrastructure expansion or replacement for smaller projects of $2 million or below. Additionally, the Commission directs the Companies to report on the work of their third-party expert on program development and implementation of full-building electrification incentives in targeted LPP areas within 120 days of this Order.

Strategic Decommissioning

On February 13, 2024, a technical conference was held to discuss strategic decommissioning in the Companies' service territories, which can be defined as identifying portions of the service territory where resources can be focused to eliminate all gas usage on a section of infrastructure so that the Companies can permanently retire such section. Representatives of Fossil Free Tompkins presented an outline of some key considerations of strategic decommissioning, including identifying all impacted groups and ensuring they are a part of the process, potentially reproducing a local decommissioning effort on a larger scale, and understanding the potential impacts on customers. The stakeholders recommended a next step in advancing a strategic decommissioning effort should include determining items for action and funding in the Companies' next rate cases and mapping out a broader plan for the Companies' next LTP filing.

In their Final LTP, the Companies included a list of LTP implementation actions that included continuing to look for potential NPAs that meet its suitability criteria and could

[58] Cases 22-E-0317 et al., supra, Order Adopting Joint Proposal (issued October 12, 2023), Attachment 1 (Joint Proposal), Appendix HH.

result in a targeted retirement of a segment or segments of their distribution systems.

Fossil Free Tompkins, in comments on the Revised LTP, provided feedback to the Companies on a community-based plan to strategically downsize the gas systems, including development of annual GHG reduction targets, identification of specific commercial and industrial customers with large energy needs, scenario development, and coordinated gas and electric planning.

In their final reply comments, the Companies state they are proactively considering strategic downsizing portions of the gas distribution system through employing NPAs in lieu of replacing leak-prone mains, but note that it will be rare to find leak-prone main segments that are not necessary to deliver gas to customers downstream of the segment, and for which the Companies can get the consent of all affected customers to electrify their existing gas loads. The Companies add that as a result of modeling of some of the CRA/Stakeholder scenarios that featured strategic decommissioning, the Companies calculated higher total costs and a higher cost per unit of GHG emissions reductions than the Companies' LTP. The Companies add that their modeling demonstrates that full electrification, even with aggressive assumptions for strategic downsizing, is significantly more expensive than a portfolio approach due to the extensive buildout required on the electric system to support full electrification.

CRA recommends the Companies develop a joint planning approach across their electric and gas companies to develop the most cost-effective and efficient solutions for customers and the Companies to support strategic downsizing and increased electrification. CRA also recommends that the Companies undertake a pilot program to determine the best approach for downsizing a specific area of the distribution system, featuring

an exercise conducted with customers and stakeholders (including local community members) to define the issues, barriers, and costs associated with eliminating service in a small, defined region, and working with customers and stakeholders to assess its viability. CRA adds that such a pilot program would help determine the best path forward to strategic decommissioning and potentially provide a model for other areas.

The Commission agrees with CRA's recommendation and directs the Companies to conduct a "table top" exercise with interested stakeholders, including but not limited to Fossil Free Tompkins to identify potential areas of the gas infrastructure in Tompkins County that possibly includes LPP or other needs for infrastructure upgrade, and where decommissioning would not negatively impact customers downstream. Through this exercise we expect the Companies will develop criteria to be used to identify these segments, potential NPAs, necessary funding, and customer outreach and education. The Companies shall convene a technical conference with interested stakeholders to conduct this exercise within 60 days of the date of this Order. Further, the Companies shall file a report summarizing the exercise results and the conclusions drawn from it with the Secretary in this proceeding by April 30, 2025. This report shall identify any potential opportunities for NPAs resulting from the exercise, or explain why the exercise did not identify any potential opportunities for NPAs. If the exercise identifies potential opportunities that include NPAs, the Companies shall identify funding needs in their next rate filing.

Leak Prone Pipe

The Planning Order directs LDCs to identify the locations of specific segments of LPP that could be abandoned in favor of NPAs in the Annual Reports required by the Commission's

Order in Case 17-G-0432 and to identify where infrastructure projects may be required to maintain reliability.[59] In their Final LTP, the Companies state they have been proactively replacing LPP and have eliminated all cast iron and are currently targeting wrought iron and bare steel pipe. The Companies add that they screen all LPP projects for NPA applicability and, as mentioned above, RGE recently completed an NPA which allowed it to retire a segment of LPP instead of replacing it.

SC/EJ state that the Climate Action Council, the Commission, and CRA have all emphasized the importance of identifying strategic opportunities to retire existing pipelines as demand declines. Moreover, SC/EJ assert that the Companies could reduce or defer large capital expenditure, such as LPP replacement costs, by strategically targeting certain neighborhoods for electrification. NYSERDA suggests that for a given LPP segment of main, the Companies should consider its position within the gas distribution network, the number of customers it serves, the type of loads it serves, and the headroom on the corresponding electrical feeder or substation, factors that are relevant for assessing the viability and value of a NPA instead of replacing the LPP segment. NYSERDA also opined that thoughtful investment in LPP replacement or hybrid heating may be prudent, but such investment must be part of a broader strategy that can achieve the CLCPA's decarbonization requirements.

CRA states the Whole Home Electrification Program, which RGE has used to retire LPP, is a positive step for the Companies to support CLCPA goals, and that the Companies should

[59] Case 17-G-0432, supra, Order Approving Petition for Non-Pipe Alternative Projects, with Modifications (issued June 21, 2021).

report these areas that they are targeting for the Whole Home Electrification Program and discuss how this program can be incorporated and modeled into their long-term gas planning procedures. CRA noted that the Companies' LPP replacement program will be completed in the coming years, but capital expenditures are not expected to decrease at any point in the future in any scenario. In their reply comments, the Companies stated that they expected costs to shift to other types of projects and that the LPP replacement program is anticipated to continue, ostensibly beyond its anticipated completion. CRA acknowledges the possibility that gas utilities may be able to capitalize NPAs in the future, which would impact the capital expenditure forecast. However, CRA also raises concern that the Companies have not provided sufficient information to support the current capital expenditure forecast that continues to increase over time, at least when including inflation, given the standard of reducing/limiting gas infrastructure. CRA states that while questions are outstanding about potential future downsizing, this proceeding is precisely the venue that the Companies should look to start addressing some of these questions. CRA recommends that the Companies assume a portion of their customer base fully electrifies in their LTP, and as a result the Companies should update their capital and operating expense forecasts to reflect potential downsizing opportunities as customers fully electrify in the LTP.

The Commission recognizes that the Companies have eliminated a significant portion of their LPP, but some segments of LPP still remain and are potential prime candidates for NPA treatment. The Commission is concerned that the Companies have failed to reflect cost reductions associated with reduced infrastructure in their LTP. Accordingly, we direct the Companies to update their characterization of revenue

requirements with respect to infrastructure, including changes to depreciation and asset utilization at least 90 days before their next LTP filing, which is due on January 31, 2028, to give stakeholders notice and information to be able to provide meaningful feedback. This information should take the form of projected capital budgets for each year of the 20-year planning period and be broken down by categories used in the Companies' rate case filings. This should allow opportunities to assess synchronicity between safety programs and decarbonization opportunities. The list of remaining LPP segments shall be filed with the Secretary within 60 days of date of this Order.

Impacts on Low- and Moderate-Income Customers and Disadvantaged Communities

The Commission directed in the Planning Order that LDCs must identify the disadvantaged communities in their service territories, explain the impacts to disadvantaged communities of any proposed projects, and explain how the LDC will ensure that an appropriate portion of the benefits of any proposed NPAs accrue to disadvantaged communities. The Companies provided maps of the disadvantaged communities in their service territories in the LTP and provide information about capital projects located in disadvantaged communities in their Five-Year Capital Investment Plans. The Companies have also proposed three new energy efficiency programs focused on disadvantaged communities in their recent Energy Efficiency Portfolio Proposal, discussed above. Additionally, the Companies state that both of their utility thermal energy network proposed projects are in disadvantaged communities.[60] The Companies state that the Rate Order requires them to

[60] Case 22-M-0429, Proceeding on Motion of the Commission to Implement the Requirements of the Utility Thermal Energy Networks and Jobs Act, NYSEG-RGE UTEN Monthly Status Report (filed November 14, 2024), pp. 1, 5, and 7.

explicitly consider factors other than cost-effectiveness when evaluating potential NPAs located within a disadvantaged community, including income levels in the target area, and respondents to NPA requests for proposals are required to provide information on how their proposals will benefit customers within disadvantaged communities. The Companies state that Avangrid, parent company of NYSEG/RGE, is also in the process of developing an enterprise-wide Just Transition framework that will apply across the entire corporation. According to the Companies, this organizing framework is well-suited to addressing the CLCPA's disadvantaged community requirements and the Companies' aspirations regarding disadvantaged communities and low- and moderate-income customers. The Companies also reference workforce development efforts to increase the proportion of company employees and contracted labor that reside in disadvantaged communities. The Companies state that while stakeholders have requested that the Companies quantify total LTP benefits to disadvantaged communities and compare it to the total plan benefits, this is not feasible for this first iteration of the LTP process.

AGREE, et al. state that disadvantaged communities already suffer from disproportionate air quality impacts that would be exacerbated by hydrogen blending. SC/EJ states that the Commission should ensure that any RNG production facilities will not disproportionately burden disadvantaged communities and that the Companies have failed to ensure that at least 35 percent of the benefits of clean energy and energy efficiency spends accrue to disadvantaged communities. SC/EJ adds that the requirements to assess and prevent disproportionate burdens and to funnel benefits to disadvantaged communities are distinct. In their final reply comments, the Companies state that they have committed to continue to collaborate to support efforts to

gather data on disadvantaged communities and will update related metrics on an annual basis consistent with Commission Requirements.

CRA states that while the Companies provided further discussion of the projects and programs that will be geared toward disadvantaged communities in their LTP, there is still no specific total spend or benefit quantification for disadvantaged communities to evaluate the level and proportion of spending the Companies are directing toward disadvantaged communities, and CRA recommends the Companies quantify total benefits to disadvantaged communities and compare it to the total plan benefits.

While recognizing the concerns of stakeholders, the Commission notes that there is an ongoing effort in the generic CLCPA proceeding and the EE/BE proceeding to determine how to quantify benefits to disadvantaged communities and the quantification will be reviewed in those proceedings.[61] The Companies are directed to provide updates on that effort in their Annual Updates to this LTP, including any resulting quantification. The Companies shall consult with Staff and identify the programs and investments that benefit disadvantaged communities and include an explanation of how and a quantification of these investments benefitting disadvantaged communities.

[61] Case 22-M-0149, Proceeding on Motion of the Commission Assessing Implementation of and Compliance with the Requirements and Targets of the Climate Leadership and Community Protection Act, and Case 18-M-0048, In the Matter of a Comprehensive Energy Efficiency Initiative (EE/BE Proceeding).

Comparison of Alternatives

1. Benefit Cost Analysis

In the Planning Order, the Commission stated that the planning proceeding does not seek to modify previous Commission orders related to BCAs. The Commission also stated that the consultant is expected to help evaluate the economic and environmental tradeoffs associated with different pathways. The Companies note they performed UCT and RIM tests to supplement existing BCA analyses of scenarios including the CRA/Stakeholder scenarios. The Companies calculated a BCA ratio for their LTP of 0.42 for NYSEG and 0.38 for RGE. The Companies state that they will develop and include a gas BCA Handbook as an exhibit to their next LTP filing. The Companies also note that they have included all incentives (including federal incentives) in the SCT as an offset to participant customer costs and federal incentives, state incentives, and participant customer costs are eliminated in the UCT and RIM, but the costs associated with utility incentives remain. The Companies provided BCA ratios for all scenarios, including the CRA/Stakeholder scenarios, that ranged from 0.16 to 0.42 for NYSEG and 0.15 to 0.38 for RGE.

AGREE, et al. states that "the Companies' outrageous cost comparisons and non-compliant emissions factors impact the LTP's [BCA], average customer bills, and analysis of decarbonization actions. Together, these assumptions make the LTP's cost analysis absolutely misleading."[62] AGREE, et al. adds that the Companies' BCA does not make any adjustment for New York State's upcoming cap-and-invest policy. NYSERDA states that BCAs should quantify both direct and indirect costs and benefits, including health benefits and the Companies' GHG accounting methodology potentially over-counts the GHG emission

[62] AGREE, et al. final comments, p. 5.

reductions from RNG which extends to the BCA. In their final reply comments, the Companies state there is no economic basis for including federal incentives as a benefit in the SCT, and that the reality is that federal incentives represent a cost because State residents pay the federal taxes that fund the federal incentives, and past precedent supports this treatment. The Companies add that the Commission has recognized federal incentives as a cost as demonstrated by BCA Handbooks filed by each of the State's electric utilities in 2016, 2018, 2020, and 2023, pursuant to requirements in the REV Proceeding.[63] The Companies also state that no adjustments to the BCA analysis are necessary to reflect changes in pipeline and storage capacity costs or reduced capital or operating costs because some scenarios include these modifications. The Companies state that it is too early to include impacts of Cap and Invest and the Order establishing the BCA framework determined that non-energy benefits including health impacts would not be included in the SCT measure.

CRA recommends that the Companies update their capital and operating costs forecast in the LTP to reflect potential downsizing opportunities as customers fully electrify and emissions would further be reduced as total mileage of pipe declines. CRA adds that the LTP should include optimally sized heat pumps (after weatherization) and the BCA should reflect the resulting reduced up-front cost and ongoing energy cost saving. CRA encourages the Companies to treat federal incentives as a benefit, which would serve to improve the BCA results, and states that scenarios in which customers fully electrify should show a higher level of avoided pipeline and storage fixed cost

[63] Case 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework (issued January 21, 2016).

reductions than in the LTP which would improve the BCA for these full electrification scenarios. CRA further recommends that by their first Annual Update, the Companies should present sensitivities on potential impact to their LTP of Cap and Invest, including BCA analyses, and should consult with Staff as necessary to ensure that they are planning properly and adjusting potential investment decisions.

The Commission finds that delaying the Companies' filing of gas BCA handbooks until the next LTP filing is unreasonable, given our expectation and directive that the Companies evaluate NPA projects over the intervening years. Thus, we direct the Companies to file a BCA handbook for gas for each individual utility within 120 days of the issuance of this Order. The Commission also agrees that some of the Companies' assumptions related to federal incentives and some capital, operating, pipeline and storage costs need to be re-examined.

2. Estimated Bill Impacts and Net Present Value of Costs of Each Alternative

The Planning Order directed the LDCs to present an annual bill impact and net present value for both a traditional solution and any alternatives, and to address in its analysis various customer groups. Additionally, the Commission required that LDCs include an alternative bill impact analysis that assumes the full value of any new gas assets is depreciated by 2050. The Companies provided bill impacts for non-participants for several rate classes and kept usage constant over time. NYSEG residential monthly bills increase from $104 to $164 in the reference case and to $284 in the LTP. Bills at the end of the planning period range from $164 to $826 across all of the scenarios. For RGE, monthly residential bills increase from $77 to $126 in the reference case and to $205 in the LTP, with bills for residential customers across all scenarios at the end of the planning period ranging from $126 to $387.

