STATE OF CONNECTICUT

PUBLIC UTILITIES REGULATORY AUTHORITY

Docket No. 24-12-01

APPLICATION OF YANKEE GAS SERVICES COMPANY

D/B/A EVERSOURCE ENERGY

TO AMEND ITS RATE SCHEDULES

Direct Testimony of
Dr. Asa S. Hopkins and Dr. Sol deLeon

On Behalf of Connecticut Office of Consumer Counsel

March 13, 2025

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I. INTRODUCTION AND QUALIFICATIONS

Dr. Hopkins

Q1 Please state your name, business address, and position.

A1 My name is Asa S. Hopkins. My business address is 485 Massachusetts Ave., Suite 3, Cambridge, Massachusetts 02139. I am a Senior Vice President at Synapse Energy Economics, Inc. Among other work, I lead Synapse's consulting regarding the future of gas utilities, and I also work extensively in the related area of building decarbonization technology and policy.

Q2 Please describe Synapse Energy Economics.

A2 Synapse Energy Economics is a research and consulting firm specializing in energy industry regulation, planning, and analysis. Synapse works for a variety of clients, with an emphasis on consumer advocates, regulatory commissions, and environmental advocates.

Q3 Please describe your professional experience before beginning your current position at Synapse Energy Economics.

A3 Before joining Synapse Energy Economics in 2017, I was the Director of Energy Policy and Planning at the Vermont Public Service Department from 2011 to 2016. In that role, I was the director of regulated utility planning for the state's public advocate office, and the director of the state energy office. I served on the Board of Directors of the National Association of State Energy Officials. Prior to my work in Vermont, I was an AAAS Science and Technology Policy Fellow at the U.S. Department of Energy ("DOE"), where I worked in the Office of the Undersecretary for Science to develop the first DOE Quadrennial Technology Review. Prior to my time at the U.S. DOE, I was a postdoctoral fellow at Lawrence Berkeley National Laboratory, working on appliance energy efficiency standards. I earned my PhD and Master's degrees in physics from the California

Institute of Technology and my Bachelor of Science degree in physics from Haverford College. My resume is included as Exhibit OCC-ASH-01.

Q4 Have you previously provided evidence before the Connecticut Public Utilities Regulatory Authority (PURA)?

A4 Yes, I testified in Docket No. 23-11-02, the Applications of Connecticut Natural Gas Corporation and the Southern Connecticut Gas Company to amend their rate schedules.

Q5 Have you previously provided testimony in other jurisdictions on topics similar to those you are testifying to in this case?

A5 Yes. I have testified on "future of gas utilities" issues, as relates to capital decision-making, rates, and business risk in Quebec, Ontario, Maryland, the District of Columbia, Wisconsin, and New York. When I testified before the Régie de l'Energie in Quebec I was recognized as an expert in "energy transition in the gas industry, and business risk." The Ontario Energy Board qualified me as an expert on "the future of electric and gas utility regulatory and business models and associated business risk in the context of deep building decarbonization objectives."

Q6 On whose behalf are you providing evidence in this case?

A6 I am testifying on behalf of the Connecticut Office of Consumer Counsel (OCC).

Dr. deLeon

Q7 Please state your name, business address, and position.

A7 My name is Sol deLeon. My business address is 485 Massachusetts Ave., Suite 3, Cambridge, Massachusetts 02139. I am a Principal Associate at Synapse Energy Economics, Inc. I work primarily in Synapse's consulting for future of gas utilities practice, and I also work in the related area of building decarbonization technology and policy.

Q8 Please describe your professional experience at Synapse Energy Economics and before beginning your current position at Synapse.

A8 I have over 25 years of experience in the energy industry, primarily in U.S. natural gas distribution utilities and international merchant electricity generation. I analyze gas utility applications and filings before state public service commissions, in addition to developing studies, reports, and other materials regarding gas utility investments, business models, ratemaking, depreciation, revenue requirements, and business risk. Prior to joining Synapse, I was a project manager at Washington Gas & Light Company, working on initiatives for corporate governance, renewable natural gas ("RNG"), and greenhouse gas ("GHG") emissions reduction inventories. Before that, I worked for AES Corporation where I conducted commodity and financial risk analysis, derivative valuation, and project valuation for electric generating assets. I completed my Masters in Business Administration and my Doctorate in Liberal Studies at Georgetown University. My doctorate focused on energy transition and energy justice. My complete CV is attached as OCC-ASH-02.

Q9 Have you previously provided evidence before the Connecticut Public Utilities Regulatory Authority (PURA)?

A9 No.

Q10 Have you previously provided testimony in other jurisdictions on topics similar to those you are testifying to in this case?

A10 Yes. I have testified on "future of gas utilities" issues, as they relate to capital planning in Illinois and New Mexico.

Q11 On whose behalf are you providing evidence in this case?

A11 I am testifying on behalf of the OCC.

Q12 What is the purpose of your testimony?

A12 The purpose of our testimony is to discuss the implications of the decarbonization energy transition on gas utilities, specifically Yankee Gas d/b/a Eversource ("the Company"). This includes examining the implications of energy transition on capital planning and depreciation.

Q13 How is your testimony organized?

A13 Our testimony begins with a summary of our conclusions and recommendations. Then it addresses the definition and context of the energy transition, with focus on how PURA and the Company can and should learn from work conducted in other jurisdictions (Section III). In Section IV, we address the details of how the energy transition is relevant in the context of gas utility rate cases. In Section V we summarize key elements of the application's revenue requirement and capital additions. We then address the specifics of the Company's filings in this case regarding capital planning (Section VI), evaluation of alternatives (Section VII), clean technology proposals (Section VIII), the multi-year rate plan (Section IX) and depreciation (Section X). The testimony ends with our conclusions and recommendations.

II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q14 Please summarize your primary conclusions.

A14 We find that:

- The general framework and path of the energy transition to deeply decarbonize Connecticut's economy is well-established. The Company has sufficient information to be taking prudent actions, as described in this testimony, to adapt to a changing future. Connecticut and other jurisdictions have completed studies, established policies, and conducted regulatory processes that the Company could have used to inform its planning.

- Successfully and safely navigating the energy transition will require the Company to make changes to its practices. The Company's filings do not reflect a reasonable understanding of the energy transition's implications for prudent management of the Company, its business model, and its capital planning. The Company does not incorporate the best available information to inform its planning and capital decision-making.

- The Company is the expert on its own system, and it is the entity with an obligation to customers to make sure that it has the financial and operational strength to maintain a safe and reliable gas system. The timing of the Company's need to understand its own challenges is independent of the timing of state-led analyses. The Company has had many years to consider and undertake a study of its own system and business to understand and adapt to such a future, while it watches Connecticut and other states adopt increasingly stringent emission targets and take actions to make them reality. It has not done so.

- If the Company were in a competitive market, where competition punishes imprudence through a loss of market share, the Company's failure to consider these changes would be putting its future returns at risk. The regulatory process is intended to supply similar discipline.

- The Company's lack of good planning practice makes imprudent investments likely.

- The Company does not undertake well-established practices to consider non-pipeline alternatives (NPA) to its capital investments.

- The Company's lack of planning for the energy transition risks creating inequitable outcomes that disadvantage low-income residents and renters.

- The Company's approach to prioritizing leak-prone pipe for replacement does not account for the energy transition or target the greatest cost-effectiveness of risk reduction.
- The Company has not developed a sales and asset utilization forecast consistent with state policy and its changing future. It has therefore not been able to develop a revised and equitable depreciation approach consistent with that future.

Q15 Please summarize your primary recommendations.

A15 We recommend that PURA:

- Find that the Company's planning process is flawed because it does not incorporate planning for the energy transition. PURA should direct the Company to update its practices to align with planning for Connecticut's energy future.
- Not approve cost recovery for investments that have not been shown to be prudent, accounting for what the Company should have known and the planning processes it therefore should have used at the time it made the investment. This includes assessment of NPAs.
- Not approve the Company's proposed K-bar or the expansion of the scope of the DIMP tracker. Capital additions should be subject to prudency review in a rate case before being added to rates.
- Direct the Company to develop and utilize an NPA assessment process to consider alternatives to all potentially avoidable investments.
- Open a docket for the purpose of establishing a common framework and planning parameters for the future of the natural gas system in Connecticut.

III. INTRODUCTION TO THE ENERGY TRANSITION

Q16 Could you please describe what you mean by the term "energy transition"?

A16 The "energy transition" refers to the economy-wide transition to reduce GHG emissions by 80 percent or more by 2050 by moving away from an energy system of fossil fuel resources and toward an energy system of renewable and zero-carbon resources. The energy transition is currently ongoing in many jurisdictions across the United States that have committed to net-zero emissions targets.

Q17 Do you suggest that the United States is committed to achieving net-zero emissions targets?

A17 While the previous presidential administration committed the country to net-zero emissions by 2050, the current administration has abandoned that goal. However, numerous jurisdictions across the country have taken significant actions to decarbonize the energy sector. These actions, combined with market forces and federal regulations, have resulted in nationwide GHG emissions falling by more than 15 percent from their peak in 2007 to 2021. We expect policy action and market forces toward decarbonization and pollution reduction to continue to shape the energy sector as the impacts of climate change become more evident.

Q18 What are the primary pathways seen for the energy transition in the building and industrial sectors?

A18 The building and industrial sectors consume electricity for a wide range of end uses, and the decarbonization of the electricity system is already underway. Renewable generation technologies such as solar and wind are becoming more cost-effective, while battery storage and other technologies continue to advance. Both sectors also directly combust fuels for various uses, particularly related to heating and incidental uses such as cooking or laundry. Decarbonization of heating requires either the substitution of currently used fossil fuels with lower-carbon combustion fuels or electrification of these processes, such as with highly efficient heat pump technologies.

Q19 Is it generally accepted that there is a transition happening in the energy sector?

A19 Yes. At the state level, numerous states have established targets through laws and executive orders. Policymakers are taking actions to make those commitments reality through regulations, incentives, codes and standards, and other policies and programs. From their peak in 2007, U.S. GHG emissions fell by more than 15 percent by 2021 and are below 1990 levels.[1] Individual states have seen emissions fall further.

Q20 Why is the energy transition relevant for this case?

A20 As jurisdictions have started to plan for the energy transition and model pathways to achieve net-zero emissions, available analyses have made clear that the transition requires broad reductions in gas consumption (discussed more below) to meet emission reduction targets. The transition requires changes in the amount of fuel gas utilities deliver to customers, which will ultimately require changes in the Company's rates and the Company's overall competitive position compared to alternatives. The transition will impact the need to build out, repair and replace, depreciate, and generally plan and invest in the gas system. Decision-making related to these topics must account for the energy transition. Gas distribution utilities like the Company get their revenue from delivering gas to customers and recovering both the costs of the gas commodity and the costs of maintaining the extensive pipeline network used to transport it. Utilities have the opportunity to earn a fair return on prudent investments in assets that are used and useful. As the energy transition progresses and gas sales decline, some gas utility assets will not be needed to provide service or will not be used and useful. These assets will therefore need to be removed from the rate base. This creates the risk of stranded costs if these assets are not fully depreciated, and the Company's remaining

[1] U.S. Environmental Protection Agency. "Climate Change Indicators: U.S. Greenhouse Gas Emissions." Available at: https://www.epa.gov/climate-indicators/climate-change-indicators-us-greenhouse-gas-emissions. Accessed December 13, 2023.

customers or investors will bear that risk. A rate case such as this one is the venue in which the prudence of a utility's actions can be evaluated, and its rates adjusted to account for the cost of capital, for changes in the assets which are used and useful, and for their useful lives. The energy transition impacts these factors and thus is relevant to this case.

Q21 Have policymakers studied the energy transition and implemented policies that will directly affect the economics of gas distribution utilities?

A21 Yes. In the following sections of testimony, we will provide an overview of the status of the energy transition in Connecticut and then summarize the progress seen in neighboring states and other jurisdictions, identifying actions taken by state legislatures, regulators and state agencies in response to issues driven by the energy transition.

A. Energy transition in Connecticut

Q22 What is the state of knowledge and policy regarding energy transition pathways in Connecticut?

A22 The Global Warming Solutions Act (GWSA), Connecticut General Statutes § 22a-200a, sets a legally binding requirement for statewide GHG emission reduction to 45 percent below 2001 levels by 2030 and 80 percent below 2001 levels by 2050. The Connecticut Department of Energy and Environmental Protection (DEEP) developed a comprehensive energy strategy (CES) in 2013 and then an updated version in 2018, as required in Connecticut General Statutes § 16a-13d. The CES identifies decarbonization strategies for buildings, electricity, and transportation.

More recent executive orders issued by Governor Lamont require decarbonization of the state's building sector. See, e.g., CT Exec. Ord. No. 21-3 (Dec. 16, 2021) ("DEEP shall include in its next Comprehensive Energy Strategy developed pursuant to Section 16a-3d of the Connecticut General Statutes, an identification of strategies to provide for more affordable heating and cooling for Connecticut residents and businesses, achieve reductions in greenhouse gas emissions from residential and commercial buildings and industrial processes as needed to enable the state to meet the economy-wide greenhouse gas reduction target for 2030 and 2050 required by the Global Warming Solutions Act…").

Q23 Connecticut has revisited some conclusions from its most recently completed CES. What process is DEEP following to develop a new CES?

A23 DEEP began an extensive public stakeholder engagement process in 2022 and new analyses to develop a new version of the CES. Specifically, DEEP has held technical sessions on the advancement of heat pumps and related barriers, alternative fuels, and natural gas distribution planning and policies.

Q24 When will DEEP publish the new CES?

A24 DEEP has not released a publication schedule.

Q25 What does the currently effective CES say about the energy transition in Connecticut's buildings?

