STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 23-G-0676 - In the Matter of a Review of the Long-Term Gas System Plans of Central Hudson Gas & Electric Corporation.

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

Issued and Effective: July 17, 2025

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of Albany on July 17, 2025

COMMISSIONERS PRESENT:

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

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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 with the Commission for consideration through a collaborative stakeholder engagement process.[1] Central Hudson Gas & Electric Corporation (Central Hudson or the Company) has engaged with Department of Public Service staff (Staff), an independent consultant, and stakeholders regarding its proposed long-term plan through technical conferences and comments on the Company's initial

[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).

long-term plan (Initial LTP), revised long-term plan (Revised LTP) and final long-term plan (Final LTP or LTP). The consultant, PA Consulting Group Inc. (PA), working at the direction of Staff, reviewed the Company's three iterations of its long-term plan and provided three reports regarding the Company's plans and stakeholders' feedback.

Ultimately, the Company's Final LTP has positive aspects and areas where it can be improved. By this Order, the Commission directs the Company to take a number of actions, including filing proposals for demand response programs and identifying segments of its distribution systems that could be addressed with non-pipe alternatives (NPA). Directing these further actions will improve the Company's Final LTP. These actions reflect the analysis performed by PA and Staff, as well as the significant stakeholder feedback. The actions directed in this Order take important steps toward decarbonizing the Company's systems, and achieving statewide greenhouse gas (GHG) emission reduction targets established in the Climate Leadership and Community Protection Act (CLCPA).[2]

BACKGROUND

Gas Planning Process

In the Planning Order, the Commission adopted a modernized long-term natural gas planning process to educate stakeholders and ensure that the State, customers, stakeholders, and all other interested entities could be engaged in the discussion regarding the future of natural gas service and infrastructure in the State. The gas system planning process is intended to "ensure that the Commission has the necessary information to consider the LDCs' long-term plans and

[2] Chapter 106 of the Laws of 2019.

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.[3] The Commission has already considered long-term plans filed by National Fuel Gas Distribution Corporation (NFG), Consolidated Edison Company of New York Inc. and Orange and Rockland Utilities Inc. (Con Edison/O&R), and New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation (NYSEG/RG&E).[4] This proceeding regarding Central Hudson's LTP began with the Company conducting an informational session on December 19, 2023, followed by 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.[5] The Commission also directed LDCs to include adjustments to demand forecast scenarios that incorporate energy efficiency,

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

[4] Case 22-G-0610, National Fuel Gas Distribution Corporation – Long-Term Gas System Plan, Order Implementing Long-Term Natural Gas Plan with Modifications (issued December 14, 2023); Case 23-G-0147, Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc. - Long-Term Gas System Plan, Order Regarding Long-Term Natural Gas Plan and Requiring Further Actions (issued September 20, 2024) (Con Edison/O&R LTP Order); Case 23-G-0437, New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation – Long-Term Gas System Plan, Order Regarding Long-Term Natural Gas Plan and Directing Further Actions, (issued January 23, 2025) (NYSEG/RG&E LTP Order).

[5] Planning Order, p. 11.

electrification, demand response, NPAs, and other external impacts.[6]

The LTP process also includes Staff engaging an independent third-party consultant to, among other things, review the LDC's filings.[7] The consultant works at the direction of Staff, participates in stakeholder meetings, makes requests of the LDCs and stakeholders participating in the long-term planning process, helps evaluate the economic and environmental tradeoffs associated with different pathways, and works with the LDC to run a reasonable number of versions of the hydraulic modeling.[8] For this proceeding, Staff engaged PA as the independent third-party consultant to assist Staff in its review of Central Hudson's LTP.

Central Hudson filed its Initial LTP on February 7, 2024. PA filed its Initial Report on April 5, 2024, followed by stakeholders filing comments on the Initial LTP. The Company filed a Revised LTP on June 25, 2024, but subsequently filed a second version of the Revised LTP on July 26, 2024, after correcting some errors in its analysis.[9] PA filed its Preliminary Findings Report on October 9, 2024, and stakeholders filed written comments on the Revised LTP and Preliminary Findings Report by October 25, 2024. Staff convened several

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[6] Planning Order, p. 29.

[7] Planning Order, p. 26.

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

[9] The Commission notes that in Cases 24-E-0461 and 24-G-0462, Central Hudson Gas & Electric Corporation – Electric and Gas Service, Joint Proposal (filed May 13, 2025) (2025 Joint Proposal), Central Hudson agreed to not recover the difference between the actual final billed professional fees of PA (not to exceed $578,652) and the professional fees set in the original contract ($470,000). The Commission is not addressing the merits of the 2025 Joint Proposal in this Order.

technical conferences, as required by the Planning Order, at which attendees discussed issues related to the Company's LTP and attempted to reconcile differences between the Company's and the stakeholders' opinions regarding the Revised LTP. Central Hudson filed its Final LTP on November 21, 2024, and PA submitted its Final Report on January 15, 2025. A round of initial and reply comments by the stakeholders and the Company followed the filing of the Final Report. The reply comment period ended February 28, 2025.[10] 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 by setting statewide GHG emission reduction targets and codifying clean energy standards. The CLCPA requires the State 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, codified in the Environmental Conservation Law (ECL).[11] Additionally, it requires that disadvantaged communities receive a minimum of 35 percent, with a goal of 40 percent, of the overall benefits of spending on clean energy and energy efficiency programs, projects or investments.[12]

Among the CLCPA's provisions, CLCPA §7(2) requires the Commission to consider whether its decisions are inconsistent with or will interfere with the attainment of the statewide GHG emission limits established in ECL §75-0117.[13] Further, if deemed inconsistent, the Commission must provide a detailed justification and identify alternatives or GHG mitigation

[10] Case 23-G-0676, Notice Establishing Comment Deadline (issued January 16, 2025).

[11] ECL §75-0107(1).

[12] ECL §75-0117.

[13] CLCPA §7(2).

measures to be imposed.[14] Meanwhile, CLCPA §7(3), requires that the Commission ensure that its decisions do not disproportionately burden disadvantaged communities and prioritize reductions of GHG emissions and co-pollutants in disadvantaged communities.[15]

Importantly, the CLCPA established specific electric sector targets for reductions in the use of fossil fuels for electricity generation, codified in Public Service Law (PSL) §66-p(2). Although the CLCPA did not include specific GHG emission reduction targets for gas utilities, attainment of the CLCPA's statewide 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.[16] The gas utilities jointly filed a Proposal for an Annual Greenhouse Gas Emissions Inventory Report on December 1, 2022.[17] After further consultation with Staff, the Joint Utilities supplemented that proposal on May 31, 2023.[18] Public comments

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[14] CLCPA §7(2).

[15] CLCPA §7(3).

[16] 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.

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

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

were filed on the Joint Utilities' proposal on September 5, 2023, and the gas utilities filed a joint response to those comments on September 28, 2023.[19]

The Commission determined that the Planning Order complied with CLCPA §§7(2) and (3).[20] 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

1. Service Territory

Central Hudson serves approximately 90,000 gas customers and 309,000 electric customers in a service territory that extends from the suburbs of metropolitan New York City north to the Capital District at Albany, covering approximately 2,600 square miles.[21] The Company states that its system is comprised of approximately 20,000 miles of gas services and mains and delivers approximately 13 million MCF of gas annually to its customers.[22] In addition, Central Hudson interconnects with four interstate pipeline systems: Algonquin Pipeline, Iroquois Gas Transmission, Millennium Pipeline, and Tennessee Gas Pipeline. Of its 90,000 gas customers, over 90 percent also

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

[20] Planning Order, p. 57.

[21] Final LTP, p. 19.

[22] Final LTP, p. 19.

take electric service from Central Hudson.[23] The Company states that residential gas customer accounts have grown at a compound annual growth rate of about one percent over the last five years, commercial gas customers have grown at a compound annual growth rate of about two percent over the last five years, industrial gas customer accounts have grown at a compound annual growth rate of about 3.6 percent, and public authority customers have grown at a compound annual growth rate of almost five percent.[24]

Central Hudson estimates that 71 percent of its gas meters are located within disadvantaged communities. The Company stated that the majority of NPAs it has investigated are located within disadvantaged communities, and four of the five completed NPAs are located in disadvantaged communities. Central Hudson states that more than 15,000 of its gas customers received heating and cooling assistance grants in the 2022-23 program year through the Home Energy Assistance Program (HEAP) run by the State's Office of Temporary and Disability Assistance. Through the Energy Affordability Program, Central Hudson also provides an additional bill discount to customers who are approved for HEAP.[25] Central Hudson states that "there are important barriers to address for electrification in [disadvantaged communities]."[26]

2. Leak Prone Pipe Replacement and/or Removal

Central Hudson classifies leak-prone pipe (LPP) as pipe constructed of cast iron, wrought iron, or steel that is either bare or ineffectively coated and not cathodically

[23] Final LTP, p. 20.

[24] Final LTP, p. 20.

[25] Final LTP, p. 23.

[26] Final LTP, p. 24.

protected. As of the end of 2023, the Company states it had 66.8 miles of leak-prone mains,[27] and as a condition of the Commission's 2021 and 2024 rate orders Central Hudson must eliminate at least 15 miles of LPP per year.[28] Central Hudson anticipates that its LPP Program will be complete in 2028.[29] Additionally, Central Hudson projects that "investment capital to serve new business … [will] fall considerably in 2027 as new codes and standards are implemented."[30]

3. Demand and Supply Management

The Company's natural gas system is comprised of pipes that operates at higher pressures and distribute gas among the distribution mains and pipe that operates at lower pressures. Pipe operating at higher pressures is subject to additional regulations, enforced by both the federal and state governments, to ensure its safety. According to the Company, it allocates about six percent of its current capital budget to the gas transmission system that operates at this higher pressure, above 125 psig.[31] Part of this high pressure section of the system is an interconnection station and 1.8 miles of transmission lines subject to a rule issued by the federal Pipeline and Hazardous Materials Safety Administration (PHMSA), which deals with

[27] Final LTP, p. 27.

[28] Cases 20-E-0428 and 20-G-0429, Central Hudson Gas & Electric Corporation – Electric Gas Service, Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plan (issued November 18, 2021), p. 51; Cases 23-E-0418 and 23-G-0419, Central Hudson Gas & Electric Corporation – Electric Gas Service, Order Establishing Rates for Electric and Gas Service (issued July 18, 2024) (2024 Rate Order), p. 76.

[29] Final LTP, p. 27.

[30] Final LTP, p. 27.

[31] Final LTP, p. 28.

verification of the maximum allowable operating pressure (MAOP) of certain pipe segments.[32]

Central Hudson states that it has identified four areas defined as "vulnerable locations" on its distribution mains, for which design day pressures may drop below 50 percent of the MAOP in the next five years.[33] These areas are East Fishkill and Hopewell Junction, two areas in the Town of Poughkeepsie, and Highland Mills.[34] As part of Central Hudson's LTP analysis it identified other areas that are highly loaded, five of which would potentially benefit from demand or supply management; these areas are referred to as Poughkeepsie-Newburgh, Highland Mills, Kingston-Saugerties High Pressure, Poughkeepsie Medium, and Titusville-Pleasant Valley.[35] Central Hudson states that it largely focuses its distribution and supply planning on extreme cold weather, which increases demand resulting in lower pressures, but adds that "climate change has two main effects: a higher amount of volatility and extreme weather events, and an overall warming trend for the Hudson Valley."[36] The Company adds that its need to plan for extreme weather conditions to ensure reliability has not changed.

4. Reference Case

The Company states that its foremost objective in this planning process is to ensure that it maintains safe and

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[32] 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 (accessed July 7, 2025).

[33] Final LTP, p. 28.

[34] Final LTP, p. 29.

[35] Final LTP, p. 29.

[36] Final LTP, p. 31.

reliable service for all customers throughout its service territory. The Company states it remains focused on analyzing, planning, and executing an optimal approach to the clean energy transition. Central Hudson adds that the Final LTP is based closely on what it termed the No-New Infrastructure Scenario (NNI) in its previous plan filings. The Company also states that "customers value the ability to make their own energy choices such as heating fuel" and that an optimal approach "may be based not on eliminating choices but raising standards (e.g., equipment efficiency standards)."[37] Central Hudson adds that it will continue to pursue NPAs and it will seek to transform its pipe for other uses, including transporting renewable natural gas (RNG), differentiated gas, and hydrogen.

Central Hudson states it supports initiatives to reduce GHG emissions, including its main replacement program, its selection of supply resources, electrification of space and water heating and commercial and industrial end uses, and utility thermal energy networks.[38] Central Hudson states it has contracted with a third-party expert to conduct a study of RNG potential from various feedstocks within the counties that overlap its service territory and it has completed a hydrogen blending study of a subset of its pipeline distribution systems to estimate the amount of hydrogen it can blend without any pipeline modifications or reduction in loading.[39]

Central Hudson references its Targeted Network Abandonment program, which explores the ability to abandon segments of its natural gas network which have a smaller number of customers by inducing customers to adopt electrification,

[37] Final LTP, p. 1.

[38] Final LTP, pp. 94-95.

[39] Final LTP, p. 4.

energy efficiency, and other clean energy solutions. The Company says it is supporting complementary efforts in its electric business, including support for statewide transmission upgrades to deliver renewable energy sources to areas of high electric demand, substituting gas for higher-carbon petroleum-derived fuels used in heating and manufacturing, and expanding heat pump and energy efficiency programs such as weatherization.[40] Central Hudson adds that the analytic models and concepts for the Final LTP are similar to, compatible with, and linked with those on the electric side as used for and described in the Company's electric Distribution System Implementation Plan (DSIP).[41]

5. CLCPA Scenarios

Central Hudson modeled multiple scenarios in the Final LTP: the Current Clean Agenda (CCA) Scenario, the CLCPA Approach Scenario, the NNI Scenario, and the Pipe Use Transformation (PUT) Scenario. The Company has selected the NNI Scenario as its preferred LTP. The CCA Scenario reflects the legal and policy framework that applies today, at current funding levels. The CLCPA Approach Scenario generally incorporates programs and policies that Central Hudson expects will be needed to meet the economy wide GHG reductions envisioned in the CLCPA but does not seek to achieve a specific level of GHG reductions. The Company states that the CLCPA Approach Scenario will "require a large investment in the electric transmission and distribution system to support incremental electric load and provide assurances of

[40] Final LTP, p. 4.

[41] Case 16-M-0411, In the Matter of Distributed System Implementation Plans (DSIP Proceeding), Central Hudson Distributed System Implementation Plan, Revised (June 30, 2023).

safe, reliable, and resilient service."[42] According to Central Hudson, the NNI Scenario represents the profile of the gas system under policies that prevent growth-related investment in the gas system and efforts to limit capital investment in gas infrastructure will be supported by an assertive effort to identify highly loaded areas and develop NPAs where possible. Central Hudson states that the PUT Scenario features a focused transition of its gas supply resources by displacing conventional natural gas resources with low-carbon fuels (LCFs) that will produce a net reduction in GHG emissions to a greater focus than other scenarios. Central Hudson adds it will continue to pursue the integration of RNG, including in situations in which RNG interconnections prevent the need for investments in distribution infrastructure, and that it will pursue blending green hydrogen with conventional supply resources in a manner consistent with safety and reliability guidelines. Central Hudson states that the PUT scenario results in the greatest GHG emission reductions of all the scenarios.

Central Hudson prepared a table that shows "Typical Gas Customer Combined Electric and Gas Usage and Bill Impacts (2024-2043)."[43] This table shows reductions in gas use per customer over the planning period offset by increases in electric usage, and the Company states that the typical residential customer annual total bill (gas plus electric) under its LTP would increase from $3,112 in 2024 to $3,401 in 2043. Non-residential customers would see similar increases under the LTP. Regarding benefit-cost analysis (BCA) calculations, the Company states that its LTP would have a ratio using the societal cost test (SCT) of 0.72, although the ratios for other

[42] Final LTP, p. 7.

[43] Final LTP, p. 12.

scenarios range from 0.69 to 1.24. The Company also calculated ratios using the utility cost test and ratepayer impact measure.

Central Hudson states that it reinforces distribution networks when gas pressure is projected to drop below 50 percent of the normal operating pressure at an average daily temperature of -8°F, equivalent to 73 heating degree days (HDDs), which is its definition of design day and occurred in its service territory as recently as 1994.[44] The Company states that it evaluated 43 of its "gas systems" to evaluate growth, peak demand, and weather. Central Hudson states that load growth projections were based on a Monte Carlo simulation that produced a range of possible outcomes by year, and also evaluated the overall historic gas usage and customer growth trends using data from 2000-2023. The Company points out that PA suggested that "rather than base the forecasts on historical trends, the forecast of accounts was adjusted to incorporate the forecasted change in households over a 20-year planning horizon."[45] The Company continues that over the 2000-2023 period, residential customer counts and gas sales grew, but use per customer declined due to changes in weather, codes and standards, efficiency programs, and a declining number of people per household.

Central Hudson states that it implements "a comprehensive portfolio of gas and electric energy efficiency programs, which include a variety of solutions for residential, commercial, and industrial customers."[46] The Company adds that it seeks to ensure that low- and moderate-income customers have equal access to all programs regardless of funding source.

[44] Final LTP, p. 30.

[45] Final LTP, p. 38.

[46] Final LTP, p. 40.

Central Hudson estimates the GHG reductions from these programs to be about 197,000 metric tons of carbon dioxide. The Company also references its NPA program to facilitate home electrification and the strategic retirement of LPP which features additional incentives. Further, Central Hudson states it has also filed its Energy Efficiency/Building Electrification Proposal (EE/BE Proposal) which provides proposed budgets and targets for the period 2026-2030 pursuant to Commission Order in Case 18-M-0084.[47] Central Hudson states that its EE/BE Proposal allocates 92 percent of the budget to strategic measures of supporting weatherization measures and building electrification and away from "traditional major natural gas measures such as replacements of older oil, gas, and propane furnaces and boilers with new efficient gas ones."[48] Central Hudson states that for 2026-2030, "the funding for LMI EE programs is being shifted to NYSERDA, and so Central Hudson does not have LMI EE budgets beyond 2025."[49] Central Hudson adds that most customers who adopted heat pumps through its Clean Heat program were served by

[47] Case 18-M-0084, In the Matter of a Comprehensive Energy Efficiency Initiative, Central Hudson Gas & Electric's Energy Efficiency and Building Electrification Portfolio Proposal (filed November 1, 2023). The Commission acted on Central Hudson's proposal, as well as those of other program administrators in May 2025. Cases 25-M-0248, In the Matter of the 2026-2030 Non-Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolios, Order Authorizing Non-Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolios for 2026-2030 (issued May 15, 2025); Case 25-M-0249, In the Matter of the 2026-2030 Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolio, Order Authorizing Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolio for 2026-2030 (issued May 15, 2025) (collectively, May 2025 EE/BE Orders).

[48] Final LTP, p. 42.

[49] Final LTP, p. 42.

a heating fuel other than gas by an approximate 2:1 margin, and the GHG emissions benefits and dollar savings are generally higher for customers switching to heat pumps from fuels such as propane and oil, as compared to gas.

Regarding NPAs, Central Hudson says that it has proposed and pursued incorporating NPA projects in its system planning processes pursuant to Commission Order in Case 17-G-0460.[50] The Company states it is pursuing two categories of NPA projects, both of which employ non-traditional solutions to avoid traditional infrastructure construction: transportation mode alternatives and load growth-based projects. Transportation mode alternatives focus on the strategic abandonment of LPP and load growth-based projects focus on locational constraints that are associated with peak demand. Central Hudson states that it pursues strategic abandonment efforts where leak prone pipe replacement costs are high, where few customers are served, and where it is more cost-effective to fully electrify homes than it is to replace the pipe.[51] The Company states that completed NPA projects resulted in per home conversion costs of approximately $46,000, including, on average, a $4,000 bonus incentive in addition to the full cost of electrification equipment, installation, and panel upgrades, more than eight times the current level of incentives offered in the Company's Clean Heat program. Central Hudson has also filed a utility thermal energy network proposal in Case 22-M-0429,

[50] Case 17-G-0460, Central Hudson Gas & Electric Corporation –Gas Service, Central Hudson Gas & Electric Corporation's Non-Pipeline Alternatives Annual Report (filed December 1, 2023) (NPA Annual Report), p. 2.

[51] Final LTP, p. 48.

which would serve a neighborhood in Poughkeepsie.[52] Central Hudson offers interruptible rate options to large customers as a form of demand response but does not offer any additional demand response programs that are focused on gas usage at this time.

The Company's supply portfolio is made up of a combination of seasonal base gas, storage gas injection and withdrawal, and winter peaking gas supplies in the form of delivered gas services. The Company adds that peaking supplies were five times more expensive than gas delivered through its year-round capacity portfolio and almost four times as expensive as its storage gas based on data from the winter of 2023-2024. Central Hudson states that it uses a short-term forecasting model to estimate day-ahead gas supply requirements that uses mathematical analysis combining historical weather and gas send-out data with the current weather forecasts to provide a rolling multi-day gas demand forecast. The Company continues that the forecast is comprised of a base usage (non-weather sensitive) component and a heating usage (weather sensitive) component, the latter being the product of the forecast of effective degree days obtained from an independent weather service and the natural gas usage per degree day. Central Hudson adds that the daily system natural gas supply requirements, including an operating reserve margin, are determined and scheduled based on this daily forecast. The Company adds that it "perpetually monitors daily actual vs. forecasted natural gas requirements and makes periodic intraday adjustments to the available natural gas supplies using contracts that provide operational

[52] Case 22-M-0429, Proceeding on Motion of the Commission to Implement the Requirements of the Utility Thermal Energy Network and Jobs Act, Central Hudson Thermal Energy Pilot Proposal (filed October 7, 2022).

flexibility."[53] Central Hudson states that it will begin reducing its natural gas supply portfolio as firm natural gas sales and peak demand decrease, although it is still developing the methodology of shedding capacity assets.