SC/EJ states that to avoid placing upward pressure on customers' bills, the Commission must require the Companies to develop and implement a pilot program to downsize a specific area of the distribution system, reasoning that the main driver for steep residential gas bill increases are due to gas infrastructure investments, as opposed to electrification.[64] SC/EJ also posits that the Cap and Invest program will result in increases in gas bills, leading to more electrification. In their final reply comments, the Companies state that it is inappropriate to discuss the effect of decarbonization on gas system costs and gas bills in isolation. In addition, the Companies assert, the analysis of customer bill impacts of decarbonization must also consider the significant buildout and resulting increased costs of the electric system to accommodate increased demand due to electric vehicles and heating electrification as well as necessary reinforcement and hardening of the grid to address extreme weather conditions.

CRA recommends that the Companies demonstrate the potential impacts of federal incentives on total customer costs in each of the scenarios, as State and federal funding make residential weatherization and heat pump installation significantly cheaper through rebates and tax credits. CRA states that as the LTP process continues, optimization improvements should be incorporated into the scenario modeling and special notice should be taken to ensure that low- and moderate-income customers and disadvantaged communities are not disproportionately affected as rates increase.

The Commission notes that bill increases may be significant under some of the scenarios that were modeled. The fact that the Companies maintained a constant level of usage

[64] SC/EJ final comments, p. 31.

across the planning period for non-participants does not reflect the expectation that customers will partially electrify gas loads over time as appliances come to the end of their lives. In addition, customers that pursue weatherization will likely reduce their consumption of both natural gas and electricity within the home or business. The Companies are directed to file updated bill impacts in their first Annual Update that assumes customer weatherization and reflects reduced customer usage over the 20-year planning period. The revised bill impact analysis shall also include two sets of bill impacts, one that only reflects changes to volumetric block rate structures that have already been approved by the Commission and the other shall additionally reflect further changes that the Companies are considering over the 20-year period such as, but not limited to, the flattening of volumetric block rates.

3. Emissions Impacts

The Planning Order requires that LDCs report the GHG emissions from all solutions, both supply-side and demand-side, and a calculation of the GHG emissions from each scenario they submit in addition to including carbon emissions in the BCA analysis as prescribed in the BCA Framework Order. The Companies state that in the Reference Case, emissions decrease from 4,509,806 MT CO2e in 2024 to 4,006,860 MT CO2e in 2043 for NYSEG and from 4,614,642 MT CO2e to 4,349,122 MT CO2e for RGE (roughly 11 percent and six percent, respectively). The Companies project the LTP to reduce emissions compared to 1990 levels by 55 percent for NYSEG and 50 percent for RGE by 2043.

AGREE, et al. states that the Companies do not use CLCPA-compliant emissions factors, especially related to the contributions of RNG to emissions reductions. AGREE, et al. adds that the failure of gas utilities to meet CLCPA's emissions reduction goals could leave the rest of the State in a deep GHG

emission deficit and a plan based on weatherization, electrification, and the strategic decommissioning of gas infrastructure is the best path for reducing GHG emissions while protecting ratepayers. SC/EJ state that many of the asserted emissions reductions in the LTP are illusory and that while the CLCPA does not specify the precise degree of emission reductions required from gas utilities, all of the scenarios modeled to support the Climate Action Council's Scoping Plan relied on emission reductions from buildings of 90 to 95 percent, suggesting that gas utilities are anticipated to achieve more than a proportional reduction in emissions from their systems. SC/EJ add that the Companies' use of a negative GHG intensity for RNG "renders the emissions estimates for the LTP wholly unreliable and dramatically overstates the purported climate benefits of the Companies' Plan."[65]

SC/EJ also points to the Companies' identification of engagement with industrial customers as an implementation action to gain greater understanding of emissions reduction potential from that sector. NY-GEO states that utilization of the federal tax credit for commercial customers related to ground-source heat pumps using a 40 percent calculation for incentives would also provide additional reductions in greenhouse gas emissions. Tompkins County refers to its Energy Strategy which states an intention to move both county government operations and the overall community toward achieving net-zero emissions and asserts that the Companies' LTP undermines many years of education to communities about heating electrification options. IBEW states that focus on assisting commercial and industrial customers to decarbonize in the LTP would result in reduced emissions and support key economic activity and jobs and the

[65] SC/EJ final comments, p. 4.

ultimate objective must be reducing emissions coupled with maintaining and promoting economic development. NYSERDA states that using CLCPA-compliant emissions factors rather than the Companies' would increase the 2043 LTP scenario emissions by over a million tons to 5.74 million MT CO2e, which corresponds to a 43.4 percent reduction relative to the 1990 baseline. NYSERDA also notes that avoided criteria air pollutant emissions (e.g., nitrous oxide and fine particulate matter, or PM2.5) from reduced combustion generate substantial health benefits and the Companies' GHG accounting methodology potentially over-counts the GHG emission reductions from RNG. NYSERDA does not oppose the disclosure of alternative GHG accounting methodologies in LTPs but maintains that CLCPA-compliant GHG accounting results must also be provided.

In their final reply comments, the Companies state that their LTP is significantly less expensive in cost per unit of GHG emissions reduction than the other modeled scenarios. The Companies state that the Commission must weigh the value of 10 to 15 percent of additional emissions reductions under another scenario against the billions of dollars of additional incremental costs, and the possibility that even with the incremental investments, barriers associated with building out the electric grid and barriers associated with customer adoption could nevertheless hinder achievement of the necessary full electrification adoption rates. The Companies add that the focus should be on reducing GHG emissions, not on downsizing the system and that the failure of stakeholders to include RNG when it has a lower cost per unit of GHG emissions reduction than electrification highlights an unreasonable focus on the goal of full electrification at any cost. The Companies also contend that hydrogen blending has one of the lowest costs per GHG emissions reductions of their modeled decarbonization actions.

The Companies argue that there is uncertainty about how electrification will contribute to emissions reductions and that carbon capture and sequestration may be less costly in terms of GHG emissions reduction than electrification.

CRA states that reflecting downsizing opportunities as customers fully electrify and total mileage of pipe declines would further reduce emissions. CRA adds that as the LTP process evolves, NYSEG and RGE should continue to assess their methodology for emissions accounting, following guidance from state and federal regulators. CRA states that given the Companies' current level of engagement with their industrial customers, it would appear that the current forecast of GHG emissions reduction in the industrial segment is very speculative and may overestimate the potential. CRA's recommendations include an increase in electrification that will serve to reduce the Companies' peak demand and allow them to begin to strategically downsize the system and reduce both operations and maintenance costs and fixed pipeline and storage capacity costs over time, in turn reducing costs to customers while maximizing emissions reductions, putting the Companies on a better path toward meeting the CLCPA's emissions reduction targets.

The Commission recognizes that the method of accounting for GHG emissions is a topic of review and consideration in Case 22-M-0149, as described above. The issue at stake in this proceeding is whether the LTP achieves maximum GHG reductions at minimum cost to ratepayers, and there is disagreement on this topic, as well as whether the mix of decarbonization measures employed in the LTP is the best use of ratepayer funds for reducing emissions. The Commission believes that additional electrification, especially through strategic decommissioning of parts of the gas distribution system, will

increase emissions reductions, and the discussion above on the strategic decommissioning exercise will provide learnings to help inform the Companies' next LTP.

Heat Pump Adoption/Pace of Electrification

In their Final LTP, the Companies refer to the filings they have made in Case 18-M-0084 regarding building electrification, the NPAs they are pursuing in different communities, and the UTEN projects they are developing. The Companies state that information regarding energy efficiency and electrification must be provided well in advance of equipment failure and electrification of multifamily and rental housing is likely to continue to face barriers related to "split-incentives" between building owner and renter. Each of the modeled scenarios include some level of electrification of heating load for residential and non-residential customers. The Companies state that impacts of full electrification on peak electricity demand and the need to invest to increase capacity on electric transmission and distribution systems will be substantial, particularly in areas of the system that are already operating close to or above rated capacity. The Companies assert that their choice of hybrid heating appliances in the LTP ameliorates this. The Companies maintain that their scenarios including hybrid heating have lower cost per GHG emissions reductions than the CRA/Stakeholder electrification scenarios, many of which have air source heat pump cost and emissions improvement assumptions plus cost reductions due to assumed gas system downsizing that are not included in the Companies' hybrid heating scenarios. The Companies maintain that it is less economic to convert boiler-based heating systems, and thus the Final LTP focuses building electrification on those with furnaces and not boilers. The LTP would reach a peak of 75 percent of customers experiencing equipment failures

each year converting from furnaces to hybrid heating by 2043, and 30 percent and 50 percent, respectively, of commercial and municipal customers experiencing equipment failures each year by 2043.

The Companies express that there are reliability, energy resilience, and public safety concerns associated with reliance on full electrification for residential customers, especially during cold winter periods that occur in the Companies' service territories. The Companies recognize that full electrification with ground source heat pumps would result in less electrical load requirements than full electrification with ccASHPs. However, the Companies argue that the high up-front installation costs and land requirements of ground source heat pumps are notable barriers to their adoption. The Companies indicate they would initially focus their electrification efforts on newer homes with furnaces, would not require weatherization prior to electrification, and would work with industrial customers to electrify heating load.

AGREE, et al. states that weatherization and electrification are more cost-effective solutions than a LTP based on low carbon fuels like RNG. SC/EJ lament that the Companies systematically overstate the costs of electrification and understate its benefits, and that the Companies include all of the costs of electrification but decline to identify or include a critical piece of the savings in potential capital spending reductions. SC/EJ also observe that the Companies inflate the forecasted costs of electricity, which skews the modeling results against electrification, and, further, that the Companies fail to account for expected improvements in heat pump performance. In addition, SC/EJ state that not treating federal incentives as benefits makes electrification appear more costly. SC/EJ aver that improved customer education and outreach

regarding electrification of heating will improve adoption rates. A growing body of research, according to SC/EJ, demonstrates that heat pumps and electrification of process heat present significant opportunities to decarbonize industrial uses.

NY-GEO states that ground source heat pumps provide a 45 percent annual energy savings compared to air source heat pumps in the Companies' service territories. Tompkins County urges that efforts to educate residents about ccASHPs and incentivize their adoption should not be discarded and that plans to promote dual-fuel solutions go against the solutions outlined by the Climate Action Council's Scoping Report. IBEW indicates that increased electric demand from electrification of heating load "raises a number of seasonal challenges with respect to having an adequate electric transmission and distribution system to support it, generation resource mix attributes that will ensure load demand is met in extreme cold or extreme heat scenarios, how to manage a changing grid from load following to more intermittent resources, and how much can we depend on our neighbors."[66]

In their final reply comments, the Companies point to the costs, reliability and implementation risks associated with full electrification, as well as the barriers associated with building out the electric grid and customer adoption. The Companies state that in the NPAs they offered over the last two years, only three customers have chosen full electrification. The Companies add that the Final LTP assumes that the Companies' electrification efforts are initially focused on the most cost-effective conversions, but no customer would be prevented from converting, and the Companies will collect information on

[66] IBEW Local 10 NYSEG RGE LT NG Plan Comments (filed June 20, 2024), p. 2.

whether customers elect to weatherize before electrification and will monitor how many customers with boilers choose to electrify to determine if modifications to modeling will be necessary in future long-term plans. The Companies contend that their hybrid heating system has fewer reliability concerns than full electrification or geothermal applications. In support of its arguments, the Companies point to various implementation actions in the final chapter of the Final LTP focused on studying aspects of electrification.

CRA makes a number of recommendations on this topic. Namely, CRA recommends that the Companies develop a joint-planning approach across their electric and gas companies to develop the most cost-effective and efficient solutions for customers and the Companies to support strategic downsizing and increased electrification. CRA also recommends that the Companies assume that customers weatherize before electrification and that the Companies assume more full and partial electrification of homes with boilers. CRA notes that building inventory data used to develop the assumptions for the building stock in the NYSEG and RGE service territories impact the level of precision of the buildings available to electrify. Assumptions about boiler prevalence in older homes may not reflect past renovations in a portion of such structures that replaced boilers with furnaces. Regarding electricity price forecasts, CRA cautions that the Companies are likely significantly overstating the modeled residential customer electric supply prices in both the LTP and Full Electrification scenarios. Accordingly, CRA urges that the Companies model a portion of the customer base converting to full electrification over time in their LTP, instead of the "hybrid" heating system, rather than only in their alternative scenarios.

Further, CRA recommends the Companies model efficiency improvement over time in heat pumps to remove bias in the LTP against electrification and include both geothermal heat pump loops and single building ground source heat pumps to be more in line with current market activity. Finally, CRA further recommends that the Companies include market studies and surveys in its future pilot programs involving electrification that would support the development of the information required to inform improved adoption rate forecasts.

The Commission observes that the Companies' electric businesses offer incentives to customers to convert heating systems to electric options. The lack of full electrification in the LTP and its reliance on hybrid heating with gas backup reduces the emissions reductions that would be possible with full electrification. The assumed economics of electrification are negatively impacted in the LTP by the treatment of federal incentives employed by the Companies. The Final LTP charts a course of continued reliance on the natural gas distribution system without recognition of increased electrification. Additional exploration and modeling of electrification scenarios is necessary. The Companies are directed to refine assumptions regarding electrification as described by CRA and stakeholders in their next LTP filing, including development of a joint-planning approach across their electric and gas companies to develop the most cost-effective and efficient solutions for customers and the Companies to support strategic downsizing and increased electrification, which the Companies have discussed in their Implementation plan in the LTP. Further, the Companies are directed to consult with Staff to develop more extensive outreach and education programs, building on their current outreach and education on alternatives to fossil fuel heating options, to be filed within 120 days of this Order, to spread

information about electrification alternatives to existing gas customers, especially those near LPP that will be replaced.

Just Transition and Worker Training/Development

IBEW states that the Companies' LTP will impact the individual workers within the Companies, many of whom are members of IBEW Local 10. IBEW adds that a long-term natural gas plan offers both benefits and risks and numerous utility jobs could be impacted by the wide scale phaseout of natural gas. However, IBEW states that the plan also offers potential employment opportunities in the development and buildout of thermal networks, RNG, hydrogen, electric vehicle infrastructure, transmission & distribution infrastructure, and emerging technologies. IBEW urge that a just transition be an important part of the first phase of this LTP, specifically asserting that transition of the workforce including worker training and development be incorporated into LTP implementation from day one. IBEW recommends that the Commission require the Companies to meet directly with the union to map out this key area. IBEW states that discussion between the Companies and IBEW must include worker training and development as any transition will require new skill development to support these decarbonization efforts.

The Commission agrees with IBEW that the transition by the Companies to the decarbonized future should include coordination with its employees, both union-represented and non-union, and that all employees deserve training and development. The Commission encourages the Companies to work in collaboration with IBEW and study future workforce availability and training requirements, as well as any other financial and employment impacts, in light of this transition to decarbonization.

Climate Leadership and Community Protection Act

As previously discussed, the CLCPA is ambitious climate legislation with a commitment to reduce GHG emissions and achieve net-zero emissions, increase renewable energy usage, and ensure climate justice. To those ends, CLCPA §7(2) requires all State agencies, including the Commission, to take into consideration whether certain specified final agency actions are inconsistent with or will interfere with the attainment of the statewide GHG emission limits established by the DEC under ECL Article 75. Thus, final Commission decisions in proceedings such as the instant matter are subject to the evaluation required under CLCPA §7(2). Section 7(2) further states that, if a decision is deemed to be inconsistent with, or interferes with, the attainment of the statewide GHG emissions limits, the deciding agency, office, authority, or division must provide a detailed statement of justification as to why such limits may not be met and identify alternatives or GHG mitigation measures to be required.