A25 The 2018 CES states that "to achieve the long-term vision of a zero-carbon economy, widespread electrification of building thermal loads and the transportation sector is required. By 2050 electricity must become the dominant form of energy consumed in Connecticut, and the cornerstone of the state's carbon-free economy will be decarbonization of the electric power sector."[2] The 2018 CES generally emphasizes decarbonization through electrification rather than through reliance on lower-carbon fuels. It also highlighted ductless mini-split heat pumps as a cost-effective choice to allow natural gas customers to electrify and advance the state's decarbonization objective.[3]

[2] Connecticut Department of Energy and Environment. *Comprehensive Energy Strategy*. 2018. Page 10. [hereinafter 2018 CES]

[3] *Id*. at 27–28.

Q26 What are the potential implications of widespread adoption of electrification measures like heat pumps, as emphasized by the CES, for Connecticut's gas companies?

A26 Natural gas sales would significantly decline if the Company's customers adopted electric heat pumps and partly electrify their heating at a large scale. As the Company continues to maintain its gas system, gas delivery rates would substantially increase and gas would become less competitive compared to other fuel options. Such a partial-electrification scenario necessitates a re-evaluation of the Company's gas system investments and business model for maintaining safe and reliable service and preserving its financial health. If the Company's customers adopt whole-building electrification, these impacts and concerns would be magnified. The Company could mitigate the risks of rate increases by reducing overall system costs and retiring assets.

Q27 What are the implications of these future pathways for the Company's customers?

A27 Increases in gas delivery rates will drive some customers to electrify, while some customers who are not able to electrify will face a greater energy burden. We are especially concerned that low-income customers and renters will be the least likely to implement electrification measures for their homes and will have to bear the largest burden of the remaining gas system costs. The Company should be carefully planning to reduce the risk of this inequitable outcome.

Q28 Has Connecticut formalized other planning processes that set a pathway for building sector decarbonization?

A28 Yes. The state's electric and gas utilities proposed their Conservation and Load Management Program (CLMP) for 2022–2024, which was approved in 2022 and then updated in 2023 and 2024. The CLMP generally emphasizes the use of heat pumps for space and water heating as a central component for its decarbonization strategy, a top priority for this plan's term. In 2024, the utilities reported that heat pump activity was ahead of the initial plan and that they will expand heat pump technology offerings to include air-to-water heat pumps. In the 2023 and 2024 updates, the utilities proposed to explore additional incentives for commercial and industrial heat pumps and to end incentives for natural-gas-fired appliances in new construction to "move toward an all-electric new construction package" and "unambiguously support electrified heating." [4] The CLMP clearly demonstrates the State's commitment and plan to implement electrification as a primary strategy to decarbonize the building sector.

Q29 Is DEEP preparing another publication related to gas planning?

A29 Yes. DEEP published its Priority Climate Action Plan (PCAP), which it submitted to the U.S. Environmental Protection Agency (EPA) on August 1, 2024.[5] DEEP prepared the PCAP as a requirement to be eligible for implementation funds for the federal Climate Pollution Reduction Grant program funded by the Inflation Reduction Act. The PCAP is designed to align with the State's decarbonization plans already discussed. The plan supports the increased adoption of heat pumps and heat pump water heaters statewide to decarbonize the building sector through incentive programs.[6] It also emphasizes the need for expanded energy efficiency programs and highlights the potential for networked geothermal systems to contribute to building decarbonization.[7] Networked geothermal systems use electric heat pumps to move heat in and out of shared underground heat reservoirs. Regardless of the CES publication schedule and any changes to the Climate Pollution Reduction Grant program, DEEP has used this plan to build on its vision for deep decarbonization in Connecticut.

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[4] DEEP. June 23, 2023. "Determination: Approval with Conditions of the 2023 Update to the 2022-2024 Conservation and Load Management Plan;" Eversource Energy, United Illuminating, Connecticut Natural Gas Corporation, and Southern Connecticut Gas. November 1, 2022. "2023 Plan Update to Connecticut's 2022-2024 Conservation & Load Management Plan;" Eversource Energy, United Illuminating, Connecticut Natural Gas Corporation, and Southern Connecticut Gas. November 1, 2023. "2024 Plan Update to Connecticut's 2022-2024 Conservation & Load Management Plan."

[5] DEEP. August 2024. "EPA Climate Pollution Reduction Grant Planning Grant First Deliverable: A Priority Climate Action Plan."

[6] *Id*. at page 87.

[7] *Id*. at page 96-97 and 111-112.

Q30 Has DEEP taken specific actions to support the increased adoption of heat pumps?

A30 Yes. CT DEEP led a coalition of New England agencies and state energy offices in applying for a CPRG implementation grant to implement measures in the building sector. In the summer of 2024, the coalition was awarded $450 million to enact their New England Heat Pump Accelerator initiative, which aims to promote various heat pumps for space and water heating for the single-family and multifamily sectors through customer and distributor incentives. The Accelerator will be implemented through three hubs—a Market Hub, Innovation Hub, and Resource Hub—all aimed at promoting cold-climate air source heat pumps, heat pump water heaters, and ground source heat pumps.[8] The Market Hub will provide a regional-scale $270 million midstream incentive program.[9] The Innovation Hub will focus on funding large-scale state initiatives and smaller community-based projects that address barriers for heat pump adoption in low-income and disadvantaged communities, while tracking adoption in the region.[10] The Resource Hub will provide resources for customers and contractors, while tracking heat pump adoption in the region.

Q31 Has the PURA recognized a need to address the energy transition?

A31 The Commission has recognized the need to address climate concerns, noting that the review of rates is guided in part by the principle that the rates be "sufficient, but no more than sufficient to cover their operating and capital costs, to attract capital, and yet provide appropriate protection to the relevant public interests,

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[8] U.S. Environmental Protection Agency. "General Competition Selected Applications Table." 2024f. Available at: https://www.epa.gov/inflation-reduction-act/general-competition-selected-applications-table.

[9] CT DEEP. "Request for Information and Notice of Technical Conference To Support Program Design of the New England Heat Pump Accelerator Program." 2025. Available at: https://portal.ct.gov/-/media/deep/energy/new-england-heat-pump-accelerator/ne-heat-pump-accelerator-request-for-information-172025.pdf?rev=38945042f6544ff6a26dee9595662915&hash=4480B91D87C382D99D942CD46B257470.

[10] Ibid.

both existing and foreseeable."[11] In the November 2024 decision in Docket No. 23-11-02, PURA ordered that in Connecticut Natural Gas and Southern Connecticut Gas's next rate applications, they should include the impact of Connecticut's GWSA reduction targets when preparing their five-year capital investment plan and required a separate set of depreciation rates that factor in the impact of the Act.[12]

B. Energy transition in other jurisdictions

Q32 Have policymakers and regulators in other jurisdictions with comparable GHG reduction objectives analyzed options for managing the energy transition?

A32 Yes. We think that the most relevant analyses for Connecticut are those conducted by Massachusetts and New York. These two states provide highly relevant examples because they are neighboring states with similar climates and economies and have similar goals of achieving net-zero emissions by 2050, which are comparable to Connecticut's objective of an 80 percent reduction in emissions by 2050. Maryland, Illinois, Minnesota, Colorado, and Ontario also offer relevant examples as those jurisdictions have recently addressed similar questions relating to decarbonization and the future gas as those facing Connecticut.

Q33 What do you see as the major implications of the energy transition for gas utilities, based on progress in other jurisdictions?

A33 As demonstrated by the regulatory proceedings in seven relevant jurisdictions that are summarized in this section, utility commissions are increasingly recognizing that business-as-usual approaches to managing the gas system cannot continue. The major implications of the energy transition for gas utilities are:

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[11] PURA. November 18, 2024. Docket No. 23-11-02, *Application of Connecticut Natural Gas Corporation and the Southern Connecticut Gas Company to Amend Their Rate Schedule, Decision*, p. 7.

[12] PURA Docket 23-11-02, page 228.

- The future of gas consumption and gas utility asset utilization will not look like the past or present. Energy delivered by the gas system will fall substantially, and the building sector share of gas consumption will fall (Massachusetts, New York, Maryland, Ontario, Illinois).

- Business-as-usual approaches to accelerated leak-prone pipe replacement are not justified. Capital investments should not be made until they are shown to be superior to alternatives that incorporate repair, retirement, or NPAs such as efficiency and electrification (Massachusetts, New York, Maryland, Illinois). In addition, there are higher levels of analysis (New York) and reporting (Illinois, Massachusetts) being required to justify gas capital investments.

- The recovery of invested capital over a smaller volume of sales will mean higher gas distribution rates and increased competition from electricity. The extent of these gas rate increases can be reduced by changes to the utility's approach to capital investment, repairs, retirement, and depreciation (Massachusetts, New York).

- Utilities have a responsibility to undertake prudent planning and investment actions to adapt to the energy transition, taking into account the timeframe of that transition and how it relates to the lifetime of gas assets. Failure to make prudent capital decisions increases stranded-asset risk, which may be borne by customers and/or investors (Massachusetts, Maryland, Ontario).

Q34 Which of these issues are most relevant to address in gas utility rate cases such as this case?

A34 The areas that are most relevant in a rate case context are capital planning/investment choices and depreciation. Among the cases we addressed above, these issues were discussed most in depth in Massachusetts's Case No. 20-80 process and Order, although these issues have also been raised in the other jurisdictions. Regarding capital planning and investment choices, a rate case is the venue for prudence review, in which past utility decisions are evaluated.

Rate cases with future test-year or multi-year ratemaking approaches typically include some kind of pre-approval process which should also be informed by the best available projection of the future state of the gas system. In practice, it appears to be difficult for regulators who have agreed to include assets in a multi-year plan to look back at the planning decisions and decide they were imprudent, so it is important for regulators to bring a prudence lens to bear even for pre-approvals.

Leak-prone pipe replacement programs have long planning horizons and the utilities have been executing on these programs and replacing pipes based on analysis conducted several years ago. There is a risk that these analyses are outdated and no longer reflect current and projected conditions. Long-term plans, with updated analysis that factors in the impacts of emission reduction mandates and the impacts of the energy transition, are required before continued investment in gas infrastructure could be shown to be prudent.

Regarding depreciation, a rate case is the venue for determining a fair depreciation rate that appropriately balances present versus future ratepayer contributions to the cost of infrastructure. If assets will be used differently and by a different blend of ratepayers in the future, then depreciation rates and analysis should account for these changes as part of a clear and consistent plan for energy transition.

<u>Massachusetts</u>

Q35 Could you please summarize the state of energy transition planning in Massachusetts?

A35 In 2020, the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) developed multiple decarbonization roadmaps and analyses: the

2050 Decarbonization Roadmap (2050 Roadmap)[13] and the Clean Energy and Climate Plan (CECP) for 2025 and 2030.[14] The EEA followed up with a CECP for 2050 in 2022. [15] Together they establish and analyze potential pathways for Massachusetts to navigate the energy transition to meet its statutory goal of net-zero emissions by 2050 and a reduction of at least 85 percent of gross emissions from 1990 levels, as well as its interim goals of 33 percent gross emissions reductions by 2025 and 50 percent by 2030.[16] The plans explore several pathways, and the use of pipeline gas declines in all of them. They highlight the need for the rapid adoption of electric heat pumps to meet interim targets and ultimately 2050 goals, as half of all residential households and three-quarters of residential space in the Commonwealth is heated with natural gas. They generally prioritize cleaner electricity generation over reliance on lower-carbon fuels to decarbonize the energy system. Because lower-carbon fuels have not been produced at scale, the plans see them as risky and recommend that alternative fuels from biological feedstocks and hydrogen play only a "modest but important role in specialized applications such as high-temperature industrial uses and as a fuel for electricity generation to ensure reliability when other clean energy resources are not available."[17] The plans highlight the need for gas utilities to adapt their business models and reform their retail rate structures and gradually retire and decommission assets as throughput declines to achieve a managed and manageable energy transition that mitigates significant increases to gas distribution rates.

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[13] Massachusetts Executive Office of Energy and Environmental Affairs. *Massachusetts Decarbonization Roadmap*. 2020 Available at: https://www.mass.gov/info-details/ma-decarbonization-roadmap.

[14] Massachusetts Executive Office of Energy and Environmental Affairs. *Massachusetts Clean Energy and Climate Plan for 2025 and 2030*. 2020. Available at: https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2025-and-2030.

[15] Massachusetts Executive Office of Energy and Environmental Affairs. *Massachusetts Clean Energy and Climate Plan for 2050*. 2022. Available at: https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2050.

[16] Global Warming Solutions Act, St. 2008, c. 298.

[17] Massachusetts Executive Office of Energy and Environmental Affairs. *Massachusetts Clean Energy and Climate Plan for 2050*, 2022. page xviii. Available at: https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2050.

Q36 Have there been any gas-utility-specific dockets in Massachusetts that address energy transition planning?

A36 In 2020, the Massachusetts Department of Public Utilities (DPU) opened Case No. 20-80 as part of the state's broad planning process to meet net-zero emission targets. The DPU sought to "develop a regulatory and policy framework to guide the evolution of the gas distribution industry in the context of a clean energy transition that requires the Department to consider new policies and structures to protect ratepayers as the Commonwealth reduces its reliance on natural gas."[18]

In this proceeding, the DPU ordered Massachusetts's gas utilities to hire an independent consultant to examine the 2050 Roadmap and strategies to achieve net-zero emissions. The consultants published a final report on March 18, 2022, which analyzed customer costs, rate base and revenue, and impacts of targeted electrification on potential asset retirements.[19] In every pathway, gas throughput declines in the state. That consistently demonstrated decline shows the need to transform customer end uses, energy supply, and networks, while increasing gas and electric utility coordination to manage the shift. The report recognized that building electrification would be essential to achieving net-zero emissions and that customers would need to use electricity for most heating needs.[20] The consultants recommended that the gas utilities promote a hybrid electrification strategy using air-source heat pumps for most heating needs but using gas for supplemental heating needs in extreme cold. [21] They also highlighted that targeted electrification provides an opportunity to reduce gas system investments and therefore mitigate the risks of stranded assets and cost recovery challenges that were significant in several pathways.