Regarding GHG emissions accounting, Central Hudson states that it reports emissions to the federal Environmental Protection Agency through its mandatory GHG Reporting Program. Central Hudson also states that it will follow the approach to GHG accounting that is described in the Joint Utilities' December 1, 2022 Proposal for an Annual Greenhouse Gas Emissions Inventory Report and the Joint Utilities' May 31, 2023 Supplement to Proposal for an Annual Greenhouse Gas Emissions Inventory Report if approved by the Commission.

Central Hudson states that based on the RNG production potential identified in the study it commissioned, it estimates that RNG could offset 218,152 metric tons CO2 equivalent (CO2e) per year if fully developed. Central Hudson states its hydrogen blending study found that 72 percent of the systems that were studied can run hydrogen today, with blends of up to 20 percent hydrogen without any need for modification on a typical winter day. Central Hudson adds that it received approval from the Commission for a Clean Hydrogen Feasibility Study and for utilization of differentiated natural gas (referred to as responsibly sourced gas by the Company).

The decarbonization measures employed by Central Hudson in its LTP include beneficial electrification (heat pumps), energy efficiency (weatherization), hydrogen, and RNG. The Company states it has incorporated data analysis from the electric Distribution System Implementation Plan (DSIP) where

[53] Final LTP, p. 54.

and when possible and will continue to refine the integration of gas and electric planning studies.

Central Hudson projects residential sales will decrease in all of the scenarios, but non-residential sales decreases will be smaller even though non-residential customers account for over 60 percent of current sales. The Company states that the biggest contributor to reducing gas sales is heat pump programs followed by codes and standards, with the impact of codes and standards being diminished due to the lower forecasted growth of households and accounts in the future. The Company expects peak demand to continue to decrease in all scenarios. Regarding GHG emissions reductions, the CLCPA Approach, NNI, and PUT Scenarios' reductions exceed those from the CCA scenario beginning in approximately 2028 according to Central Hudson, when low-carbon fuels (specifically hydrogen) begin to displace conventional natural gas in the supply mix, and the PUT Scenario's GHG reductions are most pronounced due to its progressively higher proportion of hydrogen and renewable natural gas in the fuel mix.

Regarding impacts on capital budgets of the scenarios, Central Hudson expects reductions from reduced new customer connection costs and reduced costs associated with growth-related distribution cost reinforcements, but estimates there would be a small increase in capital costs associated with hydrogen blending stations. The Company adds that as penetration of electric heating grows, it will result in increased capital costs for the electric system including resizing of poletop and padmount transformers, and upgrades to feeder circuits, substations, and transmission lines.[54] Central Hudson projects that gas distribution rates will increase with

[54] Final LTP, p. 79.

electrification, nearly doubling for residential customers over the 20-year planning period, and while the combined electric and gas consumption of the average customer decreases, their total bill does not decline. The Company estimates that a customer who maintains constant usage over the 20-year planning period under the NNI scenario will experience gas bill increases from an annual bill of about $1,700 in 2024 to about $2,700 in 2043 in constant, non-inflation adjusted dollars.

The Company lists a number of initiatives it participates in that focus on decarbonization, including aerial inspections of pipelines, a study to reduce methane emissions on threaded connections, studying the effects of hydrogen blends on odorization of natural gas, and participation in the Electric Power Research Institute's and Gas Technology Institute's Low Carbon Resource Initiative. The Company lists other initiatives it has undertaken to decarbonize its gas system including replacing LPP and that it will continue to explore options for demand response programs. The Company also states that heat pump incentives to customers in disadvantaged communities will be about two-thirds more than those offered to other customers.

Consultant Report

PA filed three reports in this proceeding, with the last filed on January 15, 2025. PA states that its final report builds on their previous reports and reflects stakeholder input through the process. PA also notes that Central Hudson made several improvements throughout the process compared to its Initial and Revised LTP filings, including updating the CO2e emissions factor, updates on the Company's UTEN project, and providing additional information on heat pump programs and incentives. PA also states that Central Hudson's selection of the NNI Scenario as its preferred scenario is an important improvement that should be acknowledged.

PA makes several important observations about the Company's LTP, including that the Company has sufficient supply resources to meet demand for gas in the foreseeable future, that low carbon fuels have a limited and targeted role in the LTP, and that the Company's bill impact analysis indicates that electrification of gas heating is not cost-prohibitive. PA also observes several opportunities for improvement of the LTP. According to PA, the Company's NNI Scenario does not align with the Commission's No Infrastructure Option identified in the Planning Order.[55] PA adds that the Company's volumetric and demand forecasts do not align with PA's expectations of lower customer counts and reduced use per customer due to electrification of heating loads and increased energy efficiency. PA adds that avoiding investments in the gas network without risking safety, reliability, and resiliency would lessen the consequences of increased rates and bills. PA points out that implementation of a multi-variable optimization model to evaluate various LTP scenarios would produce the most optimal scenario, balancing costs with emissions reductions. PA continues that "the lack of meaningful NPA implementation in the Company's service territory to date may indicate that (even with the relative newness of NPA methodologies) existing processes can be improved upon to begin successful deployment of NPAs at scale."[56] PA also recommends that the Company "develop a holistic geographical view to determine which customers and use cases are most or least likely to remain on the gas network over time, and which areas could electrify between now and 2050." PA states that this would identify segments of the gas network that could be reduced in size or eliminated altogether, and which

[55] Planning Order, pp. 36-37.

[56] PA Final Report, p. 15.

sections of the service territory are likely to remain. As a result, PA claims investments made to such likely remaining sections would be "no regret" and do not run the risk of becoming stranded. PA states that this effort should be iterative, as this endpoint view likely will evolve over time with advancements in technology, declining costs, and emerging customer preferences.

PA notes that Central Hudson has segments of its distribution system that the Company identified as highly loaded, meaning a segment is approaching or even exceeding its capacity to reliably serve customers on a design day. PA notes the Company's use of Monte Carlo simulations to determine which parts of the system may experience drops in pressure that exceed the Company's design day criteria but points out that there was not a strong correlation between the Monte Carlo simulation of segments and the more traditional hydraulic modeling of those same segments.[57] PA recommends that the Company work to ensure that the two modeling processes complement one another, to the extent the Company believes both are useful.

PA recommends the Company indicate how its de-contracting strategy for capacity assets may shift and the degree to which its supply portfolio may exceed design day demand under different scenarios. Regarding the capital expenditure forecast, PA notes that only one of the reinforcement projects in the forecast is associated with the identified highly loaded systems. PA recommends that the Company better synchronize the results of its various models with its capital expenditure forecast to the extent the models

[57] A Monte Carlo analysis, which leverages the Monte Carlo method, is a computational technique that uses random sampling to model the probability of different outcomes in a process that cannot easily be predicted.

are viewed as reliable tools and explain why projected reinforcements of the distribution system are expected to focus on areas that have not been identified as highly loaded. PA also recommends that the Company prioritize opportunities that can incrementally reduce capital expenditures as well as GHG emissions, especially as it moves forward with the NNI scenario.

Regarding the demand forecast, PA notes three main dynamics: additions to customer counts due to conversions from other heating fuels, which increases demand; declining growth in customer counts, which reduces demand; and increasing electrification of heating load and weatherization, which reduces gas use per customer (UPC). PA adds that if the impact of electrification were further incorporated, in addition to the reduction in HDDs over time, the average customer usage would be considerably lower. PA states that the residential UPC has exhibited a pronounced negative trend since 1995, growth in the number of single-family units was almost stagnant over the last decade, and housing trends point to smaller residential dwellings being added, which, in turn, imply declining average residential UPC. PA adds that a customer installing a heat-pump will see gas UPC drop to 40 percent of what it used to be.[58] PA also notes that the rate of decline in UPC in the LTP is less than expected if the impacts of heat-pump installations (leading to declining usage due to both decommissioning of connections and partial-heat heat pumps) were also considered. PA recommends the Company re-evaluate its heat pump adoption forecast and develop a robust view on economics of heat pumps compared to natural gas and other fuels in their service territory and states that the current modeling approach does not

[58] PA Final Report, p. 75.

account for the evolving competition between the economics of gas appliances and electric appliances.

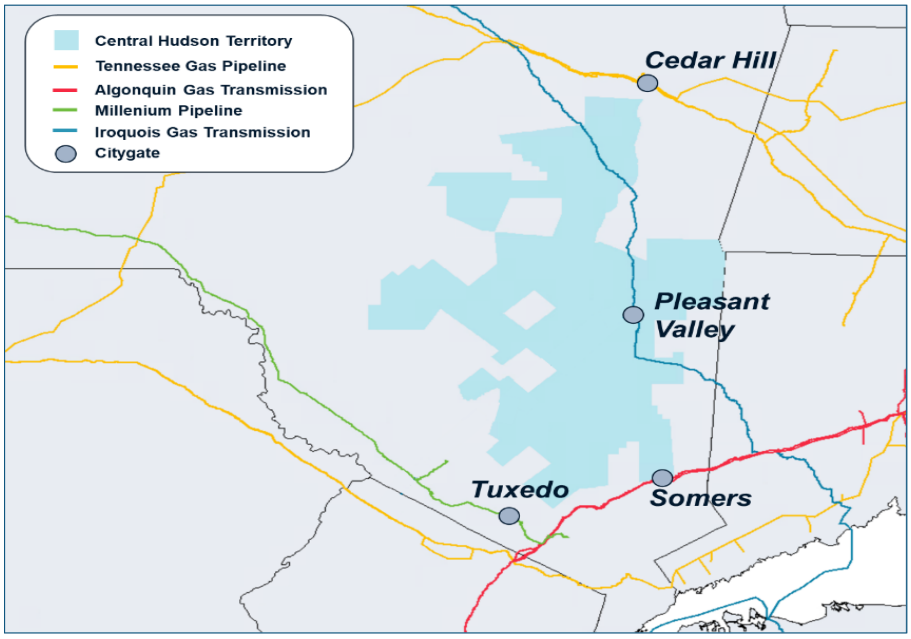
PA produced the following table summarizing the key outcomes of the Company's four evaluated scenarios:

	CCA	CLCPA	NNI	PUT
Gas Supply Mix (2043)	5 percent RNG	5 percent RNG, 5 percent hydrogen	5 percent RNG, 5 percent hydrogen	20 percent RNG, 20 percent hydrogen
2043 Net Sales percent change from 2024	-1.5 MMcf, 11.1 percent decrease	-4.8 MMcf, 36.0 percent decrease	-5.2 MMcf, 39.2 percent decrease	-6.1 MMcf, 45.7 percent decrease
2043 CO_2 Metric Tons per Customer (percent of 1990)	67.4 percent	37.7 percent	34 percent	19.7 percent
Benefit Cost Ratio (Under SCT)	1.24	0.74	0.72	0.69
Bill Impact (percent change in Gas Bill by 2043 $2024)	-7.3 percent	-15.5 percent	-19.4 percent	-19.3 percent

PA states that almost 43 percent of all occupied housing units in Dutchess, Ulster, and Orange Counties rely on ultra-low sulfur diesel fuel oil for home heating, totaling over 97,000 homes currently. PA points out that some oil customers are likely going to consider either air-source or ground-source heat pumps in lieu of natural gas for space heating. PA also states that new construction is likely to slow down based on macroeconomic indicators, and recent legislation prohibiting fossil fueled equipment and building systems in many new buildings beginning December 31, 2025, will dampen the growth of gas heating customers. PA recommends that Central Hudson provide further analysis on the costs and benefits of customer

fuel switching for each fuel option. PA also recommends that the Company develop a view on the economics of electric appliances such as heat pumps and how it will change over time as gas rates increase when the Company pursues blending LCFs and other costly measures and share the assumption and results of this analysis with Stakeholders and consider this analysis in its long-term gas planning and bill impact calculations.

Regarding the Company's supply and capacity portfolio, PA states that Central Hudson's four citygates are currently capable of flowing more gas on a design day than the Company's customers presently require. However, Central Hudson has noted some limitations at the Tuxedo and Cedar Hill citygates interconnecting with the Millennium and Tennessee Pipelines, respectively. This map illustrates the location of the citygates:



For winter peaking needs, the Company relies on delivered services contracts and spot purchases (which may be referred to as winter peaking supplies), depending on weather,

to meet peak demand. PA states that winter peaking supplies are the most likely to be displaced by NPA programs such as demand response on peak or design day. PA adds that the Company should comment on potential market limitations in purchasing additional spot gas, should that become necessary, and the Company's confidence that it can purchase additional gas during design day conditions, especially at certain citygates. PA notes that in the LTP, the Company discusses its expected methodology for de-contracting and retiring components of its supply portfolio when the supply is no longer necessary to meet demand, and its general approach appears to be reasonable, but that methodology was focused on the CCA scenario, which is not the Company's preferred LTP scenario. PA recommends the Company outline its approach to de-contracting capacity assets as demand decreases to better inform stakeholders and the Commission how sources of gas supply will be prioritized for reduction as demand decreases, and that the need to consider de-contracting is especially relevant in the Company's selection of the NNI scenario, which envisions more drastic load-shedding than in the CCA.

PA observes that Central Hudson's gas transmission system generally appears to be well positioned for continued reliability going forward, and the Company's overall near-term capital plan is heavily weighted towards replacement of the existing distribution system. The Company's capital forecast includes replacement of segments of its transmission system through 2030 to comply with PHMSA's final rule issued in October 2019 that requires operators of transmission lines to reconfirm the maximum allowable operating pressure of certain pipelines in their systems. In the absence of traceable, verifiable, and complete records supporting the maximum allowable operating pressure, compliance can be achieved by a number of means,

including re-testing the pipeline or replacing segments for which the applicable records are not available. PA states that the Company identified only approximately 1.8 miles of transmission pipeline that require replacement and that the Company has plans to complete replacement of nearly 90 percent of those segments well in advance of the deadline. PA adds that the Company's transmission pipelines will be needed to deliver gas to customers who remain on the system throughout the energy transition, and investments to ensure the safety and reliability of that gas delivery would not be considered discretionary.

PA states that approximately 28 percent of Central Hudson's capital expenditure budget addresses LPP for the period 2025-28.[59] PA points out that these levels of investment do not reflect the total investment to eliminate LPP from the system, as Central Hudson also eliminates LPP mains when completing projects to remedy undermining of cast iron mains and work required to avoid conflict with public road construction, among other types of projects. PA adds that Central Hudson has a program to replace LPP service lines that are not associated with LPP mains being replaced and proposes to continue the program in the joint proposal recently filed in the currently pending rate case; if approved, the Company plans to complete these replacements (1,224 in total) within seven years (or by the end of 2030).[60] PA considers it reasonable and appropriate to continue to pursue the retirement of leak-prone infrastructure, including under a new program for leak-prone service lines. PA recommends that the Company pursue NPAs for service line replacements where feasible, adding that to date,

[59] PA Final Report, p. 60.

[60] 2025 Joint Proposal, p. 45.

the Company has eliminated 2,139 feet of leak prone pipe through the completion of five NPA projects.

PA evaluated a variety of hydraulic modeling scenarios of segments of the distribution system and the Monte Carlo analysis performed by Central Hudson and investigated the relationship between planned reinforcement investments and the current and potential future operating conditions. PA states it expected a strong correlation between the results of the Monte Carlo analyses and the results of hydraulic modeling scenarios but found that it does not appear that the two modeling approaches are producing similar outcomes. The following table provides the identified segments and the need for upgrades to preserve reliability in the next ten years (segment names spelled out in PA's Glossary section of their final report beginning on page 7):

Hydraulic Modeling Results for Highly Loaded Segments

Segment	Percent Loaded 2024	Year at which Segment Exceeds 90 Percent Loaded	Approximate Percent Likelihood of Triggering Upgrades by 2033			Percent maximum allowable operating pressure (MAOP) in 2024
			In Next 10 Years	**By 2033 CCA**	**By 2033 NNI**	**Percent maximum allowable operating pressure (MAOP) in 2024**
CW	91	2023	0	0	0	88
HM	95	2023	Not included	56	51	81
MLP	77	NEVER	Not included			64
NFE	139	2023	Not included			76
PLP	93	2023	28	21	18	73
PM	113	2023	54	63	54	50
PN	77	NEVER	Not included			79
SP	84	2030	20	10	7	36
TVPV	111	2023	22	26	24	37
KS 40	100	2023	60	44	25	37

Given the data in this table, PA notes a disconnect between the segments that appear to already need reinforcements to maintain reliability and projects currently included in the Company's capital expenditure plans. PA notes that the Company appears to have invested minimal capital in recent years in highly loaded systems; of all system reinforcement investments made from 2018-2023, less than seven percent of those investments were made in the highly loaded segments (equating to approximately 0.2 percent of total capital expenditures over that period).[61] PA adds that the design day demand forecast does not appear to support that continued reinforcement of the

[61] PA Final Report, p. 63.

distribution system will be required, particularly after 2029, so that reductions to the later years of the 20-year capital expenditures forecast may be achievable. PA asserts that while it is reasonable that isolated reinforcements may be needed even as overall demand drops, as indicated above with the highly loaded segments, the declining demand day forecast does not seem to support consistent, ongoing investments to reinforce the distribution system.

PA states that a Monte Carlo analysis based on distribution system pressure expectations cannot convey enough information to effectively determine where reliability risks may exist, and hydraulic models of the same system segments better identify the nature of reinforcements that should be considered, where applicable. PA recommends that the Commission direct Central Hudson to further explain, in its first annual update, how these modeling processes work in tandem, how they promote overall gas planning efficiency, and clarify in detail how its capital expenditures forecast is consistent with the results of the two modeling exercises.

PA notes that, from discussions with Central Hudson, the Company's load forecasts for the 2028 and 2030 hydraulic models did not include anticipated impacts from changes in building codes and policies that could influence design day demand. PA adds that including refined load forecasts incorporating such anticipated changes could benefit these models. PA adds that its review of planned distribution system reinforcement projects and current and potential future operating conditions indicate that Central Hudson plans only three projects for 13 existing highly loaded segments of the distribution system. PA recommends that Central Hudson explain, in its first annual update, how the Monte Carlo and hydraulic modeling processes work in tandem, how they promote overall gas

planning efficiency, and clarify in detail how its capital expenditure forecast is consistent with the results of the two modeling exercises.

PA identified types of infrastructure projects that Central Hudson could avoid through the possible introduction of NPAs, including service line replacements, smaller new business projects, customer conversions, and elimination of service lines that are directly connected to transmission mains. PA illustrates the potential power of NPAs by stating that even with only a 10 percent reduction in each of these investment types annually in 2025-28, Central Hudson could reduce the total capital expenditure forecast in those four years by more than three percent, equating to several million dollars of avoided investment. PA recommends that the Company develop and provide detailed capital expenditure forecasts for the LTP.

Regarding bill impacts, PA observes that the Company provided calculations that include dissimilar results for customers who electrify and those who do not electrify all or portions of their gas end uses, and the results suggest that, under certain circumstances, the cost impact of all alternatives is close. PA states that the total volume of gas Central Hudson delivers to customers will likely be lower than the amount the Company projected in the LTP, especially for residential and small commercial customers, driven by electrification of gas appliances over the forecast period, energy efficiency efforts, the observed warming trend, and the resulting reduction in delivered gas volumes. PA prepared this table showing the key drivers of bill impacts:

Drivers	Upward Pressure on Cost	Downward Pressure on Gas Volumes
Electrification		↓
Energy Efficiency		↓
Warming Trend in HDDs		↓
Hydrogen Development	↑	
Blending of LCFs	↑	
NPAs	↑	↓

PA states that customers who are less likely to electrify can include low-income customers, renters, or customers residing in a disadvantaged community that may have less control over energy sources for their homes or less resources at their disposal to pursue these solutions.

PA states that Central Hudson's use of an optimization process during scenario modeling will assist it in identifying and developing a long-term plan with the highest emissions reduction potential and lowest impact on affordability, while maintaining system reliability and safety. PA states that it is unclear and unlikely the Company conducted such optimizations in the selection of NNI; PA recommends the Company employ an optimization process in the future.

Regarding energy efficiency programs, in addition to the Clean Heat program offered by Central Hudson's electric business, PA points to incentives to customers for energy efficiency, including natural gas heating equipment incentives. PA states that customers are currently eligible for up to $1,800 for appliance upgrades to energy efficient natural gas heating equipment and the Company's Annual System Energy Efficiency Plan for 2020-2025 offers gas heating, ventilation, and air conditioning incentives, including "Smart Wi-Fi and Learning thermostats, boiler reset controls on existing boilers,

furnaces, hydronic boilers, steam boilers, combination boilers/water heaters, combination furnace/water heater, and indirect water heaters."[62]

PA adds that the Company anticipates increased weatherization across the service territory to improve efficiency and is also pursuing NPA opportunities across the service territory. PA states that for the period beyond 2025, the Company had filed its EE/BE Proposal, outlining applicable targets and budgets for these programs for 2026-30, which allocates 92 percent of the budget to strategic EE/BE measures, with an emphasis on weatherization and building electrification measures in their Clean Heat programs.[63] PA also mentions the Company's proposed UTEN pilot site, which provides diversification of thermal loading and value, and is in a disadvantaged community.[64]

PA states that the Company presents two locations, the Kingston Saugerties and the Titusville-Pleasant Valley local gas systems, for potential NPAs. PA continues that by increasing the energy efficiency of gas customers (programmatic or non-programmatic), accelerating electrification through incentive programs, and entirely removing gas customers through NPAs, the Company's service territory is likely to see natural gas service volumes reduce further than forecast by the Company, thus limiting the potential to decrease gas customer bills and potentially increasing bill levels. PA states that the Company should focus on offering demand response programs in highly

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[62] Cases 15-M-0252 and 18-M-0084, In the Matter of a Comprehensive Energy Efficiency Initiative, Central Hudson Annual System Energy Efficiency Plan 2019-2025 (filed April 1, 2022).