The Commission finds our action here, requiring further actions with regard to the Companies' Final LTP, is not inconsistent with nor interferes with the CLCPA. The intention of the gas planning process we initiated in Case 20-G-0131 is to continue providing safe and reliable service while charting a path forward to attaining the State's climate goals. The actions directed in the body of this Order provide a framework to take steps toward these goals while balancing the need for ratepayers to receive safe and reliable service. Accordingly, we determine that our action in this Order is not inconsistent with CLCPA §7(2).

CLCPA §7(3) also provides that, in considering and issuing permits, licenses, and other administrative approvals and decisions, the Commission shall not disproportionately

burden disadvantaged communities. CLCPA §7(3) also requires that all state agencies prioritize reductions in GHG and co-pollutants in disadvantaged communities. The Climate Justice Working Group adopted final criteria to identify disadvantaged communities, along with an interactive map.[67] While the Companies' service territories contain disadvantaged communities, the types of projects and research to be initiated pursuant to the LTP and our direction herein do not disproportionately burden any specific areas. Energy efficiency and LPP replacement programs, for example, will only benefit surrounding communities and reduce GHG emissions in those areas, which has larger benefits for ratepayers and the State as a whole in attaining its climate goals. In consultation with Staff, the Companies shall identify the programs and investments that are intended to benefit disadvantaged communities in its Annual Update, due May 31, 2025, including an explanation of how these investments benefit disadvantaged communities and a quantification of the benefits. Accordingly, the Commission finds that the action taken in this Order will not disproportionately burden a disadvantaged community.

CONCLUSION

In this Order, the Commission directs the Companies to, amongst other things, propose a demand response program, submit a report on the Companies' capacity reserve margin calculation, conduct a stakeholder technical conference exploring strategic decommissioning criteria and submit a report summarizing the results thereof, and submit a report on the substantiation of maximum allowable operating pressures in certain pipe segments. Further, we also direct the Companies to

[67] See https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria.

include certain information in their Annual Updates to this LTP, and in their next LTP filing, due on January 31, 2028.

The Commission orders:

1. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file a report on contract restructuring and decontracting as described herein, as well information on capacity release revenues and counterparties, within 120 days of the date of this Order.

2. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to meet with large commercial and industrial customers on focusing renewable natural gas and hydrogen for those customers and to file a report summarizing the result of those discussions in their first Annual Update due May 31, 2025, and in every Annual Update until their next long-term plan filing.

3. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file their next long-term plan by January 31, 2028.

4. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file a report on the calculation of a capacity reserve margin as described in this order within 120 days of the date of this Order.

5. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file a proposal for a residential demand response program within 90 days of the date of this Order.

6. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file findings related to their investigation of adoption rates of

heating electrification technologies in their First Annual Update due on May 31, 2025.

7. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to include a status update on their maximum allowable operating pressure reconfirmation efforts as described herein in their first Annual Update due May 31, 2025, and in each subsequent Annual Update and Long-Term gas plan until reconfirmation is complete.

8. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file a report on the work of their third-party expert on program development and implementation of full-building electrification incentives in targeted areas where leak prone infrastructure is located within 120 days of the date of this Order.

9. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to convene a technical conference to develop criteria for identifying potential segments of infrastructure for strategic decommissioning as described in this order within 60 days of the date of this Order and file a report summarizing the discussions and results within 30 days of the technical conference.

10. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to update their capital expenditure forecasts as described in this Order at least 90 days before their next long-term plan filing due on January 31, 2028.

11. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file updated information on quantification of benefits to disadvantaged communities in their first Annual Update due May 31, 2025, and in each subsequent Annual Update until their next long-term plan filing.

12. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file Benefit-Cost Analysis Handbooks for gas programs in their first Annual Update due May 31, 2025.

13. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to update the Benefit-Cost Analysis ratio calculations for all scenarios as discussed in this Order in the first Annual Update due May 31, 2025.

14. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to file updated bill impact calculations as discussed in this Order in their first Annual Update due May 31, 2025.

15. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation are directed to develop and file outreach and education programs regarding non-pipes alternatives specifically targeted to customers residing in vulnerable locations or near remaining segments of leak prone pipe within 120 days of the date of this Order.

16. In the Secretary's sole discretion, the deadlines set forth in this Order may be extended. Any request for an extension must be in writing, must include a justification for the extension, and must be filed at least three days prior to the affected deadline.

17. This proceeding is continued.

By the Commission,

(SIGNED) MICHELLE L. PHILLIPS
Secretary

SCHEDULE OF PROCEEDING

Event	Date
Pre-Filing Educational Technical Conference	September 13, 2023
Companies' Filing of Initial Long-Term Plan	October 2, 2023
CRA Initial Report	November 22, 2023
Technical Conference	November 29, 2023 – Companies' Presentation of Initial LTP
Technical Conference on electrification and heat pumps	December 13, 2023
Initial Stakeholder Comments on Initial LTP	December 18, 2023
Technical Conference on hydraulic modeling and maximum allowable operating pressure	January 4, 2024
Technical Conference on electric and gas price forecasts	January 18, 2024
Reply Comments on Initial LTP	January 19, 2024
Technical Conference on NPAs in Lansing and Canandaigua	January 25, 2024
Technical Conference on geothermal applications	January 31, 2024
Technical Conference on strategic electrification	February 13, 2024
Companies file Revised LTP	February 20, 2024
Technical Conference on bill impacts and affordability	February 28, 2024

CRA Preliminary Findings Report	March 15, 2024
Initial Stakeholder Comments on Revised LTP	March 29, 2024
Companies file Final LTP	April 26, 2024
CRA Final Report	May 21, 2024
Stakeholder Comments on Final LTP	June 21, 2024
Reply Comments on Final LTP	July 10, 2024

SUMMARY OF COMMENTS

Comments on Initial Long-Term Plan (LTP):

1. Alliance for a Green Economy (AGREE)

AGREE states that the Initial LTP for New York State Electric Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RGE), to be referred to as "the Companies," relies on flawed assumptions and analysis from the LTP submitted by National Fuel Gas Distribution Company (NFG). AGREE accordingly urges the Companies to determine a pathway after addressing these, among other, elements of the plan.

AGREE initially asserts that the Companies' LTP does not match the emissions requirements from the Climate Leadership and Community Protection Act (CLCPA). AGREE recognizes that NYSEG and RGE project greenhouse gas (GHG) emission reductions of 58 percent and 51 percent, respectively, by the end of the 20-year planning horizon in 2043. AGREE affirms that both figures fall below the 2043 emission reduction goal of 65 percent set by the Companies to meet the CLCPA's 85 percent GHG emission reduction target for 2050.

AGREE identifies difficulties with implementing the Companies' plans for renewable natural gas (RNG). The Commenter cites studies from the Natural Resources Defense Council (NRDC) along with Sierra Club and Earth Justice (SC/EJ) to identify issues that impede accurate calculations of RNG's GHG emission lifecycle, such as methane leakage from RNG along the gas distribution system and the possibility of intentionally produced methane. AGREE also questions the optimism of the Companies' procurement plan for RNG in their service territories. This plan assumes 100 percent procurement of RNG from animal waste, food waste, and landfills, as well as 50 percent of RNG from waste treatment centers. The Commenter

questions the future of RNG and recommends a focus on currently available and efficient cold-climate and ground-source heat pumps.

AGREE recommends that the Companies remove hydrogen blending from the LTP. The Commenter supports this recommendation with reference to PA Consulting's independent analysis of the LTP submitted by the Consolidated Edison Company of New York, Inc. (Con Edison) and Orange & Rockland Utilities, Inc. (ORU); this analysis affirms a growing consensus amongst energy industry experts against hydrogen as an ideal fuel for end-use applications with the potential to electrify. AGREE also refers to a 2022 study from the California Public Utilities Commission that projects significant and costly modifications to the gas distribution system for hydrogen-blending at this scale. AGREE is also concerned with the inclusion of an upper-bound 20 percent hydrogen blend by volume.

AGREE additionally challenges the LTP's cost projections for hydrogen and RNG. The Commenter recognizes that the cost of hydrogen in the CLCPA Full Electrification scenario exceeds that in the CLCPA Hybrid scenario while the cost of RNG remains the same across the two. AGREE expects the use of hydrogen and RNG to decrease in the Full Electrification scenario according to lower gas customer counts in this scenario.

AGREE also recommends that the Companies pursue a proactive non-pipe alternative (NPA) program to reduce customer costs and stranded assets. The Commenter reiterates the direction from the Public Service Commission (PSC) regarding the NFG long-term plan to evaluate leak-prone pipe (LPP) for decommissioning according to a neighborhood approach at least 18 months prior to scheduled replacement. AGREE also notes the

request from Charles River Associates (CRA) for the Companies to analyze NPA opportunities for their existing LPP replacement program.

AGREE equally urges the Companies to ensure that the LTP does not disproportionately divert health risks and financial burdens to disadvantaged communities. The Commenter affirms the urgency of this recommendation by acknowledging the LTP's reliance on alternative fuels and endorsing studies which link asthma and on-site combustion.

AGREE states that the Companies ultimately choose a "hybrid" approach of heat pumps and backup furnaces. AGREE claims that the Companies choose this approach by incorporating faulty assumptions in their benefit-cost analysis (BCA) of the LTP options, especially with respect to the CLCPA Full Electrification scenario, or the only CLCPA-compliant scenario modeled in the LTP. AGREE asserts that the Companies' LTP, like that filed by NFG, treats all incentives for weatherization and energy efficient electrification as a cost and not a benefit. The Companies, according to AGREE, borrow from NFG's methodology for incentives, which positions incentives from the government or a utility as costs to customers according to higher rates or taxes. AGREE challenges this methodology with research from CRA which affirms that incentives from the Inflation Reduction Act (IRA) can provide customers up to $14,000 toward energy efficient electrification, along with additional federal tax credits for weatherization, at no additional cost to New Yorkers. AGREE also recognizes that CRA's corresponding corrections to the LTP, which assumes 50 percent of incentives as federal and thus offset as benefits, changes the benefit-cost ratio (BCR) for the Companies preferred path from 0.41 to 0.56 and the BCR for the CLCPA Full Electrification scenario from

0.34 to 0.52. The Commenter additionally recommends for the Companies to incorporate adjustments based on New York's upcoming cap-and-invest policy.

2. Multiple Intervenors (MI)

The comments from MI for the Initial LTP submit four primary remarks for the Commission's consideration: 1) the proposed cost of the LTP is excessive and would jeopardize gas service affordability; 2) the Benefit/Cost Ratios show that the LTP is neither cost-effective or in the public interest; 3) the LTP should implement and/or expand non-residential gas demand response programs, either on a utility-wide or targeted basis; and 4) the Commission should address equitable cost allocation and cost recovery issues within the LTP. The Initial LTP proposes expenditures of $4.095 billion for NYSEG and $3.811 billion for The Initial LTP proposes expenditures of $4.095 billion for NYSEG and $3.811 billion for RGE. MI claims that the Companies will recover the entirety of these costs from their customers. MI presents the LTP's cost to customers as excessive according to the numerous other financial commitments undertaken by the Companies, as well as periodic delivery rate increases associated with the Companies' provision of natural gas service. MI provides a sampling of significant financial obligations imposed outside of rate proceedings on energy providers and their respective customers across New York State by listing 15 decarbonization efforts authorized by the Commission and arguing that decarbonization efforts are costly and result in large delivery rate increases in recent rate proceedings. MI contends the proposed cost is excessive in light of prominent economic trends in the Companies' service territories. MI recognizes that all major cities within these territories have not only experienced negative five-year job

growth but also lost jobs at a faster rate than New York City and the State as a whole.

MI further questions the socioeconomic prudence of the Initial LTP according to the Benefit/Cost Ratio produced by each Company within this plan. Each ratio falls well below 1.0, the threshold for an effective Benefit/Cost ratio: the LTP produces a Benefit/Cost Ratio for NYSEG of only 0.41 and only 0.38 for RGE, given that implementation of the LTP for NYSEG would produce societal benefits of $2,284,482,144 at a societal cost of $5,616,395,439 and implementation of the LTP for RGE would produce societal benefits of $1,866,104,436 at a societal cost of $4,933,799,559. MI also rejects the LTP's pursuit of these proposed benefits in terms of the CLCPA and argues that even after quantifying and accounting for the benefits of emissions reductions, the LTP still would result in net societal harms in the billions of dollars.

MI then urges the Companies to implement and/or expand non-residential gas demand response programs because, according to the Commenter, the LTP does not appear to address any programs of this sort. MI claims that the Companies address the topic of gas demand response with a cursory passage that only references residential customers. MI contends that this topic's conscription to residential markets warrants correction because, according to MI, non-residential customers typically represent the primary participants – and the largest sources of load reductions – in electric demand response programs. MI observes no reason to not expect the same for gas demand response programs. Additionally, MI recognizes that non-residential gas demand response programs, like their residential counterparts, can improve gas reliability, eliminate or delay the need for future infrastructure investment, and reduce costs to customers.

Lastly, MI implores the Commission to ensure equitable cost allocation and recovery in this LTP. MI observes a variety of proposed efforts that benefit certain service classes over others, yet which forecast cost allocation/recovery on a purely volumetric basis, rather than with correlative structures to account for cost causation and/or beneficiaries pay principles. For instance, MI observes efforts in the LTP to promote building electrification with air source heat pumps and gas appliance electrification that cater to residential, commercial, and municipal customers. MI questions whether the Companies should also force industrial customers to fund these efforts, since these customers will unlikely benefit in a direct way from such efforts. Similarly, MI observes certain programmatic efforts focused on the industrial sector without clear relation to non-industrial customers. MI states it is not excusing certain customer types from any allocation of LTP implementation costs; rather, MI recommends against the application of volumetric-based cost allocation/recovery for programs with evidently disproportionate benefit distribution relative to volumetric usage. MI presents the application of this cost recovery/allocation in these instances as a matter of administrative convenience. MI also accentuates the urgency of these equitable allocation considerations according to the magnitude of this LTP's costs.

3. New York Geothermal Energy Organization (NY-GEO)

NY-GEO provided the Companies with geothermal system information specific to the NYSEG/RGE service territory. This information includes costs, markets, incentives, and savings. NY-GEO claims, based on expert consensus, that an average cost to use a geothermal system for a fully installed residential home system is $30,000. This cost includes ground loops and

thermal storage. After installing over 2,000 geothermal heat pumps, NY-GEO has learned that these appliances, when compared with cold climate air source heat pumps (ccASHPs), produce 45 percent more annual energy savings in the Companies' territories. NY-GEO claims that geothermal heat pumps produce a much higher performance than air source heat pumps or natural gas.

NY-GEO also affirms the affordability of geothermal systems to lower income residents, senior residents, and tax-exempt organizations. NY-GEO contends that New York State incentives allow 40 percent savings on installation, which could also increase, pending the passing of new legislation.

NY-GEO observes significant market potential for geothermal systems among electric customers that use oil and propane for heat, as well as current gas customers. NY-GEO promotes a rural to urban methodology for transitioning off gas to make the most of market dynamics. Contractor-based growth will initially reduce installation costs on smaller homes and, in turn, allow necessary time for electrical infrastructure in dense urban areas to improve and render geothermal installations feasible.