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[18] *Order on Regulatory Principles and Framework*, DPU-20-80-B (December 6, 2023) ("Order 20-80") page 4. (Attached as Exhibit OCC-ASH-03)

[19] E3 and Scott Madden. *The Role of Gas Distribution Companies in Achieving the Commonwealth's Climate Goals Independent Consultant Report: Technical Analysis of Decarbonization Pathways*. 2022. Available at: https://thefutureofgas.com/content/downloads/2022-03-21/3.18.22%20-%20Independent%20Consultant%20Report%20-%20Decarbonization%20Pathways.pdf.

[20] *Id*. at 82.

[21] *Id*. at 63.

The gas utilities' consultants explicitly addressed the regulatory and planning approaches and tools that Massachusetts would need to successfully achieve net-zero emissions and transition its economy.[22] Recommendations included:

- minimizing or avoiding gas infrastructure projects to reduce costs by using solutions such as targeted electrification and NPAs and creating a framework for joint gas and electric system planning;
- reviewing line extension policies and practices to reduce ratepayer risk of supporting uneconomic line extensions;
- exploring better alignment of infrastructure cost recovery with gas system utilization under decarbonization strategies (including modeling unrecovered rate base in each of several scenarios); and
- tailoring regulatory changes to the timeframes relevant to the pathway being pursued to ensure that regulatory changes can be pursued and effectively implemented with the timelines established in the pathways analyses and Commonwealth goals.

Q37 What are the DPU's findings and directives thus far in Docket No. 20-80?

A37 In 2023, the DPU issued an Order on Regulatory Principles and Framework (Order 20-80) in that proceeding, which contained conclusions about the 2050 Roadmap and CECP's implications for the gas system.

The DPU concluded that RNG did not meet the Department's least-cost supply planning standards and that there are insufficient stocks to support pathways dependent on RNG.[23] Similarly, the order states that only targeted end uses may

[22] E3 and Scott Madden. *The Role of Gas Distribution Companies in Achieving the Commonwealth's Climate Goals Independent Consultant Report: Considerations and Alternatives for Regulatory Designs to Support Transition Plans*. Chapters 4 and 5. 2022. Available at: https://thefutureofgas.com/content/downloads/2022-03-21/3.18.22%20-%20Independent%20Consultant%20Report%20-%20Regulatory%20Designs.pdf.

[23] *Id*. at 68.

rely on hydrogen.[24] The DPU rejected the consultants' recommendation that the gas utilities should promote hybrid electrification. Instead, the DPU stated that no additional ratepayer dollars can be used for hybrid heating systems and funds should be directed to targeted electrification and networked geothermal. (The DPU noted that it did not believe it had the authority to reject hybrid heating outright.[25]) The DPU indicated its focus on a pathway with less reliance on the gas system going forward than anticipated initially by the 2050 Roadmap and CECPs.

Order 20-80 specifically directs local gas distribution companies (LDC) to:

- File Climate Compliance Plans (CCP) every five years beginning April 1, 2025, as well as Climate Act Compliance Term Report Filings to show whether they have met their required emissions reductions. [26] Each plan must include total investments as well as an analysis and cost estimate for alternative potential investments. The DPU further noted that it anticipates the CCPs will "serve as actionable, enforceable plans for future actions, not merely a summary of existing plans and processes."[27] LDCs must also include a discussion on six key principles recommended by the Massachusetts Department of Energy Resources: consistency with already existing targets and orders, inclusion of actions that are concrete, quantifiable and measurable, inclusion of metrics to track progress, adherence to a standardized format, inclusion of equity analysis for Environmental Justice populations, and stakeholder accountability and transparency.[28]

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[24] *Id*. at 84.
[25] *Id*. at 80–81.
[26] *Id*. at 133–135.
[27] Massachusetts Department of Public Utilities. Memorandum re: LDC Climate Compliance Plans" January 24, 2025.
[28] Massachusetts Department of Energy Resources, "DOER Recommendation to LDCs on Climate Compliance Plans" August 21, 2024.

- Review and report on their current line extension practices and policies including historical number of new customer connections to the gas system, no-charge line extension allowances, and methods for calculating customer contributions in aid of construction.[29]

- Forecast the potential magnitude of stranded investments and the impacts of alternative depreciation methods.[30]

- Propose at least one targeted electrification demonstration project that decommissions an area of the gas system in coordination with the relevant electric distribution company.[31]

- Before they can recover the replacement costs, prove that any investments made to replace parts of their systems are consistent with state emissions reduction targets; that they have been made following adequate consideration of NPAs that use electrification, thermal networked systems, targeted energy efficiency, and demand response; and that replacement was the best alternative.[32]

Q38 What actions have gas utilities in Massachusetts taken to comply with Docket DPU 20-80?

A38 In compliance with Order 20-80, LDCs have made progress on addressing future of gas issues in many areas including but not limited to line extension allowances, evaluation of NPAs, and exploring alternative investments through pilot projects.

Concerning line extensions, LDCs filed testimony and documents explaining their current line extension policies and practices in August 2024. The DPU invited

[29] Order 20-80, page 99.
[30] *Id*. at 101.
[31] *Id*. at 87.
[32] *Id*. at 97–98.

other parties to comment on a list of questions pertaining to LDCs' line extension policies.[33] Following these submissions, the DPU issued a memorandum in February 2025 with proposed revisions to the current gas line extension policies.[34] Stakeholders have the opportunity to comment on the proposed line extension policy through the end of March.[35]

Concerning the DPU's recommendations around NPAs from Order 20-80, LDCs and other stakeholders formed a working group to establish an NPA framework for assessing alternatives to traditional infrastructure projects. Topics for discussion in the NPA Working Group included NPA criteria, benefit-cost analysis, LDC application of an NPA framework, community integration, workforce impacts, and timelines for implementing NPA projects.[36] LDCs, including Yankee Gas' parent company, Eversource, jointly developed an NPA framework that was presented in this working group for stakeholder review.[37] LDCs will revise the NPA framework, taking stakeholder feedback into account, and ultimately submit it to the DPU for review.

Concerning targeted electrification, National Grid submitted a proposal for a targeted electrification demonstration project at the end of 2024 that implements residential electrification to avoid the replacement of multiple segments of leak-prone pipe.[38] The proposed project would take place in Leominster and Winthrop

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[33] DPU. *Memorandum: Line Extension Policies of Gas Local Distribution Companies*. June 14, 2024, Available at: https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/19211932.

[34] DPU. *Procedural Notice and Request for Comments Regarding Policies and Practices for Proposed Line Extension Allowances and Contributions in Aid of Construction for Gas Local Distribution Companies.* February 5, 2025. Available at: https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/19883930.

[35] *Id.*

[36] Apex Analytics, NPA Stakeholder Facilitators. "NPA Working Group Charter." October 22, 2024.

[37] Joint Massachusetts LDCs (Berkshire Gas, Eversource, Liberty Utilities, National Grid, Until). *NPA Framework*. January 15, 2025.

[38] Boston Gas Company and Massachusetts Electric Company, each d/b/a National Grid. *Exhibit TEP-2 Targeted Electrification Demonstration Program Implementation Plan*. December 6, 2024. Docket No. 24-194. Available at: https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/19877298.

in an area with 14 segments of leak-prone pipe that serve 118 customers.[39] Full customer participation would allow National Grid to decommission the segments of pipe (decommissioning of some segments might be possible even without full customer participation).[40] For participating customers, National Grid would cover the full upfront costs of converting to electric appliances and offer a bill credit for any net increases in customers' total energy bill for the first five years.[41]

Q39 What are the specific lessons for gas utility planning that you draw from the Massachusetts experience?

A39 We think it is particularly important to note that Massachusetts utilities and their regulators are not waiting until there are substantial changes in gas consumption patterns in order to study and make key initial decisions about the future of the gas utilities in the state.

The DPU has laid out a set of clear, reasonable steps to change traditional utility planning processes and limit risk for the utility and ratepayers. These steps require the participation of the gas companies and stakeholders to develop updated planning processes and consider alternatives to gas infrastructure investments. Gas companies are also required to evaluate and plan for investments within the context of the overall energy transition in coordination with electric companies, rather than independently as has historically been the case. By explicitly requiring the utilities to take the prudent step of evaluating all investments against alternatives, the DPU emphasized that less-rigorous approaches based on historical practice are not consistent with prudent investment decisions in the context of energy transition.

Another insight we find important from the DPU’s Order is that dependence on lower-carbon fuels would not create a cost-effective or reliable path forward, and

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[39] *Id*. at 8.
[40] *Id*. at 9.
[41] *Id*. at 30.

that the focus should be on harnessing the output of renewable electricity generation accompanied by electrification and efficiency measures. In particular, a net-zero future requires accelerated, short-term efforts to increase electric clean-heat services to meet the interim targets on the way to achieving longer-term goals. This approach needs to include a coordinated effort among gas and electric utility companies to downsize sections of the gas system. All reliable, cost-effective paths forward involve substantial reductions in natural gas consumption, meaning that the paradigm for gas system planning must change.

New York

Q40 Could you please summarize the state of energy transition planning in New York?

A40 Under the 2019 Climate Leadership and Community Protection Act (CLCPA), all sectors of the state's economy are collectively required to achieve 40 percent GHG emissions reductions from 1990 levels by 2030 and to achieve 85 percent emissions reductions and net-zero emissions by 2050. Per the CLCPA and its emissions reduction goals, the New York State Energy Research and Development Authority (NYSERDA) and New York State Department of Environmental Conservation commissioned a draft climate scoping plan. The CLCPA also created a new appointed body, the Climate Action Council (CAC), to prepare the scoping plan. The draft plan modeled statewide and economy-wide benefits, costs, and GHG emissions reductions in different scenarios that could achieve the emissions goals, known as the Integration Analysis. A business-as-usual scenario and initial scenario based on CAC recommendations were not found to meet those goals, leading to the modeling of three additional scenarios. The Integration Analysis concluded that widespread building electrification, decarbonized electricity, and aggressive energy efficiency measures are essential to achieving CLCPA targets. The final climate scoping plan, published in December 2022, calls for greater levels of electrification than the draft plan along with statewide fossil gas use reductions of at least 33 percent by 2030 and by 57 percent by 2035.[42] The final plan accordingly contains a full chapter on the gas system transition and recommends a well-planned, strategic downsizing of the gas system.[43]

Q41 What steps has New York taken to address gas-utility-specific issues related to the energy transition?

A41 In 2020, New York's Public Service Commission opened a gas planning proceeding (Case 20-G-0131) to "establish planning and operational practices that best support customer needs and emissions objectives while minimizing infrastructure investments and ensuring the continuation of reliable, safe, and adequate service to existing customers."[44] The Commission issued a Gas Planning Order as part of this docket that creates and defines a process for long-term gas planning that requires the gas utilities to file long-term plans every three years and file annual reports in interim years.[45] Long-term plan analyses are to include geographically granular 20-year demand and supply forecasts. Utilities must consider energy efficiency and NPAs as part of their plan, including an NPA-only (no new gas infrastructure) scenario unless they can present sufficient evidence that such a scenario is not feasible. The plans must evaluate and compare these alternatives using benefit-cost analysis, bill impact analysis, and emissions impacts. Annual reports also must include information that will allow clean heat developers to target programs at areas with leak-prone pipe or which need infrastructure improvements to improve or maintain reliability.

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[42] New York State Climate Action Council. *Scoping Plan Full Report*. 2022. Available at https://climate.ny.gov/-/media/Project/Climate/Files/NYS-Climate-Action-Council-Final-Scoping-Plan-2022.pdf.

[43] *Id*. at 250–363.

[44] State of New York Public Service Commission. *Order Instituting Proceeding*. March 19, 2020. Case 20-G-0131 - Proceeding on Motion of the Commission in Regard to Gas Planning Procedures. Page 4. Available at: https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={2BE6F1CE-5F37-4A1A-A2C0-C01740962B3C}.

[45] State of New York Public Service Commission. *Order Adopting Gas System Planning Process*. May 12, 2022. Case 20-G-0131 and Case 12-G-0297. Available at: https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={130B05B5-00B4-44CE-BBDF-B206A4528EE1}.

Under the same proceeding, the PSC requested Commission Staff to propose revisions to New York's line extension policies, Title 16 of New York Code of Rules and Regulations (NYCRR) Part 230. Staff's proposed revisions to the length of 'entitlements' (the length of pipe provided free-of-charge to new customers by default) and the calculation of customer contributions in aid of construction when the line extension exceeds the length of the entitlement.[46] Stakeholders submitted comments on the staff's proposal at the end of 2024, and the policy revisions are now under Commission review.

Q42 Have New York utilities begun implementing NPAs?

A42 Yes. New York State Electric and Gas (NYSEG) (a sister utility to the Company in this case) is developing a process for implementing a portfolio of NPAs. In 2022, NYSEG introduced a Request for Proposals for NPAs in the Canadaigua area to avoid a main reinforcement where the distribution system was near reaching maximum capacity.[47] NYSEG issued a similar request for proposals in 2019 in the Lansing area to avoid the need for a pipeline reinforcement project where delivery pressures have been at unacceptable levels during peak conditions. In 2022, NYSEG entered into contracts with six developers to create a portfolio of NPAs in the Lansing area including projects to install air-source and ground-source heat pumps, implement energy efficiency solutions, and implement a waste heat recovery program for a large industrial customer.[48]

Another New York utility, Con Edison, has completed electrification of 14 buildings through its Electric Advantage program (formerly called the "Whole

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[46] State of New York Public Service Commission. Staff Straw Proposal Regarding Modification of 16 NYCRR Part 230. July 16, 2024. Case 20-G-0131. Available at: https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=62227&MNO=20-G-0131.

[47] NYSEG. "Non-Pipe Alternatives." Accessed December 28, 2023. Available at: https://www.nyseg.com/ourcompany/reliableservice/reliability-projects/non-pipe-alternatives.