[63] Case 18-M-0084, In the Matter of a Comprehensive Energy Efficiency Initiative (NE: NY Proceeding).

[64] PA Final Report, p. 99.

loaded areas to avoid the need for incremental investment in the gas network in the near-term, as gas volumes are forecasted to decline in the long-term, reducing the stranded asset risk.

PA states that the LTP represents the gas system under policies aimed to prevent growth-related infrastructure investment, focusing on: decarbonization using NPAs; an increase in incentives for heat pumps and weatherization; energy efficiency; building electrification; and capping new connections in 2026. PA states the LTP would result in reductions in GHG emissions associated with building electrification, heat pumps, and the increasingly clean electric grid. PA adds that the Company still expects to blend small amounts of RNG and hydrogen into the gas supply, which would be most impactful when targeted toward hard-to-electrify customers.

PA notes that Central Hudson has worked with a third-party consultant to determine RNG potential in the Company's service territory. The consultation results suggest the most available RNG feedstock in the Company's service territory is agricultural residue, which NYSERDA estimates to cost between $19.87 and $39.78/MMBtu.[65] As such, PA recommends that Central Hudson investigate the technical, environmental, and economic implications of hydrogen production, transport, and distribution across its service territory and research and update the costs associated with RNG procurement and blending sourced from within and nearby geographies to Central Hudson's service territory and reflect this updated cost of RNG on customer bills throughout the forecast period.

PA states it "commends the Company for promoting a more targeted deployment of RNG and hydrogen in the preferred NNI scenario for customers with hard-to-electrify end-uses. PA

[65] Potential of Renewable Natural Gas in New York State, NYSERDA, 2022.

believes a targeted deployment of LCFs to customers left on the gas system, after electrification and heat pump adoption mature in the residential customer class, will alleviate the potential cost burden of RNG development for the entirety of the Company's customer base."[66] PA states that a combination of blending low-carbon fuels and continuing efforts on demand side measures leads the Company to its estimates for CO2e reductions, from 1990 levels, by 2043; the LTP results in a 45 percent reduction in GHG emissions compared to 1990, or 450,000 metric tons of CO2e.

PA notes that the Company has indicated in its pending rate case that it will continue to pursue the utilization of differentiated gas and will seek to procure differentiated gas up to the incremental cost threshold of $200,000 established in the previous rate case.[67]

PA states that the LTP describes continued efforts to advance the Company's support of disadvantaged communities in the energy transition, including research and programs with targeted support and investment in disadvantaged communities. PA adds that the Company states that 23 out of 34 of the NPA projects that the Company pursued since 2019 were in disadvantaged communities and four out of five of the NPA projects that reached completion were in disadvantaged communities. PA encourages the Company to continue maintaining a strong focus on the bill impact implications on these customers given that 71 percent of the Company's gas meters are located within a disadvantaged community.

[66] PA Final Report, p. 89.

[67] 2025 Joint Proposal, p. 57.

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 March 27, 2024 [SAPA No. 23-G-0676SP1]. The time for submission of comments pursuant to the Notice expired on May 26, 2024. Moreover, the Commission issued Notices Establishing Comment Deadlines on February 7, 2024, June 28, 2024, July 11, 2024, August 26, 2024, and January 16, 2025. Comments on the Initial LTP were received on April 29, 2024, and reply comments were received on June 11, 2024. The Company filed two versions of its Revised LTP, and comments on them were filed by October 3, 2024. Stakeholder initial comments on the Final LTP were received by February 14, 2025, with reply comments received by February 28, 2025.

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), Communities for Local Power (CLP), Multiple Intervenors (MI), the New York State Energy Development and Research Authority (NYSERDA), and Sierra Club (SC). In addition, over 300 comments have been received from members of the public.

LEGAL AUTHORITY

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, Con Edison/O&R, and NYSEG/RG&E in previous orders. We 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 noted that there are no state laws requiring existing buildings discontinue using natural gas.[68] We also recognized that gas planning will be an iterative process, with the Company filing annual updates and a new long-term plan in three years' time.[69]

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 a 20-year

[68] Con Edison/O&R LTP Order, p. 31.

[69] Id., p. 32.

horizon this far in advance. Instead, we focus on actions the Company must take in the near future to advance the decarbonization of its system while ensuring it can continue to provide safe, adequate, and reliable service to customers. We will address recovery of costs for specific proposals and actions associated with this LTP in the Company's 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 Company's 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 Company 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, NPAs, and other external impacts. Furthermore, the Planning Order directed LDCs to provide estimates of the expected sources of growth and/or reduction in peak demand from demand-side investments.

NYSERDA states that the value of avoided peak demand varies substantially across Central Hudson's service territory, adding that while "the load-weighted system average value of avoided peak demand is $207/Ccf-year, that value reaches as high as $5,800/Ccf-year on some local systems, a 25-fold difference," and this metric only captures one of several benefits from reducing gas demand, and benefits like lower GHG emissions and health benefits should also be considered.[70] NYSERDA also

[70] NYSERDA comments on Revised LTP, p. 3.

mentions the "probability that a reduction in peak demand would enable the avoidance or deferral of investments in system reinforcement." NYSERDA recommends that the Commission consider requiring other LDCs to assess the locational value of reduced demand and identify areas where growth-related investments may be avoidable. NYSERDA states that Central Hudson should develop and invest in strategies to avoid demand growth and hypothesizes that existing buildings converting from other fuels to gas for their heating loads is a major driver of demand growth. NYSERDA points out that such conversions may include both buildings that currently have gas connections but only use them for non-heating loads and buildings that do not currently have gas connections. NYSERDA continues, stating that the historical trend in demand growth does not properly reflect currently enacted policies nor actions the Company is currently taking to stem demand growth, as the compound annual growth rate for total sales was -2.47 percent over the past five years and +0.70 percent over the past 10 years (compared to the Company's projected growth rate of +1.59 percent).[71]

PA states that it would have expected to see lower customer counts across all scenarios, and that the Company's historical trend-based UPC forecasts seem to capture the impact of eroding HDD over time. PA states that if the impact of electrification and energy efficiency were also incorporated, the average use per customer would be lower. PA states that the Company's historical trend-based approach to forecasting future customer counts, which heavily influences sales volume estimates, could overstate the net sales forecast. If the

[71] NYSERDA comments on Revised LTP, p. 9.

historical trend-based forecasts were adjusted downward, the peak demand forecasts would also decrease.[72]

In its reply comments, Central Hudson states that it made updates in its Final LTP to its demand forecast in response to input from PA and stakeholders, including forecasted changes in households and population and including data on gas abandonment rates for sites that electrify. Central Hudson adds that the empirical data shows that most customers, 97.7 percent, do not abandon the gas system after installing whole home cold climate heat pumps and therefore the forecasted customer accounts for the scenarios did not change much with the demand forecast updates.[73] Central Hudson adds that it "welcomes additional statistical analyses and empirical data that supports PA's conclusion" and that it relied on empirical data and fact-based analyses for its service territory to the extent the data exists.

The Commission finds that the Company's demand forecasting appears adequate to ensure continued reliability. However, it also appears that the impacts of electrification of heating load may have a greater dampening effect on demand going forward than that forecasted by the Company. As a result, the Commission directs the Company to study the number of gas customers that have switched their space heating to electric options including air- and ground-source heat pumps and how many of those terminate their gas service versus retain gas service for back up heating or other uses, and provide the data in each Annual Update to this LTP.

[72] PA Final Report, p. 78.

[73] Central Hudson Final Reply Comments, p. 26.

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.

PA states that the Company has sufficient supply resources to meet the demand for gas for the foreseeable future. PA continues that if demand grows in the near term, even at the level of growth forecast by the Company, PA would not expect there to be a need for additional investments in the gas supply portfolio to accommodate that growth, given its observation that the current portfolio is capable of providing more gas on a design day than is presently required by the Company's customers. PA does note there are some delivery limitations at the Tuxedo and Cedar Hill citygates. PA adds that the Company's portfolio currently incorporates delivered services that can be used to meet any marginal demand.[74] PA proffers that a plan for de-contracting supply and capacity assets as demand is reduced would help provide stakeholders a longer-term view of the Company's plans to source gas supply and evaluate the affordability of service. Thus, PA recommends that the Company indicate how its de-contracting strategy may shift and the

[74] PA Final Report, p. 11.

degree to which its supply portfolio may exceed design day demand under different scenarios.

PA adds that during design day conditions, it is entirely possible that there will not be available natural gas on the spot market due to tight market conditions across the region, and while it may be technically possible for the Company to purchase additional gas on the spot market and move it through its system, the additional pipeline capacity may not actually be available to purchase, especially during design day conditions, due to market limitations.[75]

In its reply comments, the Company notes that it would be overly speculative to determine a confidence level for its ability to purchase additional spot and peaking gas in the future given numerous dynamic factors, such as limited interstate pipeline infrastructure and competition with other LDCs. Regarding de-contracting of assets, the Company states that further analysis on this topic does not merit detailed analysis at this time while the Company continues to see load growth in its five-year forecasts, and its approach to de-contracting will become more appropriate to develop when the five-year load forecasts reflect load reductions.

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

1. De-Contracting

The Commission acknowledges that Central Hudson expects continued growth in gas demand for the time being, but also notes PA's and stakeholders' concerns that the Company's estimates of electrification rates may be overly conservative. The Commission directs the Company to include in its next long-

[75] PA Final Report, p. 45.

term plan filing in July 2028 a process for de-contracting unnecessary capacity and supply assets, including peaking services. The filing must include criteria that Central Hudson will use to identify assets targeted for de-contracting, including information such as the potential impacts on reliability of specific highly loaded segments discussed below.

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.[76]

AGREE states that the evidence against the use of RNG and hydrogen in gas system blends is mounting, and "the only way that it has been justified in other gas long-term plans is by manipulating data to artificially decrease costs and to inflate GHG reductions."[77] AGREE continues that the use of RNG in the LTP requires an accurate cost estimate, whereas the RNG costs used by Central Hudson reflect production costs and not market costs, and if Central Hudson is claiming GHG emission reductions from the use of RNG, then the Company must buy the associated environmental attributes along with the gas.

Sierra Club states "serious concerns about other gas utilities' flawed and overly optimistic assumptions regarding both the cost and the availability of RNG and hydrogen."[78] NYSERDA comments that Central Hudson's stated emissions factors

[76] Planning Order, p. 57.

[77] AGREE comments on Final LTP, p. 2.

[78] Sierra Club comments on Final LTP, p. 3.

for RNG skew the LTP results and have significant impacts on evaluating the cost-effectiveness of RNG as a decarbonization action. CLP states that according to a 2021 study produced by NYSERDA, RNG does not have enormous potential in New York State, and the Hudson region is one of the least potentially productive regions.[79] CLP adds that RNG exacerbates emissions and the climate crisis.

Regarding differentiated gas, CLP points out that there are no universal certification standards for differentiated gas and the industry regulates itself and issues their own certifications.

PA states that the Company has limited its reliance on RNG and hydrogen for emissions reduction in the LTP. Although PA believes RNG has potential use in future gas planning, PA agrees with the Company's decision to focus LCF deployment as a targeted decarbonization measure for hard-to-electrify customers after other decarbonization measures are deployed for use cases that are easier and do not require costly LCFs fuel blending.[80] PA recommends that the Company research and update the costs associated with RNG procurement and blending sourced from within and nearby its service territory and reflect this updated cost of RNG on customer bills throughout the forecast period. PA states that the Company indicated it is open to further analysis of hydrogen and RNG through additional studies and agrees that it would be valuable to conduct a study to investigate the technical and economic implications of hydrogen and RNG production, transport, and distribution across the Company's service territory.

[79] CLP Final Comments, p. 7.

[80] PA Final Report, p. 18.

PA adds that smaller RNG production facilities, such as agricultural RNG producers within the Company's service territory, can result in producers charging a higher rate for the RNG produced, and by looking to source all RNG locally, the Company runs the risk of higher-than-average production costs. PA notes that RNG supply across the state of New York will be limited, and the Company may find difficulty in procuring adequate volumes of RNG to meet their GHG emission reduction targets. The third-party report prepared for Central Hudson expresses concern for the sustainability of New York State agricultural residue as an RNG feedstock due to the trend in converting farmland to solar PV developments to achieve the state's clean electricity targets.[81] PA adds that the Company, to date, has been unable to secure RNG production at its target cost and anticipated state policy for RNG application in the transportation market and RNG utilization for electric generation present additional demand on a potentially limited supply of RNG.

In its reply comments, Central Hudson states that it will consider stakeholder feedback and revise RNG costs and assumptions for the next cycle of its long-term plan. The Company states that when the environmental attributes are separated from the gas, the gas cost itself is sold based on the commodity price of natural gas and not the production cost, which is already "baked into the market cost" and the overall cost of RNG would be only slightly higher than the cost of the environmental attribute.[82] Central Hudson continues:

> Production cost is a more accurate estimate for RNG integration, as it presents a unified cost for the different feedstocks and is more reflective of the RNG

[81] https://www.cenhud.com/globalassets/pdf/my-energy/central-hudson---rng-analysis.pdf, p. 14.

[82] Central Hudson final reply comments, p. 32.

> potential available within Central Hudson's territory. It is also important to note that costs in the long-term plan are in line with what the Company has received through competitive bidding. These bids included the environmental attributes, and they reaffirm that the assumptions included within the GSLTP are reasonable.[83]

Central Hudson also notes that it welcomes additional data for consideration in their next long-term plan filing.

The Commission agrees that targeting the use of RNG or hydrogen to hard-to-electrify customers is appropriate and will mitigate the likely higher costs of these fuels. The Climate Action Council noted in its Final Scoping Plan that additional analysis is needed to determine the feasibility and the climate impact of RNG and hydrogen and the analysis should include an evaluation of the full life cycle GHG and co-pollutant emissions impacts, health impacts, impacts on energy affordability, and safety and reliability considerations for the use of these alternative fuels prior to investments in alternative fuels for use in gas system planning.[84] Central Hudson can consider how RNG or hydrogen can address the needs of its hard-to-electrify customers and address this issue in its next long-term plan filing. The Commission recognizes that the recently filed Joint Proposal in the pending rate proceedings would continue the Company's pilot program to purchase differentiated gas.[85] While we will not pre-judge the merits of the Joint Proposal, we note that the Commission continues to consider cost-effective means to reduce GHG emissions. The Company is encouraged to provide evidence of GHG reductions from differentiated gas purchases and

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[83] Central Hudson final reply comments, pp. 32-33.

[84] New York State Climate Action Council. 2022. "New York State Climate Action Council Scoping Plan," p. 351, available at climate.ny.gov/ScopingPlan.

[85] 2025 Joint Proposal, pp. 57-58.

its cost effectiveness relative to other demand-side measures in its next long-term plan filing.

3. Peaking Services

Central Hudson relies on delivered service peaking contracts to meet design day demand and states that on an average dollar per dekatherm basis supplies provided through peaking contracts were almost five times more expensive than gate-delivered base gas, and almost 3.75 times more expensive than gate-delivered storage gas.[86] Central Hudson states that less future reliance on peaking contracts will be economically beneficial for customers as peak gas demand reduces under the LTP.

PA points out that the Company typically issues a request for proposals (RFP) to procure peaking contracts and in Central Hudson's existing forecast, the volumes of peaking contracts fluctuate between 40 and 45 MDth/d. PA states that peaking contracts remain the component of the Company's supply portfolio that has the most embedded risk and believes that it was valuable for the Company to elaborate on those risks. Further, PA states that peaking contracts are also the most likely to be displaced by NPA programs such as demand response on peak or design day.

In its reply comments, the Company states that it provided joint comments in 2020, along with the other New York LDCs, which addressed peaking contracts or "delivered services," and stated they are the higher risk assets in the supply stack.[87] Central Hudson continues that the LDCs did not develop a

[86] Final LTP, p. 52.

[87] Case 20-G-0131, supra, Modernized Gas Planning Process: Standards for Reliance on Peaking Services and Moratorium Management, Joint Filing by Seven New York Local Distribution Companies (filed July 17, 2020).

definitive confidence level for peaking contracts and the Company does not support moving beyond the joint LDC analysis at this time.

As discussed above, we require that Central Hudson include a process for de-contracting peaking contracts as part of the de-contracting process to be filed in its next long-term plan in 2028.

Demand Response Programs

In the Planning Order, the Commission stated that LDCs should continue to consider the use of interruptible gas service to minimize the need to build new infrastructure, while also prioritizing developing innovative clean demand response programs. Central Hudson notes that 20 percent of its total sales comprise interruptible gas service to larger customers that the Company can call on to curtail usage in full. Central Hudson does not currently offer any other demand response programs and states that "the overall focus of shifting gas usage to electricity may suggest a decreased focus on pursuing new gas demand response efforts in general, noting that gas demand response efforts may be suitable on a more targeted basis, e.g., if there is both a gas and an electric constraint."[88] Central Hudson says it is open to working with stakeholders on innovative demand response programs if they are shown to be cost-effective.

MI states that Central Hudson should be directed to evaluate and, if cost-effective, implement gas demand response programs. MI recommends that the Commission direct Central Hudson to coordinate with parties and develop one or more cost-effective gas demand response programs to be submitted to the Commission for approval by a reasonable deadline. PA states

[88] Final LTP, p. 51.

that the Company should focus on offering demand response programs in highly loaded areas. This will avoid the need for incremental investment in the gas network in the near-term and reduce the stranded asset risk, as gas volumes are forecasted to decline in the long-term. In its reply comments, Central Hudson stated it would welcome working with MI, and for MI to put forward particular parties to work with Central Hudson to develop a proposed gas demand response program, but that a filing later this year, as recommended by MI, may not be realistic given a potential Commission order date, as well as the time required to identify and work with stakeholders to develop such a program.

The Commission agrees that the Company should explore demand response programs, especially in highly loaded areas. The Company is directed to propose a large non-residential customer demand response program. Given MI's interest we strongly encourage that the Company collaborate with MI and other large customers and their representatives as the Company develops a program proposal. Central Hudson is directed to file the proposed large non-residential demand response program within 150 days of this Order. Central Hudson is also directed to develop a residential customer demand response program targeting its highly loaded areas, which may include a bring your own thermostat component, and to file a proposal with the Commission within 150 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. Central Hudson states it has "long administered and otherwise supported energy efficiency, and will continue to do so, subject to ongoing regulatory processes including requirements related to the July 2023 EE/BE Order,

which limits gas energy efficiency measures in utility programs in the future."[89] Central Hudson states it is closely monitoring its highly loaded segments as it consider the best path forward, including targeted energy efficiency and NPAs. Central Hudson states that it collaborates with the other New York State LDCs and NYSERDA to develop coordinated statewide efficiency initiatives targeting low- and moderate-income customers. Central Hudson also notes it had filed its EE/BE Proposal which provides proposed budgets and targets for the period 2026-2030 and allocates $2.6 million in weatherization budget to gas-only customers. Central Hudson states that annual heat pump and energy efficiency incentive funding is modeled to increase through 2032 to stimulate installation of building electrification systems and incentives will be targeted to regions of the gas system that experience the highest loading to mitigate or eliminate the need for growth-oriented investment.

Sierra Club states that it supports Central Hudson's prioritization of energy efficiency, electrification, and NPAs over low carbon fuels-based alternative plans. NYSERDA states that Central Hudson's actions to focus spending on Clean Heat initiatives and away from traditional gas programs like new efficient gas furnaces are already well engrained in the Company's operations and making a substantial impact and explains, in part, the recent trends in sales growth.

PA opines that the Company is expected to experience downward pressure on gas customer numbers and delivered gas volumes because of electrification, energy efficiency, and a warming trend but that the Company has not effectively

[89] Final LTP, p. 2, referring to Case 18-M-0084, In the Matter of a Comprehensive Energy Efficiency Initiative, Order Directing Energy Efficiency and Building Electrification Proposals (issued July 20, 2023) (EE/BE Order).

incorporated energy efficiency in load forecasts of use per customer. PA anticipates a quicker decrease of annual net sales than the Company does, due to factors including an accelerated adoption of heat pump and electric appliances and energy efficiency.

In its reply comments, Central Hudson states that it does not agree with PA's expectation of accelerated electrification beyond what the Company modeled and notes that there is "substantial uncertainty regarding federal incentives for federal funding for heat pump technology."[90] The Company adds that it will largely discontinue its gas energy efficiency incentives after 2025, citing as an example that it expects to discontinue an $1,800 incentive and all residential energy efficient natural gas heating equipment incentives to end in 2025.

The Commission notes that general ratepayer-funded, customer-facing gas energy efficiency programs are funded within the budget bounded portfolios approved in the Commission's May 2025 EE/BE Orders. Details of such programs are subject to the implementation plan approval process set forth in those orders. However, efficiency measures or targeted initiatives may be administered or pursued as a component of specific NPAs or NPA proposals, especially those implemented within or planned to address highly loaded areas. In its first Annual Update due on May 15, 2026, and in each Annual Update filed until its next long-term plan filing in 2028, Central Hudson is directed to provide information on the anticipated impact of its portfolio of energy efficiency and building electrification programs.

[90] Central Hudson Final Reply Comments, pp. 26-27.

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 at a frequency proposed by the LDC.[91] Central Hudson states that it currently plans its gas system for a daily average temperature of -8°F, which equates to 73 HDDs, and this actually occurred in 1994. The Company notes the warming trend in climate and the resulting lower use per customer but adds that "the need to plan for extreme weather conditions to ensure reliability does not change."[92] Central Hudson states that none of the segments of its distribution system are isolated or specifically served by one city gate, which provides for system flexibility and reliability through diversification. The Company states that load growth forecasts were developed using Monte Carlo simulations that produced the range of possible load growth outcomes by year and simulates the reality that the near-term forecast has less uncertainty than forecasts 10 years out, with a total of 2,000 simulations being implemented for each gas system.