4. Ratepayer and Community Intervenors (RCI)

RCI contends that the LTP does not comply with the CLCPA and will hinder New York State's ability to meet climate and emissions goals. RCI recommends that the Companies remove the "delayed-achievement" scenarios and provide more scenarios which meet or exceed the State's climate timeline. RCI views the evaluation of these scenarios as a waste of time and effort; by initially planning for delayed achievement of CLCPA goals, these scenarios preemptively divest the Companies of the opportunity to comply with these goals, given their temporal basis.

RCI proceeds to list more specific recommendations for CLCPA compliance in the Revised LTP. RCI recommends that this LTP present scenarios which include the reduction of pipe usage and the decommissioning of gas system sections. RCI challenges the LTP's assumption that customers will need supplemental heat for electrification. RCI confirms the market availability of modern heat pumps rated down to temperatures experienced in the Companies' service territories. RCI resists the notion that a hybrid heating scenario would cost less than a singular system for either company or customer.

Additionally, RCI rejects hydrogen blending as a solution. RCI views this blending as unsafe, unnecessary, and expensive. RCI contends that this blending remains a speculative technology and requires cumbersome equipment overhauls. RCI also offers more sweeping advice on the LTP's economic analysis. RCI recommends that the comparisons between scenarios in the Revised LTP account for externalized costs from environmental, state, and local mitigation.

5. Sierra Club and Earth Justice (SC/EJ)

SC/EJ submit the following remarks regarding the Companies' Initial LTP: 1) the Companies cite commitments made in their Joint Proposal adopted by the Commission in Case 22-E-0317, which was pending at the time of the Initial LTP's filing, as a basis for LTP approaches; 2) no scenario analyzed in this LTP, chosen or otherwise, achieves emission reductions through 2043, or across the LTP's 20-year planning horizon, that establishes a trajectory for the Companies to meet their proportional share of the CLCPA's 85 percent emission reduction target for 2050; 3) each scenario assumes no reductions to gas-side capital spending, despite projecting not only decreased gas usage but also increased electric system costs in response to

gas customer electrification; 4) the LTP promotes overreliance on RNG and hydrogen according to unrealistic assumptions regarding the cost, availability, and environmental impacts of alternative fuels and according to insufficient consideration of industrial decarbonization pathways, non-pipe alternatives, thermal energy networks, and demand-reduction strategies; and 5) the LTP fails to assess impacts on disadvantaged communities.

SC/EJ recognize that the Companies develop the LTP's mileage targets for leak-prone main replacement according to the JP in Cases 22-G-0320 and 22-G-0318. The organizations question the applicability of proceedings regarding CLCPA compliance from rate cases with those from long-term gas planning dockets, given that rate cases have different and far shorter planning horizons than long-term gas plan filings and subsequently pursue incremental, rather than more comprehensive, actions to comply with the CLCPA. SC/EJ also promote a 20-year long-term planning docket as a better venue for evaluating the prudence of leak-prone main replacements in particular, given that these replacements should represent long-lived capital investments. The Commenter also asserts that long-term gas planning should inform rate case commitments on capital expenditures and decarbonization measures, rather than vice versa.

SC/EJ agree with the 65 percent emission reduction target for 2043 that the Companies establish for compliance with the CLCPA's 85 percent emission reduction target for 2050; however, SC/EJ assert that no scenario analyzed in this LTP, chosen or otherwise, achieves this 65 percent target for 2043. The two "delayed achievement" scenarios from this LTP, of course, miss this target: each achieves only 50 percent emission reduction by 2043. The Companies purport that their CLCPA Hybrid Heating scenario and CLCPA Full Electrification scenario

both achieve 65 percent emission reduction by 2043, but SC/EJ challenge the verity of these projections by asserting the centrality of RNG in the decarbonization strategies of each scenario and the inconsistency of each scenario's RNG emissions accounting with the CLCPA. Moreover, SC/EJ recognizes that NYSEG's Initial LTP achieves only 58 percent emission reduction by 2043 while RGE's achieves only 51 percent. The organizations add that the Companies overstate these 58 percent and 51 percent reductions, given that the initial LTP for each Company relies heavily on substituting RNG for fossil methane and omits CLCPA-consistent emissions accounting. SC/EJ trace the difference between the levels of emission reduction in the Initial LTP and the CLCPA Full Electrification scenario to the latter's lower dependence on RNG, which diminishes its exposure to the Companies' erroneous RNG emission accounting. The Commenter recognizes that quantities of RNG utilized in the CLCPA Full Electrification Scenario accord with ICF's Achievable Deployment Scenario, rather than its Optimistic Growth Scenario, which the Initial LTP employs to project utilized RNG quantities. The Commenter also traces this difference to the assumption in the CLCPA Full Electrification Scenario that residential customers install ccASHPs rather than hybrid heating systems and would electrify not just in newer homes with gas furnaces, as in the initial LTP, but also in older homes and with boilers.

SC/EJ criticize this lack of any CLCPA-consistent emission reduction scenario because it obscures the true cost of CLCPA compliance. They also recognize that this lack will eventually place the Companies in a difficult situation where they will need to achieve residual emission reductions through the following means: electrifying customers in hard-to-electrify buildings (at higher cost) without the benefits of avoided gas

system investment from a more electrification-oriented approach; replacing recently installed heat pumps with cold-climate models at new cost; and further decarbonizing the gas supply.

SC/EJ recommend that the Companies revise each scenario's assumption of no reductions to gas-side capital spending by incorporating more dynamic and realistic assumptions regarding capital investments and calibrating these to each scenario's projections for gas customer count and throughput decline. Accordingly, SC/EJ recommend that the Companies coordinate these calibrations for each scenario with features of a managed and phased transition from the gas system. SC/EJ recognize that gas system spending does not unconditionally decline with customer count or throughput but notes that this spending can directly correlate to gas customer count and throughput decline within the parameters of a managed and phased transition from the gas system. SC/EJ refer the Companies to a March 2023 report from Groundwork Data for the Building Decarbonization Coalition for guidance on right-sizing the gas system. SC/EJ confirms that a critical component of this approach is the avoidance of gas network reinvestment and subsequent stranded assets by repairing or decommissioning leak-prone pipes rather than replacing them. This approach also advises to frontload investments in low- to moderate-income households and disadvantaged communities so as to avoid ballooning costs and minimize burdens to ratepayers. SC/EJ provide additional support for a managed and phased approach to gas system transition by referencing a June 2023 report from the American Council for an Energy-Efficient Economy. This report promotes electrification through strategic neighborhood, rather than household by household, pipeline replacement, as well as the use of NPAs in higher electrification scenarios.

SC/EJ also challenge many of the LTP's assumptions regarding electric and gas forecasting. They also assert the cap placed by the Companies on the percentage of customers who will electrify their heating systems when their current systems give out is arbitrary. SC/and EJ affirm that this cap significantly understates the number of customers with the potential to electrify their heating systems, much like the Companies' assumption that no customers with boilers install electric heat pumps. SC/EJ challenge the Companies' exclusive electrification of customers in newer homes, further stating that mini-split heat pumps can electrify customers with boilers and that the exclusion of these customers would disproportionately leave lower-income customers on the gas system, given that these customers remain more likely to live in older homes and heat with gas boilers. SC/EJ continue that the LTP will economically disadvantage these customers left on the gas system, given the inevitability of gas price increases from declining gas throughput, substitution of expensive alternative fuels for fossil methane, and New York's forthcoming cap-and-invest program. The Commenter also notes that the Companies have not developed any analyses quantifying the risk of volatile gas prices or the economy-wide cap-and-invest regulations currently under development by the Department of Environmental Conservation. SC/EJ accentuate the risks of these analytical shortcomings by confirming that conventional natural gas accounts for approximately 74 percent of NYSEG's and 77 percent of RGE's annual usage in 2043.

SC/EJ characterizes the Companies’ projections of heating needs as inflated and ascribes these to the Companies' deviation from their own proposed methodology for calculating peak heating demands. SC/EJ affirm that the LTP projects

heating needs from temperatures over 40 years old, despite the Companies' claims to project these from the coldest day in the prior 40 years. The organizations challenge this inflation of heating needs not only according to methodological inconsistency but also unjustified subordination of electric heat pumps to gas (electric heat pumps become less efficient and more costly to operate at the unrealistically low temperatures assumed by the Companies). SC/EJ observe this unjustified subordination of electric heat pumps through the Companies' modeling of their cost, as well. SC/EJ reference Strategen's comments on the LTP to evidence skewed cost modeling. According to Strategen, the Companies base their cost assumptions for ccASHPs on some of the most expensive units, the Companies overstate the incremental cost for ccASHPs by $8,000 relative to other utilities, and the Companies fail to factor in currently available rebates and tax credits for high-efficiency electric appliances. SC/EJ then critique the Companies' assumption of no future improvements in electrification technology cost or performance.

SC/EJ proceed to critique the LTP's heavy reliance on combustion of RNG and hydrogen. They assert that financial and technical barriers surrounding alternative combustion fuels prevent these fuels from providing the following: a viable decarbonization pathway; necessary downsizing of the gas system; CLCPA-compliant GHG emission reduction; a response to co-pollutants from combustion that threaten public health, especially in disadvantaged communities; and a managed transition that does not financially overburden low-income customers.

SC/EJ attribute the LTP's heavy reliance on alternative fuels to this plan's incorporation of the ICF's "optimistic growth scenario" for RNG supply and its omission of

the ICF's "achievable deployment scenario" for this supply. The commenters contend that the LTP's exclusive dependence on the optimistic scenario for RNG supply places ratepayers at risk because the plan subsequently fails to account for factors outside Company control that thwart the plan's forecasted monopoly on RNG in its service territory. SC/EJ recognize that the plan's RNG supply forecasting does not account for New York State's plan to reduce landfilling by 85 percent by 2050 or competition from other industries. The organizations challenge the GHG emission reduction benefits of the Companies' RNG plans for the following reasons: RNG is chemically identical to fossil gas; full decarbonization of the Companies' gas supply would require intentional cultivation of an enormous amount of RNG, which would create the perverse incentive to increase both organic waste in landfills and concentrated animal feeding operations; the emission reductions claimed in the LTP lack analytical value because the Companies employ net rather than CLCPA-compliant gross accounting and subsequently use negative emissions factors for some RNG.

SC/EJ attribute the LTP's heavy reliance on hydrogen to its proposal to incrementally increase hydrogen blending, beginning in 2028, by 1.25 percent per year, up to a 20 percent hydrogen blend in 2043. The Commenter emphasizes financial and logistical issues with this hydrogen blending plan. SC/EJ assert that the LTP's projected total cost for hydrogen blending proves not only expensive but even understated. They recognize that blending costs for NYSEG ($135 million) and RGE ($172 million) exclude updates for the natural gas system and/or end-use appliances to allow systemwide blending. SC/EJ affirm that this blending would require these updates, such as costly investments in pipe replacements, because, according to a 2022

feasibility study from the California Public Utilities Commission, systemwide blending becomes concerning once it approaches five percent by volume. SC/EJ reference this study and mention the LTP's failure to disclose the Companies' research on hydrogen blending, which they cite as another obstacle to an accurate assessment of blending's safety, reliability, and prudence. SC/EJ also challenge the efficacy of the Companies' hydrogen blending plan by asserting that a 20 percent blend of hydrogen by volume in natural gas mains results in roughly double the total gas loss when compared to methane-only blends and that green hydrogen requires electricity as an input. Further, they challenge the GHG emission reduction benefits of the Companies' plans for hydrogen according to recent research which indicates that higher blending levels reduce the GHG benefits that hydrogen can theoretically provide. SC/EJ accordingly recommend that the Companies conserve RNG and hydrogen for hard-to-electrify uses and not blend or inject either into the existing gas distribution system.

SC/EJ state that indoor combustion of RNG and hydrogen produces several co-pollutants and identify grave health threats associated with each. They state indoor combustion of each fuel can produce hazardous matter which can have serious health implications. SC/EJ state that these negative health outcomes associated with indoor fuel combustion disproportionately impact low-income communities and communities of color because these populations typically live in smaller homes with inadequate mechanical ventilation and aging stoves often used to supplement winter heating. SC/EJ emphasize the importance of assessing the health impacts of co-pollutants from fuel combustion in these communities by identifying this as a criterion for CLCPA compliance. SC/EJ recognize that the Scoping Plan developed by

the Climate Action Council specifically calls for analyses of the co-pollutant emissions and health impacts of alternative fuels such as RNG and green hydrogen prior to investments in such fuels for use in gas system planning, including in disadvantaged communities. SC/EJ recommend that the Companies perform these analyses with the EPA's Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool. The Commenter urges the Companies to explicitly detail how the LTP will direct 35 percent of benefits from clean energy and/or energy efficiency programs towards disadvantaged communities, as required by the CLCPA.

SC/EJ recommend that the LTP further assess opportunities for industrial customers to decarbonize through energy efficiency and electrification. SC/EJ observe significant opportunities for industrial decarbonization in the Companies' service territories given that NYSEG and RGE's industrial customers make up 21.6 percent and 13.1 percent of demand, respectively. They also observe opportunities for significant emissions cuts amongst these customers according to the LTP's omission of electrification for boiler-based systems and process heat, along with the U.S. Department of Energy's support for these industrial decarbonization initiatives.

SC/EJ further highlight additional decarbonization opportunities for the LTP in the potential for the Companies to expand their NPA program. The Commenter recognizes the circumscription of the Companies' NPA program to vulnerable and constrained areas, along with this program's lack of success. Specifically, they note that the Companies have yet to advance NPAs in vulnerable locations the Companies identified. SC/EJ accordingly recommend that the Companies expand their NPA screening process to include segments of LPP under assessment

for decommissioning or replacement. SC/EJ states that cost savings from NPAs that reduce or defer large capital expenditures through strategic neighborhood targeting for electrification can produce more available funds for decarbonization. They also recommend that the Companies intensify their consideration of Thermal Energy Networks for decarbonization purposes. SC/EJ counter the Companies' defense for subordinating the networks in the LTP, which raises concerns regarding unsettled technology, by reflecting this defense and effectively turning it on its head; the Commenter states that concerns regarding unsettled technology did not deter the Companies' pursuit of hydrogen blending.

SC/EJ lastly recommend that the Companies work to reduce overall demand, the need for infrastructure investment, and, in turn, emissions by including demand response programs in the LTP. They further state that the Companies' ignored the Commission directive from the Gas Planning Order to include these types of programs in the LTP. SC/EJ recommend that the Companies advance beyond the "bring your own thermostat" paradigm for demand response programs and promote Load Shedding (daily demand) and Load Shifting (hourly demand) programs among commercial customers. They also recommend that the Companies implement Behavioral Demand Response programs by aggressively pursuing residential customer outreach, education, and participation. SC/EJ further recommend that the Companies reevaluate deployed metering infrastructure and/or direct load control devices to modify rate design to include Time of Use, peak pricing, and seasonal rates.

6. <u>The Tompkins County Department of Planning and Sustainability (Tompkins)</u>

The Tompkins County Department of Planning and Sustainability (Tompkins) affirms that the LTP selected by the Companies does not align with the CLCPA and will hinder New York State's ability to meet its climate change and emissions goals. Tompkins asserts that the Companies' non-compliance in this regard could discourage other entities in New York State from taking the requisite steps to meet these goals.

Tompkins states this LTP could have negative impacts on the county's ability to achieve net-zero carbon emissions. Tompkins asserts that this plan does not clearly focus resources on developing and implementing robust electrification programs to enhance energy reliability and resiliency. Tompkins requests that the Companies show how the LTP would significantly reduce GHG emissions and comply with the CLCPA.