[48] NYSEG. "Lansing Non-Pipes Alternatives (NPA) Portfolio." 2022. Available at: https://www.nyseg.com/documents/40132/5899449/22-5069+NYSEG+Lansing+Non-Pipes+Alternatives_12.30.22.pdf/.

Building Electrification Service").[49] The Company has two additional NPA programs, the Energy Exchange Program which targets NPAs for low-usage customers, and the Area Load Relief Program which targets NPAs for areas with capacity constraints; although neither had successfully implemented any NPAs as of November 2024.[50]

The Gas Planning Order required all LDCs to develop NPA screening and suitability criteria to assess infrastructure projects above a certain cost threshold.[51] However, other utilities have not made as much progress on NPA implementation as Con Edison and NYSEG.

Regulatory Action in Other States and Provinces (Maryland, Illinois, Colorado, Minnesota and Ontario)

Q43 Are there other jurisdictions where gas-utility-related issues have recently been addressed which you think are relevant to this case?

A43 Yes. Recent gas utility rate cases in Maryland, Illinois, and Ontario have featured extensive discussion of energy transition issues, and the regulators in those proceedings have laid out important principles and findings that are relevant for this proceeding.

Maryland

Q44 Is Maryland's policy context similar to Connecticut's?

A44 Yes. Maryland's General Assembly set renewable energy goals in the 2019 Clean Energy Jobs Act (Senate Bill 516), which increased the total renewable energy

[49] Consolidated Edison. *Non-Pipes Alternatives Annual Expenditures & Program Report*. November 2024. Case 22-G-0065.
[50] *Id*.
[51] State of New York Public Service Commission. *Order Adopting Gas System Planning Process*. May 12, 2022. Case 20-G-0131 and Case 12-G-0297. Available at: https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={130B05B5-00B4-44CE-BBDF-B206A4528EE1}.

requirement to 50 percent by the year 2030, and the Climate Solutions Now Act (CSNA) of 2022 (Senate Bill 528), which set a goal of a 60 percent reduction in GHG emissions by 2031 and net-zero statewide GHG emissions by 2045. Recent legislation also requires that, in supervising and regulating public service companies, the Maryland Public Service Commission consider "the preservation of environmental quality, the protection of the global climate from warming, and the achievement of the State's climate commitments for reducing statewide GHG emissions."[52]

Maryland has a building energy performance standard (BEPS) for buildings over 35,000 square feet, which requires a decrease in both on-site GHG emissions and site energy intensity. Maryland's recently published Climate Pollution Reduction Plan lays out a suite of policies, including the BEPS, to meet the state's net-zero objective.[53] Other policies of particular relevance to the future of the gas system include expansion of the state's energy efficiency programs to include electrification, a zero-emission heating equipment standard that will require all new heating systems to produce no on-site emissions (so that gas equipment will need to be replaced with non-emitting equipment when it burns out), and a clean heat standard to ensure all remaining source of heat-related emissions are eliminated or reduced over time.

Q45 Are you aware of any gas utility cases in Maryland in which the parties and the Commission explored energy transition issues?

A45 Yes, the Public Service Commission of Maryland explored energy transition issues in Baltimore Gas and Electric Company's application for a multi-year rate plan, Case No. 9692.

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[52] *Order on Application for a Multi-Year Rate Plan*. Maryland PSC-9692.December 14, 2023. Pages. 83-84.

[53] Maryland Department of the Environment. *Maryland's Climate Pollution Reduction Plan*. 2023. Available at https://mde.maryland.gov/programs/air/ClimateChange/Maryland%20Climate%20Reduction%20Plan/Maryland%27s%20Climate%20Pollution%20Reduction%20Plan%20-%20Final%20-%20Dec%2028%202023.pdf.

Q46 What did the Maryland Public Service Commission rule with regard to the future-of-gas-related issues that arose in this case?

A46 When evaluating BGE's reconciliation proposal for its first multi-year plan, the Commission generally cautioned BGE to prioritize risk reduction and cost-effectiveness, account for rapidly changing current and future State and federal policies, and to proactively consider NPAs for effective system planning in the future. This entails evaluating market force changes that may impact the useful life of the gas assets. In light of Maryland's recent policies, the Commission also set a higher allowed return on equity for electric distribution (relative to gas) to reflect policy shifts toward downsizing the gas system.[54] The slightly lower gas return on equity is intended to incentivize BGE, a dual-fuel utility, to invest in its electric distribution system rather than gas distribution.

In looking at specific components of the multi-year plan, the Commission implemented reporting requirements for leak-prone pipe replacement projects historically associated with BGE's Strategic Infrastructure Development and Enhancement program (STRIDE).[55] Though the Commission approved continued investment through this program, the reporting requirements aim to ensure the projects appropriately target leak reduction and are necessary projects. The Commission rejected BGE's plan to use pipe replacement as its only strategy to comply with federal transmission safety rules (PHMSA), because the company *did not show it had sufficiently considered potentially lower-cost options, and the* expensive strategy BGE proposed was "incongruous" with and demonstrated little-to-no consideration for the long-term future of gas infrastructure in Maryland.[56] The Commission similarly denied authorization for BGE's two-phase gas meter conversion project because of its risk to ratepayers and lack of analytical support.[57] Maryland's climate policies make investing in the wholesale

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[54] *Order No. 90948 on Application for a Multi-Year Rate Plan*. Maryland PSC-9692, p. 119–132. December 14, 2023, page 242.
[55] *Id*. at 119–132.
[56] *Id*. at 143.
[57] *Id*. at 150.

replacement of BGE’s suite of gas meters impractical as there is a significant possibility BGE will have fewer gas customers as Maryland nears its 2045 emissions reduction milestone.

Q47 What steps has Maryland taken to comprehensively address gas-utility-specific issues related to the energy transition?

A47 On February 9, 2023, the Maryland Office of People's Counsel (OPC) petitioned the PSC to initiate a proceeding to address gas planning, stating that the gas companies' "escalating capital spending" was out of line "with technological and economic trends toward the replacement of fossil gas with electricity, Maryland's GHG reduction goals, and Maryland's evidence-backed policy to convert buildings to electricity to meet the challenge of climate change." The OPC proposed the initiation of a two-track Future of Gas proceeding.[58] One track would focus on long-term system planning, such as the future role of gas utilities, the mitigation of potential stranded costs, and the maintenance of reliability and safety as gas demand and utility revenues decline. The other track would cover shorter-term, priority actions that the Commission should take in the near term to align current gas operations with the "widely accepted" fact that gas sales will decrease due to cost-effective electrifying technology and state climate policies.

The PSC opened case No. 9707 to solicit comments on the OPC's petition and held a public hearing on July 25, 2024, for parties to present priorities and concerns for the future of gas and the OPC’s proposal.[59] The OPC and other stakeholders, including a sizeable coalition of non-profits, supported the initiation of this proceeding to address the future of gas in Maryland. These parties highlighted their concerns about the gas utilities' continued pursuit of capital

[58] Office of People’s Counsel. Petition of the Office of People's Counsel for Near-Term, Priority Actions and Comprehensive, Long-Term Planning for Maryland's Gas Companies, February 9, 2023, at page 1.
[59] Maryland Public Service Commission. Notice of Comment Hearing. Case No. 9707. May 20, 2024.

investments and programs that do not account for the CSNA's "stark" implications for Maryland's gas system and other state policy requirements.[60]

Illinois

Q48 Is Illinois's policy context similar to Connecticut's?

A48 Yes. Illinois joined a group of states in the U.S. Climate Alliance in 2019, committing the state to the Paris Agreement's emissions reduction goals and aligning Illinois with the decarbonization pathways the country aimed to follow more broadly, which require building electrification. Through the Paris Agreement, members of the U.S. Climate Alliance commit to reducing gas emissions by at least 26–28 percent below 2005 levels by 2025.[61] Illinois has also passed the Climate and Equitable Jobs Act (CEJA), which requires the electricity industry to achieve zero-emissions by 2045 and allows an electric utility to "offer and promote measures that electrify space heating, water heating, cooling, drying, cooking, industrial processes, and other building and industrial end uses that would otherwise be served by combustion of fossil fuel at the premises provided that [it] reduce[s] total energy consumption at the premises."[62] The Illinois Commerce Commission also demonstrated its commitment to ensuring that gas companies plan for the transition of the gas system in its recent decision in the People's Gas Light and Coke Company rate case, Case 23-0069.[63]

[60] Comments by The Non-Profit Organizations. Case No. 9707. October 24, 2023, pages 5-6.
[61] Illinois Environmental Protection Agency, "U.S. Climate Alliance." Accessed: https://epa.illinois.gov/topics/climate/climate-alliance.html#:~:text=%E2%80%8B%E2%80%8BOn%20January%2023,Paris%20Agreement%20(the%20Agreement).
[62] Illinois General Assembly, Public Act 102-0662.
[63] Final Order, *The Peoples Gas Light and Coke Company Proposed general increase in rates and revisions to service classifications, riders, and terms and conditions of service.* ICC 23-0069. November 16, 2023.

Q49 What were the outcomes in the People's Gas rate case that are relevant context for this case and the Company's capital planning?

A49 The Commission assessed and ultimately rejected People's Gas's request for approval of $265 million for its Safety Modernization Program (SMP) to replace leak-prone pipe because the Company did not justify its proposed spending level for the SMP.[64] The program's high level of new pipe installation and magnitude of investments were raised as concerns in the case, as well as the slow pace of both replacements and retirements of pipe on the system. Over the previous five years, People's Gas had installed 75 percent more pipe than it retired in the SMP, but also only replaced 59 miles of high-risk pipe for years between 2018 and 2022; this put the utility on pace to take until 2049 to replace all of its existing high-risk pipe.[65] The Commission ordered a new investigation into the program due to failure to prioritize high-risk neighborhoods and to consider alternatives to pipe installation.[66] It then ordered that the SMP be paused until the determination of a method for replacing certain high-risk pipe and a prudent investment level in a separate proceeding.[67]

Q50 What steps has Illinois taken to comprehensively address gas-utility-specific issues related to the energy transition?

A50 As required in the Commission's Final Order in the People's Gas rate case discussed above, in 2024, the ICC opened a "Future of Gas" proceeding, Docket 24-0158, to explore the future of the gas system as the state transitions toward a cleaner energy future. The proceeding is split into two phases. Phase One consisted of several working group meetings to determine the scope and topics that would be covered in Phase Two. Phase Two will investigate the feasibility and economic impact of different decarbonization pathways and explore

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[64] Final Order, *The Peoples Gas Light and Coke Company Proposed general increase in rates and revisions to service classifications, riders, and terms and conditions of service.* ICC 23-0069. November 16, 2023 at 28-29.
[65] *Id*. at 28.
[66] *Id*. at 29.
[67] *Id*.

regulatory next steps.[68] The topics for discussion in this proceeding include strategies for decarbonizing the gas system such as NPAs, solutions for hard-to-electrify customers, integrated gas and electric planning, mitigating stranded assets, protecting ratepayers from bearing disproportionate costs, line extension policies, and more. As these proceedings continue, the State will gain a better picture of how the gas system will evolve and how utilities should plan to transition customers and territories to electricity.[69]

As part of this process, the ICC has directed each gas utility to file a Long-Term Gas Infrastructure Plan on a biennial basis starting in 2025, which the utilities are working on drafting and workshopping. These plans must include comprehensive detail of their proposed investments and infrastructure needs to assist the Commission in conducting a more "informed" view of future rate requests by Illinois's gas companies.[70]

Minnesota

Q51 Is Minnesota's GHG reduction objective context similar to Connecticut's?

A51 Yes. In 2007 Minnesota passed the Next Generation Energy Act, which required the state to reduce GHG emissions by 80 percent between 2005 and 2050 while maintaining reliable and affordable energy. In 2023, the Minnesota legislature updated these goals to reduce GHG emissions 50 percent by 2030 from a 2005 baseline and achieve net-zero emissions by 2050.[71] The State has also developed a Climate Action Framework, which it planned to continue to update through 2025.

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[68] Illinois Commerce Commission, Initiation of Proceeding to Examine the Future of Natural Gas and Issues Associates with Decarbonization of the Gas Distribution System. Docket No. 24-0158. March 7, 2024.

[69] Illinois Commerce Commission. Future of Gas Phase 1 Workshops Facilitator Report to the Commission. July 29, 2024. Docket No. 24-0158.

[70] Final Order, *The Peoples Gas Light and Coke Company Proposed general increase in rates and revisions to service classifications, riders, and terms and conditions of service.* ICC 23-0069. November 16, 2023, at 119.

[71] State of Minnesota. Greenhouse Gas Emissions. Accessed February 24, 2025: https://mn.gov/mmb/one-mn-plan/measurable-goals/ghg-emissions.jsp.

The Climate Action Framework outlines immediate actions that can avoid the worst impacts of climate change and demonstrates a strategy to reduce GHG emissions by improving efficiency and accelerating the clean energy transition.[72]

Q52 What steps has Minnesota taken to comprehensively address gas-utility-specific issues related to the energy transition?

A52 In 2021, Minnesota passed the Natural Gas Innovation Act (NGIA), which directed the Minnesota Public Utilities Commission (PUC) to open two new proceedings to examine the future of the gas systems in the state. The first, Docket No. 21-566 serves to establish the analytical frameworks that the gas utilities can use to develop Innovative Resource Plans.[73] The gas utilities were able to present their "innovative" resources to achieve decarbonization at the PUC beginning in June 2021, including the deployment of strategic electrification using cold-climate air-source heat pumps, carbon-free ground-source district energy systems, and energy efficiency measures that go beyond the existing programming.[74] Alongside their Innovative Plans, the companies are required to submit utility system reports and forecasts with the innovation plans detailing infrastructure characteristics, projected capital and fuel investments, carbon emissions, and incentive programs with respect to fossil gas.[75] The second, Docket No. 21-565, is a broader proceeding to look at the future of gas, which has largely been on pause.[76]

While the second docket has been paused, the PSC has established an additional Integrated Resource Planning (IRP) docket (23-117) for gas utilities, which

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[72] State of Minnesota. Climate Action Framework. Accessed: https://climate.state.mn.us/minnesotas-climate-action-framework.