NYSERDA states that it is incumbent on the Company to balance the need for energy affordability and reliability and recommends that Central Hudson work with the Commission and potentially other utilities in the state to "develop a framework for updating its definition of design day demand conditions to align with empirical data and the latest climate science."[93] Regarding the Company's statistical modeling of demand growth

[91] Planning Order, p. 34.

[92] Final LTP, p. 31.

[93] NYSERDA comments, p. 14.

across its system, NYSERDA states that the forecasts are locationally granular, conducted at the local system level which is appropriate and necessary. NYSERDA adds that locationally granular forecasts support the development of demand response programs that target the needs of a specific part of the distribution system. Further, NYSERDA states that by generating multiple simulations for each specific part of the distribution system, the Company produces forecasts that reflect uncertainty associated with changes in load. The forecasts produce the maximum allowable pressure drop under design conditions, which is the relevant criterion for assessing the need for system reinforcement. Additionally, NYSERDA states that by overlaying current and forecast electric system winter loading data to assess headroom for electrifying heating load, the Company takes an important step towards integrated gas and electric system planning.

PA notes certain segments of the Central Hudson distribution system that have been identified by the Company as highly loaded, meaning the segments are either approaching or even exceeding their capacity to reliably serve customers on a design day. PA continues:

> The highly loaded segments were identified using a Monte Carlo analysis to determine which parts of the system may experience drops in pressure that exceed the Company's design day criteria. All segments of the distribution system are ranked from highest loaded to least loaded. Central Hudson then conducted hydraulic modeling as a more detailed assessment to identify constraints on those segments. In PA's opinion, a Monte Carlo analysis based on distribution system pressure data is unable to convey enough information to effectively determine where reliability risks may exist. PA believes the hydraulic modeling process is the key step in determining whether these potential risks exist and lays the foundation for anticipating and addressing future design day reliability issues. Importantly, PA would expect there to be a strong correlation between the results

> of the Monte Carlo analyses and the results of hydraulic modeling scenarios ... it does not appear that the two modeling approaches are producing similar outcomes in all cases. We continue to recommend that Central Hudson work to ensure that the two modeling processes complement one another, to the extent the Company believes both are useful.[94]

PA adds that approximately 7.2 percent of the capital budget forecast for 2025 through 2029 supports projected reinforcements of the overall gas distribution system to maintain design day operating standards and ensure reliability, but it appears that only one of the reinforcement projects in the forecast are associated with the identified highly loaded sections of its system. PA recommends that the Company better synchronize the results of its various models and ensure that its capital budget forecast is consistent with those results. PA's analysis indicates that a number of highly loaded sections of its distribution system as identified by the Company's modeling are not currently slated for reinforcement projects even though they show reliability risks, whereas other sections that are less highly loaded are scheduled for reinforcement. PA recommends Central Hudson re-evaluate the outputs of its various modeling exercises to ensure that the results thereof are complementary and support effective distribution system planning going forward. PA also recommends that the Commission direct Central Hudson to further explain, in its first annual update, how these processes work in tandem, how they promote Central Hudson's overall gas planning efficiency, and clarify in detail how the Company's capital budget forecast is consistent with the results of the two modeling exercises.

PA notes that the Company has determined that only approximately 1.8 miles of transmission pipeline require

[94] PA Final Report, p. 16.

replacement in order to comply with the requirements of the federal PHMSA regulations covering the verification of maximum allowable operating pressure (MAOP) in segments with higher pressure pipe. These regulations require records demonstrating determination of MAOP be traceable, verifiable and complete. PA adds that plans are in place to complete replacement of nearly 90 percent of those segments well in advance of the 2028 PHMSA deadline.

Central Hudson notes that the PA Final Report often refers to one type of the Company's modeling as "Monte Carlo" but this modeling is more accurately described as "long-term probabilistic econometric modeling." Central Hudson adds that it is accurate that Monte Carlo simulations are one component of this, but it is not accurate to refer to the comprehensive whole of that analysis as "Monte Carlo." Central Hudson adds that its response to a PA data request used the term "reinforcement" in capital budgeting in very few project descriptions due to coding language in its capital budgeting software that it is "unable to change."[95] The Company adds that it has slated 10 of the 12 highly loaded segments of its system for reinforcement via various pipeline projects. Central Hudson states that hydraulic modeling and "long term probabilistic econometric modeling" are complementary for long-term planning and it will continue to refine and better define these modeling approaches in future LTP iterations. The Company states that it continuously evaluates the segments of its distribution system to determine if there are any choke points or other constraints that should be addressed.

The Company's reliance on the coldest actual weather experienced in its service territory is reasonable for design

[95] Central Hudson Final Reply comments, p. 15.

day planning. The Commission agrees with PA that the coordination between the Company's modeling tools is not clear and directs Central Hudson, in its first annual update due May 15, 2026, to explain how Central Hudson coordinates its modeling processes, to explain how the modeling processes promote Central Hudson's overall gas planning efficiency, and to clarify in detail how its capital forecast is consistent with the results of the two modeling exercises.

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. In its LTP, the Company has designated what it calls its NNI (No New Infrastructure) scenario as its LTP. PA notes that this scenario may not align with the "No Infrastructure Option" described within the Planning Order, which states the Company should "include an entirely 'no infrastructure option' and other scenarios relying on alternatives to traditional capital projects."[96] The Company states that the NNI scenario "represents the profile of the gas system under policies that prevent growth-related investment in the gas system. Note, however, that the NNI Scenario does not entail the elimination of capital spending."[97] The Commission finds that the Company did not provide a true no-infrastructure scenario, which would include a mix of utility sponsored demand reduction measures that will close any gap between projected load and available supply.[98]

[96] Planning Order, pp. 36-37.

[97] Final LTP, p. 64.

[98] Planning Order, pp. 7-8.

Regarding NPAs, the Final LTP states Central Hudson will continue to pursue NPAs in place of traditional infrastructure when feasible. The Company states that "efforts to limit capital investment in gas infrastructure will be supported by an assertive effort to identify highly loaded areas and develop NPAs where possible, consistent with State policies" and mentions suitability and BCAs.[99] Central Hudson also mentions that four of its five completed NPAs are in disadvantaged communities. Regarding the highly loaded segments discussed above, Central Hudson states it is closely monitoring locations as they consider the best path forward, including targeted energy efficiency and NPAs. The Company states it is pursuing two categories of NPAs: transportation mode alternatives and load growth-based projects. The first is focused on abandonment of LPP and the second is designed to manage locational constraints that are associated with peak demand. The Company states it will continue to advance these two programs as part of the on-going efforts described in the Final LTP.

Sierra Club states that nearly 60 percent of new business capital expenditures are for small residential interconnections, and approximately five percent are for natural gas conversions from alternative fuels, at least some of which could potentially be avoided through targeted NPAs. Thus, Sierra Club concurs with PA's recommendation that "the Company aggressively pursue NPAs where feasible to avoid the incremental CapEx associated with replacing leak-prone mains and service lines."[100] NYSERDA states that identifying and evaluating NPA opportunities to avoid growth-related investments is a necessary

[99] Final LTP, p. 8.

[100] Sierra Club Final Comments, p. 5.

step, but it is not sufficient and recommends that Central Hudson develop a more complete proposal to implement strategies to avoid growth-related investments. NYSERDA recommends that the Company evaluate how expanding targeted incentives could achieve cost-effective reductions in gas distribution capacity costs and adds that the level of these incentives could be based, in part, on the avoided peak demand values calculated by the Company and higher demand side management program budgets may be warranted to capture the benefit of avoided gas distribution capacity costs. NYSERDA suggest that the Company could "publish and periodically update a map showing the avoided peak demand value across its service territory and work with third parties to develop NPAs or promote demand reduction measures, including gas demand response, in high value areas."[101] NYSERDA continues that the Company should identify and evaluate pipe segments that can be decommissioned through targeted electrification and should make the results of this analysis public to the maximum possible extent and use it as a jumping off point for implementing NPAs to avoid infrastructure replacement.

PA explains that the lack of significant NPA implementation in the Company's service territory to date may indicate that Central Hudson can improve its existing processes to advance successful deployment of NPAs at scale. PA adds that the Company identified two locations as potential NPA opportunities but more work is needed by the Company, stakeholders, and policy makers to support the timely deployment of NPAs, including providing sufficient lead time to identify, issue RFPs, and implement NPAs and a minimum cost threshold should be considered for traditional CapEx which would trigger a

[101] NYSERDA Comments, p. 4.

robust NPA study. PA notes that NPA programs such as demand response on peak or design day are most likely to displace winter peaking supplies. PA also discusses how Central Hudson could use NPAs to address transmission services, or service lines attached to higher pressure, transmission, pipes instead of distribution mains (sometimes referred to as farm taps), avoiding the incremental capital expenditures required to upgrade facilities to retain these customers.

In its Final Reply Comments, Central Hudson states that it and the gas utility industry overall have experienced challenges in achieving the level of customer uptake of NPA offerings needed to achieve system abandonment goals. However, Central Hudson adds that its successful NPA projects have costs that are 74 percent of the avoided cost of the infrastructure project, inclusive of all benefit streams. Further, Central Hudson states it expects limited participation in terms of customers agreeing to abandon gas service and opting for full electrification through NPAs if incentives were to remain at current levels. The Company states its preferred approach for NPAs as achieving load reduction to avoid needed gas infrastructure investment, rather than segment abandonment.

The Commission recognizes Central Hudson's successful pursuit of NPAs in lieu of LPP replacement, although it has only resulted in five completed NPA projects. Pursuit of NPAs for highly loaded segments needs attention. In the 2025 Joint Proposal, Central Hudson has committed to "include targeted outreach efforts and initiatives to increase customer adoption of a combination of energy efficiency measures, heating electrification, or demand response programs within areas of pressure concern" and states that examples of these areas are

illustrated in the Final LTP in Case 23-G-0676.[102] Central Hudson has committed in the Joint Proposal to submit a unique implementation plan following the development of a solution or solicitation of vendors through an RFP process for these areas. As noted earlier, we are not addressing the merits of the Joint Proposal at this time. However, we direct Central Hudson to develop and issue an RFP for an NPA in one of its highly loaded segments within 120 days after this Order. As it develops the RFP, Central Hudson shall consult with Staff by, at a minimum, providing a copy of the draft RFP for Staff's review at least 30 days prior to issuance. In addition, Central Hudson is directed to share the results of the RFP with Staff before entering into any contracts with potential vendors or deciding not to enter into any such contracts. Within 90 days after it takes action on the proposals submitted in response to the RFP, Central Hudson shall file a report with the Secretary explaining those actions. If such RFP do not produce actionable results, Central Hudson shall explain why it did not pursue the NPA and how it can improve its solicitation of NPAs in the future.

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.[103] As mentioned above, Central Hudson has been able to address five segments of LPP with NPAs. Central Hudson indicates in its Final LTP that it had 66.8 miles of leak-prone mains, as currently defined, as of the end of 2023. Further, under its 2021 rate plan, Central Hudson must eliminate at least 15 miles of LPP per year. Continuing LPP removal at that pace means that we can expect the Company to remove all LPP main in

[102] 2025 Joint Proposal, p. 59.

[103] Planning Order, p. 39.

approximately just over four years. Central Hudson adds that the 2024 Rate Order approved a leak prone services program to replace services that are considered LPP but are not included within the LPP main program because they are not served by a leak-prone main. Central Hudson adds it currently has 1,224 leak prone services that fall outside of those to be replaced through the LPP program. Central Hudson states that its LPP main program spending will be complete in 2028, "after which the Company's capital spending is projected to diminish significantly."[104] The Company states it has identified over 60 locations across its service territory where implementing a transportation mode alternatives project, focused on the strategic abandonment of LPP through electrification in cases where it is more cost-effective than replacing infrastructure and does not compromise system reliability, could enable the permanent and cost-effective retirement of LPP.

NYSERDA states that LPP removal accounts for about 32 percent of near-term projected capital expenditure and avoiding a portion of this capital expenditure through targeted electrification would reduce stranded asset risk and customer bill impacts. NYSERDA adds that the Company falls short of the Planning Order's requirement to identify locations of LPP segments that could be abandoned in favor of NPAs. CLP states that replacement of LPP "emerges as the perfect alternative to retiring or reducing gas pipelines. It offers a false solution even as it produces profits for the company."[105]

The Commission recognizes that the Company is very close to eliminating its leak prone mains, with the replacement of leak prone services to follow, as well as the elimination of

[104] Final LTP, p. 27.

[105] CLP Comments, August 23, 2024, p. 6.

farm taps. Central Hudson has also been successful at employing NPAs in lieu of replacement of leak prone infrastructure. As NYSERDA points out, the Company did not provide locations of LPP that could be abandoned with NPA treatment, although Central Hudson's Appendix C to the Final LTP discusses two potential NPA locations. The Commission directs the Company to issue RFPs for each of these two opportunities within 120 days of this Order. The Company shall provide Staff the opportunity to review the RFPs at least 30 days before they are issued and will provide the results of the requests for proposals with Staff within 30 days after the responses are received. These RFPs must provide specific information on the amount of load reduction being sought, the types of customers currently served and their load, the dollar value of traditional infrastructure that could be avoided through NPA treatment, and the necessary timeframe within which the load relief is required for the location. Similar to the requirements for the RFP discussed in the previous section, Central Hudson shall report on the results of the RFP within 90 days of taking action regarding any proposals received.

Strategic Decommissioning

Stakeholders suggested that Central Hudson should pursue a tabletop exercise focused on strategic decommissioning of parts of its distribution system, and it was also mentioned in the public comments. This topic was introduced in the NYSEG/RG&E long-term plan proceeding, and the NYSEG/RG&E LTP Order directed NYSEG/RG&E to identify potential areas of the gas infrastructure in Tompkins County that possibly include LPP or otherwise may require infrastructure upgrades, and where decommissioning would not negatively impact customers downstream. The Commission directed NYSEG/RG&E to convene a technical conference to develop criteria for identifying

potential segments of infrastructure for strategic decommissioning within 60 days of the date of the NYSEG/RG&E LTP Order and file a report summarizing the discussions and results within 30 days of the technical conference.[106]

AGREE states that the Commission should order Central Hudson to conduct a strategic decommissioning plan with the Department of Public Service and interested stakeholders. Sierra Club urges the Commission to require Central Hudson to pursue a targeted plan for reducing the footprint of the gas distribution system and urges the Commission to establish a similar collaborative process to that established for NYSEG/RG&E in Central Hudson's service territory with a goal of proving out the potential for neighborhood scale strategic decommissioning. NYSERDA states that recent research to develop an analytical framework for targeted electrification and strategic gas decommissioning indicates that this type of approach can be effective. NYSERDA adds that the "barriers to decommissioning parts of the gas system that Central Hudson identifies are real. But rather than obviating the need for progress, they create an imperative to accelerate the work of developing the necessary data sets, adopting new analytical tools, conducting community engagement, and implementing proactive, integrated gas and electric system planning processes into the Company's business practices."[107]

PA states the following:

> PA encourages the Company to take an additional step: develop a holistic geographical view to determine which customers and use cases are most or least likely to remain on the gas network over time, and which areas could electrify between now and 2050. Such approach will result in developing a directional view on geographical footprint of the gas system over time.

[106] NYSEG/RG&E LTP Order, p. 53.

[107] NYSERDA Comments, p. 8.

> It would identify segments of the gas network that could be reduced in size or eliminated altogether, and which sections of the service territory are likely going to remain and therefore investments made to them will be "no regret" and do not run the risk of becoming stranded.[108]

In its Final Reply Comments, the Company states that it opposes the Commission requiring a tabletop exercise, as directed for NYSEG/RG&E, for Central Hudson. The Company maintains that such a requirement would duplicate the Company's prior efforts and inefficient from a cost and resource perspective. Central Hudson adds that a single customer refusing to participate can prevent a NPA from going forward and "if a community, such as what is being contemplated in the [NYSEG/RG&E LTP] Order, can override such a customer not participating in an NPA, that would be noteworthy" and states it will "track with interest any such activity and learnings in NYSEG and RG&E's effort."[109]

The Commission notes that the strategic decommissioning exercise commenced by NYSEG/RG&E represents a potentially innovative approach to decarbonization of the natural gas system in New York State. We expect that all the State's LDCs, including Central Hudson can learn from that initial experience. At this time, we will not require Central Hudson to duplicate it. However, we encourage Central Hudson to consider whether any part of its service territory might be a candidate for strategic decommissioning and include that information in its next long-term plan filing.

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

[108] PA Final Report, p. 90.

[109] Central Hudson Final Reply Comments, pp. 39-40.

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 Company provided a map of the disadvantaged communities in its service territory in the LTP and estimates that 71 percent of its gas meters are located within a disadvantaged community. As noted above, Central Hudson has completed NPAs in disadvantaged communities and Central Hudson states it filed its first disadvantaged community report on investments and energy saving benefits in disadvantaged communities from 2020 through 2022 on December 28, 2023.[110] Central Hudson adds that its proposed thermal energy network pilot project is located in a disadvantaged community.

PA recommended that the Company conduct a study to show how fuel blending with RNG and hydrogen would impact a representative customer bill within disadvantaged communities or a low-income customer over time and the potential impact on energy assistance programs. PA also points to a list of barriers to electrification developed by the Company, such as the relatively high proportion of customers residing in disadvantaged communities who live in rental housing where the customer is not the key decision maker on investments and the need for additional workforce development in disadvantaged communities to facilitate heat pump installations. PA states that an unplanned and uncoordinated decarbonization approach can result in stranded assets, suboptimal reliability of the gas and electric system and possibly lead to high gas and electric bills

[110] Case 18-M-0084, In the Matter of a Comprehensive Energy Efficiency Initiative, In the Matter of Reporting Investments and Benefits to Disadvantaged Communities (filed December 28, 2023).

that are unaffordable to portions of the population, including disadvantaged communities.

In its Final Reply Comments, the Company notes that its analysis and model included higher incentives for disadvantaged communities and adds that customers switching from gas to electric heating may have increased bills, as Central Hudson calculates that switching to an air-source heat pump increases operating costs for customers who currently use gas for heating. The Company continues that even if PA's assumptions were true, the equipment only represents a portion of the total cost for replacement and PA did not take labor installation and electrical building upgrade costs into consideration.

While recognizing the concerns of stakeholders about the long-term impacts of the LTP on disadvantaged communities, the Commission notes that this is Central Hudson's first LTP, which it will refine through future iterations. In addition, Staff has provided guidance on the reporting of investments benefitting disadvantaged communities through Clean Energy Guidance Document 12, filed on the Department's website.[111] The Company is directed to provide updates on that effort in its Annual Updates to this LTP.

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

[111] CE-12 CLCPA-Disadvantaged Communities Investment and Benefits Reporting Guidance (September 27, 2023) available at: https://dps.ny.gov/ce-12-clcpa-disadvantaged-communities-investment-and-benefits-reporting-guidance.

environmental tradeoffs associated with different pathways. In its Final LTP, the Company calculates a BCA ratio based on the societal cost test of 0.72 for its chosen scenario. The Company also calculated ratios using the ratepayer impact and utility cost tests, and calculated ratios for the other modeled scenarios.

NYSERDA states that the Company's reliance on a historic baseline of customer count and usage from 1995 to 2023 to develop projections used in the BCA is problematic because of the incongruity between trends during the 1995 to 2023 period and more recent policies, trends, and expectations for the natural gas system. NYSERDA also recommends that Central Hudson quantify health impacts in its BCA. MI notes that BCAs presented by the Company are not cost effective and should not be considered for implementation.

PA notes that changes to the volumetric forecast from electrification and weatherization may seem insignificant on their own but will have an impact on bill impact, GHG emission, and BCA calculations. PA adds that many of the recommendations in its Final Report are likely to influence assumptions, outcomes and conclusions underlying the Company's BCA calculations. PA also states that a number of BCA calculation assumptions could benefit from further assessment in future long-term plans, such as the discount rate of 8.36 percent employed by the Company in its BCA calculations to account for the time value of money.

In its Final Reply Comments, the Company notes that it selected the LTP scenario "in part because it seems to strike the appropriate balance of ambitiously pursuing greenhouse gas emissions, limiting or reducing the need for gas infrastructure investment, and costs" and notes that its selected scenario

generally reflects higher BCA results than some other utility long-term gas plans filed thus far.[112]

As such, Central Hudson has produced adequate benefit-cost comparisons of the scenarios it compared, however we do recognize stakeholders' concerns regarding some assumptions used in the BCA calculations. When it files its next long-term gas plan in 2028, Central Hudson is directed to modify the BCA calculations to reflect expectations of decreased natural gas demand resulting from electrification of space heating. Additionally, Central Hudson shall consult with Staff on the appropriate discount rate to use in advance of filing its next long-term gas plan.

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 Company presents bill impact analysis in its Final LTP that shows total combined electric and gas annual usage and bills and wallet share for all of the scenarios it considered. Its LTP produces an estimated 3.81 percent increase in the combined annual bills over the 20-year planning period. The Company states that it forecasts combined electric and gas use for the current gas customers to decrease under the various scenarios due to electrification but this decrease in total energy use does not lead to a lower total bill for the average customer. The Company also calculated bill increases for a

[112] Central Hudson Final Reply Comments, p. 21.

current natural gas customer who does not electrify of about $875 annually or about 27 percent. Central Hudson predicts reduced gas usage by non-residential customers and resulting lower natural gas bills but predicts these will be accompanied by increased electric bills for non-residential customers due to increased capital costs and revenue requirements for the electric system.