Comments on Revised Long-Term Plan

1. AGREE

AGREE supports CRA's conclusions that RNG should only be used for hard-to-electrify end-uses. The Commenter refers to its initial LTP filing comments, which challenge this plan's assumptions regarding RNG cost-effectiveness and availability. AGREE supports CRA's recommendation that the Companies apply hydrogen within the industrial sector through direct application rather than system-blending. AGREE states that the Companies' proposed percent of hydrogen-blending, along with their estimate of no-cost to the system to prepare for this amount of blending, is unrealistic. The Commenter references hydrogen-blending allowances in California and Massachusetts and compares these to the Companies' proposed amount in the LTP.

AGREE supports the Free Tompkins Strategic Downsizing Exercise and asserts that the Companies would benefit from this planning exercise. The Commenter acknowledges that the

Companies' reply comments discuss difficulties in identifying places to downsize the gas system and refer these difficulties to a lack of requisite community engagement. AGREE recommends that the Companies begin this process within the Tompkins County community since this Tompkins County community is already engaged by prospects of electrification and gas system downsizing. AGREE also recommends that CRA and the Companies reply to the planning exercise outline and develop this idea into a pilot for the final LTP.

AGREE observes a bias in the revised LTP against electrification and toward a dual system heating approach based in alternative fuels. The Commenter states that numerous assumptions in the LTP artificially reduce alternative fuel costs and inflate electrification costs. AGREE laments that the LTP maintains all current gas customer connections, arbitrarily caps heat pump adoption, and fails to reduce capital expenditures for gas when modeling electrification efforts. AGREE also notes that the LTP employs cost assumptions for electrification conversions from the LTP filed by NFG; AGREE claims that NFG has a vested interest in overstating these costs as a gas-only utility.

2. Fossil Free Tompkins

Fossil Free Tompkins recites its extensive history of working with NYSEG to encourage movement toward decarbonization. Commenters trace this relationship back to 2013, when the Company proposed the Lansing Reinforcement pipeline for reliability purposes. Fossil Free Tompkins responded by mobilizing community efforts to promote heat pumps and energy efficiency, which ultimately resulted in Commission approval for New York State's first NPA project in 2017. Overall, Fossil

Free Tompkins acknowledges NYSEG's leadership and historical willingness to move toward a gas-free future. Nevertheless, Fossil Free Tompkins faults the Companies' Revised LTP for continuing to pursue solutions such as hydrogen blending and RNG despite stakeholder opposition. Fossil Free Tompkins asserts that the Companies neglect consideration of ground source heat pumps, the Companies' own report demonstrating the cost-effectiveness of reducing gas system size, and Fossil Free Tompkins' suggestion of pathways for community engagement to support gas system decommissioning.

Ultimately, Fossil Free Tompkins expresses disappointment over the Companies' Revised LTP. Fossil Free Tompkins views this plan as little more than business-as-usual in the face of a climate emergency. Fossil Free Tompkins includes its proposal for community-engaged gas system decommissioning, which Fossil Free Tompkins submitted to NYSEG during the technical conference held on February 13. Fossil Free Tompkins urges the Companies to initiate robust gas reduction plans, ideally according to the aforementioned proposal.

3. NY-GEO

NY-GEO critiques the Revised LTP's evaluation of heat pump technology for exclusively considering air source heat pumps (ASHPs). According to NY-GEO, the consequent omission of ground source heat pumps (GHPs) from this evaluation undermines not only its rigor but also its ultimate outcome. NY-GEO affirms that GHP technology accords with the colder climate of the Companies' service territories and offers a more energy efficient space heating source than conventional ccASHP hybrid systems. NY-GEO also aligns the provision of GHP options with the Companies' emphasis on customer choice. NY-GEO expects the

percentage of GHPs among New York State's heat pump usage to surpass the forecast from the Climate Action Council's Final Scoping Plan (23 percent), once current federal and state incentives begin to impact the market and proliferate recognition of GHP benefits. Installations of residential GHPs in the Companies' service territories can now leverage a 30 percent federal tax credit and a 25 percent state tax credit, in addition to Clean Heat program incentives.

NY-GEO recognizes that GHPs cost slightly more to install than air source heating solutions developed from cold climate hybrid and cold climate with electric resistance models. Nevertheless, NY-GEO affirms the competitiveness of GHP costs relative to those for ASHPs according to the longer useful life and 45 percent energy savings indicative of the former. NY-GEO also challenges the Companies' argument for limiting their evaluation of heat pump technology to air source solutions. NY-GEO claims this sets the present level of efficiency for GHPs at two to four times more than all other fossil fuel or heat pump technology. NY-GEO then presents this current success of GHP technology as a portent of this technology's future success. NY-GEO claims that this present success circumscribes uncertainty regarding the future of GHPs to the following variable: how much more efficient GHPs will become as the industry scales.

NY-GEO proceeds to list significant benefits that the federal Department of Energy observes in GHPs, including: demand management for the electrical grid; electricity savings to all customers; reductions of the marginal cost of electricity; decarbonization; and improved environmental conditions for human health. NY-GEO also indicates that GHPs can greatly reduce the need for electrical grid buildout, along with uncertainties

associated with the achievement of future electrical infrastructure targets.

NY-GEO disagrees with the Companies' promotion of gas as a more reliable and safe option in the event of an electrical outage. NY-GEO affirms that most gas-fueled space/water heating and cooking systems depend on electrical components for safe operation. Additionally, NY-GEO presents hybrid fuel systems as an inconvenience to customers. NY-GEO specifies not only the significant expense of these systems, but also the fact that they require more maintenance and space than their non-hybrid counterparts. NY-GEO states that the Companies understate future costs of gas to customers by not accounting for accelerated depreciation in these estimates. NY-GEO also advises the Companies to bolster the economics of non-hybrid heat pumps by developing an electric rate that better reflects actual customer delivery costs and is based on a load factor, like the Selective SC1-IV rate currently under study by Con Edison.

Lastly, NY-GEO lists their points of agreement with CRA's LTP feedback. Both agree that the Companies should eliminate carbon capture, hydrogen blending, and dependence on RNG for anything but hard-to-electrify situations. Both also urge the following of the Companies: to adjust fixed costs for pipelines and storage; develop a strategic phase down of the gas system, with an emphasis on NPAs; reduce capital budgets in accordance with lower future demand; and produce a BCA that includes federal incentives and three cost tests.

4. New York State Energy Research and Development Authority (NYSERDA)

NYSERDA affirms that the methodology for the Revised LTP should produce insights regarding the tradeoff between

environmental and affordability objectives. NYSERDA states that the Companies' methodological decisions in this LTP compromise this goal and thereby risk skewed analysis.

NYSERDA initially critiques the capital budgets in the LTP, given their importance to this plan. The Commenter challenges the assumption of the LTP's Reference Case that only inflation influences long-term capital budgets. The Commenter affirms that assumptions regarding decarbonization actions also influence capital expenditures. NYSERDA challenges the Company's assumption that the completion of the LPP replacement program will not have an impact on the future capital expenses. NYSERDA agrees with CRA that the Companies have not demonstrated that sustained growth in capital expenditures (or flat on a real basis) for the 2027-2043 period represents a reasonable expectation.

NYSERDA also critiques the LTP's capital expenditures in reference to the 2019 PHMSA rule that requires confirmation of maximum allowable operating pressure (MAOP) for all gas transmission line segments with traceable, verifiable, and complete records by 2035. The Commenter notes that the Company remains in the early stages of planning and cannot provide a projected annual spending nor cost per mile at this time. The Companies have yet to establish a system to determine an appropriate and cost-effective methodology to complete this compliance task.

NYSERDA recommends that the Companies modify their Reference Case capital budget forecast and include appropriate supporting documentation. The Commenter also advises the Companies to provide separate forecasts for each scenario per the request of stakeholders. NYSERDA states that the forecast

for customer bill impacts per each scenario proves inadequate as a substitute for each scenario's capital budget forecasting.

The Commenter additionally recommends that the Companies increase transparency when considering factors for their capital budget forecast. NYSERDA agrees with CRA that ignoring potential avoided capital costs via electrification disadvantages the scenarios. NYSERDA recommends that the Companies perform a sensitivity analysis to consider this potential.

NYSERDA critiques figures regarding design day percentage decreases and costs of pipeline and storage capacity that it characterizes at contradictory. NYSERDA remains unpersuaded by the Companies defense of these figures. NYSERDA recommends that the Companies adjust their modeling assumptions to reflect reductions in pipeline and storage capacity costs in proportion to forecasted reductions in design day demand for each scenario. NYSERDA also recommends that the Companies produce protocol to make determinations that balance the financial benefits of asset management agreements with the benefits of maintaining capacity.

NYSERDA equally notes that the Companies will adjust their design day only if colder temperatures occur, which establishes an asymmetrical approach. NYSERDA agrees with CRA on the appropriateness of longer-term climate change patterns in the development of the design winter planning criteria and design day standards. NYSERDA recommends that the Companies work with Staff to redefine its design day to better align with the most current climate data.

NYSERDA asserts that the Companies do not use emissions factors that align with the State's GHG gross accounting practices. NYSERDA references its own published

clarifying documentation on these practices to defend this assertion. The Commenter also expresses concern that the Companies' current GHG accounting methodology potentially over-counts reductions associated with RNG. NYSERDA states that the Companies must provide Climate Act-compliant GHG accounting results when employing alternative GHG accounting methodologies in an LTP. NYSERDA affirms that these results should form the basis of cost-effective calculations, as well. NYSERDA recommends that the Companies' BCA methodology include quantified and indirect costs and benefits which include health benefits.

NYSERDA recommends that the Companies consider strategies in alignment with other State efforts, such as those to build clean hydrogen markets, given the expected scarcity of hydrogen. NYSERDA also recognizes limited quantities of RNG and notes the Companies' acknowledgment of these limits. NYSERDA claims that these limits underscore the need to aggressively pursue decarbonization actions that reduce gas system throughput, like weatherization and electrification. NYSERDA accordingly recommends that the Companies include additional planning for building electrification, including full electrification, within their LTP. The Commenter provides detailed comparisons of percent-based electrical incorporation within each scenario. NYSERDA notes that the Reference Case has an unrealistic analysis of 100 percent of residential customers installing natural gas forced air units from 2025-2043, given the requirements of the All-Electric Buildings Act.

NYSERDA affirms that the Companies do not provide planning strategies to manage costs associated with gas system investments as throughput declines. The Commenter recommends that the Companies develop proactive system planning including

the integration of the electric system. NYSERDA refers to the PSC's Order regarding the NFG long-term plan as it pertains to the LPP process, which stipulates the evaluation of LPP segments scheduled for replacement for NPA suitability at least 18 months beforehand.

NYSERDA notes that the incorporation of data sets and other analytical tools present in the Companies' planning process could require refinement over many stages. The Commenter subsequently urges the Companies to immediately start this process. The Commenter recognizes the Companies' identification of actions to reduce emissions and recommends they develop an LTP creating a strategic path to these goals.

5. SC/EJ

SC/EJ express frustration with the LTP process. SC/find their evaluation of the LTP compromised by the Companies' unwillingness to supply adequate information about the LTP. SC/EJ states the Companies refused to fulfill requests for live versions of spreadsheets, even those not based on confidential or proprietary models. SC/EJ acknowledge that the Companies offered to meet with SC/EJ but claims that the Companies declined to provide helpful clarification during those meetings, rather advising SC/EJ to submit information requests for explanations to each spreadsheet cell in question. SC/EJ characterize this approach for clarifying LTP aspects as time-consuming, impractical, and, ultimately, an impediment to stakeholders' ability to robustly comment on the LTP. SC/EJ claim that the Companies' consultant, Concentric, did not respond to follow-up email queries about their meeting regarding electricity price forecasts. The Commenters additionally note the Companies' refusal to identify studies relied upon for the creation of their LTP, along with CRA's concern that the

Companies employ studies which contradict publicly available information regarding various topics, such as the feasibility of hydrogen-blending.

SC/EJ echoes CRA's concerns regarding the Companies' assumptions for RNG and hydrogen. SC/EJ reiterate their comments on the initial LTP regarding RNG's scarcity, expense, lack of meaningful climate benefits, and perpetuation of gas system dependence. The Commenters claim that the Companies skew modeling results regarding RNG's availability. The Commenters also challenge the procurement of RNG at the Companies projected production cost of $11.29/MMBtu as unrealistic. The Commenters state that the Companies will likely need to purchase environmental attributes for their RNG, given that they do not own any RNG production facilities and even express the intention to purchase environmental attributes for RNG as soon as 2026. SC/EJ recognize that the Companies plan to obtain the majority of their RNG from landfills and that the 2022 cost of landfill RNG from Waste Management reached $26/MMBtu with attributes. The Commenters note that the current cost of RNG with attributes may exceed $35/MMBtu. They also support CRA's recommendation against system-wide RNG blending, along with CRA's recommendation to reserve RNG supply for hard-to-electrify end-use market segments. SC/EJ then assert that the emission reductions claimed by the Companies according to the LTP's projected RNG usage lack analytical value because the Companies did not derive these reductions from a CLCPA-compliant emissions accounting method. The Commenters additionally support CRA's assertion that the LTP's proposed 20 percent hydrogen-blend lacks safety evidence.

SC/EJ characterizes the Companies' scenario modeling as skewed and that it overstates the cost of electrification and

understates the cost of pipeline-based approaches. The Commenters refer to CRA's Preliminary Findings Report, which offered similar concerns and critiques regarding projected declines for throughput and customer count. The Commenters recommend that the Companies explain how they will manage their storage and peaking contracts to maintain flexibility as gas demand declines. The Commenters refer the Companies to the final long-term plan from Con Edison and ORU for guidance on this contract management.

SC/EJ then attribute inflated electricity price forecasts in the Companies' LTP and Hybrid Electrification scenarios to the Companies derivation of these forecasts from the New York Independent System Operator (NYISO) System Resource Outlook (SRO) Base Case. The Commenters challenge the application of this Base Case for these forecasts because, unlike SRO's Policy Cases, the Base Case does not account for the CLCPA's mandates of 70 percent renewable energy by 2030 and 100 percent zero-emissions electric grid by 2040. The Commenters also claim that the Companies inappropriately layer on an additional Clean Generation Supply Adjustment for electrification-based scenarios. The Commenter recognizes that the Companies model the LTP's electrification-based scenarios from NYISO's Policy Case Scenario 2, which already incorporates the assumption of clean generation compliant with CLCPA mandates. SC/EJ contend that this addition to the Companies' electrification-based scenarios leads to a 42 percent increase in electricity costs by 2042.

SC/EJ reiterate concerns regarding the LTP's failure to incorporate New York's forthcoming cap-and-invest program. SC/EJ state the Companies' defense for this failure, which eschews the capacity to accurately predict future policy

direction, is unreasonable. SC/EJ note the cap-and-invest program's planned implementation for 2025 and thus urges that the LTP model some basic sensitivities around a future carbon price, rather than assume zero increase in gas commodity costs.