[73] Minnesota Public Utilities Commission. Order Establishing Preliminary Procedures for Implementing Minnesota's Natural Gas Innovation Act. CI-21-566. January 27, 2022.

[74] Minnesota Public Utilities Commission. Order Establishing Frameworks for Implementing Minnesota's Natural Gas Innovation Act. CI-21-566. June 1, 2022.

[75] 2024 Minnesota Statutes 216B.2427.11 Natural Gas Utility Innovation Plans.

[76] *See* State of Minnesota. Gas Resource Planning. Accessed: https://mn.gov/puc/activities/economic-analysis/planning/gas-irp/.

requires gas utilities to submit forward-looking plans with 10-year projections of demand for gas in their service territories and new customers.[77] Each utility must select two or three gas system expansion projects and conduct an Expansion Alternative Analysis evaluating the potential to use alternative resources such as electrification, efficiency measures, thermal energy networks, or NPAs.[78] These assessments must factor the emissions reductions including the social cost of carbon, and air quality for the alternatives. Utilities are also broadly required to consider Minnesota's GHG reduction goals and report their plans' emissions from both their upstream and gas distribution systems to ensure that the state has important data to identify potential further emissions reduction opportunities.[79]

<u>Colorado</u>

Q53 Is Colorado's policy context similar to Connecticut's?

A53 Yes. In 2019, Colorado enacted a statute that set economy-wide emissions reduction targets of at least 26 percent by 2025, 50 percent by 2030, and 90 percent by 2050 from 2005 levels. It then updated these targets in 2023 to 65 percent reductions by 2035, 75 percent by 2040, and net-zero GHG emissions by 2050.[80]

Q54 What steps has Colorado taken to comprehensively address gas-utility-specific issues related to the energy transition?

A54 Colorado's General Assembly passed SB 21-264 and set specific requirements for the state's gas distribution utilities to reduce GHG emissions by 4 percent in 2025 and by 22 percent by 2030 from a 2015 baseline. To demonstrate compliance, the

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[77] Minnesota Public Utilities Commission. In the Matter of a Commission Investigation into Gas Utility Resource Planning. Docket No. CI 23-117. March 27, 2024, page 5.

[78] Minnesota Public Utilities Commission. In the Matter of a Commission Investigation into Gas Utility Resource Planning. Docket No. CI 23-117. March 27, 2024, pages 11-12.

[79] Minnesota Public Utilities Commission. In the Matter of a Commission Investigation into Gas Utility Resource Planning. Docket No. CI 23-117. March 27, 2024, pages 11-12.

[80] HB 19-1261, 2019 Reg. Session (CO. 2019). https://leg.colorado.gov/bills/hb19-1261; SB 23-016, 2023 Reg. Session (CO. 2023). https://leg.colorado.gov/bills/sb23-016.

state's gas utilities are required to submit comprehensive Clean Heat Plans to the Public Utilities Commission (PUC) starting in 2023. Colorado gas utilities are required to submit comprehensive Clean Heat Plans that may include a mix of supply-side resources to replace traditional gas and demand-side resources that reduce customer use.[81] So far, the Commission has prioritized efficiency measures and beneficial electrification to address decarbonization over other measures that would encourage greater investment in gas infrastructure.[82]

SB 21-264 also required gas utilities to file biannual Gas Infrastructure Plans (GIP) to ensure that gas system investments are aligned with Colorado's long-term affordability and decarbonization goals.

Q55 What has the Colorado PUC ruled with regard to gas forecasting and future system investments?

A55 In April 2024, the PUC issued a decision on Xcel Energy's GIP, the first to be filed in the state, which demonstrated the Commission's commitment to achieving an affordable and decarbonized future and its expectation that the future involves less gas. The Commission directed Xcel Energy to account for local building electrification and other policies in its gas forecasting to ensure that the company was not over-projecting gas needs and out of alignment with climate targets and market trends.[83] The PUC made it clear that "legacy planning processes" would "no longer [be] acceptable nor in the best interest of the ratepayers."[84] It went on to say that should Xcel Energy push forward with investments in the gas system without GIP or other through review, "it is likely doing so at its own risk."[85]

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[81] SB 21-264, 2021 Reg. Session.
[82] Commission Decision Granting Application with Modifications, Requiring Filings, And Issuing Certain Directives To Guide Next Clean Heat Plan Filing. C24-0397. June 10, 2024, at page 22.
[83] Commission Decision Granting, In Part, And Denying, In Part, Application For Rehearing, Reargument, Or Reconsideration Of Commission Decision No. C24-0092. April 3, 2024. Page 19-20.
[84] *Id*. at 7.
[85] *Id*. at 33.

Q56 Has Colorado begun implementing NPAs?

A56 Yes. Xcel Energy filed its Mountain Energy Plan with the PUC in January 2025, which includes $47 million in funding for NPAs. The company has said that the project will help Colorado meet its energy targets, deliver carbon-free energy to customers, and enhance reliability. This is the company's largest NPA project to date and demonstrates the promise of deploying these alternatives at scale.[86]

Ontario

Q57 Is Ontario's GHG reduction objective context similar to Connecticut's?

A57 Yes. Ontario has established a relatively near-term target for GHG emission reduction: 30 percent below 2005 levels by 2030, which is somewhat less ambitious than Connecticut's 2030 target. Ontario, like Connecticut, is also subject to a federal objective of net-zero emissions by 2050. Canada's 2030 commitment is a 40 percent reduction from 2005 levels, which is comparable to Connecticut's objective of 45 percent below 2001 levels.

Q58 Are you aware of any recent gas utility cases in Ontario in which the parties and the Commission explored energy transition issues?

A58 Yes. These issues were considered in Phase 1 of Enbridge Gas's rate case, Ontario Energy Board (OEB) Case No. EB-2022-0200.

Q59 Did Enbridge consider the energy transition in its rate case filing?

A59 Yes, it did. Enbridge argued that its cost of equity capital is higher because of risk associated with the energy transition. Enbridge also contracted with two different consulting firms to study pathways to net-zero emissions for Ontario, which

[86] Xcel Energy, "Xcel Energy unveils first of its kind plan to provide safe, clean, reliable and affordable energy service in targeted mountain communities." January 16, 2025. Accessed: https://corporate.my.xcelenergy.com/s/about/newsroom/press-release/xcel-energy-unveils-first-of-its-kind-plan-to-provide-safe-clean-reliable-and-af-MC476LD6J74VGYNG7EINQSDBOPOE.

allows it to understand the range of possible levels of gas consumption that may be consistent with that target. Enbridge did not, however, quantify or model its business risk or stranded-asset risk associated with the energy transition. Enbridge proposed no energy-transition-related change in its approach to capital investment or depreciation.

Q60 What did the Ontario Energy Board rule with regard to energy transition and Enbridge's capital planning?

A60 The OEB "concludes that Enbridge Gas's proposal is not responsive to the energy transition and increases the risk of stranded or underutilized assets, a risk that must be mitigated. In particular, Enbridge Gas has not met the onus to demonstrate that its proposed capital spending plan, reflected in its Asset Management Plan, is prudent, and that it has accounted appropriately for the risk arising from the energy transition. Two important themes emerged during this proceeding:

- climate change policy is driving an energy transition that gives rise to a stranded-asset risk, and
- the usual way of doing business is not sustainable."[87]

Based on this finding, the OEB reduced Enbridge's overall proposed capital budget by $250 million and found that "[t]he current Asset Management Plan is not accepted as a basis to support the proposed capital investments."[88] The OEB further ordered that the utility no longer provide any cost-sharing for new customer connections, effective January 1, 2025, in order to eliminate stranded-asset risk associated with new connections. The OEB determined that Enbridge "needs to put more emphasis on monitoring, repairing and life extension of its

[87] OEB. *Decision and Order. Enbridge Gas Inc. Application for 2024 Rates – Phase 1*. EB-2022-0200. Pages 19-20. Available at https://www.oeb.ca/applications/applications-oeb/current-major-applications/eb-2022-0200.

[88] Id., page 2.

system so that replacement projects are only implemented where absolutely necessary in order to address the stranded asset risk in that context."[89] The OEB also ordered Enbridge to "carry out a risk assessment and to consider a range of risk mitigation measures, including:

- How Enbridge Gas would prune its existing system to avoid the replacement of assets
- What role Enbridge Gas's depreciation policy should play in reducing the stranded asset risk
- How Enbridge Gas will identify maintenance, repair and life extension alternatives to extend the life of existing assets instead of long-lived replacements that increase the stranded asset risk"[90]

IV. IMPLICATIONS OF THE ENERGY TRANSITION FOR REGULATION OF GAS UTILITIES

Q61 One of the major issues you identified to address in rate cases such as this one is capital investment planning and prudence review. Could you please describe the role of prudence review in utility ratemaking?

A61 Prudence review is the process by which regulators review utility investments and expenditures to provide the discipline on expenditures that the competitive marketplace would otherwise provide. Unlike a company in a competitive market, regulated public utilities earn a return on their rate base rather than from their ability to outcompete other firms in a free market. In a competitive market, if a company makes imprudent investments, it will earn a lower rate of return because competing firms that do not make that error will earn a greater market share, or the firm will otherwise have less revenue relative to its costs. In the regulated context, then, regulators must take steps to ensure that utilities prudently make

[89] Ibid.
[90] Ibid.

plans and support their decisions, including potentially disallowing imprudent investments, to impose the same kind of discipline.

Q62 Are there established principles about how to conduct prudence reviews?

A62 Yes. The Prudent Investment Test in the 1980s, a research report by Burns, Poling, Whinihan, and Kelly of the National Regulatory Research Institute published in 1985 (Exhibit OCC-ASH-04), contains a clear and cogent summary of the underlying philosophy and application of a prudence test for public utility investments. Of particular interest here are four principles for prudence reviews:[91]

- "[T]here should exist a presumption that the investment decisions of utilities are prudent. The presumption of prudence can be overcome, however, by the allegation of imprudence that is backed up by substantive evidence creating a serious doubt about the prudence of an investment decision.

- [U]se the standard of reasonableness under the circumstances. That is, to be prudent, a utility decision must have been reasonable under the circumstances that were known or could have been known at the time the decision was made. A corollary to the standard of reasonableness under the circumstance is a proscription against the use of hindsight in determining prudence.

- The proscription against hindsight makes it unwise for a commission to supplement the reasonableness standard for prudence with other standards that look at the final outcome of a utility's decision, though consideration of outcome may legitimately have been used to overcome the presumption of prudence.

- [D]etermine prudence in a retrospective, factual inquiry. The evidence needs to be retrospective in that it must be concerned with the time at which the decision was made."

[91] Exhibit OCC-ASH-04 at page *iv*. Nothing in these statements of principle should be taken as superseding state law, such as regarding a utility's burden of proof and persuasion.

Burns et al. also state that "[T]he concept of prudence protects the rights of individuals not in control of investment decision making. It does not require perfection in decision making but does require, for example, avoidance of deliberate exposure to substantial risk where the individuals not in control could suffer financially."[92]

Q63 Does Connecticut's approach to prudence review align with every aspect of Burns et al.'s principles?

A63 No. Each state takes its own approach and has its own case history for defining how prudence review is conducted and how burdens are assigned, and states need not agree with all of Burns et al.'s principles. We understand that in Connecticut there is no statutory basis for the presumption that utility decisions are prudent until rebutted by other evidence. In fact, it is our understanding that a Connecticut statute[93] explicitly places the burden upon a public service company to affirmatively prove that its proposed rate is just and reasonable. Accordingly, PURA has established that utilities have an obligation to make a positive showing that their investments are prudent. In the most recent rate case decision for the Connecticut Natural Gas and the Southern Connecticut Gas Company, PURA states that, "to carry its statutory burden, the utility must provide (or ensure the record contains) a preponderance of evidence that, inter alia, the requested rates are consistent with the principles that rates be 'sufficient, but no more than sufficient' and 'reflect prudent and efficient management.'"[94] As we understand it, PURA and its predecessor the Department of Public Utility Control ("DPUC") have been applying this standard for many years. For example, in a 2011 decision in a Yankee Gas Services Company rate case, the DPUC found that the gas company failed to meet its burden to prove that its proposal was just and reasonable where it failed to provide sufficient evidence as to several claimed

[92] *Id*. at *iii-iv*.
[93] Conn. Gen. Stat. §16-22.
[94] PURA Docket No. 23-11-02, p. 7.

costs, including where the company "had the opportunity to provide evidence on the record on [an] issue and chose not to."[95]

Q64 When a regulator or legislature provides some kind of pre-approval for spending, does that change the need for retrospective prudence review?

A64 No. Pre-approval to spend funds does not insulate a utility from a finding of imprudence. Utility management has an ongoing obligation each day to decide whether to continue with, expand, or restrict each investment. If information becomes available that shows that a decision is imprudent, even after it has been approved by a regulator or legislature, utility management has an obligation to make a different, prudent, choice.

Q65 What is the role of prudence analysis in setting rates for the next rate period, if PURA approves multiple years of future rates?

A65 While full (retrospective) prudence review is deferred until the next rate case, PURA has a choice about how to treat each investment over the course of the intervening period in order to set just and reasonable rates. It could (1) include the expected cost in the forecast rates collected over the period, or (2) treat the expense like it would be treated in traditional ratemaking: not include it in rates until the next rate case, after it has been judged to be prudently incurred. PURA's review in this case can enable it to choose which course to take for each projected expense, and how to thereby allocate risk between ratepayers and investors. As Burns et al., state, "The concept of prudence provides commission with a principle that does not necessarily require an 'all or nothing' decision in favor of one side, but can allow some sharing of the risks between investors and ratepayers. The prudent investment test is a tool that regulators are using to

[95] DPUC. Docket No. 10-12-02, *Application of Yankee Gas Services for Amended Rate Schedules, Final Decision*. June 29, 2011. p. 42.

provide an answer to the question of who should bear which risks and associated costs."[96]

Q66 What role does gas system planning play in prudent utility system management?