MI states that the LTP contains inadequate information with respect to total projected costs and is not clear how much spending Central Hudson would need to implement the LTP and when such spending likely would occur. NYSERDA states that avoiding a portion of the cost of replacing LPP would reduce potential bill impacts. NYSERDA recommends that Central Hudson develop all-in energy costs for representative customers with a variety of technology configurations, suggesting cost profiles could be reported for residential customers with gas heating, hybrid heating, or fully electrified. CLP states that "the Company is finding it difficult to accurately predict and plan for changes to its gas system" adding that this is demonstrated by Central Hudson's need to file a second version of its Revised LTP, reflecting corrections to the data provided for such key parameters as customer bill impacts.[113] CLP suggest these errors may be due to numerous pressures, including successive rate cases and "the difficulties Central Hudson has faced since 2021 as a result of its disastrously flawed billing system." CLP states that "a close comparison of the various versions of the Company's plans reveals that problems establishing reliable data are unfortunately not limited to billing problems. The Company's failure to ascertain accurate data is ubiquitous, and undermines its ability to understand the factual basis for

[113] CLP Final Comments, pp. 7-8.

transforming the gas system and meeting climate goals, and/or to communicate accurately with the PSC and stakeholders."

PA notes that the Central Hudson's calculation of bill impacts is missing the overall increase in delivery costs being shared by a smaller number of customers remaining with full gas heating service and the result would be that remaining natural gas customers' bills would increase further. Regarding the bill impacts of blending RNG and hydrogen, PA notes that the Company states there is not enough information to perform that calculation. PA states that by adjusting the assumptions made in their heat pump adoption forecast, the Company is likely to see higher adoption of heat pumps, lowering net sales volumes and increasing bill impacts if not planned for in advance and managed properly. PA adds that the higher costs per volume of gas in the LTP are primarily attributed to the blending of costly LCFs and fewer customers remaining on the gas network to pay for infrastructure upgrades and resiliency, and such a significant increase in gas costs might also lead more customers to electrify as gas appliances become less economical.

In its Final Reply Comments, the Company justifies focusing on total bill impacts instead of gas bill impacts by stating that focusing exclusively on the gas bill does not capture the full bill impacts customers experience and does not properly convey the impact on affordability. Central Hudson adds that to "lower total monthly bills, let alone cover incremental equipment and installation costs, electric heat pumps need to use roughly 1/3 or less of the energy as the gas equivalent. While not insurmountable, the higher costs of electric energy are an important consideration and potentially a substantial barrier to adoption."[114] Central Hudson adds that

[114] Central Hudson Final Reply Comments, p. 12.

its empirical analysis found that only 2.3 percent of sites installing cold climate whole home heat pumps are abandoning the gas system. Central Hudson asks if the objective is to minimize total bill impacts or only gas bill impacts and states its position is that the objective should be to minimize total bill impacts.

The Commission notes that Central Hudson's approach to modeling bill impacts in its LTP varied from other LDCs in its reliance on "share of wallet" analysis until PA requested that the Company also model increases in gas bills alone for customers who choose not to electrify.[115] While the modeled bill increases for total gas and electric bills appear modest over the 20-year planning period, they may actually be even lower given the noted low assumed electrification rate employed by Central Hudson in its modeling. The Company is directed to continue to study the rates of electrification in its service territory and update data on the rate of heating electrification and customer's partial and complete abandonment of gas service in its next long-term plan filing due on July 31, 2028. In the interim, Central Hudson is directed to provide an updated bill impact analysis in its first Annual Update due May 15, 2026. This bill impact analysis shall reflect reduced natural gas usage by a representative gas customer over the 20-year period for every service classification. To the extent that the Company anticipates additional changes to volumetric block rate structures not currently approved by the Commission, the Company shall file a second set of bill impacts reflective of anticipated changes to the Company's block rate structures such as, but not limited to, the flattening of volumetric block rates.

[115] PA Final Report, p. 11.

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. Central Hudson states in its LTP that its parent company Fortis has a goal of reducing GHG emissions by 75 percent by 2035 and to net-zero direct GHG emissions by 2050. Central Hudson adds that the projected GHG emissions reduction from conversions to electric heat pumps from gas programs are 175,000 metric tons of CO2-equivalent by 2030 and that it is expanding energy efficiency programs including weatherization. The Company states that it will follow the approach to GHG accounting set forth in the Joint Utilities' initial Proposal for an Annual Greenhouse Gas Emissions Inventory Report and the Joint Utilities' Supplement to Proposal for an Annual Greenhouse Gas Emissions Inventory Report.[116] Central Hudson estimated that RNG could offset 218,152 metric tons CO2e per year if fully developed and directed towards Central Hudson customers. The Company estimates that its LTP would reduce emissions by about 50 percent compared to 1990 levels by 2043, compared to only about 25 percent reduction from the baseline.

AGREE states that the GHG emissions reduction in the LTP do not significantly depend on RNG. NYSERDA states that Central Hudson's GHG emissions reduction estimates are impacted by its lack of a well-designed baseline demand forecast. NYSERDA adds that the emission factors used to generate Central

[116] Case 20-G-0131, supra, Proposal for an Annual Greenhouse gas Emissions Inventory Report (filed December 1, 2022); Case 20-G-0131, supra, Supplement to Proposal for an Annual greenhouse Gas Emissions Inventory Report (filed May 31, 2023).

Hudson's emissions reductions are not consistent with the State's GHG accounting practices and that gross accounting should be used when evaluating State GHG emission reduction limits. CLP adds that hydrogen and RNG exacerbate emissions and the climate crisis.

PA states that to "identify the scenario with the highest societal value, the Company should conduct an optimization process to identify and develop a long-term plan scenario with the highest emissions reduction potential and lowest impact on affordability while maintaining system reliability and safety and other requirements set by the Commission."[117] PA says that the LTP results in emissions of CO2e Metric Tons equal to 34 percent of 1990 levels. PA adds that the emissions reductions associated with each scenario modeled by the Company represent a decrease in CO2e emissions per customer ranging from 35 percent to 60 percent of 1990 emission levels by 2043. Additionally, PA notes that the Company sees considerable reductions in CO2e of 450,000 metric tons, and by 2043 CO2e metric tons on a per customer basis are expected to be only 45 percent of what per customer CO2e emissions were in 1990. PA also questions the Company's estimates of GHG emissions reductions from RNG based on the sources of RNG available to Central Hudson.

In its Final Reply Comments, the Company states that it predicts its PUT scenario to reduce GHG emissions more than its LTP but that scenario entails additional costs. Regarding PA's assertion that "[t]he effectiveness of low-carbon fuels in reducing GHG emissions will depend on state policy decisions on how utilities account for emissions across the natural gas lifecycle" Central Hudson states it appreciates PA's observation

[117] PA Final Report, p. 14.

and notes generally that it is optimal that state policy decisions do not prematurely rule out promising technologies that could help address State goals.[118]

The Commission recognizes that the method of accounting for GHG emissions is a topic remaining under consideration in Case 22-M-0149, as described above. One issue at stake in this proceeding is how the LTP achieves maximum GHG reductions at minimum cost to ratepayers. The Commission directs Central Hudson to produce an optimization model as recommended by PA as part of its next LTP filing due July 31, 2028. The optimization model would vary the application of various decarbonization measures and their associated costs to produce scenarios that include various levels of emissions reductions and their associated bill impacts. Central Hudson is also encouraged to consider sensitivity analyses around the optimization model inputs.

Heat Pump Adoption/Pace of Electrification

As discussed above, PA states that the Company is expected to experience downward pressure on the number of gas customers and delivered gas volumes because of electrification, energy efficiency, and a warming trend. PA states that it encourages the Company and stakeholders to collaborate in identifying opportunities for scaling electrification to avoid costly investments in long-lived gas assets that may become stranded in the coming decades, and this targeted electrification planning should span both geographically and temporally for a successful decarbonization journey with least total societal cost and highest emissions reduction, reliability, and safety. PA observes that declining trajectories of the Historical Trend UPC forecasts do seem to

[118] Central Hudson Final Reply Comments, p. 33.

capture the impact of eroding HDD over time to some extent, with residential UPC declining about six percent through 2050. PA expects that if the impact of electrification and energy efficiency were also incorporated, the average use per customer would be lower.

Stakeholders echoed PA's concerns regarding assumptions about the penetration of electrification. Sierra Club states that it supports Central Hudson's prioritization of energy efficiency, electrification, and NPAs over low carbon fuels-based alternative plans. Sierra Club adds that to maximize the value and minimize the overall cost of electrification, it will be important to increase the percentage of Central Hudson customers that disconnect from the gas system after electrifying their homes.

In its Final Reply Comments, Central Hudson states that it does not agree with PA's expectation of electrification acceleration beyond what Central Hudson modeled. Central Hudson notes that there is substantial uncertainty regarding federal incentives for federal funding for heat pump technology and it would welcome PA or other stakeholders to provide further empirical data and explain why that data is better or more accurate than the data Central Hudson supplied. The Company adds that PA's analysis does not address the fact that customers switching from gas heating to electric heating may have increased bills. The Company notes that it is aggressively pursuing NPAs where feasible, but it cannot force any customer to end its gas service.

The Commission recognizes uncertainty about the pace of customer electrification going forward. As mentioned above, the Company is directed to continue to monitor data on its system related to how many customers decommission their natural gas heating systems in favor of either geothermal applications

including thermal energy networks or air-source heat pumps and how many of those customers terminate gas service completely and report this data as part of each Annual Update to its LTP, due May 15, 2026, and May 15, 2027, as well as its next long-term plan filing due July 31, 2028. The data must include cumulative information of historic customer electrification and decommissioning going back to the beginning of the Company's Clean Heat program.

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 interfere 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 Company's Final LTP, is not inconsistent with nor will it interfere with attaining the GHG emission limits of 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, pursuant to CLCPA §7(2), we determine that our action in this Order is not inconsistent with the GHG emission limits of the CLCPA.

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-pollutant emissions in disadvantaged communities. The Climate Justice Working Group adopted final criteria to identify disadvantaged communities, along with an interactive map.[119] While the Company's service territory contains 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 Company shall identify the programs and investments that are intended to benefit disadvantaged communities in its Annual Update, due May 15, 2026, 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.

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

CONCLUSION

In this Order, the Commission directs the Company to, among other things, pursue separate demand response programs for residential customers and large non-residential customers and non-pipe alternatives projects for highly loaded segments of its system. Additionally, we direct the Company to include certain information in its Annual Updates to this LTP due May 15, 2026, and May 15, 2027, and in its next LTP filing, due on July 31, 2028. Further, Central Hudson is also directed to consult with Staff on the calculation of benefits and costs in regard to its next long-term plan filing and to employ an optimization model in developing the scenarios in that filing.

The Commission Orders:

1. Central Hudson Gas & Electric Corporation is directed to provide updated data related to the number of gas customers that have electrified their space heating, how many terminated their natural gas service entirely, and how many retained natural gas service for back-up heating or other applications in each annual update to this long-term plan due May 15, 2026, and May 15, 2027, and in its next long-term plan filing due July 31, 2028.

2. Central Hudson Gas & Electric Corporation is directed to include a process for de-contracting unnecessary capacity and supply assets, including peaking contracts, in its next long-term gas plan filing due July 31, 2028.

3. Central Hudson Gas & Electric Corporation is directed to file a proposal for a large non-residential customer demand response program with the Secretary to the Commission within 150 days of this Order.

4. Central Hudson Gas & Electric Corporation is directed to develop a residential customer demand response

program targeted to its highly loaded areas and to file a proposal with the Secretary to the Commission within 150 days of this Order.

5. Central Hudson Gas & Electric Corporation is directed to provide information on the anticipated impact of its portfolio of energy efficiency and building electrification programs in the Annual Updates to this long-term plan due May 15, 2026, and May 15, 2027.

6. Central Hudson Gas & Electric Corporation is directed to provide an explanation of how it coordinates its Monte Carlo and hydraulic modeling tools, how they promote overall gas planning efficiency, and how Central Hudson Gas & Electric Corporation ensures consistency with the gas capital budget forecast in its first Annual Update due May 15, 2026.

7. Central Hudson Gas & Electric Corporation is directed to develop a proposal for a non-pipes alternative project in one of its highly loaded segments, consistent with the discussion in the body of this Order, and issue the request for proposals and file a copy of it with the Secretary to the Commission within 120 days of this Order.

8. Central Hudson Gas & Electric Corporation is directed to develop requests for proposals for non-pipes projects for the two locations described in Appendix C of its Final LTP, consistent with the discussion in the body of this Order, and issue the requests for proposals and file a copy of it with the Secretary to the Commission within 120 days of this Order.

9. Central Hudson Gas & Electric Corporation is directed to file reports with the Secretary to the Commission on the results of the requests for proposals required in Ordering Clauses 7 and 8 within 90 days following the date Central Hudson takes action regarding the proposals received. If such RFP do

not produce actionable results, Central Hudson shall explain why it did not pursue the NPA and how it can improve its solicitation of NPAs in the future.

10. Central Hudson Gas & Electric Corporation is directed to provide a quantification of the benefits to disadvantaged communities of this LTP filing in the Annual Updates to this long-term plan due May 15, 2026, and May 15, 2027.

11. Central Hudson Gas & Electric Corporation is directed to modify the benefit-cost analysis calculation to reflect expectations of decreased natural gas demand resulting from electrification of heating load in its next long-term plan filing due July 31, 2028, and to consult with Staff on the appropriate discount rate to use in those calculations at least 30 days prior to making that filing.

12. Central Hudson Gas & Electric Corporation is directed to employ an optimization model as discussed in the body of this Order to produce scenarios for consideration in its next long-term plan filing due July 31, 2028.

13. Central Hudson Gas & Electric Corporation is directed to file its next long-term gas plan by July 31, 2028.

14. 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.

15. This proceeding is continued.

By the Commission,

(SIGNED) MICHELLE L. PHILLIPS
Secretary

SCHEDULE OF PROCEEDING

Event	Date
Pre-Filing Educational Technical Conference	December 19, 2023
Company's Filing of Initial Long-Term Plan	February 7, 2024
Technical Conference	March 6, 2024 – Company's Presentation of Initial LTP
Technical Conference	April 4, 2024 – Non-Pipes Alternatives
PA's Initial Report	April 5. 2024
Initial Stakeholder Comments on Initial LTP	April 29, 2024
Technical Conference	May 8, 2024 – Low Carbon Fuels and Oil-to-Gas Conversions
Technical Conference	May 15, 2024 – Hydraulic Modeling and Vulnerable Areas
Company's Filing of Reply Comments on Stakeholder Comments on Initial LTP	June 11, 2024
Company's Filing of Revised Long-Term Plan	June 25, 2024
Company's Filing of Second Version of Revised Long-Term Plan	July 26, 2024
Stakeholder Comments on Revised LTP	October 2, 2024
PA Preliminary Findings Report	October 9, 2024
Company's Filing of Reply Comments on PA's Preliminary Findings Report and Stakeholder Comments on the Revised LTP.	October 23, 2024
Technical Conference	November 6, 2024 – Bill Impacts and Affordability
Company's Filing of the Final LTP	November 21, 2024

PA's Final Report	January 15, 2025
Stakeholder Comments on Final LTP	February 14, 2025
Company's Filing of Reply Comments on Stakeholder Comments on Final LTP	February 28, 2025

SUMMARY OF COMMENTS

Public Comments

One commentor filed a comment regarding NYSERDA's comments on the Revised LTP, both on October 2, 2024. The commentor agreed with NYSERDA that Central Hudson should do more to reduce current and future demand for gas by developing and investing in strategies to avoid demand growth. The commentor suggested the Company present a comprehensive plan to its customers on the benefits of converting from gas to electricity for heating, including raising awareness of indoor pollutants associated with gas appliances use in homes. The commentor further states the Company should offer incentives to replace such gas appliances. The commentor also opposed hydrogen blending in the entirety of Central Hudson's gas system, asserting that there are too many risks associated and suggesting the Company list alternatives to hydrogen in hard to decarbonize sectors.

The remaining commentors filed approximately 322 comments between February 26 and March 24, 2025, all regarding Central Hudson's Final LTP and PA's Final Report. All the commentors agree with the Company's recognition that pipeline-based fuels have a limited role to play in a low-emissions future and investment in the pipeline system must necessarily shrink over time as a result. However, the commentors state that the Commission should require Central Hudson to go further to limit capital spending pursuant to PA's observation that greater reductions in long-term spending are likely achievable. To effectuate this reduction, the commentors assert the Commission should require the Company to initiate a strategic decommissioning process for existing gas infrastructure, citing the Commission's recent requirements for NYSEG/RG&E in its

respective LTP Order.[120] In addition, some of the commentors voiced general support for further advancement of renewable energy generation to coincide with more aggressive reduction of the Company's gas infrastructure.

Comments on Initial Long-Term Plan (LTP):

1. Alliance for a Green Economy (AGREE)

AGREE challenges the significance of the greenhouse gas (GHG) emission reductions in the Pipeline Use Transformation (PUT) scenario, which projects a 65 percent reduction from 1990 levels by 2050. AGREE maintains that the PUT scenario relies on the extensive and unproven use of hydrogen and renewable natural gas (RNG) to simply approach the emission reductions required by the CLCPA. AGREE claims that this scenario represents a concerning status quo for customers, including those in disadvantaged communities, whom this plan would burden with additional health risks.

AGREE maintains that a system-wide blend of 20 percent hydrogen by volume remains unproven. The Commenter recognizes that Central Hudson limits its feasibility study on hydrogen-blending to a simulation of velocity and pressure for only 25 of the 94 systems in the Central Hudson service territory. AGREE references a study on hydrogen-blending from the California Public Utility Commission, which raises concerns about systemwide blending at 5 percent. AGREE states it plans to submit questions related to the differences in the studies, along with questions on the Company's assumptions regarding hydrogen's cost and availability.

[120] NYSEG/RG&E LTP Order, p. 53.

Further, AGREE cites other sources skeptical of hydrogen blending: a December 6, 2023, Order from the Massachusetts Department of Public Utilities rejected proposals by MA utilities for hydrogen-blending using ratepayer funds; the consultant's initial report in New York State Electric and Gas Corporation's (NYSEG) and the Rochester Gas and Electric Corporation's (RGE), which stated that production and system upgrade costs to accommodate hydrogen were uncertain, the hydrogen regulatory framework remained unclear, and brought up safety and reliability concerns. AGREE also cites comments from PA Consulting (PA) in response to the LTP from the Consolidated Edison Company of New York, Incorporated (Con Edison) and Orange & Rockland Utilities, Incorporated (O&R), which state that consensus is growing among experts that hydrogen is not ideal for end uses that could instead be electrified.

AGREE asserts a more efficient application for renewable electricity than generation of green hydrogen, would be direct use for electrified heating and cooling. However, AGREE still supports PA's recommendation to develop a plan for the limited use of green hydrogen for difficult-to-electrify customers.

Regarding the PUT scenario's reliance on a 20 percent RNG blend, AGREE challenges RNG's potential for GHG emission reduction stemming from difficulties in determining life cycle GHG emissions, such as distribution system leaks and the possibility of intentional methane production. AGREE recognizes that Central Hudson contracted a study on local RNG production; however, AGREE challenges this study's support for a 20 percent blend of RNG. AGREE claims that this study does not fully consider technical and economic feasibility or competition from other sectors, including transportation and electricity

generation, as well as other utilities. AGREE further claims that the study analyzes counties that overlap with service territories of other utilities. AGREE also expresses concerns about RNG price hikes from this competition. AGREE supports these affordability concerns with comments from PA, which recognize that Central Hudson neither assessed the bill impacts of RNG production and blending in the Initial LTP nor purchased RNG at the Company's target cost.

2. Communities for Local Power (CLP)

CLP asserts that the Company's plan is unacceptable because it attempts to follow four divergent paths at once. The Commenter supports this point by referencing PA's feedback for the Con Edison/O&R Revised LTP, which distinguishes a proposal with multiple scenarios from a plan. CLP affirms that the LTP should chart a course for CLCPA compliance that maintains reliable energy services at reasonable prices.

CLP focuses its comments for the Initial LTP on the PUT scenario. CLP reserves comment on other scenarios for future rounds of comments. CLP claims that the Initial LTP foregrounds this scenario as the one which provides the most emissions savings. CLP asserts that PUT contains an unproven mix of fossil gas with large percentages of hydrogen. CLP subsequently characterizes the Company's approach in this scenario as poorly defined, uncertain, and based on unsupported expectations.

CLP claims that PUT's proposed 20 percent blend of hydrogen fuels compromises safety and affordability. CLP asserts that this proposal does not concretely consider from where or whom the Company will secure hydrogen. CLP also notes that the Company does not clearly consider the type of hydrogen (green, gray, or blue) which it will secure. CLP additionally

offers better uses for green electricity than green hydrogen production, such as hard-to-electrify purposes. CLP notes that this hydrogen-blending proposal does not consider the health impacts of nitric oxide (NOx), the resulting compound of burning hydrogen. CLP seeks further clarity on whether customers can safely burn the proposed blend in existing gas-fired equipment, the cost of this blend, and who would pay for it.

CLP equally questions the Company's proposal for differentiated gas (also called responsibly sourced gas). CLP points out the absence of universal certification standards for differentiated gas. CLP challenges the Company's assertions regarding the emission reduction potential of differentiated gas, pointing to flawed calculations from the pilot program for purchasing differentiated gas referenced by Central Hudson in the LTP. CLP questions the reliability of these calculations according to the lack of oversight or independent body to verify the reduction in methane leakage. CLP also questions this because Central Hudson does not track methane emissions from households and these reductions are associated with the upstream wellhead. CLP recommends the Commission continually review unbiased resources on differentiated gas rather than simply accept the utilities' claims. CLP then discusses Colorado's 2023 Clean Heat Plan, which is similar to New York's CLCPA, and points out that Colorado's plan excludes differentiated gas, despite the disagreement of Xcel Energy, a Colorado natural gas company.

CLP recommends a more aggressive and proactive non-pipe alternative (NPA) or leak-prone pipe (LPP) repair program to reduce LPP replacement costs. CLP claims that PUT maintains gas infrastructure longer than necessary, which will extend costs and negative health impacts for customers.