SC/EJ also support CRA's recommendation to treat federal incentives as a benefit, not simply a transfer, to New York under the Societal Cost Test. The Commenters recognize that the treatment of federal incentives as a transfer fails to account for their possible uptake, which can produce significant benefits. SC/EJ affirm that New York can receive additional unexpended appropriations from certain Inflation Reduction Act programs if the state timely distributes the formula-based funds for these programs and other states do not. The Commenters also recognize that federal tax liabilities and energy costs will decrease as more New Yorkers participate in these programs, which will render these incentives into benefits as their costs remain fixed. SC/EJ only view federal incentives as a cost when not used. They emphasize that the California Public Utilities Commission treats federal incentives as a benefit.

SC/EJ continue to urge the Companies to ensure that the LTP will not disproportionately burden disadvantaged communities and will direct 35 percent of the benefits from energy efficiency and clean energy funding to these communities, as stipulated by the Gas Planning Order and the CLCPA. The Commenters assert that the Revised LTP fails to do so. SC/EJ acknowledge that the Revised LTP provides more details about the Companies 2020-2022 investments in disadvantaged communities filed in Case 18_M-0084, which include three thermal energy networks and three new energy efficiency programs, one of which will offer weatherization incentives to residential single-family homeowners. The Commenters remain concerned that

limiting this program's eligibility to homeowners' risks excluding members of disadvantaged communities. SC/EJ acknowledge the Companies' plans to expand data collection in these communities, and recognize the then-pending joint proposal filed in the Companies' rate case would require them to file an annual report with certain metrics, including megawatts of demand response achieved in disadvantaged communities. The Commenters, however, also recognize that the revised LTP still fails to assess burdens on and benefits to these communities or provide information to allow stakeholders and/or the Commission to assess as much. SC/EJ additionally urge the Companies to assess the potential burdens posed to disadvantaged communities by the capital projects from the Companies' Five-Year Capital Investment Plan located in these communities. These projects include LPP replacement and other investments to fortify the gas system and could, according to SC/EJ, prolong the dependence of these communities on the gas system and, in turn, their exposure to pollution such as nitrogen dioxide and particulate matter.

SC/EJ also urge the Companies to critically examine available opportunities for industrial customers to decarbonize from not only energy efficiency programs but also electrification. The Commenter claims that the revised LTP ignores Commenters' previous recommendations to expand its electrification programs beyond space heating and evaluate electrotechnologies for the industrial subsectors in the Companies' service territories. The Commenters recognize that a new State Industrial Decarbonization Policy Handbook for Utilities from the American Council for an Energy Efficient Economy urges utilities to support the decarbonization of the industrial sector through policy input, utility-sponsored programs, and incentives.

The Commenter nevertheless appreciate the Companies' work in the LTP to separate their largest industrial customers by percent of industrial volume. SC/EJ affirm that this work helps to identify potential opportunities to electrify industrial subsectors in the Companies' territories. They reference a recent NYSERDA report noting that the Primary Metals and Paper subsectors along with induction (electric) and resistance melting in the glass industry represent 52 percent of the electrification decarbonization potential by 2042. SC/EJ observe opportunities to realize this potential in the industrial sector for the Companies' territories. Moreover, SC/EJ recognize that the Glass Manufacturing, Primary Metals, and Paper subsectors represent 54 percent of NYSEG's industrial sector and 11 percent of RGE's. The Commenters also reference a February 2023 report published by the Global Efficiency Intelligence, the Renewable Thermal Collaborative, and David Gardiner and Associates to list the industrial subsectors and end-uses associated with the following prevalent industrial electrotechnologies: industrial heat pump, electric boiler, electric arc furnace, induction furnace, resistance heating, and electrolyzers. SC/EJ ultimately recommend for the Companies to identify the following: large industrial users suitable for electrification; specific barriers associated with wide-scale applications of industrial heat pumps; and targeted actions needed to address these barriers, including further research, development, demonstration, and deployment.

Comments on Final Long-Term Plan:

1. AGREE

AGREE critiques the Companies' LTP for overreliance on RNG. The Commenter notes that this LTP plans for RNG to comprise approximately 18 percent of the Companies' fuel energy

mix by 2043. AGREE states that the Companies base their choices regarding RNG on irrational assumptions about this fuel's availability, cost, and environmental benefits. AGREE affirms that CRA provides rational and fact-based recommendations against system-wide RNG blending. The Commenter also contends that the additional analysis and recommendations against RNG from NYSERDA, along with other stakeholders, could bolster the LTP. AGREE states that low carbon fuels do not offer a viable solution for GHG emission reduction; the Commenter instead recommends weatherization and electrification alongside decommissioning of the gas system. AGREE notes that the LTP incorporates no reductions to gas infrastructure. The Commenter emphasizes the urgency of a gas system transition with statistics from the Natural Resources Defense Council, which claim that the financial and health burdens associated with fossil fuel combustion could cost New York State residents 47 billion dollars per year.

AGREE also claims that the LTP incorporates misleading cost comparisons between alternative fuels and electrification. The Commenter contends that the Companies reduce the true cost of RNG to one third of its actual price. Direct quotes from CRA also confirm AGREE's observation of inflated electric supply customer prices.

AGREE compares CLCPA-mandated percentages of GHG emission reductions to the current LTP percentages. The Commenter states that these reduction percentages within the LTP remain below requisite levels for CLCPA compliance. AGREE emphasizes that the Companies would need to achieve 65 percent emission reductions by 2043 to reach the CLCPA's goal of 85 percent emission reduction by 2050; however, AGREE adjusts the Companies' combined emission reduction of 53.7 percent to 43.4

percent by applying CLCPA-compliant emissions accounting. The Commenter accordingly states that the LTP proves deficient.

The Commenter refers to multiple alternative scenarios shared by CRA and states that the Companies could use elements of these scenarios to create a new LTP. AGREE identifies CRA's sixth scenario as the one with the potential for the highest benefit-cost ratio because it includes nearly double the weatherization and heat pump installations of any other scenario, it does not use hydrogen, and results in the greatest emission reduction and fossil fuel throughput reduction. AGREE also recognizes CRA 6 as the only scenario that would satisfy CLCPA reduction requirements by 2050; the Commenter mostly attributes this to the fact that this scenario models the weatherization of all customers prior to heat pump installation.

AGREE provides instructions for the Commission to deny the Companies' LTP and evaluate the gas planning proceeding. AGREE recommends that the Commission provide more detailed requirements to ensure that the Companies seriously consider all stakeholder feedback.

2. International Brotherhood of Electrical Workers Local 10 (IBEW)

IBEW represents many of the individual workers within the Companies. The comments from IBEW for the Companies' Final LTP recognize the reality of forecasted electrical demand increases and make recommendations to manage the long-term phase out of natural gas utilization.

IBEW asserts that the initial phase of this transition in the Companies' service territories should prioritize the decarbonization of the largest commercial and industrial end users of natural gas through effective alternatives and incentives, rather than the conversion of individual residential

gas customers toward electrification. IBEW characterizes these end users as the lowest hanging fruit in the transition. IBEW affirms that the industrial sector in the Companies' service territories accounts for substantial natural gas demand through a relatively low number of customers. IBEW also endeavors to focus the transition on key commercial and industrial customers in the Companies' service territories so that these customers can capitalize on New York State's current considerations for manufacturing and commercial growth activity in the artificial intelligence, micro-chip manufacture, hydrogen, data, and dairy industries. IBEW correspondingly imbues this focus with support for the State's economic vitality and tax base. IBEW states that both existing and new businesses require affordable options, power quality, and long-term stability to commit necessary capital resources to economic growth.

IBEW suggests alignment of the transition of the industrial and commercial sectors with that of the residential sector. The Commenter claims that reductions in commercial and industrial natural gas supply will allow for additional supply options in the residential sector and help reduce both customer and electric price impacts. IBEW asserts that all potential options and solutions should remain under consideration and that the LTP must include thermal networks, hydrogen, RNG, cost-effective non-pipe alternatives, energy efficiency, and other emerging technologies. IBEW includes specific recommendations for the residential sector transition prioritizing the efficiency upgrade of residential building shells to avoid over-sized conversions and ensure the affordability of residential conversions to electric heat.

IBEW Local 10 also urges the Companies to incorporate a section that plans for the Just Transition of utility workers

toward employment opportunities in alternative energy industries. IBEW recommends required meetings with and compliance filings from the Companies regarding this Just Transition. IBEW additionally supports the concept of utilizing demonstration projects, such as an Ithaca/Tompkins County Demonstration project discussed during the proceeding, but cautions that consideration of significant geographical, social-economic, and weather differences between areas in the Companies' service territories is necessary before wide-scale implementation. IBEW lastly encourages the Companies to engage expertise on decarbonization options from universities such as University of Buffalo, Clarkson, Rensselaer Polytechnic Institute, Rochester Institute of Technology, and the State University of New York's College of Environmental Science and Forestry.

3. NY-GEO

NY-GEO emphasizes that GHPs are cost-competitive with both ccASHPs and hybrid systems. The Commenter accordingly recommends that the Company include GHPs in the incentives and budget on a level equal to each of these two alternative systems. The Commenter also requests that the Companies incorporate additional benefits of GHPs into the LTP calculations. NY-GEO offers evidence and experience to affirm that GHPs provide a 45 percent annual energy savings compared to ASHPs in the Companies' service territories.

NY-GEO ultimately recommends that the Companies include the following in the LTP regarding GHPs: modeling that utilizes the federal tax credit for commercial customers using a 40 percent calculation for incentives; an estimation of the health benefits of reduced GHGs; the reliability/resiliency and longer useful lives these systems provide compared to other

systems; and their positive impact on grid stability and cost.

NY-GEO affirms the urgency of their recommendations according to the shattering of record high temperatures across New York State, which is causing electricity demand, much of it generated by fossil fuels, to exceed forecasts and, in turn, put the health NY-GEO affirms the urgency of their recommendations according to the shattering of record high temperatures across New York State, which is causing electricity demand, much of it generated by fossil fuels, to exceed forecasts and, in turn, put the health and lives of many citizens at risk. The Commenter strongly advises the Commission to mandate the inclusion of the recommendations provided by NY-GEO, CRA, and AGREE in the NYSEG/RGE long-term gas plan, as well as all other public utilities' long term gas plans.

4. SC/EJ

SC/EJ provided the following input regarding the Companies' Final LTP: 1) the Companies project emission reductions through 2043 below CLCPA-consistent levels; 2) the Companies rely on flawed assumptions that unduly favor their preferred pipeline-based status quo over alternative scenarios; 3) the Companies rely on unrealistic assumptions regarding low-carbon fuels; 4) CRA's report cogently elucidates many of the flaws with the LTP and its scenario modeling but does not aggregate these observations into a clear alternate vision; 5) the LTP fails to assess burdens on and benefits to disadvantaged communities. The Commenters ultimately assert that the LTP remains infeasible and thus should not be approved.

The Companies project that their preferred Plan will achieve emission reductions of 55 percent for NYSEG and 50 percent for RGE through 2043. SC/EJ recognize that each Company's projected level of emission reduction in this plan

effectively adheres to that in its respective "delayed achievement" scenario, given that each of these scenarios projects 50 percent emission reductions. The Commenters points out the deviation of these emission reduction levels from those proscribed in the CLCPA by recognizing that each of the two "CLCPA" scenarios modeled in this proceeding project 65 percent emission reduction. SC/EJ claim that each Company overstates its emission reduction by relying on impermissible accounting for RNG. The Commenters note that this accounting employs a negative GHG intensity for RNG. SC/EJ urge the Companies to pursue CLCPA-consistent planning so that they can account for the true cost of climate compliance and avoid exacerbating logistical and financial difficulties attendant to impending large-scale electrification needs. They further urge the Commission to follow the Massachusetts Department of Public Utilities in rejecting customer expenditures for hybrid heating investments.

SC/EJ then claim that the Companies systematically overstate the costs of electrification and understate its benefits. The Commenters recognize that the Companies assume fixed pipeline and gas storage costs for all scenarios other than their preferred Plan, which reduces fixed pipeline and storage costs as design day demand decreases. SC/EJ claim that the Companies' exemption of their preferred Plan from this assumption proves arbitrary, given that many of the non-Plan scenarios would reduce gas use more than the Companies' preferred Plan and enable greater reductions in pipeline and storage costs. They also state that the Companies’ assumption of fixed costs in other scenarios disregards their opportunities for cost reductions from customer electrification.

SC/EJ states the LTP failed to reasonably account for inevitable CLCPA-driven declines in gas demand in the Companies' approach to contracting for gas transmission capacity. The Commenters recognize that the Companies do not plan to reduce pipeline capacity due to forecasted decreases in gas demand; the Companies affirm that the future availability of released capacity remains unlikely. SC/EJ urge the Companies to follow the final LTP for Con Edison and ORU regarding pipeline contracts. The Commenters affirm that the Con Edison and ORU LTP addresses the need to de-contract their supply portfolio as firm peak demand slows and begins to decrease; these utilities plan to initially reduce and eliminate the procurement of delivered services and then target the least flexible pipeline capacity contracts with no access or association with storage.

SC/EJ challenge the presence of fixed capital expenditures in general in each LTP scenario, outside of the additional scenarios requested by CRA. The Commenters assert that this trend inflates the costs of the more-electrification-based scenarios, which can avoid capital expenditures by creating opportunities for a managed phase-down of portions of the gas system. SC/EJ again refer the Companies to the final LTP from Con Edison and ORU for guidance on modeling capital savings to the gas system in scenarios of declining throughput and customer counts. The Commenter ultimately supports CRA's recommendation that the Companies develop scenario-specific capital expenditure forecasts which prompt substantial decreases in capital spending for full electrifications scenarios by reflecting downsizing opportunities from a shrinking customer base. SC/EJ critique the LTP for assuming that no customers fully electrify over the next 20 years. The Commenter finds this assumption implausible because Governor Hochul already

announced plans for 2 million homes to be electrified or electrification ready by 2030.

SC/EJ also observe inflated electricity prices, especially in the modeled scenarios that heavily rely on electrification. CRA validates the Commenter's concern over the Companies' electricity price assumptions and adjustments in a report regarding these elements of the LTP that CRA produced at the Commenter's request. This report observes electric price supply increases that are 200 percent-300 percent overinflated in the RGE CLCPA Full Electrification scenario, for example. This report also supports the Commenters' recommendation that the Companies should not use the NYISO SRO Base Case, which does not assume achievement of CLCPA targets. This report additionally recognizes that the Companies' calculation of the starting supply price for 2023 is significantly higher than the historical location based marginal prices for 2023 in Zones B (RGE) and C (NYSEG). According to SC/EJ, this report recommends that the Companies update the electric price forecast with actual historical NYISO location based marginal price data from 2022 to 2023 as the starting point, rather than outdated New York Mercantile Exchange forward prices.

SC/EJ aver that the Companies disadvantage electrification-based scenarios with the unrealistic assumption that heat pump performance will remain static over the next 20 years. The Commenters support Strategen's recommendation that the Companies incorporate an electric heating appliance learning curve in alignment with projected costs provided in the Electrification Futures Study from the National Renewable Energy Laboratory (NREL). The Commenters supports CRA's recommendations that the Companies model heat pump efficiency improvement over time in a manner consistent with NYSERDA's

integration analysis, which derives ASHP annual performance improvement from NREL's 2021 Electrification Futures Study "Moderate Advancement" scenario.