A66 Planning is essential to prudent management. Gas system capital planning, for both the short term (e.g., less than five years) and for the longer term (over a decade or more) is a key tool for identifying options for system growth and optimization. By looking ahead multiple years, and considering the usefulness of assets over their lifetimes, system planners can weigh alternatives to meet evolving system needs at the lowest cost. For example, with appropriate tools and processes in place, a system planner can compare the costs and benefits of a repair-focused effort for leak-prone pipe (aimed at reactive responses to leaks and repair of pipe sections that show the greatest leak history) with a replacement-based approach (aimed at proactively replacing high-risk pipe). Each action in a repair-focused approach may have a shorter effective lifetime for resolving safety issues than would replacement, but it can also be more targeted and nimbler with respect to changing system utilization. Replacement offers a longer lifetime, with associated reduction in flexibility and increase in the need to manage stranded-costs risks. If a utility is not conducting planning practices that take this kind of analysis into account, it risks making imprudent decisions for the development of and investment in its system.

[96] *Id*. at *vi*.

Q67 Can you suggest some principles for long-term gas system planning, in the context of the energy transition?

A67 Yes. Synapse published a white paper in the context of New York's gas planning proceeding,[97] which identified the following principles and practices:

- Design all scenarios to comply with state emissions objectives.
- Integrate gas and electricity planning.
- Assess impacts on gas and electricity sales.
- Use appropriate asset lives and depreciation schedules.
- Articulate GHG constraints.
- Apply a high threshold for approving new gas infrastructure investments.
- Assess multiple gas utility business models.
- Develop comprehensive NPA screening frameworks.
- Adopt practices for strategic asset retirement.
- Update gas load forecasting practices.
- Account for customer actions.
- Account for risk.
- Articulate an action plan.
- Update plans periodically.

Q68 How does the evolving state and federal policy context interact with prudent gas system planning?

A68 In order to be prudent, gas system planning must be conducted with an eye to its policy and market context. Where policies and market transitions may limit the future utility of a gas system asset, a prudent decision to invest in that asset or pursue an alternative must take those potential future limits into account. For example, the economic evaluation of alternative approaches to solve a gas system

[97] Woolf et al. *Long-Term Planning to Support the Transition of New York's Gas Utility Industry*. Synapse Energy Economics on behalf of Natural Resources Defense Council. 2021. Attached as Exhibit OCC-ASH-5.

problem must account for the useful lives of the approaches and the associated depreciation rates.

Q69 What are the implications of these principles for review of the prudence of a gas utility's planning processes, in the context of the energy transition?

A69 The gas system operates within the context of the well-established energy transition, and planning must account for that context in order to be prudent. When reviewing gas system investments for prudence, therefore, it is essential for regulators to consider whether the investment planning and selection process has accounted for energy transition. For example, has the process included the items that we listed above from Synapse's New York whitepaper? Depending on information availability, it may be possible to evaluate specific investments and whether the process of selecting and executing those investments took energy transition into account. Looking forward to future rate years and rate cases, it may also be necessary to set high-level guardrails for utility investment to limit stranded-cost risk, as Ontario has done, rather than select specific investments to disallow. Taking this approach would set a clear structure and expectation around making investment choices and evaluating alternatives in order to find the best investments. This approach would also make clear that a simple status quo approach is not prudent.

V. REVENUE REQUIREMENT AND CAPITAL ADDITIONS

Q70 Could you please summarize how the Company addresses the energy transition in its testimony and evidence in this case?

A70 The Company does not address the energy transition. It limits itself to addressing issues related to GHG emission reduction, noting that the Company anticipates a step-up in regulations aimed at reducing GHG emissions in coming years"[98] in the

[98] Kelley Horton, page 14 at 8-10.

form of revised federal regulations on leak surveys, advanced leak detection programs, leak grading, repairs, re-checks and reporting.[99] The Company's current decarbonization activities only extend to internal Scope 1 and Scope 2 emissions, the Company has yet to adopt targets for reducing Scope 3 (customer end-use) emissions.[100]

The Company recognizes the "increased urgency to decarbonize energy resources with the ultimate goal of delivering a clean energy future,"[101] But the Company's response to this is vague. As we will discuss later in this testimony, the Company provided information about potential solutions to reduce emissions, such as networked geothermal; clean hydrogen; carbon capture, utilization, and storage (CCUS); and RNG as potential solutions to decarbonize the natural gas system. However, the Company does not propose any actions related to these technologies. Instead, it merely notes that it is "not requesting PURA take action on a specific RNG or clean hydrogen project in this case."[102]

Q71 Are you concerned that this is not sufficient?

A71 We're concerned that the actions proposed by the Company are not consistent with and will not contribute towards the GWSA emission reduction targets. The Company cites the Accelerated Replacement Program (ARP) as its contribution to advancing Connecticut's GHG mandates, through the reduction of methane emissions from leak-prone mains and services.[103] The Company does not appear to have considered how the achievement of the emission reduction targets will be constrained by the continued use of gas for heating, cooking and other residential, commercial and industrial use. Further, pipe replacement does not reduce Scope 3 emissions, which constitute a much larger share of total GHG emissions from the

[99] Kelley-Horton, page 68 at 16.
[100] Response to Discovery Q-OCC-424.
[101] Kelley-Horton, page 73 at 12.
[102] Kelley-Horton, page 78 at 16.
[103] Response to Discovery Q-OCC-344.

gas system. In terms of dollars-spent-per-emissions-reduced, the ARP is much more costly compared to alternative emission-reducing measures such as NPAs (i.e. load reduction and electrification).[104]

Q72 Please describe the Company's requested Rate Year revenue requirement.

A72 The Company's proposed revenue requirement is based on a Rate Year average rate base of $2.5 billion and an overall weighted cost of capital of 7.62 percent.[105] Overall, the Company proposes an annual revenue requirement increase of $209 million, or 49 percent, relative to today's rates.[106]

Q73 How will these revenue adjustments impact customer bills?

A73 Residential heating customers would experience a total annual bill impact of 43 percent or a monthly increase of $46.74. The impact is temporarily reduced to approximately 38 percent, when considering the Company's proposal to credit sales customers $37.4 million in deferred gas non-firm margin. C&I customers' average overall class impact would range from 14–42 percent.[107]

Q74 What is primarily driving this request?

A74 Capital investments in replacing leak-prone pipe infrastructure and other safety and reliability investments, along with other products and services that will reinforce the Company's gas system, make up the bulk of investment in the

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[104] The Company proposes to spend $754.7 million on ARP from 2025 to 2029 (Exhibit YGS-CAPITAL-1, page 93), in addition to $121.8 million in 2024, and claims that methane emissions will be reduced to 70% below 2011 levels by 2030, or a reduction of about 4,726 metric tons per year from 2023 levels. If one assumes a generous 50-year life for those emission reductions, that is a lifetime emission reduction of 236,000 tons for an investment of $876.5 million, or emission reductions achieved at a cost of about $3,700 per metric ton. A typical household that uses 800 therms per year causes CO_2 emissions of about 4.24 metric tons. If emission reductions were valued at $3,700/metric ton, this would imply a value of almost $16,000 per year for electrification with zero-carbon electricity supply, or over $235,000 over the 15-year lifetime of typical home appliances like heat pumps. This far exceeds the cost of home efficiency and electrification.

[105] Paruta Shelnitz Murray Exhibit YGS-REVREQ-1, p. 11.

[106] Kelley Horton Testimony, page 11 at13.

[107] Kelley Horton Testimony, page 12 at 20.

interim period. ARP investments account for 45 percent of all capital spending during the Rate Year ending 10/31/2026,[108] and the Reliability project category as a whole accounts for 80 percent of planned capital spending.[109]

Q75 How much capital investment is being made?

A75 The capital additions that the Company has already completed and is planning for are substantial. As noted in the testimonies of Kelley and Horton, "rate base **approximately doubled** between Yankee's last rate case and 2023"[110] [emphasis added]. The Company's capital additions from 2018 to 2024 total $1.5 billion, including $540 million due to ARP capital investments (approximately 36 percent) and $404 million due to system integrity investments.[111] The Company also expects that spending in the next four years "will increase substantially as compared to spending over the last six years."[112] The Company plans to place into service $1.87 billion of capital additions from 2025 to 2029.[113]

Q76 Do you have concerns that the proposed revenue requirement and the resulting impact on customer bills do not fully represent the proposed capital investments' impacts on rates?

A76 The proposed revenue requirement and the resulting significant impact on customer bills cover only the capital additions in the interim period and the test year, for a net adjustment of $370 million for the interim period and $265 million for the test year. However, the Company references some significant capital additions in this Application that are not reflected in its rate analysis. The Company's 2025–2029 Long Range Plan shows a total of $1.87 billion to be recovered through the proposed DIMP Tracker and K-Bar until such time as they

[108] Paruta Shelnitz Murray Testimony, p. 70 at 6 & p. 66 at 21.
[109] Paruta Shelnitz Murray Testimony, p. 70 at 6 & p. 66 at 21.
[110] Kelley Horton Testimony, page 63 at 9.
[111] Response to Discovery Q-OCC-341 Attachment 1.
[112] Kelley Horton Testimony, page 64 at 2.
[113] Day Desrosiers, page 93 at 11.

are rolled into base rates. This includes $755 million in the ARP program and $826 million associated with System Reliability expenses.

VI. CAPITAL PLANNING PROCESS

Q77 How does the Company characterize its long-term view of the gas system?

A77 According to Kelley and Horton, long-range planning involves considering what the ideal state of the gas system should be. The Company describes the final state as a system that has "completed all eligible pipe replacements, meets high standards for reliability and resiliency, and accounts for growth."[114]

Q78 How was the capital plan developed?

A78 The Company develops the capital plan based on a five-year forecast that is updated annually. Company witnesses add that capital investments undergo an analytical and prioritization process that addresses safety, reliability, and growth.[115]

Q79 Does the Company consider the energy transition in its planning?

A79 It does not appear so. In the testimonies of Kelly Horton and Day Desrosiers, their description of the capital planning process does not include a description of how the energy transition or increased electrification is addressed. The Company also states that it "does not incorporate any exogenous adjustments for Connecticut's greenhouse gas emissions mandates due to the lack of statistically significant deviations from historic[al] trends in our actual sales to date."[116]

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[114] Kelley Horton, page 42 at 5.
[115] Day Desrosiers, page 7 at 6.
[116] Response to Discovery Q-OCC-346.

Q80 Is a planning horizon of five years sufficient?

A80 No. A five-year view is insufficient. The infrastructure investments the Company is making will be paid for by its customers for decades. Understanding the long-term prospects of the gas system and the implications for capital needs is critical, particularly in the context of the emission reduction targets and evidence that new customer growth has declined (which is reflected in lower capital additions for new business in 2024, compared to previous years).

Q81 How much of the proposed capital additions are due to new business? How did the Company estimate this amount?

A81 Of the $302.3 million total capital placed in service in the rate year, about 4 percent of this is from New Business.[117] The Company notes that "[a]s a result of the wind down of the gas system expansion program, and the early expiration of new customer incentives, the company expects capital investments associated with New Business to begin to decrease when compared with the height of the gas system expansion program."[118] It further notes that "New Business expansion main growth will remain relatively flat to the level experienced in 2024."[119] The Company expects to add 2,500 new heating customers over a 12-month period starting in November 2025 and "anticipates that future customer growth will continue at a similar level through the remainder of the proposed PBR plan."[120]

Q82 Has the Company done any analysis on future customer growth and customer retention?

A82 The Company does not seem to have conducted analysis on future customer growth and customer retention. The Company states that "[t]he transition to widespread electrification, ultimately, will be driven by customers. Hence, it is difficult to gauge the entire impact to the Company's customer base, throughput,

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[117] Paruta Shelnitz Murray Testimony, Page.67 at 4.
[118] Day Desrosier. Page 32 at 21.
[119] Day Desrosier. Page 67 at 15.
[120] Day Desrosier, Page 68 at 9.

and asset retirements due to the complexities and unknowns of customer adoption rates, changes in public policy, and timing of the electrification transition."[121]

Q83 Is the lack of certainty regarding customer behavior a good reason not to analyze the impact of electrification to the Company's customer base throughput and asset needs?

A83 No. On the contrary, the need for a prudently managed utility to be prepared for a range of possible futures is a very strong argument for analyzing those potential futures and understanding their implications for the utility and its capital investments. The Company proposes to make large irreversible capital investments. This means that the value associated with the option to not make these investments is high. Greater uncertainty increases the financial value of this option, so it is even more important to understand possible futures when there is greater uncertainty. The Company appears to make no account of this option value when considering capital investments. (In fact, because the Company does not appear to rigorously evaluate alternatives to its investments, as we will discuss later in this testimony, it does not even have a place in its processes to consider such option value.)

The case for engaging is these studies is made stronger as Witness Allis's testimony indicates that the Company is aware of the risks and implications of emission reduction targets and increased electrification. He says that one factor that could impact the future service lives of the Company's assets is the impact of the clean energy transition on gas assets, saying "[b]ased on discussions with Company personnel as well as my experience with previous depreciation studies...I believe it is likely that the reduction in emissions will have an effect on the service lives of gas assets. Widespread electrification could lead to fewer

[121] Response to Discovery Q-OCC-348.

customers and declines in throughput, resulting in early retirements of gas assets."[122]

Q84 Are you concerned about the Company's assumptions regarding existing customers?

A84 Yes. The flattening of the rate of customer additions also raises questions about the future number of customers on the system. Existing customers will not necessarily be on the system forever. When gas appliances reach the end of life, existing customers make analysis similar to new customers and compare various options for space and water heating, including electrification. Thus, the Company should evaluate not just new customer numbers but also customer retention, and include both in the planning process.