3. Multiple Intervenors (MI)

MI affirms that its members fully support reasonable decarbonization efforts. MI equally recognizes that the critical process applications of many members depend on affordable and reliable gas service for which viable alternatives do not yet exist. MI submits the following primary remarks for consideration: 1) the proposed cost of the LTP remains unclear but appears excessive and inconsistent with affordable gas service; 2) Central Hudson should conduct additional BCA analyses and prioritize cost-effective elements, given that the benefit/cost ratios for the four proposed scenarios range from 0.81 to 0.83; and 3) Central Hudson should evaluate at least one gas demand response program and implement this within a reasonable time if cost-effective.

MI begins its discussion on the lack of clarity pertaining to cost in each LTP scenario by acknowledging the LTP's lack of clarity on not only its pathway preference but also its overarching proposition. MI then notes that Central Hudson only projects Societal Cost Test (SCT) costs, rather than actual spending levels for ratepayer recovery, and that these costs range between $656.6M and $1.165B. MI recommends that Central Hudson provide detailed customer cost projections on a total and NPV basis.

MI nevertheless contends with this lack of clarity to observe indications of excessive costs to customers. MI asserts that the LTP projects bill impacts for an average-sized industrial customer of approximately $6M ($300,000 annually for the twenty-year period). MI equates this bill impact to roughly $10 per dekatherm and claims that it could portend substantial production and job migration from the Company's service territory to other states and/or countries. MI also anticipates

excessive customer costs according to the Company's then pending requests for electric and delivery rate increases in Cases 23-E-0418 and 23-G-0419; Central Hudson sought electric and gas delivery rate increases from those cases of 31.9 percent and 29.2 percent, respectively. MI equally anticipated excessive customer costs according to the Commission's current consideration of a proposal to double CLCPA-mandated energy storage at an incremental cost to customers of up to $2B, as well as New York State's plans to adopt a cap-and-invest program. MI ultimately recommends the Commission refrain from approving or endorsing the LTP based on these cost considerations.

MI introduces its discussion of the LTP's BCA analyses with comments on the Commission's BCA methodology. MI recommends that the Commission limit modifications of this methodology to those which improve ratio accuracy in both directions, rather than those which primarily increase this ratio, such as the treatment of federal funding as a benefit instead of a transfer. MI then recommends that Central Hudson submit a BCA for each scenario which utilizes the SCT, the Utility Cost Test (UCT), and the Ratepayer Impact Measure (RIM) test. MI also recommends that Central Hudson provide BCA results in a less aggregated form to help the Commission distinguish cost-effective and uneconomic measures within each scenario, along with specific opportunities to improve each scenario's cost-effectiveness.

MI recommends a gas demand response program as a means to involve firm customers reluctant to join interruptible service classes in the enhancement of operational flexibility during peak periods. MI claims that gas demand response programs can improve gas reliability, eliminate or delay the

need for future infrastructure investment, and reduce costs to customers.

Reply Comments on Initial LTP

1. Central Hudson

Central Hudson agrees with PA's recommendation to provide capital forecasts for each scenario over a 20-year period and will do so for the Revised LTP. Central Hudson will do so to also address MI's concerns regarding the lack of clarity on capital forecasts.

Central Hudson notes divergent comments from MI and PA regarding the LTP's cost-effectiveness. Central Hudson affirms MI's comments regarding substantial costs and attributes these to empirical customer adoption propensities modeled for various decarbonization efforts. Central Hudson then addresses PA's assertions that the Company optimized BCA results in all four scenarios instead of adequately testing trade-offs between emission reduction and affordability. Central Hudson responds to these comments from MI and PA by offering to work further toward a middle position between the two. Central Hudson states that the next LTP will include higher BCAs with lower costs as well as lower BCAs which show more emission reduction. Central Hudson intends this work to demonstrate how additional costs may achieve more significant emission reduction in each scenario. Central Hudson also responds to MI's recommendation that the Company utilize the UCT and RIM test to supplement its work to develop BCAs for each scenario with the SCT; Central Hudson affirms the consistency of utilizing the SCT for BCAs with the Gas Planning Order and notes that the Appendices of the LTP include data for the UCT BCA test. Central Hudson challenges MI's request for BCA results in a less aggregated form. Central

Hudson claims that it provided significant information regarding benefits and costs by source for energy efficiency (EE), beneficial electrification, hydrogen, and RNG in the output models and information responses for this proceeding. Central Hudson also affirms its provision of BCA results in particular program filings, including those related to NPAs and EE programs.

Central Hudson proceeds to address stakeholder comments regarding bill impacts. Central Hudson agrees with PA's recommendation that the Company conduct a comprehensive share-of-wallet analysis for all scenarios to better understand their respective bill impacts for each service class, particularly with respect to potential shifts in cost from gas to electric. Central Hudson commits to including both gas and electricity bill impacts in the Revised LTP and will refine this analysis to address share-of-wallet in the Final LTP. Central Hudson claims that it did not incorporate assumptions regarding gas system abandonment related to heat pump adoption due to insufficient data; however, Central Hudson commits to incorporating these assumptions in a transparent manner that discusses the limitations of data for these assumptions. Central Hudson also challenges PA's claim that the Initial LTP calculated bill impacts over the forecast period with a constant average volume of gas consumed by a representative customer. Central Hudson claims that the Initial LTP's bill impacts exhibit a decrease in net sales counterbalanced by increases in delivery rates. Central Hudson then challenges MI's recommendation that the Commission reject the LTP if it continues to project $300,000 in incremental annual costs for an average-sized industrial customer; Central Hudson claims that MI's recommendation deviates from the purpose of the long-term

planning proceeding, which is to present the proposed scenarios' costs, benefits, and bill impacts. Central Hudson also addresses MI's request for total and NPV customer costs by referring MI to Figure 46 of the Initial LTP, which includes NPV calculations, along with details on cost and benefit components.

Central Hudson agrees with PA's recommendation that the Company improve each scenario's demand forecasts by explaining and quantifying the impact of factors like electrification, EE, and climate change. Central Hudson agrees to do so in the Revised LTP. Central Hudson notes that the Company does not separately model climate change impacts but includes these in design day extremes parameters.

Central Hudson addresses comments from AGREE, CLP, and PA that challenge the feasibility of blending low-carbon fuels across the Company's entire distribution system. Each of these stakeholders recommends that Central Hudson target hydrogen use for difficult-to-electrify purposes; however, PA still suggests further studies regarding system-wide hydrogen blending. PA also recommends that Central Hudson target RNG use for difficult-to-electrify purposes. AGREE questions the consistency of RNG use with CLCPA-compliance according to this fuel's expense and limited availability. Central Hudson responds to these comments by expressing interest in additional studies regarding system-wide blending of both hydrogen and RNG. Central Hudson acknowledges that it can expand its current study on industrial end-uses for hydrogen according to stakeholder input. Central Hudson does not support precluding either fuel from the LTP. Central Hudson claims that hydrogen and RNG can potentially increase emission reduction in commercial and industrial sectors. Central Hudson offers to monitor market

developments to update assumptions for these fuels in future LTP cycles.

Central Hudson addresses comments from AGREE and PA on bill impacts of fuel-blending with hydrogen and RNG. Central Hudson challenges PA's recommendation that the Company study how fuel-blending with hydrogen and RNG would impact a representative bill for a low-income or disadvantaged community customer, as well as energy assistance programs; Central Hudson notes the absence of assessments on cost allocation among rate classes for blending either fuel. Central Hudson challenges assertions from AGREE and PA that the Company has not assessed bill impacts for blending RNG, as well as PA's assertion that the Company has also not done so for hydrogen; Central Hudson claims that the LTP reflects costs and bill impacts of blending hydrogen and RNG in assumptions for modeling these fuels. Central Hudson claims that it can address AGREE's concerns regarding RNG price hikes related to intense market competition by constructing RNG facilities near pipeline systems and contracting RNG to specific gas utilities in proximity of these locations.

Central Hudson addresses concerns from AGREE and CLP regarding the safety of hydrogen-blending by proposing a study on the impacts of this blending. Central Hudson contends that the removal of hydrogen along with other low carbon fuels (LCFs) from consideration currently remains inappropriate. Central Hudson notes that Hawaii Gas has safely blended up to 15 percent hydrogen in its delivered gas pipeline network for almost 50 years.

Central Hudson acknowledges CLP's recommendation that the Commission review unbiased analysis of differentiated gas. Central Hudson notes that Staff agreed to the proposal from the

Company's current rate proceeding allowing CH to purchase differentiated gas according to a cap of $200,000 and the reporting requirements of Staff. Central Hudson also notes that the Initial LTP excludes RSG from emissions calculations. Central Hudson plans to incorporate these values in future LTPs as GHG accounting methodology integrates upstream out-of-state emissions.

Central Hudson addresses PA's request that the Company provide additional information regarding the operational flexibility of the Company's pipeline delivery system and focus on risks to satisfying design day demand in the event of reduced deliverability to one Citygate. Central Hudson states that it will provide greater clarity on the interconnected nature and flexibility of the system to assure stakeholders that none of the segments of the system are isolated or served by an individual citygate. Central Hudson agrees to discuss the risk associated with the reduction or loss of a citygate in the Revised LTP.

Central Hudson addresses PA's request that the Company explain and quantify how the current supply stack meets demand under all four scenarios. Central Hudson responds that the current supply stack would do so because its meets demand under the historic trend and each scenario would have lower consumption than this trend. Central Hudson addresses PA's request that the Company discuss its confidence in its ability to continue contracting necessary volumes of winter peaking or delivered services to meet winter demand by offering to discuss this in the Revised LTP. Central Hudson affirms that it will frame this discussion around "Modernized Gas Planning Process: Standards for Reliance on Peaking Services and Moratorium Management," which the Joint LDCs filed in July 2020 and which

discuses risks associated with increased reliance on peaking resources due to recent challenges in siting new pipelines to serve New York markets. Central Hudson then addresses PA's request that the Company discuss how its approach to de-contracting may change under differing scenarios. Central Hudson states that it may address this topic in future LTP cycles but that it must wait to perform this type of analysis, given near-term demand projections. Central Hudson anticipates that de-contracting will occur before and not after load reductions and entail a reduction in peaking services before long-term firm transport and storage contracts.

Central Hudson agrees with PA's recommendation that the Company further explore assumptions regarding the impact of fuel switching on disconnection from the gas system and, in turn, forecasts for gas volume and peak demand. Central Hudson will provide as much empirical data in this regard as it can for the Revised LTP and transparently identify limitations. Central Hudson limits this data to two sources: 1) Clean Heat program sites that installed whole home heat pumps between 2020 and the end of 2023; and 2) proactive Company efforts to cost-effectively abandon leak prone pipe segments. Central Hudson then addresses PA's recommendation that the Company develop a more robust view on the role of targeted electrification in gas network abandonment/retirement across different geographies. Central Hudson challenges the availability of requisite empirical data to develop reliable estimates for this analysis. Central Hudson notes the lack of data on decommissioning large groups from the gas system and the difficulties in determining the level of payment necessary to fully electrify customers who would otherwise remain on the gas system. Central Hudson affirms that it will take future steps to estimate rebate levels

by surveying a broad sample of customers and obtaining data from comparable jurisdictions that achieved network abandonment via electrification. Central Hudson reiterates its preference for demand reduction over full abandonment because the former promises greater feasibility and avoids expensive investments in capital reinforcements, along with associated bill impacts. Central Hudson also addresses PA's recommendation to further investigate and consolidate the list of barriers to electrification solutions, namely heat pumps, across disadvantaged communities. Central Hudson agrees to engage with stakeholders on this topic and provides the list of these barriers that it already compiled. This list includes the following barriers: high up-front costs; landlord-tenant split incentive issues; bill increases related to loss of fossil-fueled heat included in rent; uncertain electric heating costs; electric panel and wiring upgrades; ductwork installations/modifications; weatherization costs; customer preference; and additional workforce development.

Central Hudson expresses its openness to MI's recommendation that the Company develop a gas demand response program rather than rely on interruptible customers for this purpose. Central Hudson requests MI's collaboration in this program's development, beginning with the identification of willing participants.

Central Hudson notes CLP's suggestion that the Company develop a more proactive NPA program and/or LPP repair program (LPPRP) and assures CLP that the Company already has. Central Hudson notes that its regular NPA reporting includes a category for Load Growth Projects, which represents an increase in NPA penetration for New York State. Central Hudson targets LPPRP completion for 2029.

Central Hudson disagrees with CLP's suggestion that the LTP does not comply with the Gas Planning Order by presenting a set of scenarios rather than a single plan. Central Hudson claims that this suggestion ignores this Order's direction to consider a range of scenarios. Central Hudson also claims that the Initial LTP's lack of chosen pathway more aptly allows the Company to consider stakeholder input and, in turn, prioritize decarbonization objectives. Central Hudson invites CLP to suggest constructive improvements to modeling through PA.

Comments on Revised LTP

1. AGREE

AGREE introduces its comments for the Revised LTP by recognizing this plan's omission of a preferred pathway and subsequent inconsistency with the Gas Planning Order. AGREE's comments accordingly strive to improve the assumptions for the various scenarios in the LTP and thereby assist the Company in selecting a preferred pathway.

AGREE challenges the Company's forecast for service line replacements to individual customers. AGREE recommends that the Company develop a strategy to reduce service line replacements to individual customers, as the replacements account for over 28 percent of the 2025-29 capital forecast, per PA. It represents an opportunity to reduce stranded assets, lower costs for the customer base, and reduce GHG emissions. This would serve as a tangible short term and no regret action, according to AGREE.

AGREE agrees with PA that Central Hudson should plan for a higher rate of fuel oil to electric conversions. Central Hudson would ideally incentivize the conversion, and this would support long-term goals of reducing GHG emissions and limiting

stranded assets. AGREE affirms that recent research challenges the potential for GHG emission reductions from fuel oil to gas conversions.

AGREE affirms that only PUT offers emissions cuts significant enough to match the Climate Act's requirements; however, AGREE still recognizes that this LTP scenario includes the most low-carbon fuels (20 percent RNG and 20 percent hydrogen) and shares PA's concern that this reliance destabilizes cost projections and emission reductions.

AGREE bases its concerns regarding understated cost projections for RNG in the LTP according to the Company's responses for AGREE IR-003 and IR-011, which confirm the Company's plans to purchase both RNG and its associated attributes. AGREE recognizes that Central Hudson did not include attribute costs as an input in their scenarios. AGREE claims that these attribute costs could more than double the Company's current cost assumptions for RNG.

AGREE bases its concerns regarding overstated emission reductions from RNG in the LTP according to the Company's emission factors, which are more significant than CLCPA-compliant factors. AGREE cites NYSERDA's claim that this discrepancy inflates the Company's projected emissions reductions by 20 percent for PUT. AGREE recommends that Central Hudson revise these emission factors.

AGREE also claims that Central Hudson overstates the feasibility and cost-effectiveness of RNG in emission reduction according to the reliance of the Company's RNG production strategy on thermal gasification, a speculative technology which PA considers complex and costly relative to anaerobic digestion. AGREE recommends removing this process from the LTP.

AGREE's approach to RNG in this LTP ultimately agrees with PA's recommendation that Central Hudson reserve RNG for truly difficult-to-electrify customers and not pursue a system-wide RNG blend. AGREE challenges the 20 percent hydrogen-blending by volume included in PUT because Central Hudson provides neither clear evidence that the system can support this blending without significant infrastructure upgrades nor any cost analysis for potential infrastructure upgrades to support this blending. AGREE acknowledges that Central Hudson remains at beginning stages of its hydrogen feasibility study. AGREE agrees with PA that Central Hudson should reserve hydrogen for targeted deployment to hard-to-electrify end users and should not pursue a system-wide blend.

AGREE advises Central Hudson to add the health benefits of reduced fossil fuel combustion in their BCA accounting, which NYSERDA recommends in their comments for the Revised LTP. AGREE advises this because of costs that the Climate Action Council's Scoping Plan associates with failure to address the climate crisis, costs that the National Resource Defense Council (NRDC) associates with climate-fueled extreme weather, and health risks, such as asthma, among other burdens to disadvantaged communities and all New Yorkers.

AGREE additionally notes administrative inefficiencies during this LTP proceeding. The Commenter attributes these to discrepancies between the published timeline and the actual posting dates of the Company and consultant. AGREE notes that PA released its preliminary findings on October 9, 2024, instead of September 18, 2024, while stakeholder comments were due on October 2, 2024. AGREE notes these discrepancies because many insights in these stakeholder comments and consultant reports could have benefitted and built upon one another. Company reply

comments were also scheduled for October 2 but were not posted until October 24, which prevented AGREE from properly consulting the comments before submitting its own reply. AGREE recommends a shared timeline and notifications to involved parties of any changes to this timeline.

2. CLP

CLP underscores the urgency of the long-term gas planning proceedings according to the Draft Clean Energy Standard Biennial Review issued by NYSERDA on July 1, 2024, as well as Report 2022-S 4 filed on July 17, 2024, by Comptroller Thomas DiNapoli. The NYSERDA report questions the likelihood that New York State will reach its climate goal of 70 percent renewable energy by 2030. The Comptroller's report reiterates this concern while critiquing NYSERDA's contract and proposal evaluation, as well as the Commission's approach to risks and challenges associated with implementing CLCPA goals.

CLP critiques the Company's planning approach for its focus on extensive capital investments and, in turn, the replacement and reinforcement of the existing gas distribution system. CLP supports this assertion with PA's study of the Initial LTP; this study recognizes that each of the Company's four modeled scenarios incorporates the same 5-year capital plan and that gas capital requirements comprise 70 percent of this capital plan's budget. CLP also supports PA's observation that the Company manipulated the BCA in each of the four scenarios to produce identical and optimal results.

CLP challenges the LTP's reliance on low-carbon fuels. CLP critiques the Company's plans for hydrogen-blending for lack of clarity on the following issues: the extent to which this blend will incorporate green hydrogen; the source of hydrogen production; the means for connecting or transporting hydrogen to

the Company's pipelines; the potential for pipe embrittlement; and when blending would commence. CLP critiques the Company's plans for RNG for lack of clarity on the following topics: cost estimates for RNG production; blending and transportation of RNG to the Company's pipelines; and customer bill impacts. CLP supports a 2021 NYSERDA study that characterizes the Hudson region as one of the least potentially productive regions in New York State for RNG. CLP also supports PA's recommendation that the Company reserve their exploration of blended hydrogen and RNG to the industrial sector. CLP questions the Company's plans for differentiated gas according to the absence of both an overseeing body for certification and independent peer-reviewed evidence of differentiated gas's ability to significantly reduce emissions.

CLP observes pervasive issues with the Company's work to accurately project figures related to gas system transition. CLP notes significant differences between the cost estimates for average residential customers' 2024 annual gas usage provided in the Initial LTP and both versions of the Revised LTP. CLP also claims that the Company systematically underestimates the number of customers who will leave the gas system and, in turn, the costs to customers who will remain on this system. CLP anticipates more substantial increases in gas customer bill impacts and subsequent transition, even in the form of an unsustainable feedback loop between the two, based on the LTP's LPP costs ($213M). CLP additionally recognizes that Central Hudson encourages customers to switch to natural gas and does not track conversions from oil to gas heating rather than to electric heat pumps.

CLP critiques the LTP for deprioritizing customer impacts. CLP refers to the LTP's discussion of hydrogen-

blending to exemplify this aspect. CLP asserts that the LTP's pursuit of an 80 percent hydrogen blend, which the Company describes in the "Potential Hydrogen Feasibility Study" from Appendix C of the LTP, fails to fully consider costs related to end-use appliance modifications, along with other impacts related to LMI customer safety, economics, and health.

CLP observes a risk for stranded assets in the Company's proposal to invest $240M in gas pipelines over the three years ending in 2026. CLP asserts that the 70-year depreciation period for this investment exceeds the 50-year useful life for gas pipelines and will seek revenue from a gas customer base expected to halve its current gas usage by 2035, according to projections from the Climate Action Council's Scoping Plan. CLP challenges the likelihood that Central Hudson can compensate for the loss of revenue from the scale of this decreased gas usage through the sale of more expensive LCFs.

CLP recommends that Central Hudson focus more on integrated system planning with electric grid operations, especially since the New York Independent System Operator projects 90 percent growth in electric demand by 2042. CLP additionally recommends that the Company expeditiously integrate new renewables, such as solar, wind, and customer-sited distributed energy resources (DER). CLP correspondingly recommends that Central Hudson increase efforts to add and reduce costs for battery storage, which will minimize the volatility of the energy production levels from these renewables.

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

NYSERDA states that the Company's system demand and cost forecast analysis offers a model that the Company and other gas utilities can build upon for the identification and

evaluation of non-pipeline alternative opportunities to avoid growth-related investments. NYSERDA observes the following benefits to this analysis: 1) locationally granular forecasts, which support the development of geographically targeted demand reduction strategies; 2) multiple simulations for each local system, which produce probabilistic forecasts and may thereby reflect uncertainty from forecast changes in load; 3) translations of forecast into the maximum allowable pressure drop under design conditions, which is the relevant criterion for assessing system reinforcement needs; 4) layering of current and forecast electric system winter loading data to assess headroom for electrifying heating load, which supports integrated gas and electric system planning and, in turn, the gas system transition; and 5) inclusion of the expected value of reduced peak demand ($/Ccf-year), which supports the identification of local systems that offer high value opportunities to avoid growth-related investments and demonstrates the substantial variance of the value for avoided peak demand across the Company's service territory. NYSERDA recognizes that this LTP represents the first to offer this type of analysis and recommends that Central Hudson refine this methodology to maximize its robustness and transparency. NYSERDA also recommends that the Company consider GHG emissions and health benefits when evaluating gas demand reduction strategies.