SC and EJ also state that the Companies disadvantage electrification-based scenarios by treating federal incentives as a transfer rather than as a benefit under the Societal Cost Test. The Commenters echo CRA that the portrayal of the federal incentive as a transfer incorrectly suggests New York's indifference to the uptake of the federal incentive, which renders the incentive into a benefit. SC/EJ recognize that the costs to New York of these programs do not vary with participation levels, which allows the program's incentives to potentially exceed their cost, as more New Yorkers take advantage of reduced federal tax liabilities and energy costs from these programs. The Commenter also supports the utilization of these incentives as a benefit by recognizing the cost associated with not utilizing them. SC/EJ add that the Commission approved BCAs treat federal incentives as a benefit in Case 18-E-0138.

SC/EJ state that the Companies disadvantage electrification-based scenarios by failing to account for the State's planned economy-wide cap-and-invest program. The Commenters state that the Department of Environmental Conservation and NYSERDA plan to implement this program in 2025. The Commenters note that the program will increase the price of gas relative to most cleanly produced electricity and likely render the Companies' preferred pipeline-dominated approach less economically attractive by putting a price on the emissions associated with different fuels burned in New York.

SC/EJ state that the Companies overstate the benefits of their preferred Plan according to numerous unrealistic

assumptions about the feasibility and cost of procuring and blending low-carbon fuels, such as hydrogen and RNG. The Commenters state that the Companies' support RNG for decarbonization measures according to unreasonably optimistic assumptions about the availability of RNG which do not account for competition from other market segments. SC/EJ state that the Companies' assumptions about the cost of RNG prove equally unreasonable. SC/EJ further states that the Companies incorrectly assume the availability of RNG at the cost of its production (which the Companies project at $11.29/MMBtu) rather than market price. The Commenters challenge this assumption because the Companies do not plan to own any of the RNG production facilities from which they intend to obtain RNG and because producers typically sell RNG with environmental attributes (which now sell at $35/MMBtu), given attribute markets in California. The Commenters note that the Companies plan to purchase the environmental attributes associated with any RNG they procure from 2026 onward. SC/EJ observe that the Companies plan to obtain the majority of their RNG from landfills and that the experience of Waste Management, a company that owns and operates landfill gas RNG projects, challenges the likelihood of producers selling RNG at the production cost.

SC/EJ support CRA's recommendation against system-wide RNG blending as a climate strategy. They also support CRA's recommendation that the Companies only supply RNG to hard-to-electrify end-use market segments in the industrial sector. SC/EJ also recommend further analysis to determine how to use RNG for decarbonizing hard-to-electrify customers. The Commenter critiques the final LTP for failing to include information concerning industrial customer profiles that would allow stakeholders and the Commission to assess potential

decarbonization pathways. SC/EJ state that industrial heat pumps, electric boilers, and thermal battery systems can replace fossil fuel-powered technologies for heat-intensive industrial processes to significantly reduce emissions by 2030. SC/EJ recommend that the Companies look to California for guidance on industrial decarbonization. They further suggest that the Companies identify the following: large industrial users suitable for industrial electrification; specific barriers associated with wide-scale applications of industrial heat pumps; targeted actions needed, including further research, development, demonstration, and deployment; and a plan to help industrial customers purchase, install, and run their new electric technology.

The Commenters' ultimate recommendations regarding RNG urge the Commission to ensure that: RNG distributors and producers assess the GHG and local environmental impacts of RNG production and distribution; RNG production facilities will not disproportionately burden disadvantaged communities; and new RNG facilities perform a cost-benefit analysis to assess whether other decarbonization measures would prove more cost-effective. The Commenters accentuate the urgency of these recommendations to the Commission by recognizing that National Grid's RNG production facility at the Newtown Creek Wastewater Treatment Plant in Brooklyn already operates without tracking GHG or co-pollutant emissions. The Commenter additionally accentuates this urgency by recognizing that National Grid is currently seeking rate recovery for four new RNG interconnections without attempting to determine the potential GHG and co-pollutant emissions from project construction, transportation, or anaerobic digestion.

SC/EJ challenge the Companies' pursuit of hydrogen as an alternative fuel by asserting that the Companies have yet to substantiate how blending hydrogen into the Companies' system can safely occur at concentrations of 20 percent by volume. The Commenters note that the Companies were unable to disclose the studies that they used to develop their hydrogen blending assumptions when CRA asked them to do so. The Commenters also opine that the Companies overstate the benefits of hydrogen-blending by assuming zero costs for updates to the gas system and/or end-use appliances needed to allow for system-wide hydrogen-blending. SC/EJ disagree, however, with CRA on CRA's recommendation to consider a study or pilot program that assesses appropriate safe hydrogen blending limits. The Commenters claim that hydrogen blending maintains certain inalterable harms to public health and the climate that no pilot - or concentration of blending, for that matter - can address. SC/EJ would prefer to spend ratepayer money on decarbonization measures that they consider proven, such as demand response and electrification.

SC/EJ delineate additional points of agreement and disagreement with CRA. They support CRA's recommendation of a pilot program to determine the best approach for downsizing a specific area of the distribution system, along with the issues and costs associated with eliminating service in a small, defined region. SC/EJ claim that this downsizing, especially when performed on a neighborhood scale, can reduce emissions and save customers, particularly low-income ratepayers left on the gas system, money by stranding fewer assets in combustion-based infrastructure with a shrinking and already disadvantaged customer base. SC/EJ additionally suggest that the Commission require the Companies to work with their sister utilities, such

as Con Edison and National Grid, to replicate their creative NPA programs to address load relief, main replacements, service line replacements, and gas reinforcements. The Commenters recommend that the Commission require the Companies to confront the dilemma posed by the NPA criteria stipulating 100 percent customer-adoption through the deployment of a robust education plan around electrification which promotes federal and state incentives while discouraging reinvestment in gas appliances. SC/EJ proceed to support CRA's recommendation that the Companies conduct further analysis on how 35 percent of benefits from clean energy and energy efficiency spending flow to disadvantaged communities, as directed by the CLCPA, given that the LTP does not contain any analysis of potential impacts to or burdens on disadvantaged communities from proposed projects. SC/EJ ultimately support CRA's scenario number 6 as a foundation from which the Companies should construct a new long-term plan.

SC/EJ concludes by urging the Commission to initiate an immediate review of the gas planning process. The Commenters identify the following challenges they experienced while participating in the Commission's long-term planning process: 1) Companies were unwilling to share live versions of spreadsheets, reveal the bases for assumptions, or engage constructively with stakeholders; and 2) utilities have made limited changes to their initially proposed plans, despite criticism from the Commission's independent consultants.

5. Tompkins

The chief concern of Tompkins with the Company’s Final LTP is this plan’s non-compliance with New York State’s CLCPA. Tompkins asserts that the Final LTP will threaten the County’s work to support the CLCPA because this plan develops a path for the Company to not comply with this law. The Tompkins County

Comprehensive Plan and the Tompkins County Energy Strategy offer concrete actions taken by the County in support of the State's climate goals.

TCDPS claims that the LTP undermines many years of education provided to communities in New York State by not including cold climate capable heat pumps as whole-building solutions and instead promoting non-cold climate heat pumps, which favor a dual-fuel solution and perpetuate the use of natural gas or other fossil fuels into the future. The Commenter claims that the promotion of a dual-fuel solution could diminish efforts surrounding incentives and programs throughout the state (including those by NYSERDA, the State's Clean Heat and Clean Energy Communities Program, etc.).

Tompkins highlights points made by CRA regarding the LTP's figures for RNG and green hydrogen that overstate the benefits of these low-carbon fuels at the expense of possible electrification-based solutions. Tompkins requests that the PSC examine the claims made by the Company about these alternatives and rectify any faulty assumptions.

Tompkins also requests that the PSC ask the utilities to correctly model and consider electrification scenarios laid out by stakeholders and outlined by CRA in their final report as "Stakeholder-Driven Alternative Scenarios." These scenarios support the possibility of utility and stakeholder collaboration for a long-term plan that complies with CLCPA and ensures an affordable and equitable transition. Tompkins claims that the Companies do not acknowledge the effort put in by stakeholders throughout this process to engage and develop an agreeable plan. They ask the Commission to reject the Companies' LTP in order to address CLCPA-related concerns raised by CRA and stakeholders.

Reply Comments on NYSEG and RGE Final LTP

1. NYSEG and RGE

The Companies urge the Commission to approve the Final LTP because it appropriately balances the following objectives: affordability; reliability; safety; and significant GHG emission reduction. The Companies affirm that the Final LTP meets all of the criteria from the Gas Planning Order because this plan includes: a demand forecast which considers energy efficiency, electrification, demand response, NPAs, and other external impacts; a supply forecast which considers demand response programs, along with the availability of hydrogen and RNG; an emphasis on reliability standards; "no infrastructure" scenarios; consideration of the Commission's NPA requirements; attention to leak prone pipe; and a focus on disadvantaged communities.

The Companies disagree with CRA's recommendation to modify the Final LTP in accordance with the CRA Final Report - a recommendation supported by SC/EJ, Monroe County, and Tompkins County. The Companies note that the Gas Planning Order specifically calls for three LTPs and that the Commission did not require NFG to file an additional LTP after CRA recommended this. The Companies also recognize that they can offer modifications in alternative venues such as the Annual Update due May 31, 2025, and the next new LTP in three years.

The Companies challenge the claim that the Final LTP fails to reasonably consider and reflect stakeholder input - a claim made by SC/EJ, AGREE, and Tompkins County. The Companies offer the six stakeholder-driven scenarios in the Final LTP to substantiate this plan's receptivity to stakeholder input. The Companies add that they have included provision of Reference Case forecast modifications, specification for several decarbonization actions, decreased fixed costs, and additional

BCAs. The Companies proceed to delineate their points of agreement with stakeholders and defend their points of opposition.

The Companies agree in principle with CRA's recommendations regarding reliability, specifically the following actions: develop a plan to comply with the 2020 PHMSA rule; determine which MAOP reconfirmation proves most technically feasible and cost-effective; and identify the cost of PHMSA compliance. The Companies defend the lack of discussion regarding these actions in the Final LTP by claiming that this topic remains premature at this time and will remain so during the Annual LTP updates. The Companies confirm that their pursuit of these actions will conform with PHMSA's 2035 deadline; the Companies agree to provide updates on their pursuit in future long-term plans.

The Companies disagree with CRA's recommendation to produce a study on the correlation between long-term climate change patterns and design day weather. The Companies claim that they already account for the potential of these patterns in their design day planning, which utilizes a rolling weather database and updates annual and monthly planning criteria each year. The Companies recognize that their coldest days date back 45 years to February 1979; the Companies affirm that they conduct analysis each year to determine the occurrence of a new coldest day and consequent design day weather changes. The Companies also objects to the necessity of this study by challenging its import to design day planning. The Companies affirm that design day planning accounts for the intensity rather than the frequency of extremely cold weather and that climate change may increase not only the intensity but also the frequency for many types of extreme weather events. The

Companies even cite CRA's Final Report to support these increases. The Companies additionally assert that design day standards remain policy decisions that the Commission should address on a statewide rather than a utility-by-utility basis.

The Companies then address recommendations regarding design day forecasting from CRA's Final Report. The Companies claim that they do not need to provide additional discussion regarding the impact of the residential energy efficiency adjustment to the Reference Case on the LTP design day forecasts, as requested by CRA. The Companies claim that they already provided information about how energy efficiency impacts the annual forecast and therefore the design day forecast. The Companies also claim that they do not need to incorporate assumption changes from their 2023-24 Winter Supply Plan into the LTP design day forecasts because the Final LTP is more current that this plan.

The Companies disagree with CRA's recommendation that the Companies produce a study to justify the current reserve margin, or operationally available capacity (OAC), of 9.45 percent for NYSEG and 3.51 percent for RGE. The Companies challenge the necessity of this study by first asserting that CRA incorrectly calculates each Company's OAC according to a methodology that inappropriately includes third-party capacity and demand served by marketers, neither of which the Companies can anticipate or control. The Companies affirm that the exclusion of these factors produces an OAC of 5.9 percent for NYSEG and 3.5 percent for RGE. The Companies also claim that CRA's calculation of OAC for RGE mistakenly employs CRA's own methodology; the Companies claim that CRA's calculation of 3.51 percent of OAC for RGE is a typo and should be 4.4 percent, based on CRA's methodology. The Companies recognize that

NYSEG's OAC of 5.9 percent exceeds the 5.0 percent goal. However, they attribute this deviation to factors beyond their methodology for OAC calculation; they attribute this deviation to contract terms which limit the times when the Companies can adjust these terms, as well the lack of contiguity between several areas in NYSEG's service territory, which stipulates service from multiple pipelines and limits contract adjustments to specific pooling areas by inhibiting flexible transfers of gas between several areas in this service territory. The Companies note that they already report design day capacity compared to design day demand by pooling area in their annual Winter Supply filing. The Companies agree to report OAC in future long-term plans.

The Companies disagree with CRA's recommendations regarding capacity contracts. The Companies also take issue with CRA's recommendation that the Companies establish a ranking criterion to manage contract restructuring. The Companies note that contract restructuring will necessarily follow load reductions, given the limited interstate pipeline infrastructure in the service territories. The Companies also object to CRA's recommendation that the Companies develop a metrics report that summarizes the pipeline and storage cost benefits of their capacity release transactions, including asset management agreements. The Companies state that they already report on capacity release transactions and asset management agreements in their periodic gas reconciliation proceedings.

The Companies further disagree with the recommendations of CRA and SC/EJ that the Companies model reductions in fixed pipeline and storage costs for the Reference Case and all Company scenarios. The Companies assert that they did not model these reductions in these scenarios to avoid

double counting this reduction in stakeholder scenarios. The Companies claim that CRA and stakeholders instructed them to model the Stakeholder Scenarios off the Company scenarios and then add reductions for fixed pipeline and storage costs. The Companies agree to model changes in fixed pipeline and storage costs related to changes in design day demand in the LTP, Reference Case, and all Company scenarios for future long-term plans.

The Companies also address recommendations regarding NPAs. The Companies disagree with CRA's recommendation that the Companies reflect generic NPA projects and their associated demand and cost reductions in the LTP and all scenarios - a recommendation supported by both AGREE and SC/EJ. The Companies challenge the reasonableness in assumptions of NPA success; the Companies cite formidable obstacles to NPA adoption from their experiences in the Lansing and Canandaigua NPA processes, a February 2024 report by the California Energy Commission on targeted electrification and strategic gas downsizing in the Northern East Bay Region of California, and a May 2024 report by Rocky Mountain Institute for National Grid.

The Companies agree, however, with the following recommendations from CRA regarding NPAs: provide additional information regarding the next steps for RGE's Southeast 1 & 3 NPA project and planned projects; report on experiences and lessons learned from the Lansing and Canandaigua NPA projects; and include more information about vulnerable locations, such as specific quantifiable thresholds for their identification, in their Annual Update Reports and future long-term plans. The Companies also agree with CRA's observation that the Companies reasonably addressed the moratorium process by evaluating potentially vulnerable areas on their system and by conducting

community and stakeholder outreach/education for potential NPA solutions.

The Companies express several concerns with the recommendation of both CRA and SC/EJ that the Companies develop scenario-specific capital expenditure forecasts which reflect downsizing opportunity from a shrinking customer base in full electrification scenarios through substantial decreases in CapEx, as in Con Edison's LTP. The Companies resist comparison to Con Edison, with the support of IBEW, given that Con Edison serves a densely populated and largely urban territory and accordingly manages a very different distribution system, customer base, and modeling approach. The Companies then attribute the decreases in Con Edison's capital expenditures to the completion of their LPP replacement program rather than strategic downsizing related to full electrification. The Companies affirm that the Final LTP models four scenarios which assume full electrification paired with strategic downsizing, at the request of CRA and stakeholders. The Companies also limit opportunities for downsizing in full electrification scenarios by challenging the likelihood that all customers on any segment at the end of the system will electrify. The Companies defend the Final LTP's omission of opportunities to address leak-prone main with NPAs by reiterating the Commission's directive in the Commission’s Order in Case 22-G-0610 for NFG report on NPAs related to leak prone main in the Annual Updates.