Q85 What impact would increased gas rates have on the competitiveness of gas relative to electricity for heating?

A85 The current high levels of capital investments along with the lower rate of growth of new customers will likely put an upward pressure on gas rates (as reflected in the substantial rate increase requested in this proceeding). Higher gas rates would worsen the competitive position of gas relative to electricity and delivered fuels. This would further reduce the rate of customer growth and may lead to an increased rate of conversions from gas to electric heating. This could lead to a self-perpetuating cycle of rising gas rates and increasing customer departures from the gas system.

Q86 What are Reliability projects and how has the Company estimated the Reliability capital investments?

A86 Reliability capital investments are intended to improve the safety and reliability of the system and reduce risk. These projects include leak-prone pipe replacements (called ARP), multi-phased system resiliency projects that increase system

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[122] Allis Testimony, page 24 at 9.

redundancy, and system reliability investments identified through a risk-based approach. The Company identifies and prioritizes projects based on an integrated risk modeling analysis that considers factors such as increased reliability, system capacity, or redundancy.

Q87 How has the Company planned resiliency projects?

A87 The Company has identified two layers of redundancy: (1) distribution-level redundancy, which requires that service to a station has the ability to be sourced from multiple gate stations and (2) transmission-level redundancy, which requires that sufficient gas capacity be provided by multiple transmission companies.

The Company also identifies three factors that contribute to the level of investment needed for the system resiliency program: (1) an increased number of customers dependent on natural gas as a primary source of energy, (2) increased threat of attacks to gas infrastructure, and (3) increased pipeline reliability issues.

Q88 Has the Company performed any analysis of the impact of the "changing future of the natural gas delivery system" on its system, capital investments, operations, finances, or business model?

A88 No. The Company calculates its revenue requirement consistent with past PURA precedent and the standard filing requirements and "did not run different scenarios or sensitivities to determine the appropriate level of revenue requirements."[123] Nor does the Company consider Connecticut's GHG emissions mandates in its analysis, justifying this by stating that there is a lack of statistically significant deviations in sales from historical trends.[124]

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[123] Response to Discovery Q-OCC-361.
[124] Response to Discovery Q-OCC-346.

Q89 Do you agree that it is prudent to wait for these legally binding reductions to manifest in changes in customer counts and gas demand data before evaluating the pros and cons of the distribution infrastructure or conducting other analysis of the changing future?

A89 No. Furnaces generally have a useful life of between 15 and 25 years, and 2050 is 25 years away. For example, new gas mains typically have engineering lives of more than 50 years, double the time between today and 2050. To be consistent with Connecticut law, a substantial portion of the energy transition will therefore occur over a timeframe that is short compared with the average expected useful life of gas system assets. Waiting until the transition has demonstrably begun before beginning to make plans and ultimately taking action would leave the Company and its remaining customers in a precarious position. Customers would face higher and higher rates, unaffordable to many, and the Company and shareholders would face accelerating customer departures, unrecovered revenues, and stranded assets. Failing to adapt the Company's current infrastructure and financial planning to anticipate future changes will inevitably lead to imprudent investment decisions.

Q90 Do you agree that policy-encouraged changes in customer counts and gas demand are speculative only, both now and in the foreseeable future?

A90 No. All of the studies we described earlier in our testimony show compliance pathways for legally binding emission reductions that will result in reductions in customer counts and gas demand. Policymakers and planners have foreseen this future for years, and actions are showing it is not speculative. Connecticut's 2018 CES clearly states Connecticut's path toward electrification. Actions throughout the last several years, such as the enactment of the Inflation Reduction Act and Infrastructure Investment and Jobs Act, reinforce that this transition is not speculative. Connecticut's Priority Climate Action Plan is just the latest in a string of resources that should inform the Company's planning and approach to decarbonization.

Q91 Have other jurisdictions required gas utilities to conduct gas planning exercises to justify further gas infrastructure investments?

A91 As addressed in the first part of our testimony, various jurisdictions have made the approval of future capital additions contingent upon long-term gas planning. These jurisdictions include Illinois (People's Gas is required to file a Long-Term Gas Infrastructure Plan), Massachusetts (Climate Compliance Plans), and Colorado (Clean Heat Plans and Gas Infrastructure Plans).

Q92 Have the Company's witnesses demonstrated that they are aware of the potential impacts to the Company of the energy transition?

A92 Yes. As mentioned above, Witness Allis says that one factor that could impact the future service lives of the Company's assets is the impact of the clean energy transition on gas assets. Witness Bruno notes the "growing customer demand for clean energy solutions,"[125] and discusses the benefits of networked geothermal heat pump systems, though she does not propose any investments for clean technologies and fails to acknowledge the need for managing the energy transition in a concrete or meaningful way. The Company's capital and business model witnesses have not demonstrated that they are aware of or account for the energy transition in their work.

Q93 Given Eversource's involvement in Massachusetts' Docket No. 20-80, is it prudent for Yankee Gas to not consider NPAs within its traditional infrastructure planning process?

A93 No. Eversource in Massachusetts has demonstrated institutional awareness of NPA technologies and processes for NPA evaluation. Yankee Gas is well-aware of the proceedings in Massachusetts where "Eversource is actively evaluating [NPAs] and electrification scenarios," and in the same sentence admits that "Yankee is not conducting any formal NPA analysis in Connecticut."[126] We believe it is imprudent that Yankee Gas is not considering NPAs given the

[125] Bruno, page 2 at 21.
[126] Response to Discovery Q-OCC-419.

Utility's responsibility to make prudent investment decisions considering all available technologies.

Q94 Is it prudent for the Company to rely on others, such as state government, to conduct analysis of the changes facing the gas system as a result of the energy transition, and not to analyze the changes itself?

A94 No. The Company knows more about its own system, and it is the entity with an obligation to customers to make sure that it has the financial and operational strength to maintain a safe and reliable gas system. The timing of the Company's need to understand its own challenges is independent of the timing of state-led analyses. For example, a doubling of gas distribution rates (as would be implied by a halving of sales without changes in the gas revenue requirement) would substantially change the Company's competitive position. The Company has had many years to consider and undertake a study of its own system and business to understand and adapt to such a future, while it watches Connecticut and other states adopt increasingly stringent emission targets and take actions to make them reality. It has not done so.

If the Company were in a competitive market, where competition punishes imprudence through a loss of market share, the Company's failure to consider these changes would be putting its future returns at risk. The regulatory process is intended to supply similar discipline.

Q95 What might the Company have found if it had conducted analysis of the impact of the changing future of the natural gas delivery system on its capital plans, finances, or business model?

A95 From our analysis of utilities in similar situations and from the analysis conducted in other states with comparable policy objectives (such as Massachusetts) we believe the Company would have found:

- That continued status quo approaches to leak-prone pipe replacement, system growth, and depreciation rates will result in rising revenue requirements without commensurate increases in sales, resulting in increasing rates;

- That these increasing rates, combined with policy support for electrification, will change the competitive position of the Company's product compared with electricity—thereby reinforcing and accelerating declines in sales, resulting in further increases in rates; [127]
- That failing to prepare for and adapt to these changes would place its financial health and its ability to maintain a safe and reliable gas system at risk; and
- That taking a different and more comprehensively planned approach to capital decision-making and depreciation can mitigate long-term rate increases, increase the predictability of capital recovery, and allow it to retain the financial strength necessary to maintain a safe and reliable gas system.[128]

Q96 What impacts might these findings have had on the Company's capital plan and other components of this rate case?

A96 Among the impacts of these findings might have been:

- The Company would examine the cost-effectiveness of its leak-prone pipe investments (among other investments) to prioritize those actions which provide the greatest benefits (such as risk reduction or reliability) within a limited budget for capital additions, while accounting for the potential service lives of assets. This analysis would likely prioritize replacement for leak-prone assets expected to have longer service lives, such as larger mains and assets which serve industrial customers, and de-prioritize

[127] *See* MA DPU Order 20-80, page 91 (discussing the anticipated substantial decline in gas sales in all pathways).
[128] *See* MA DPU Order 20-80, page 101–102 (discussing the general consensus on the need to re-examine depreciation and stranded assets).

replacement-based approaches for smaller pipes which serve only a small number of building sector customers.

- The Company would likely have proposed a smaller amount of capital additions, in order to limit capital at risk and maintain optionality. The Company would likely favor smaller projects and seek to defer larger ones, again reflecting option value.

- The Company would have developed and utilized a process for evaluating the cost-effectiveness of NPAs.

- The Company would be using a shorter potential lifetime for capital assets when evaluating ways to approach challenges on the gas system, such as when evaluating a question of repair vs. replacement or considering NPAs.

Q97 Could you elaborate further on the implications of these findings for leak-prone pipe replacement investments?

A97 Leak-prone pipe replacement constitutes the largest single driver for the Company's capital investment plans (45 percent of proposed capital expenditure), and it is also a component where planning choices will have a large effect on how the Company's assets are distributed as the energy transition unfolds. In order to retain competitive rates, and in recognition of its practical limits on annual replacement activity, the Company needs to work within a limited capital budget for addressing leak-prone pipes. The Company should be selecting projects on which to spend this limited budget based on two drivers: increasing safety and reducing future financial risk. It can prioritize increasing safety by replacing the riskiest pipe per dollar spent—so that a limited budget produces the most safety benefit. It can limit future financial risk by prioritizing replacement for segments that are likely to have the longest useful lives. These are generally going to be the segments that are "trunk" lines, rather than "leaves"—because these mains are most likely to be needed to continue to serve some customers over the longest timeframe. Limiting financial risk is important for the Company's investors, but also for customers, because if the Company's financial health suffers it may not be able to spend the funds necessary to maintain a safe and reliable system.

Q98 Does the Company prioritize its leak-prone pipe investments based on their cost-effectiveness or based on their expected useful life, informed by the energy transition?

A98 No, it does not. While the Company has a process of quantifying risk associated with leak-prone pipe segments, and using that information when selecting leak-prone pipe projects,[129] it explicitly does not consider the cost of a given project as part of that process.[130] As a result, it is almost certainly not producing the optimal level of risk reduction for a given budget. The Company's risk/prioritization rubric includes no information about the topology of the system, how the pipe is used, or whether it serves other pipes.

Q99 Are there equity considerations that should be incorporated when prioritizing locations for leak-prone pipe replacement or retirement?

A99 Yes. Low-income customers and renters are the most likely customer segments to be unable to easily adopt efficient electric heating equipment, due to lack of capital or lack of control over their building's equipment. As a result, when other customers electrify and rates rise, these customers will be more likely to be left carrying the cost of the gas system. It is inequitable for these customers, who have the least ability to pay and the least control over their gas use, to be paying more than their share of the cost of the gas system. The appropriate priority for these customers is to focus electrification and NPA-based approaches in these communities, rather than to focus leak-prone pipe replacement in these locations. When the Company does begin to plan for scenarios with a shrinking customer base, it will likely prioritize keeping newly installed pipe around in service as long as possible and therefore will not prioritize electrification for customers

[129] Response to Discovery Q-OCC-352.
[130] *Id.*

served by newly installed pipe. To the extent the Company focuses on replacement rather than retirement in low-income communities, it is exacerbating future inequitable outcomes.

Q100 Does the Company account for equity implications in its leak-prone pipe planning?

A100 We have not seen any indication that it does. As discussed earlier in the testimony, the focus of gas planning is customer growth, safety, reliability, and emission reductions.

VII. CONSIDERATION OF ALTERNATIVES

Q101 What are non-pipeline alternatives and why are they relevant to the energy transition?

A101 NPAs are solutions that meet customer energy needs and are alternative to traditional infrastructure investments. Examples of NPA portfolio components include electrification, energy efficiency, and other measures that reduce or eliminate customers' demand for natural gas. NPAs can be used as temporary solutions to defer infrastructure replacement or used as long-term solutions that allow utilities to decommission assets. The benefits of NPAs include emission reductions and associated health benefits, avoided costs from traditional infrastructure investments, and reduced risk of future stranded assets. When faced with uncertainty, companies can reduce risk by retaining optionality and avoiding potentially unnecessary capital investments. In the face of the energy transition, gas utility actions which avoid, reduce, or delay irreversible investments have particular value.

Q102 Has the Company discussed implementing any NPAs?

A102 The Company appears to be in the very early stages of considering NPA projects. It discusses one idea: a network geothermal demonstration project, that would draw lessons from the Framingham Massachusetts Network Geothermal Demonstration Project.[131] The Company is not seeking to implement the pilot project at this time but is seeking approval from the Commission for a regulatory framework to support the project before proceeding.[132] While this project could be considered an NPA if it led to the deferral or avoidance of investments in gas infrastructure, there is no indication that it will offset any of the currently proposed gas infrastructure investments.

Based on the results from Massachusetts, it is not clear that a network geothermal project would be an effective NPA. Witness Bruno discusses at length the Framingham Network Geothermal Demonstration Project completed by Eversource in Massachusetts. The final report from this pilot shows the cost and execution challenges faced by the project, particularly in customer conversions, where they found it was more costly and time-consuming to install ground-source heat pumps, and in drilling boreholes, which was expensive.[133]

Notably, all residential and commercial customers in the Framingham project who used natural gas for non-heating purposes retained their gas connections even after they converted to geothermal heating.[134] This project did not enable the decommissioning of any parts of the natural gas system, nor did it eliminate the need for future pipe maintenance or other investments. The high costs of drilling and laying new pipelines call into question the scalability of network geothermal heating as a wide-spread decarbonization strategy, especially given the individualized nature of each geothermal network (i.e. suitability of terrain for drilling, permitting requirements, building retrofits, geography of customers, etc.).

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[131] Exhibit YGS-CLEANTEACH-1, page 16.
[132] Exhibit YGS-CLEANTEACH-1, page 49
[133] Exhibit YGS-CLEANTEACH-1, p. 30 and 35.
[134] Response to Discovery Q-OCC-420

Further, the uncertainty of future federal funding may also impact the feasibility of geothermal deployment.[135]

Q103 Is the Company's corporate family aware of and using NPAs?