NYSERDA nevertheless recommends that the Company develop a more complete proposal to translate this analytical work into implementation strategies to avoid growth-related investments. NYSERDA first notes a discrepancy in the Company's work to identify portions of its service territory with potential for avoidable distribution cost or deferral value.

NYSERDA recognizes that the Company's avoided distribution study concentrates this potential in a single distribution system, referred to as the PN Line, which is located in the Town of Poughkeepsie; NYSERDA also recognizes that Appendix A of the LTP identifies at least five local systems with avoided peak demand values of $500/Ccf-year or higher, some of which are higher than the PN system. NYSERDA then recommends that the Company evaluate how expanding targeted incentives to additional measures and additional local systems could achieve cost-effective reductions in gas distribution capacity costs. NYSERDA recognizes that Central Hudson has implemented a "kicker" incentive for smart thermostats on the Poughkeepsie Newburgh (PN) local system but has not done so for other energy efficiency, electrification, or demand response measures for other local systems with a high avoided peak demand value. NYSERDA also notes that Central Hudson modeled scenarios with targeted incentives but stopped short of proposing the adoption of these incentives. NYSERDA suggests that the Company support this evaluation with higher demand side management (DSM) program budgets. NYSERDA suggests that Central Hudson communicate the findings of this evaluation by publishing and periodically updating a map to show the avoided peak demand value across its service territory. NYSERDA asserts that a map of this sort can help Central Hudson work with third parties to develop NPAs or promote demand reduction measures, including gas demand response, in high value areas.

NYSERDA correspondingly recommends that Central Hudson develop and invest in strategies to avoid demand growth. NYSERDA recommends that the Final LTP discuss historic drivers of demand growth and propose strategies to limit this growth. NYSERDA suggests that Central Hudson target the Clean Heat

program to customers seeking to convert from oil or propane to gas and from non-heat to heat gas service. NYSERDA affirms that avoiding expanded gas use proves easier than discontinuing gas service.

NYSERDA critiques the LTP for lacking a robust approach to identifying and evaluating NPAs that can avoid infrastructure replacement, or projects which Central Hudson identifies as "transportation mode alternatives." Central Hudson defends this lacking by identifying low participation rates and high conversion costs. Central Hudson asserts that these barriers to implementation challenge the scalability of transportation mode alternatives and support a focus on reducing demand growth and preventing the need to invest capital in system reinforcements. NYSERDA claims that this lacking undermines the LTP's compliance with the Gas Planning Order. NYSERDA recommends that Central Hudson use site-specific data to estimate the replacement costs for LPP segments in its service territory. NYSERDA then recommends that Central Hudson cross-reference these estimates with the customer count for each LPP segment to produce an initial list of suitable segments for decommissioning. NYSERDA also recommends refining this list with other criteria, such as: reliability/hydraulic impacts; available headroom on corresponding portions of the electric system; customers loads on the segment that can electrify; segments within a disadvantaged community; and replacement schedules.

NYSERDA critiques Central Hudson for relying on a historic baseline of customer count and usage data from 1995 to 2023 to develop the several key analyses in the Revised LTP, such as benefit cost analyses, GHG emission impacts, system costs, and bill impacts. NYSERDA claims that this baseline

likely overstates customer growth and does not properly reflect enacted policies or the Company actions for demand growth reduction. NYSERDA recommends that Central Hudson establish its baseline with more recent data that better reflect current policies and recent sales trends, or the sales forecast from the CCA scenario.

NYSERDA recommends that Central Hudson quantify health impacts in its BCA. NYSERDA claims that the omission of these benefits understates the benefits of scenarios that reduce combustion by relying on greater electrification.

NYSERDA challenges the calculations in each scenario of the Revised LTP for total annual GHG emissions and emission reductions versus a 2024 baseline. NYSERDA claims that the emission factors used to generate these figures are not consistent with the State's GHG accounting practices.

NYSERDA recommends that the Company work with the Commission and other utilities in New York State to develop a framework for updating its definition of design day demand conditions to align with empirical data and the latest climate science. NYSERDA also adds that the Company should consider a probabilistic approach, given the inherent uncertainty of long-term forecasting of extreme weather patterns.

NYSERDA asserts that the "Hydrogen Blending Study" performed by Central Hudson requires additional analysis for the following reasons: 1) Central Hudson does not address how it could blend hydrogen into the remaining 28 percent of the systems that this study identifies for modification; 2) Central Hudson did not evaluate hydrogen's compatibility with the material composition of the gas distribution system; and 3) Central Hudson does not address known concerns beyond hydrogen's impacts to velocity and pressure, such as elevated risks of

leaks (including customer side piping), increased pipeline maintenance and leak detection costs, recalibration and/or replacement of customer-appliances and equipment, and the potential for increased nitrous oxide pollution. NYSERDA recommends that the analysis address opportunities to strategically target hydrogen to difficult-to-electrify end uses, such as medium and heavy-duty transportation, industrial processes, and electricity reliability.

NYSERDA recommends refinements to the modeling assumptions in the Company's scenario analysis. NYSERDA asserts that the Company's modeling approach does not properly reflect the All-Electric Building Act because this approach assumes the prohibition of installations for only heating equipment rather than all fossil-fuel equipment. NYSERDA claims that this assumption overstates both the amount of gas used and the number of new customer connections expected under this policy. NYSERDA then urges Central Hudson to assume that customers who electrify do no revert back to gas heating at the end of the heat pump's useful life. NYSERDA also disagrees with the Company's characterization of price elasticities for natural gas and electricity usage as speculative. NYSERDA recommends that Central Hudson incorporate elasticity effects into its modeling. NYSERDA notes that Central Hudson updated and expanded its bill impacts analysis between its Initial LTP and its Revised LTP and subsequently brought this analysis closer to achieving the share-of-wallet analysis recommended in PA's Initial Report. NYSERDA affirms that Central Hudson can still improve this analysis by developing all-in energy costs for representative customers with a variety of technology configurations. NYSERDA claims that this improvement can help stakeholders understand

tradeoffs between the scenarios and identify customer types with a high risk of untenable cost burdens.

4. Sierra Club (SC)

SC questions whether the Company's assumptions regarding heat pump adoption accurately account for future regulatory changes that will influence incentive levels for this technology, such as the state's forthcoming cap-and-invest emission trading program. SC recommends that Central Hudson enhance its exploration of the impacts from this program for the Final LTP.

SC encourages Central Hudson to model multiple scenarios that achieve CLCPA-compliant emission reductions. SC correspondingly encourages Central Hudson to model these scenarios with sensitivity to key assumptions so that this modeling produces a range of costs for achieving these emission reductions through different pathways. SC identifies the following key assumptions for this modeling to address: New York All-Electric Buildings Act; gas usage for customers who fully electrify but retain gas service; GHG emissions accounting; and cost of RNG, with particular attention to environmental attribute purchases. SC additionally urges Central Hudson to develop a pilot program for decommissioning discrete sections of the existing distribution system.

Reply Comments on Revised LTP

1. Central Hudson

Central Hudson addresses PA's recommendation that the Company evaluate oversupply risks and cost variations in Winter Peaking resources. Central Hudson agrees to develop a Load Duration Curve for years 5 and 10 in the preferred scenario and to provide the most recent average delivered supply price for

the following gas portfolio categories: base, storage, and peaking.

Central Hudson addresses PA's recommendation that the Company explain how it chooses to procure gas from amongst different delivery points in a manner which reduces ultimate costs to customers. Central Hudson agrees to provide high-level information on this topic in the Final LTP. Central Hudson notes that it has procurement discretion only from April to October, when customer demand is lower than the Company's long-term transportation capacity, which is fully subscribed from November to March.

Central Hudson addresses PA's recommendation that the Company discuss its ability to purchase additional spot gas, particularly during design day conditions. Central Hudson notes its limited control over supply factors to affirm the speculative nature of this discussion.

Central Hudson addresses PA's recommendation that the Company prioritize investments in electrification, NPAs, DSM measures, and EE over LCF blending. Central Hudson claims that the LTP does so while also exploring the ability of alternative fuels to leverage emission reductions.

Central Hudson addresses PA's recommendation that the Company update the cost of RNG on customer bills with updates to costs for RNG procurement and blending. Central Hudson notes that doing so would result in double counting because its purchase price for RNG already includes costs to developers for production facilities and blending stations. Central Hudson also responds to comments from SC on RNG supply costs by noting that the Company includes environmental attributes in these costs according to a NYSERDA study conducted by ICF.

Central Hudson addresses PA's recommendation to target deployment of RNG for difficult-to-electrify customers rather than a systemwide blend by noting that the Company would require Commission approval to develop an RNG facility specifically for a difficult-to-electrify customer.

Central Hudson notes its general agreement with the following recommendations from NYSERDA and PA regarding hydrogen: further investigate the technical, environmental, and economic implications of hydrogen production, transport, and distribution; provide more robust discussion of potential operational challenges to blending hydrogen in the Company's proposed Clean Hydrogen Feasibility Study; target deployment of hydrogen for difficult-to-electrify end uses; and incorporate more conservative hydrogen pricing.

Central Hudson addresses PA's recommendation that the Company synchronize the results of its various models. Central Hudson agrees to ensure consistent inputs where viable but recognizes that models may not align by necessity due to divergent model purposes.

Central Hudson responds to PA's recommendation that the Company address whether projected distribution system reinforcements will focus only on areas not identified as highly loaded. Central Hudson claims that the Revised LTP includes reinforcement projects for highly loaded areas and affirms that some reinforcement projects have multiple objectives.

Central Hudson addresses CLP's concern with the Company's prioritization of capital investments. Central Hudson defends the prioritization of investments for safe and reliable service.

Central Hudson agrees with PA's recommendation that the Company revise its assumption of one percent average annual

population growth to reflect declining population growth over the last decade and a Moody's forecast of negative growth rates beginning in 2027.

Central Hudson agrees with PA's recommendation that the Company align its considerations of the impact from annual oil-to-gas conversion led acquisitions with the Company's own reporting of 350 per year and improving heat pump economics.

Central Hudson disagrees with NYSERDA's recommendation to limit demand growth by avoiding oil and propane conversions to gas and non-heat to heat gas service conversions. Central Hudson notes insufficient historical data for quantifying the impact of oil and propane conversions to gas on household growth; Central Hudson has the aggregate of these conversions over recent years but not over a prolonged period. Central Hudson also notes the discontinuance of its marketing program for these conversions and its presentation of electrification options to prospective gas customers. Central Hudson anticipates some growth from these conversions according to its obligation to serve.

Central Hudson addresses recommendations from PA and NYSERDA that urge the Company to reevaluate assumptions and investigate drivers for fuel-switching. Central Hudson affirms that the Revised LTP offers information on this topic, like the percentage of Central Hudson customers who retain gas service after installing heat pumps (97.7), in response to stakeholder comments on the Initial LTP. Central Hudson will keep tracking gas system disconnections from electrification.

Central Hudson agrees with PA's recommendation that the Company update usage per customer (UPC) forecasts to model the impact of a warming trend as well as the negative trajectory observed by the Company residential UPC since 1995.

Central Hudson disagrees with SC's suggestion that the Company did not calculate the change in gas consumption for customers who elected to retain gas service after heat pump installation. Central Hudson claims to include this, along with emission changes for these customers, in Section 5.2 of Appendix A from the Revised LTP.

Central Hudson addresses a discrepancy noted by NYSERDA regarding potentially avoidable gas distribution costs. Central Hudson affirms that the most current information on this topic appears in Appendix A, which identifies at least five local systems with avoided peak demand values of $500/Ccf-year or higher.

Central Hudson addresses NYSERDA's recommendation that the Company update design day assumptions to reflect long-term warming trends. Central Hudson indicates its openness to a statewide study on this issue but defends its current retention of conservative cold-weather assumptions according to requirements for maintaining safe and reliable service.

Central Hudson addresses PA's recommendation to account for the economic trajectory of electric appliances as well as ways to improve this relative to gas appliances with federal, state, and local rebates and subsidies. Central Hudson agrees to review its findings on this topic with PA to determine whether to update the Final LTP.

Central Hudson disagrees with NYSERDA's recommendation that the Company use a BCA baseline that reflects recent data and current policy. Central Hudson defends its use of a 30-year data trend for its baseline by noting that the compound annual growth rate in accounts over the past 5-10 years is not meaningfully different than trends since 1995. Central Hudson also reflects current policy in the CCA scenario. Central

Hudson will include what it deems as the optimal BCA baseline in the Final LTP.

Central Hudson addresses NYSERDA's recommendation that the Company reflect health benefits in BCA calculations. Central Hudson notes complexities and differing opinions on how to do so and expresses openness to stakeholder engagement on doing so in the next LTP cycle.

Central Hudson disagrees with NYSERDA's recommendation that the Company include Climate-Act compliant accounting results. Central Hudson asserts that the Revised LTP reflects current and widely accepted GHG accounting approaches and that the Commission has yet to identify a unified comprehensive method for the industry.

Central Hudson agrees with PA's recommendation that the Company update the Final LTP with bill impact studies which reflect full and partially electrified gas customers and all-in energy costs for a variety of technological configurations.

Central Hudson addresses NYSERDA's recommendation that the Company incorporate gas and electricity elasticity models. Central Hudson will consider developing this analysis for the next LTP cycle, given the substantial modifications to existing models that this analysis would necessitate.

Central Hudson addresses SC's recommendation that the Company model New York's upcoming cap-and-invest program. Central Hudson agrees to analyze this program once this program is finalized.

Central Hudson responds in the affirmative to SC's question about whether each scenario presents emissions according to the emissions accounting methodology developed by DEC and NYSERDA.

Central Hudson addresses SC's concern that emissions reductions in several LTP scenarios do not clearly align with CLCPA targets. Central Hudson affirms that the CLCPA sets emission reduction targets on a statewide, rather than sector-by-sector or utility-by-utility, basis. Central Hudson also affirms that the CLCPA directs state agencies, not utilities, to take actions toward these targets. Central Hudson additionally notes different timelines for the LTP process (20 years) and the CLCPA (2050).

Central Hudson disagrees with recommendations from SC and NYSERDA that the LTP refine its modeling of the New York All-Electric Buildings Act. Central Hudson asserts that it does not model fossil fuels in any new construction from 2026 onward.

Central Hudson addresses NYSERDA's recommendations regarding NPAs, which include the following: develop implementation strategies to avoid growth-related investments; produce and publicly share a list of pipe segments to decommission through targeted electrification; and develop a framework for identifying and evaluating NPAs to avoid infrastructure replacement. Central Hudson also addresses SC's recommendation that the Company develop a pilot program to decommission discrete sections of the distribution system. Central Hudson agrees with an emphasis on NPAs, including efforts to avoid growth-related investments and to pursue segment decommissioning. Central Hudson claims to include these efforts in its daily procedures and to summarize the outcomes and insights of these efforts in the LTP. Central Hudson affirms that it will include a beneficial electrification program for highly loaded locations in the Final LTP.

Central Hudson addresses NYSERDA's recommendations regarding electrification, which include the following: evaluate

how expanding targeted incentives could achieve reductions in gas distribution capacity cost; discuss basing incentives on avoided peak demand values; map avoided peak demand; and work with third parties to promote NPAs or demand reduction. Central Hudson affirms that it currently models higher incentives for locations with higher loading. Central Hudson notes that the LTP includes a map of locations with higher incentives. Central Hudson will consider developing an interactive map to develop NPAs with third parties in the next LTP cycle.

Comments on Final Long-Term Plan:

1. AGREE

AGREE agrees with the Company's preferred pathway selection, the "No New Infrastructure" (NNI) pathway as this pathway does not rely on low carbon replacement fuels such as hydrogen and RNG. AGREE also asserts that the decision against a widespread blend of hydrogen and RNG aligns with the NYSEG/RG&E LTP Order. AGREE reiterates the Commission's concerns in its NYSEG/RG&E LTP Order regarding RNG's costs relative to traditional sources and the unproven technology for hydrogen-blending in the State's natural gas system.

AGREE recommends that Central Hudson update its RNG cost estimates to incorporate environmental attributes. AGREE states that Central Hudson appears to base its RNG cost assumptions on NYSERDA's "Potential of Renewable Gas in New York State" study, which itself states that it does not reflect the potential value of environmental attributes associated with RNG. AGREE argues that Central Hudson's claims of emission reductions from RNG require the purchase and subsequent retirement of environmental attributes for any RNG the Company uses in its system. AGREE also notes that Central Hudson will not own the

production of RNG. AGREE claims that the inclusion of environmental attributes will significantly increase the costs the Company would assume costs for RNG.

AGREE reiterates PA's concerns regarding the Company's lack of transparency in its presentation of the NNI pathway's proposed $817M in capital expenditures for gas infrastructure over the twenty-year planning horizon. AGREE recommends that the Commission order Central Hudson to conduct a strategic decommissioning plan with Staff and interested stakeholders to remedy this lack, along with other issues, before the next LTP cycle. AGREE states the Company's strategic decommissioning plan should take a similar approach to the plan directed by the Commission in its NYSEG/RG&E LTP Order. AGREE notes that adjusting such a decommissioning plan for conditions local to Central Hudson could align with PA's recommendation that the Company develop a holistic geographical view on its territory's propensity for electrification.

Finally, AGREE notes PA's observation that service line replacements account for 28 percent of the capital forecast for 2025-2029. AGREE builds on PA's recommendation to limit these service line replacements by recommending that the Commission require Central Hudson to develop a short-term plan to limit service line replacements to individual customers to not lose an opportunity to act in the three years before the next long-term plan. AGREE recommends this short-term plan include educational materials and enhanced incentives for heating and cooking electrification.

2. MI

MI states that the total cost of the LTP remains unclear, but seems excessive, especially when assessed in

conjunction with other financial obligations imposed on customers.

MI asserts that NNI is neither cost-effective nor in the public interest, citing the Company's own benefit-cost analyses for NNI, which output a benefit-cost ratio indicating greater costs than benefits in each test method.

MI recognizes that the LTP does not include any demand response programs other than its interruptible rate option. MI notes the Company's openness to developing these programs with interested parties. MI recommends that the Commission require Central Hudson to submit one or more cost-effective gas demand response programs by a reasonable deadline set for later this year.

Based on the benefit-cost analyses and the magnitude of delivery rate increases impacting ratepayers, MI states there is no compelling reason for the Commission to approve the LTP at this time. MI ultimately recommends that the Commission enact an outcome for Central Hudson's LTP resembling the outcome for the NYSEG and RGE LTP in Case 23-G-0437. Specifically, MI agrees with the Commission's finding that a long-term plan with specific details for a 20-year time horizon was not necessary or appropriate for Commission approval at that time. MI also agrees with the Commission's statements that review of cost recovery for specific proposals and actions in ate proceedings and rate case proposals related to elements of an LTP be addressed in said rate proceeding.

3. SC

SC also cites to the Commission's NYSE/RG&E LTP Order, noting several consistencies between the Final LTP and the NYSEG/RG&E LTP Order. SC states the Final LTP shares the NYSEG/RG&E LTP Order's near-term emphasis on minimizing new

infrastructure build, prioritizing NPAs in highly loaded areas of the Company's system, reducing demand through efficiency and weatherization, incentivizing electrification, incorporating the All-Electric Buildings Act by capping new connections in 2026, and focusing alternative fuels to difficult-to-electrify use cases.

SC supports the Company's NNI scenario as it prioritizes energy efficiency, electrification, and NPAs over alternative plans based in LCFs. SC agrees that NPAs can potentially limit capital investment and help reduce the cost of decarbonization, as well as the Company's rationale for selecting NNI over PUT. SC also agrees with the Company's recognition of the unproven economics for low-carbon fuels and the prioritization of electrification.

SC still notes concerns about capital expenditures in the NNI, which, according to SC, appear indistinguishable from those in PUT despite the latter's greater emphasis on pipeline-based decarbonization approaches. SC questions the necessity of NNI's $6.5M capital investment in "New Business" from 2024-2029. SC recognizes that this investment represents a $4M decline in capital spending on this category relative to the prior six-year period (2018-2023). However, SC asserts that NNI's cap on new connections in 2026 warrants an even greater decline on capital spending for this category and that Central Hudson could avoid significant portions of this investment through NPAs, given that Central Hudson allots 60 percent of new business capital expenditures for small residential connections and 5 percent for conversions from alternative fuels to natural gas.

SC also observes possible opportunities for capital savings in the Company's forecasts for distribution system reinforcements. SC notes PA's claims that the Company's design

day demand forecasts do not appear to support continued reinforcement of the distribution system, especially after 2029, and that NNI does not strongly correlate forecasted distribution system improvements with highly loaded portions of the Company's distribution system. As such, SC ultimately argues that justification for the forecasted distribution system improvements require more detailed information. SC recognizes that PA refrains from offering an opinion on the extent to which Central Hudson can avoid CapEx investments under NNI and meet this scenario's intention according to this lack of detailed information. SC supports PA's recommendation that Central Hudson aggressively pursue NPAs where feasible to avoid the incremental CapEx associated with LPP and service line replacement.

SC remains unclear about the extent to which high levels of ongoing capital expenditures stem from the Company's assumption that 97.7 percent of customers who install whole-home cold-climate heat pumps still retain gas service. SC notes that reductions in this percentage are needed to maximize the value and minimize the overall cost of electrification. While SC recognizes that Central Hudson currently doubles incentives for customers who decommission their fossil fuel heating source upon heat pump installation, SC encourages Central Hudson to explore additional strategies, including new rate design options that improve expected bill savings and more extensive customer education about anticipated bill savings.

SC also recommends that Central Hudson update its new customer growth projections to reflective of PA's projections of lower customer growth and usage-per-customer than Central Hudson's projections. Specifically, SC references the PA's projection of lower gas customer growth and usage per customer

due to decreases in the average annual pace of customer conversions from heating fuel to natural gas; a declining share of new construction; and a rising propensity of fuel-conversions favoring electrification.