The Companies agree with CRA's recommendation that the Companies develop a pilot program to determine the best approach for downsizing a specific area of the distribution system - a recommendation also supported by both AGREE and SC/EJ. The Companies support the recommendation of SC/EJ to work with sister utilities on NPA programs to address load relief, main

and service line replacements, and gas reinforcement. The Companies, however, challenge the argument of SC/EJ that elevates full electrification over a hybrid scenario according to the diversion of gas system costs to low-income ratepayers; the Companies observe comparable financial burdens in full electrification scenarios, given that these scenarios will require all residential customers to pay for heat pumps, electric system build out, and stranded gas costs.

The Companies proceed to discuss recommendations regarding RNG. The Companies disagree with the CRA's recommendation that the Companies incorporate lower amounts of RNG into the LTP - a recommendation supported by AGREE and SC/EJ. The Companies trace this recommendation to a strict focus on the goal of full electrification, which they equally observe to emerge from the exclusion of all RNG from the scenarios developed by CRA and the stakeholders (CRA 1-6) in spite of RNG's lower cost per unit of GHG emission reduction relative to electrification. The Companies also claim that their assumptions regarding RNG availability prove realistic, if not conservative. The Companies affirm that the LTP includes 52 percent of the maximum potential for RNG from current anaerobic digestion-based feedstocks identified in NYSERDA's RNG potential study and excludes all RNG associated with thermal gasification, which would more than triple the RNG quantities in the LTP. The Companies defend the conservatism of these assumptions by claiming that they account for RNG outside of New York State, only in Pennsylvania and Ohio, rather than the entire eastern U.S. The Companies explain that they limit the LTP's quantities of RNG from Pennsylvania and Ohio to the Companies' proportional share of approximately half of the maximum potential for RNG (one percent of each state's RNG potential), which also accounts

for RNG competition in these states. The Companies also note that their projections of RNG usage through 2028 represent less than 0.3 percent of NYSEG's current firm capacity and less than 0.2 percent of RGE's.

The Companies disagree with CRA's recommendation that the Companies only target hard-to-electrify customers for RNG. The Companies recognize that direct use of RNG by industrial customers may represent a viable method for GHG emission reduction and plan to work with industrial customers to better understand this opportunity; however, the Companies claim that eliminating the option of blending RNG into the system to help reduce emissions from all customers will increase costs and adversely impact affordability. The Companies defend this claim with the fact that all six of the scenarios modeled at the request of CRA and stakeholders, which eliminate RNG and hydrogen from the portfolio of decarbonization actions, prove significantly more expensive than the Companies' LTP, even though these scenarios include many assumptions that reduce costs when compared to cost assumptions in the Companies' LTP.

The Companies disagree with the claims from AGREE and Monroe County that the Companies' assumed cost estimates for RNG lack a profit margin. The Companies assert that these stakeholders premise their argument on a comparison between RNG and fossil gas cost according to a $ per MMBtu basis, which the Companies position as an apples and oranges comparison. The Companies recommend a comparison between the costs of RNG and other decarbonization actions on a dollars per GHG emission reduction basis.

The Companies also disagree with the recommendation of SC/EJ that the Commission direct the Companies to eliminate their reliance on RNG in the LTP. The Companies claim that this

recommendation eliminates a viable and more cost-effective decarbonization action in favor of more expensive options. The Companies even note that the Commission did not direct NFG to eliminate RNG blending from its LTP.

The Companies proceed to address stakeholder resistance to hydrogen blending in the Final LTP. The Companies disagree with CRA's characterization of the Final LTP's 20 percent hydrogen blending as unrealistic - a characterization supported by AGREE, SC/EJ, Monroe County, and Tompkins County. The Companies challenge this characterization according to the slow ramp rate of this blending; the Companies claim that the first round of 1.25 percent blending will accomplish the same goals as a pilot program. The Companies also recognize that they will complete an additional LTP prior to the planned start of hydrogen blending in 2028, which will allow for further consideration of all developments related to hydrogen before it is blended into the Companies' systems. The Companies also discuss CRA's recommendation that the Companies focus their hydrogen efforts on the industrial sector to gain a better understanding of hydrogen applications that do not require system-wide blending. The Companies agree that direct use of hydrogen by industrial customers may offer a viable method for GHG emission reduction; the Companies indicate plans to work with these customers to decarbonize through hydrogen. The Companies agree with CRA's recommendation to provide periodic reports on this work and plan to file these in the Annual Updates to the LTP as well as in future long-term plans.

The Companies challenge the claims made by SC/EJ that hydrogen will exacerbate health impacts of gas combustion and prolong reliance on a distribution system in need of downsizing. The Companies state that the goal is not to downsize the

distribution system but rather to reduce GHG emission, and that hydrogen blending produces meaningful reductions in GHG emission at a much lower cost than full electrification.

The Companies then discuss stakeholder comments regarding energy efficiency, demand-side management, and demand response. The Companies note that CRA generally agrees with the Companies' plans regarding these topics. The Companies also highlights that CRA supports their discussions with other New York utilities on the development of residential demand-side management pilot programs. The Companies plan to submit an implementation plan prior to the start of this pilot and provide further information in future long-term plans and Annual Updates. The Companies also agree with CRA's recommendation that the Companies explore the incorporation of new tariff offerings and programs for pilots of this sort to appropriately incentivize sustained customer engagement through new rate designs and payment structures, as well as consumer outreach and education. The Companies further agree with CRA's recommendation that the Companies investigate the use of advance metering infrastructure. The Companies additionally agree with CRA's recommendation that the Companies eventually consider including the impacts of demand response programs in their modeling.

The Companies disagree with CRA's recommendation that the LTP assume customer weatherization prior to electrification on the basis of logistical challenges. The Companies affirm that CRA-5 and CRA-6 assume as much but still prove more expensive than the LTP. The Companies also note that NFG's Final LTP demonstrates that this assumption only results in minor changes. The Companies then disagree with CRA's recommendation that the Companies perform a more thorough

analysis to reevaluate the partial and full electrification of buildings with boilers. The Companies affirm that they modeled several scenarios in which customers with boilers electrify; however, the Companies still expect boiler conversion to be much less common than furnace conversion projects according to additional costs and challenges.

The Companies also disagree with CRA's recommendation that the LTP include electrification, geothermal heat pump loops, and single building ground-source heat pumps - a recommendation supported by SC/EJ. The Companies claim that the assumption of hybrid heating as the preferred electrification approach proves more reasonable for the following reasons: the LTP's modeling demonstrates that full electrification and geothermal systems prove significantly more expensive; full electrification and geothermal systems require significant buildout of the electric system; and hybrid heating has fewer reliability concerns. The Companies also claim that they addressed the recommendation of both CRA and SC/EJ to correct the LTP's assumption of static heat pump performance. The Companies, however, deviate from CRA's recommendation to do so in consistency with NYSERDA's Integration Analysis, which derives ASHP annual performance improvement from NREL's 2021 Electrification Futures Study "Moderate Achievement" scenario; rather, the Companies correct this assumption with more recent 2023 data released by the Energy Information Administration which contradicts NREL's older assumptions of heat pump cost and technology improvements over time. The Companies also disagree with CRA's recommendation that the Companies reflect additional building demographic details to enable more representative heat load and cost conversion estimates for structures in the Companies' service territories. The Companies defend their

reliance on averages for their building demographic modeling since averages encompass the spectrum of a given metric's data points. The Companies do acknowledge CRA's recommendation that the Companies include market studies and surveys in future pilot programs involving electrification to develop information requisite for the improvement of adoption rate forecasts. The Companies respond by referring to Chapter VII of the Final LTP, which includes the impacts of various levels of electrification incentives on customer adoption rates. The Companies do not state a position on the recommendation from SC/EJ that the Companies improve customer education and outreach in an effort to increase electrification. However, the Companies respond by expressing their intention to continue already implemented initiatives that focus on energy efficiency and beneficial electrification with the goal of promoting awareness about customer choice and opportunities.

The Companies then discuss comments regarding industrial customer decarbonization. The Companies disagree with CRA's recommendation that the LTP remove carbon capture and storage, one of the three decarbonization actions which the Companies modeled for industrial customers. The Companies also modeled energy efficiency of process load and electrification of space heating for the decarbonization of these customers. The Companies note that CRA recommends that the Companies decrease the decarbonization of industrial loads, although the Companies only assume a total industrial load reduction of five percent. The Companies disagree with this removal because: CRA's Final Report acknowledges the importance of carbon capture and sequestration in industrial decarbonization; the industries targeted for it in the Final LTP (ethanol, cement, steel, and refinery) reside within the industrial sectors which CRA

identifies as the cheapest sectors to so target (natural gas processing, ammonia production, and methanol production). Final LTP estimates show that carbon capture and sequestration consistently costs less per unit of GHG emission reduction than electrification; and the Companies assume that it will start in 2028 at a rate of 0.5 percent per year, up to eight percent by 2043.

Additionally, the Companies disagree with SC/EJ's claim that the Companies fail to assess opportunities for industrial customers to decarbonize through industrial heat pumps for process load. The Companies claim that they assessed these, among other, clean energy industrial solutions while balancing feasibility concerns. The Companies agree, however, to collaborate with industrial customers to gain more information for every available solution of this type, including participation rates, natural gas usage reductions, and implementation costs and barriers. The Companies also agree to incorporate this information in future long-term plans, as CRA recommends.

The Companies also address comments regarding the Final LTP's compliance with the CLCPA. The Companies disagree with SC/EJ, AGREE, and Monroe County's concerns that the Final LTP's emission reduction does not comply with the CLCPA. The Companies respond by citing CRA's Final Report, which notes that the CLCPA does not specifically establish a 2050 gas emission reduction target of 85 percent for either gas utilities in general or the Companies in particular. The Companies assert that the LTP produces significant emission reduction at the lowest cost of all the scenarios. NYSEG and RGE recognize that the LTP projects 10 percent and 15 percent more emission for each, respectively, than in CRA-6; however, they also note that

they do so for $12.8 billion less, collectively. The Companies emphasizes that the Final LTP produces meaningful emission reductions when considered with the ways in which these balance affordability concerns. The Companies, however, challenge CRA's claim that increased electrification will maximize emission reductions while reducing costs to customers. The Companies assert that this claim ignores the cost of electric system buildout to meet increased peak winter loads, which increases costs to customers, as demonstrated by comparison between the Final LTP and CRA-6.

The Companies also responds to regarding the Final LTP's modeling of decarbonization. The Companies agree with CRA that the Companies should calculate customer adoption rates for various decarbonization measures, such as weatherization and electrification, from input data based on equipment costs, incentives, energy costs, convenience, customer preferences, etc.; however, the Companies assert that even CRA acknowledges the dearth of this data. The Companies then disagree with CRA's assertion that the Companies significantly overstate the modeled residential customer electric supply prices in both the LTP and Full Electrification scenarios by equating electric supply costs to the historical location-based marginal prices--a recommendation supported by SC/EJ. The Companies claim that their modeled electric supply cost reflects the full cost of electric supply paid by customers, including location-based marginal prices, plus losses, unaccounted for energy, capacity, and other ancillary services (or costs required to maintain reliable operation of the transmission system, including Regulation and Operating Reserve, Energy Imbalance and cost-based services of Scheduling, System Control and Dispatch, Voltage Control, and Black Start). The Companies affirm that

all-in supply costs exceed historical location-based marginal prices because they include more than just the location-based marginal prices-related costs. The Companies also disagree with CRA's claim that using the SRO Policy Case Scenario 1 prices would remove the need for the Companies' Clean Energy Generation Adjustment, as the Policy Case Scenario 1 prices already accounts for meeting CLCPA goals and a higher peak demand. The Companies claim that their modeling only uses the forecasted NYISO SRO Policy Scenario prices to shape the annual supply cost to average monthly and seasonal prices, not to set the annual supply costs. The Companies also note that the Clean Energy Generation Adjustment is still required, regardless of which forecast is used to shape annual supply costs to monthly prices, in order to reflect increases in losses, unaccounted for energy, and capacity and ancillary service payments not reflected in the NYISO SRO forecasts.

Further, the Companies disagree with the claim of SC/EJ that the Final LTP overstates GHG emission reduction based on emission accounting inconsistent with the CLCPA. The Companies note CRA’s observation that emission accounting currently remains under review in New York. The Companies also note that CRA does not express an opinion regarding the CLCPA-compliance of the Companies' emission accounting. The Companies agree with CRA's recommendation that the Companies continue participation in relevant proceedings and assess their emission accounting methodology with guidance from state and federal regulators.

The Companies then address comments regarding BCAs. The Companies disagree with CRA's recommendation to treat federal incentives as a benefit in order to improve BCA results - a recommendation supported by AGREE and SC/EJ. The Companies

represent federal incentives as a cost because New York State residents pay the federal taxes that fund the federal incentives and the Commission treats them as a cost in all of the BCA Handbooks filed by each of the State's electric utilities in 2016, 2018, 2020, and 2023. The Companies also counter that society could not recognize a legitimate cost to federal taxes and other federal fees if all states treated federal incentives as benefits. The Companies distinguishes the uncited reference to Case 18-E-0138 that CRA provides in order to support these incentives as benefits. This case, according to the Companies, uses a BCA performed for NYSERDA by three outside consultants to determine that the benefits of the 2020 EV Make-Ready Order program exceed the costs.[68] The Companies recognize that Table 25 of the NYSERDA Report used herein claims inconsistency with Commission approach based on the fact that the SCT treats federal incentives as a benefit.

The Companies also disagree with AGREE's recommendation that the Companies' BCA consider health impacts. The Companies claim that the Order establishing the BCA framework determined that non-energy benefits including health impacts would not be included in the BCA societal test.[69] The Companies then disagree with CRA's recommendation that the Companies account for federal and state equipment incentives in customer rates; the Companies affirm that rate analysis

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[68] Case 18-E-0138, Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure, Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs (July 16, 2020) (2020 EV Make-Ready Order).

[69] Case 14-M-0101 – Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework (issued January 21, 2016).

quantifies impacts on non-participating customers and that the SCT therefore remains the appropriate venue to account for these incentives.

The Companies also disagree with CRA's recommendation that the Companies further quantify benefits to disadvantaged communities - a recommendation supported by SC/EJ. The Companies note that Staff, and the Joint Utilities are still working to define and develop specific metrics related to disadvantaged communities. The Companies then disagree with CRA's recommendation to reflect the cap-and-invest program's potential impact on the LTP and its supporting BCA analyses - a recommendation supported by SC/EJ. The Companies contend that the cap-and-invest program remains in early developmental stages, although they recognize that the State agencies issued a "Pre-Proposal Outline" in December 2023 and preliminary scenario analyses for pre-proposal consideration in January 2024.

Lastly, the Companies conclude their reply comments by reaffirming the importance of maintaining all options for decarbonization pathways - a sentiment supported by IBEW. The Companies recognize ongoing debate for each of these options and urge the Commission to avoid the premature elimination of any such options.