Finally, SC argues the Commission should require Central Hudson to engage in coordinated planning across its gas and electric utilities to support cost-effective electrification of its customer base, similar to the NYSEG/RG&E LTP Order. Also drawing from the NYSEG/RG&E LTP Order, SC recommends that the Commission require Central Hudson to engage in coordinated planning across its gas and electric systems to support cost-effective electrification. To that end, SC notes the following recommendations from PA's Final Report: development of a holistic geographical view on propensities for gas retention and electrification; development of a directional view on geographical footprint of the system over time; and identification of gas system segments to reduce or eliminate, as well as segments that could remain without becoming stranded.

Reply Comments on Final LTP

1. Central Hudson

Central Hudson first voices appreciation for positive feedback that the Company received from both stakeholders and PA throughout this proceeding regarding the Company's responsiveness to recommendations, transparency, and quality of analyses. Specifically, the Company notes PA's commendation of the Company's bill impact analysis and information clarifying impact of electrification on residential customer bills throughout the forecast period. Central Hudson notes that PA commends the Company's efforts to develop a flexible and adaptable approach which resembles the electric Distribution

System Implementation Plan (DSIP) and can account for numerous assumptions and inputs. Central Hudson notes that NYSERDA commends the Company's modeling and suggestion that the Commission require other local gas distribution companies to conduct similar analyses. The Company also notes that MI appreciates the Company's willingness to address its current lack of gas demand response programs. Finally, Central Hudson notes PA's and Stakeholder commendation of the Company's selection of the NNI scenario for its Final LTP.

Regarding PA's recommendations, Central Hudson first disclaims that it has already integrated aspects of several of those recommendations in the Final LTP, addressed them in other Company comments in this proceeding, or has addressed why the Company has not further adopted or approved said recommendation in the Final LTP or in reply comments. The Company provides a table summarizing its reasoning as to why it has not further adopted or pursued these recommendations.

First, Central Hudson addresses PA's recommendation that the Company provide and explain an annual quantification to show how the Company's supply stack meets demand under all four scenarios and the degree to which there is oversupply. The Company states that it provided the supply stack for NNI in the Final LTP, but challenges the value of performing this exercise for the other three scenarios given resource and time constraints. Central Hudson reasons that the purpose of choosing a selected pathway is to enable a more efficient and targeted focus and use of resources, such as conducting this detailed analysis for the chosen scenario only.

Second, Central Hudson addresses PA's recommendation that the Company discuss how its approach to de-contracting may change under differing scenarios or if realization of an

alternative scenario may require the Company to accelerate its de-contracting planning. Central Hudson states that it addressed the topic of de-contracting in the Final GSLTP and that further analysis on this topic does not merit detailed analysis at this time while the Company continues to see load growth in its 5-year forecasts.

Next, Central Hudson addresses PA's recommendation that the Company discuss the costs and benefits of customer fuel switching for each fuel option for each scenario supported by the most current data available. Central Hudson asserts that the Final LTP references a detailed calculator that compares customer bill impacts associated with fuel switching by scenario, forecast year, heat pump technology, and building type, which the Company states it provided. Central Hudson also states that it offered to make this calculator available to stakeholders but had not received any request for it.

Central Hudson addresses PA's recommendation that the Company consider the impact of annual oil-to-gas conversion-led customer acquisitions in a manner more consistent with the Company's own reporting of around 350 per year in recent years, stating that it will work to integrate the specific request in the future. Central Hudson also addresses PA's recommendation that the Company provide stakeholders with visibility into projected costs of each scenario from a residential, non-residential, and average customer view. Central Hudson states that the Final LTP provided this information in "Total Bill Impact (Gas & Electric)," "Gas Rates and Gas Bill Impacts," and "Electric Rates and Electric Bill Impacts" Sections of the Final LTP.

Central Hudson addresses PA's recommendation that the Company further investigate the technical, environmental, and

economic implications of hydrogen production, transport, and distribution across the Company's service territory. Central Hudson notes that Appendix D of the Final LTP discusses a hydrogen study that the Company will conduct, which the Company states will incorporate recommendations from the Commission and this proceeding.

Central Hudson then addresses PA's recommendation that the Company research and update the costs associated with RNG procurement and blending sourced from within its service territory and nearby geographies and reflect this updated cost of RNG on customer bills throughout the forecast period. Central Hudson states that it will consider stakeholder feedback and revise RNG costs and assumptions for the next LTP cycle.

Finally, Central Hudson addresses PA's projections that increases in electrification and declines in gas usage will both occur at faster rates than the Final LTP's analyses indicate. Central Hudson claims that these statements do not appear to be corroborated in PA's Final Report or in other materials PA has provided.

Central Hudson moves on to respond to stakeholder input on bill impacts and affordability. First, the Company addresses MI's recommendation that the Company prioritize gas affordability for all customers. Central Hudson asserts that it focuses on total bill impacts, or impacts on both electric and gas bills, to account for the impacts of electrification in its analyses on gas affordability. Central Hudson notes that PA's Final Report focuses only on gas bill rather than total bill impacts. The Company argues that focusing on total bill impacts provides a more accurate view of impacts on affordability, as opposed to PA's Final Report, which the Company asserts focus only on gas bill impacts.

Central Hudson then addresses PA's concern that the Company's bill impact calculations do not accurately incorporate a decreasing customer count for full gas heating service and may subsequently prove optimistically low, especially for remaining gas customers. Central Hudson asserts that sales volume, rather than customer count, drives gas delivery rates and that only 2.3 percent of sites installing whole-home cold-climate heat pumps abandon the gas system and that the Company has provided robust data and analysis in developing its bill impact information.

Finally, Central Hudson addresses MI's statements regarding recovery of long term plan related costs discussed above; agreement with the Commission's findings in the NYSEG/RG&E LTP Order that a long-term plan with specific details for a 20-year time horizon was not necessary or appropriate for Commission approval at that time. Central Hudson affirms that its Final LTP is consistent with MI's statements and the Company does not propose funding approval on any elements of its Gas LTP in this proceeding.

Central Hudson then moves on to PA's addressal of the Company's planned system reinforcement investments. Specifically, PA identified a discrepancy between: a) the number of reinforcement projects listed by the Company under distribution improvement projects for highly loaded systems from 2025-2029 in its updated response to PA-008 IR121; and b) the number of reinforcement projects observed by PA under this category in this updated IR response. PA observed three reinforcement projects listed in this update under distribution improvement projects for highly loaded systems from 2025-2029 while Central Hudson confirms that all 22 projects listed under this category in this response qualify as reinforcement projects. Central Hudson recognizes that only three project

titles from this list explicitly use the term "reinforcement," which Central Hudson attributes to coded language embedded in the software that the Company cannot change.

In PA's review of Central Hudson's reinforcement investment projections, PA also recommended the Company synchronize the results of its hydraulic modeling, which offers static representation of a pipe network's physical attributes (e.g., pipe size, regulators) used to simulate flow and pressure, and its Monte Carlo modeling, the latter of which Central Hudson refers to as long-term probabilistic econometric modeling. PA submitted this recommendation to address its conclusion that the Company's planned reinforcement investment fell below the investment for high loading of systems dictated by its long-term probabilistic econometric modeling.

Central Hudson disagrees with PA's conclusion and recommendations, noting that the updated response to PA-008 IR121 identifies 10 of the Company's 12 highly loaded systems for reinforcement through various pipeline projects. Central Hudson agrees that models should use consistent inputs. However, the Company argues the different purposes of these two modeling approaches: the hydraulic modeling is for short-term planning while the econometric model is for long term planning. Central Hudson notes that its hydraulic modeling compliments the long-term probabilistic econometric modeling by virtue of its short-term vantage.

Central Hudson also disagrees with PA's characterization of the Company's process for identifying needed upgrades and resulting criticism. Specifically, Central Hudson claims PA characterizes the Company's process to be identification of a segment of the system as highly loaded using statistical, or long-term, modeling, and then further evaluation

of the system for constraint points with hydraulic modeling. Based on this, PA stated that this approach is unable to convey enough information to identify where reliability risks may exist. Central Hudson argues PA's characterization is inaccurate; that the Company does not wait until it identifies a segment as highly loaded to evaluate it for constraint points. Instead, the Company states it identifies highly loaded systems following its normal hydraulic modeling process and separately from its statistical modeling, which Central Hudson conducted to support this long-term planning process. Central Hudson emphasizes that it does not make near-term decisions with long-term probabilistic econometric modeling, including Monte Carlo simulations.

Central Hudson then addresses PA's assessment that the Company had likely not used a multi-variable optimization model in selecting the NNI Scenario for its long-term plan. Central Hudson first notes that the Gas Planning Order did not require a formal multi-variable optimization model. Central Hudson then questions the feasibility of developing the optimization model recommended by PA because PA's Final Report did not provide any direction on defining the variables to manipulate or the constraints of such a model. Central Hudson also notes the absence of a conclusive determination on whether the objective of the long-term planning process is to minimize total bill impacts or only gas bill impacts. Central Hudson affirms that its current model optimizes within each scenario by selecting the measures and customer segments that provide the highest societal net benefit per dollar spent in rank order. Central Hudson notes that it invited stakeholders, along with Staff and its consultant, to adjust the built-in parameters of its model and provide alternative inputs and model scenarios. Central

Hudson claims that stakeholders did not provide this input or request additional model runs based on this input.

Central Hudson also addresses MI's claim that the Final LTP BCA results show that NNI is not cost-effective under the SCT. Central Hudson asserts that NNI generally reflects higher BCA results than some other utility long-term gas plans. Central Hudson notes that it did not receive stakeholder requests to optimize modeling around a positive benefit cost ratio. Further, Central Hudson claims that NNI appropriately balances ambitious pursuits of GHG emissions, limits or reductions for gas infrastructure investments, and cost.

Regarding the Final LTP's capital planning for conversions from alternate fuels to natural gas, Central Hudson disagrees with assertions from PA and SC that conversions of commercial and residential customers to natural gas account for only five percent of the new business forecast. Central Hudson claims that this five percent metric is erroneous, as it only applies to forecasted commercial conversions. Central Hudson states that most new business is customer conversions.

Next, Central Hudson discusses input regarding its selection of the NNI Scenario and the selection of its long-term plan pathway. First, the Company addresses concerns from PA, AGREE, and MI regarding potential inconsistency between the NNI scenario as described in the Final LTP, and the "No Infrastructure Option" as described within the Gas Planning Order. Central Hudson notes that PA's Final Report acknowledges the Gas Planning Order itself states investments will still occur in order to address immediate threats to system reliability and public safety. The Company also notes PA's stated inability to provide an opinion on the consistency between the two according to insufficient CapEx forecast

information for the NNI scenario from the Company, as well as AGREE's and MI's similar concerns regarding insufficient CapEx detail or their assessment that the information the Company provided indicate excessive costs and insufficient savings from avoided gas system investment. Central Hudson affirms that it provided details on changes to the overall drivers of the CapEx and argues that further detail would reflect false precision given the uncertainties in long range planning. Central Hudson states that it developed its model to allow for real-time updates from the LTP process and that applying a traditional budgeting process would represent an unreasonable burden for projections ten years into the future.

Regarding the Final LTP's pathway costs, Central Hudson addresses SC's concern that the capital expenditures projected for the NNI scenario are not sufficiently below capital expenditures in the CCA, and remains essentially indistinguishable from PUT. Central Hudson asserts that the similarities in the benefits between NNI and CCA do not alter or undermine the benefits of NNI. Central Hudson attributes the comparable levels of capital expenditures in NNI and CCA to CCA's incorporation of significant savings from codes and standards banning fossil fuel heating and appliances in new construction and CCA's focus on "low-hanging fruit," or measures and customer segments that achieve benefits at relatively low incremental costs. Central Hudson notes that NNI reflects an additional layer of measures beyond low-hanging fruit, including more aggressive savings and reduced infrastructure investment goals, and higher associated costs. Central Hudson distinguishes NNI from PUT according to increased GHG reductions rather than savings from avoided infrastructure investment or reduced energy consumption.

Regarding volumetric and demand forecast modeling, Central Hudson addresses the recommendation of PA and SC that the Company further update its modeling to reflect apparent reductions in conversions to natural gas from other heating fuels and, in turn, produce greater declines in new customer growth projections for scenarios outside of the Historical Trend. Central Hudson emphasizes that it already updated its demand forecasting for each scenario by supplementing each with the following factors recommended for inclusion by PA: the forecasted declining rate of household growth; the declining HDD trends; the impact of the increased installation of heat pumps on gas abandonment; and the increasing market share of heat pumps as they become more familiar to customers. Central Hudson notes that total gas usage decreased substantially in each scenario. Central Hudson attributes the underwhelming decreases to forecasted customer accounts in scenarios outside of the historical trend to the fact that these other scenarios already integrated policy requiring new construction to include heat pumps and electric appliances before PA submitted its above recommendations for demand forecasting. Central Hudson attributes the customer count changes in these other scenarios to gas abandonment alone and reiterates that 97.7 percent of customers who install whole-home cold-climate heat pumps do not abandon the gas system.

Central Hudson next responds to PA's statements on electrification and energy efficiency in its Final Report. First, Central Hudson disagrees with PA's expectation of electrification acceleration above and beyond the Company's modeling. Central Hudson states its modeling incorporates federal, state, and utility-level rebates, as well as the impact of higher incentive levels on customer adoption decisions.

Central Hudson invites PA and other stakeholders to provide further empirical data on rebates and heat pump adoption and explain the enhanced accuracy of such data relative to that supplied by Central Hudson in this regard. Central Hudson also addresses PA's recommendation to include incentives from the Inflation Reduction Act and NYS Clean Heat Program, as well as higher incentives for disadvantaged communities. Central Hudson asserts that it did incorporate these incentives, including higher incentives for disadvantaged communities, and quantified their impacts on heat pump adoption rates. Central Hudson claims that it anticipates lower rates than PA for heat pump adoption in disadvantaged communities because the Company's projections, unlike those from PA, account for: operating costs to customers which exceed those for gas energy by as much as a claimed three times; installation labor; and potential need for electrical building upgrades.

Central Hudson also disagrees with PA's expectation that natural gas service volumes in the Company's territory will decrease more than the Company forecasts according to incentives offered by Central Hudson for appliance upgrades to energy efficient natural gas heating equipment. Central Hudson affirms that it expects to discontinue most of the energy efficiency gas incentives noted by PA after 2025, and thus relying on these incentives in calculating gas service volumes in not appropriate.

Finally, Central Hudson addresses MI's recommendation that the Commission order the Company to coordinate with parties to develop one or more cost-effective gas demand response programs to submit for Commission approval by a reasonable deadline set for later this year. Central Hudson affirms its

openness to doing so but claims that a deadline for later this year may prove unrealistic.

Central Hudson then responds to input regarding its gas supply planning, including incorporation of alternative fuels. First, Central Hudson addresses PA's recommendation that the Company identify the most expensive delivery points from which it procures gas and explain how the Company chooses to procure gas from different delivery points to provide least-cost service to customers. Central Hudson notes that the Final LTP shows both the relative cost of market supply points and transportation paths filled to 100 percent during the winter from all points. Central Hudson affirms that it makes daily supply adjustments using portfolio alternatives like flexible gas storage contracts, pipeline operational balancing agreements, retail access incremental/decremental adjustments, call on peaking contracts, or purchase/sale of daily spot gas. Central Hudson notes that system design limitations or upstream pipeline capacity limitations may prevent the Company from flowing additional volumes of gas through certain gate stations. Central Hudson notes that it conducts competitive requests for proposals.

Central Hudson addresses PA's recommendation that the Company discuss potential market limitations in purchasing additional spot gas and comment on its confidence that it can purchase adequate additional gas during design day conditions. Central Hudson states that the Final LTP provides a detailed description regarding its approach and analysis for meeting design day gas supply. Central Hudson asserts that a determination of its confidence level for purchasing additional spot and peaking gas would require extensive speculation. Central Hudson argues this determination would be speculative

because: the interstate pipeline structure is discrete and limited; the availability of services is on year-by-year bases; Central Hudson competes with other load serving entities, including other LDCs, for the same upstream assets and capacity; and the maintenance practice of owners determines the reliability of interstate pipelines.

Central Hudson next addresses PA's expectation that the costs associated with agricultural residue fed RNG will exceed those anticipated by the Company and PA's recommendation that the Company consider additional costs associated with the production pathway for RNG from agricultural residue, which PA identifies as thermal gasification.

Central Hudson states its study only considered gas from anaerobic digesters and not thermal gasification that could be available in a 5–10-year timeframe. Central Hudson notes that the LTP conservatively applied a reduced volume from this study and pushed the timeframe out to 20 years.

Central Hudson disagrees with AGREE's assertion that the Company underestimates the cost of RNG by not separately calculating the costs of environmental attributes, which could more than double the Company's estimates. Central Hudson notes that the market cost of environmental attributes associated with RNG include the production cost. Central Hudson defends its use of production cost as a more accurate estimate for RNG integration because it presents a unified cost for different feedstocks. Central Hudson also affirms that its cost estimates accord with those received by the Company through competitive bidding. Central Hudson challenges the prudence of utilizing short-term market pricing, which depends on supply and demand factors, for long-term cost forecasts. Central Hudson asserts that the total cost of RNG would exceed the cost of the

environmental attributes by roughly 10 percent rather than a multiple of more than two. Central Hudson remains open to incorporating additional data in future LTP cycles to refine RNG cost projections. Central Hudson reiterates its position that alternative fuels such as RNG may prove vital to the State's emission goals and affirms that difficult-to-electrify customers may offer an important starting point for the role of LCFs in the State's achievement of these goals.

Regarding electrification and NPAs, Central Hudson disagrees with PA's claim that electrification of gas heating is not cost prohibitive according to the Company's bill impact analysis. Central Hudson recognizes that PA's Final Report references a NYSERDA study that observed heat pumps as a cheaper option than gas furnaces for residential applications in an area similar to the Company's service territory. Central Hudson claims that PA does not quantitatively support this claim or refute the Company's bill impact calculator. Central Hudson affirms that heat pumps must reduce energy usage by at least two thirds to produce operational cost savings because the cost of natural gas is one third the cost of electricity for Central Hudson residential customers. Central Hudson recognizes that its calculator shows a bill impact of -22.9 percent (-$260/year) for ground-source heat pumps and -29.6 percent (-$70/year) for heat pump water heaters; however, Central Hudson maintains its uncertainty that heat pump technology can provide enough operational savings to offset incremental costs for equipment and installation, especially when decarbonization efforts currently project increased electric rates. Central Hudson affirms that it will continue to refine and improve its bill impact calculator going forward.

Central Hudson addresses recommendations from PA and SC that encourage aggressive pursuits of NPAs to avoid incremental CapEx from LPP replacements and increase the percentage of customers who abandon the gas system after electrification. Central Hudson confirms aggressive pursuits of NPAs but challenges the feasibility of widescale NPA implementation and gas abandonment in the Company's service territory. Central Hudson claims that conversion costs often exceed those avoided; Central Hudson notes that only 75 percent of 40 homes screened for NPAs by the Company received a positive BCA. Central Hudson then affirms that only 44 percent of customers with a passing or near passing BCA agreed to system abandonment while the Company completed NPAs for only 20 percent of those customers (10 percent of screened) due to customer opt-outs. Central Hudson additionally notes that even successful NPA projects typically cost 74 percent of avoided costs.

Central Hudson addresses SC's recommendation that the Company improve NPA participation and increase electrification with changes to electric rate design. Central Hudson refers the complexities of electric rate design to a generic proceeding or electric rate case.

Central Hudson addresses PA's recommendation that the Company aggressively pursue electrification for service line replacement customers from 2025-2029 to significantly reduce CapEx investments during this period, 18 percent of which flows to these customers. Central Hudson also addresses AGREE's corresponding recommendation that the Commission require the Company to develop a short-term plan to limit service line replacements to individual customers which includes educational materials and enhanced incentives. Central Hudson recognizes that retiring rather than replacing service can net $8,000 in

savings but asserts the conversion costs average $51,800 per home with incentives.

Central Hudson addresses the recommendation from PA and SC that the Company develop a holistic geographical view on electrification and, in turn, gas system retention and abandonment in its service territory. Central Hudson asserts that it has already provided significant information in this regard.

Central Hudson addresses the recommendation from AGREE and SC that the Commission order the Company to collaborate with stakeholders on neighborhood scale strategic decommissioning according to a process resembling the "table top exercise" required in the NYSEG/RG&E LTP Order. Central Hudson opposes a Commission order that directs this collaboration. Central Hudson asserts that an order of this sort would duplicate the Company's effective efforts to pursue localized gas system decommissioning through its LPP and NPA programs. Central Hudson correspondingly asserts that this requirement would prove inefficient from a cost and resource perspective. Central Hudson questions whether the collaboration contemplated in the NYSEG/RG&E LTP Order can override, absent legal or regulatory change, the obstacle posed to NPA success by a single customer's refusal to participate. Central Hudson also notes that its "red carpet approach" for NPAs, which covers all costs for full electrification, proves expensive. Central Hudson prefers load reduction rather than segment abandonment in its approach to NPAs. Central Hudson notes that it provides the groundwork for a combined gas and electric NPA analysis for highly loaded systems in Appendix C of the Final LTP and that directing limited company resources away from this would counter near term actionable progress. Central Hudson affirms that the Commission

would need to authorize costs for this collaboration and that the Company would need to receive cost recovery for it. Central Hudson additionally notes that the Company's service territory lacks a community or organization analogous to the highly engaged community described in the NYSEG/RG&E LTP Order.

Central Hudson addresses SC's recommendation that the Commission require the Company to engage in coordinated planning across its gas and electric utilities to support cost-effective electrification of its customer base. Central Hudson notes that Company practice has identified segments of the gas system to reduce or eliminate for many years, especially as part of its LPP program.