A103 Yes. Eversource in Massachusetts is involved in DPU Docket 20-80 where it is collaborating with other natural gas utilities and stakeholders to develop an NPA Framework.[136] Eversource has been actively involved and has been a leading contributor in the NPA working-group meetings since October 2024.[137] The NPA Framework will be used to identify traditional infrastructure projects that are suitable for NPA analysis and guide NPA evaluation. NPAs discussed include demand-side resources such as electrification, energy efficiency and gas demand response, and new and hybrid infrastructure, such as hybrid systems and thermal networks.

Q104 Does the Company's capital planning process include the evaluation or assessment of alternatives to gas infrastructure?

A104 No. The Company does not evaluate non-gas alternatives (such as NPAs). It "only considers alternate gas projects as potential feasible project alternatives."[138] The only time alternatives of any type are considered is during the project authorization process. Projects estimated above $500,000 are required to complete a Project Authorization Form (PAF), which includes a section titled "Alternatives Considered," that evaluates feasible alternatives.[139] Feasible alternatives identified in this section may undergo financial analysis in the "Financial Evaluation" section of the form.[140] However, few projects are greater than $500,000 and required to complete PAFs; since 2022, only one-quarter of the projects in the Basic Business, New Business, and Reliability categories were required to

[135] Exhibit YGS-CLEANTEACH-1, p. 33.
[136] Massachusetts Department of Public Utilities, Docket 20-80.
[137] NPA Working Group for DPU Docket 20-80 materials available at https://npaworkinggroup.com/.
[138] Response to Discovery Q-OCC-338.
[139] Day and Desrosiers testimony, page 16 at 12.
[140] Day and Desrosiers testimony, page 16 at 5.

complete a PAF, which accounted for just 10 percent of total project expenditure (projects that fall below the $500,000 threshold may elect to complete a PAF but are not required to).[141] With the Company's current processes, very few projects are required to evaluate alternatives; and even when they are, NPAs are not considered.

Q105 Based on this evidence, do you believe that the Company seriously considers alternatives based on their cost-effectiveness and ability to achieve project requirements?

A105 No, we do not. As discussed above, the Company is required to consider alternatives for projects above a certain cost threshold. Moreover, alternatives are only considered at the point of project authorization. This is late in the project identification and approval process and happens after a significant amount of technical evaluation has already been completed. Additionally, there is no evidence that the Company has seriously identified and evaluated NPAs such as energy efficiency or electrification. It has limited its NPA evaluation to the logistically and technologically complex networked geothermal approach.

Q106 Is it reasonable and prudent for the Company to make investment decisions without evaluating alternatives, including NPAs?

A106 No. By failing to evaluate alternatives, the Company runs a high risk of spending more money than is necessary to achieve the safe and reliable gas system that it is obligated to maintain and operate. Because the Company has provided no records of any cost-effectiveness or other evaluations conducted to determine the most appropriate investment, it is essentially asking PURA to bless billions of dollars of capital investments without substantive justification that they were truly necessary.

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[141] Response to Discovery Q-OCC-337.

Q107 The Company states that it does not consider NPAs. Is it necessarily prudent to conduct only the analyses required by law or mandate?

A107 No. As described by Burns et al., utilities have an ongoing obligation to behave in a prudent manner to protect the interests of their customers: "[T]he concept of prudence protects the rights of individuals not in control of investment decision making. It does not require perfection in decision making but does require, for example, avoidance of deliberate exposure to substantial risk where the individuals not in control could suffer financially."[142] The Company's actions need to be "reasonable under the circumstances."[143] In this case, the evaluation of reasonableness must include the circumstance that numerous other utilities, including the Company's sister utility, conduct NPA analyses. It is unreasonable to avoid NPA analysis just because it is not required by PURA or Connecticut law. Recall that the point of utility law and regulation is, in large part, to replicate the discipline that would be provided by competitors. If the Company were competing to offer cost-effective service with other firms, and those firms offered lower-cost service because they considered NPAs, the Company's competitive position, and therefore financial results, would suffer.

VIII. CLEAN TECHNOLOGIES

Q108 Does the Company discuss any emission reduction targets for Scope 3 emissions?

A108 No. Aside from its internal (Scope 1) emissions goal,[144] the Company has not stated any specific goals for reducing customer end-use (Scope 3) emissions. Although Yankee Gas acknowledges the state's emission reduction targets, nowhere does the Company demonstrate consideration of said targets within its

[142] Burns et al. at *iii-iv*.
[143] *Id.* at *iv*.
[144] Exhibit YGS-CLEANTEACH-1, page 6.

capital planning, nor does the Company request cost-recovery for any strategies to reduce customer end-use emissions, beyond certain EE program expenses. .

Q109 What are the technologies or measures the Company discusses for reducing emissions?

A109 Yankee Gas discusses networked geothermal, clean hydrogen, CCUS, and RNG as potential solutions to decarbonize the natural gas system.

Q110 Has the Company proposed concrete measures to support the carbon reduction efforts of the State?

A110 No. The Company has not presented any concrete plans for reducing customer end-use emissions but merely speculates on the possibility of a few decarbonization strategies. The Company has not demonstrated any analysis of the cost-effectiveness or emissions-reducing potential of the clean technologies discussed, nor how these technologies fit into a larger strategy for achieving state emission targets.

Q111 Is the Company proposing to implement any NPAs or clean technologies at this time?

A111 No. The Company is not requesting cost recovery for the network geothermal demonstration project discussed by Witness Bruno or any of the clean technologies discussed in this rate case.[145]

Q112 Has the Company demonstrated consideration of electrification options other than ground-source heat pumps?

A112 The Company does not demonstrate consideration of electrification options aside from the limited use of networked ground-source heat pumps. Air-source heat pumps share many of the same benefits as ground-source heat pumps but do not require the costly installation of boreholes and new pipes. It is our belief that

[145] Exhibit YGS-CLEANTECH-1, page 50.

Yankee Gas should explore all available decarbonization technologies, including full electrification of heating, cooking, and other appliances, before landing on an investment strategy.

Q113 Has the Company sufficiently analyzed the available decarbonization strategies to determine feasibility and cost-effectiveness?

A113 No. The Company has not conducted any analysis on the cost-effectiveness or emissions-reduction potential of network geothermal, clean hydrogen, CCUS, RNG; nor has the Company demonstrated consideration of other alternatives to natural gas. Yet, it is our understanding that the Company requests support from the Commission to increase likelihood of future cost recovery for investments for which the Company has not provided any analysis on technical or economic feasibility.[146]

Q114 Has the Company demonstrated meaningful consideration about how to achieve the emission reduction targets mandated by the GWSA?

A114 No. Given the lack of Scope 3 emission reduction targets and emission reduction strategies or consideration of alternatives, it is our belief that the Company has not taken sufficient action to align its actions with state emission mandates.

Q115 What should the Commission require from Yankee Gas to address state emission targets?

A115 The Commission should require Yankee Gas to plan for deployment of near-term and long-term decarbonization measures that reduce its Scope 3 emissions and comply with Connecticut's emission reduction targets. The Company should analyze the cost per emissions saved for all available decarbonization technologies (including full electrification) and incorporate its understanding of a portfolio of near-term and long-term measures into its planning and operations.

[146] Exhibit YGS-CLEANTECH-1, page 50.

Additionally, the Company should propose a framework for evaluating and implementing NPAs for business expansion and reliability projects.

IX. MULTI-YEAR RATE PLAN

Q116 Is Yankee Gas proposing a multi-year rate plan?

A116 Yes, the Company is proposing the implementation of a performance-based regulatory (PBR) plan with an initial term of four years, with provision for extension. Under the plan, rates would be adjusted annually, with a revenue-cap formula.

Q117 How will capital additions be treated in this multi-year rate plan?

A117 The Company is proposing a capital revenue formula (K-bar) to support capital investment that is above the revenue cap formula. K-bar would cover capital additions for new business, basic business, system resiliency and system reliability. Notably, this is in addition the DIMP Tracker, which is the proposed recovery mechanism for capital investments in ARP and regulator relocations.

Q118 Would approving this plan be sensible given the Company's response to the energy transition?

A118 No, it would not. The Company has not shown that it has a capital planning process that is up to the task of making decisions based on all available information (such as a detailed and long-term understanding of future customer demand for gas and the associated infrastructure needs and asset lifetimes). Implementing a multi-year rate plan structure would reduce regulatory oversight of the Company's capital additions at a time when that oversight is particularly necessary.

Q119 What risks are associated with a multi-year rate plan?

A119 The Company's proposed K-bar would be calculated based upon a three-year rolling average of historical expenditures. This would adjust rates on a forward-looking basis based upon past expenditures, rather than future needs. Such an adjustment would both further divorce investment planning from a frank and realistic assessment of the future and would exacerbate the incentive to maximize present spend in order to grow future returns. The rate of growth of past capital additions will not necessarily reflect the rate of growth of future capital additions. The Company has noted that the rate of new business growth is lower in 2024 than previous years. Technological developments may have an impact on expenditures on system resilience, as seen in other jurisdictions which have found NPAs to potentially be a lower-cost alternative to system upgrades or expansions.

Q120 Are you concerned that consumers will be paying for capital expenditures that have not been reviewed for prudence?

A120 Yes. The Company is proposing two mechanisms—the capital additions adjustment to rates (K-bar), as part of a multi-year rate plan, and a capital tracking mechanism (DIMP Tracker)—that will result in adjustments to consumers' bills before the next rate case. This means that consumers will be paying for billions in capital additions that have not been reviewed for prudence.

X. DEPRECIATION AND ASSET LIVES

Q121 In what way does the Company's depreciation analysis reflect the energy transition?

A121 The Company's depreciation witness, Mr. Ned Allis, includes a short discussion of energy transition issues in his testimony to provide context for the depreciation study conducted by the Company. He refers to "significant changes that will occur in Connecticut and across New England in the coming decades that necessitate a faster rate of the recovery of capital through depreciation than has occurred historically. The future will be different from the past, as the combination of state GHG emissions mandates, technology changes, a customer preferences will drive an energy transition as the state moves to a clean energy economy by 2050."[147]

Q122 Did Mr. Allis recommend to the Company an approach to depreciation that would be better suited to the energy transition?

A122 Yes, he did. Citing PURA's directive in Docket No. 23-11-02, Mr. Allis states that "the potential impacts of the energy transition is one of the factors [he] considered when preparing the [depreciation] study.[148] Adding that "the Company's proposal does not fully recognize the impact of the greenhouse gas emissions reductions – fully incorporating the impact of GHG reductions on gas depreciation would result in higher depreciation expense than the Company's proposal.[149] He then estimates the results of using the Units of Production method to quantify the impact of the energy transition.

Q123 What is a Units of Production depreciation approach?

A123 In a Units of Production depreciation approach, the plant and salvage value of an asset is recovered on the basis of the number of units of service it provides, not based on time. That is, a widget-maker that will produce 100 widgets in its life would be depreciated 1 percent for each widget produced, even if the widgets are not produced evenly over time.

Q124 What would a Units of Production approach look like for gas system depreciation?

A124 To take this approach for the gas system, the Company would prepare its best estimate of the number of units of energy that would flow through each

[147] Exhibit YGS-Depreciation-1, page 3-4 at 4.
[148] Allis Testimony page 4 at 10.
[149] Allis Testimony, page 4 at 11.

component (or class of components) of its system, in each year going forward, consistent with state policy. Take the example of a component through which 1000 units would flow over the next 25 years, declining from 80 units today through zero units in 25 years (averaging 40 units over 25 years = 1000 units). In this case, the depreciation rate would be 8 percent (80 out of 1000 units) of its current net value in the first year, and a smaller amount each remaining year.

Q125 Why is a Units of Production method a promising method for use in the context of energy transition?

A125 A Units of Production method builds in intertemporal equity, would have the practical effect of limiting rate increases and competition risk in future years, and reduces stranded-asset risk. We discuss the implications of this method further below:

- Equity: A Units of Production approach would allocate more costs to the near term, when the gas system is heavily used, and fewer costs to the future when use is less. It would be inequitable for future customers to pay for pipes on a per-year basis when they are receiving much less service from the assets. A Units of Production approach is consistent with protecting future customers, who may on average have less ability to invest in their buildings to electrify because wealthier customers have left the system, from paying more than their fair share of costs.

- Rate increases: While a Units of Production approach that reflects shorter use-weighted asset lives would tend to increase rates in the near term, it shifts costs toward the present rather than increasing them. In the future, when higher rates would have a larger impact on both customers and competition, overall rates could be lower because both rate base and depreciation expenses would be smaller.

- Stranded-asset risk: A Units of Production approach is built from a foundation of a future-aware plan for how assets will be used and depreciated. It could dramatically lower or eliminate the risk that assets might reach end of life without having been fully depreciated—that is, stranded.

Q126 Did Mr. Allis conduct additional analysis to estimate the potential impact of a different approach to depreciation?

A126 Yes, he did. Mr. Allis developed two additional scenarios based on the units of production method. In the first scenario, gas demand declines by 50% by 2050 and in the second, gas demand declines by 90% by 2050. In the latter scenario, the depreciation expense is close to three times higher than the current depreciation expense.[150]

Q127 Has the Company developed an asset utilization forecast sufficient to support a Units of Production approach to depreciation?

A127 While it would have been prudent for the Company to have developed such a forecast, it has not done so.

Q128 Is it acceptable to use a traditional approach to depreciation for this case, given the Company's lack of analysis?

A128 Yes. Given the lack of an asset utilization forecast and the need to use some kind of depreciation approach in this case, a traditional straight-line approach is acceptable.

Q129 Could the Company have developed a Units of Production approach for this rate case?

A129 Yes. The Company has sufficient information to develop a utilization forecast. If the Company had taken Mr. Allis's recommendation and developed such a

[150] Allis Testimony, page 5 at 4.

forecast, it would have shown that the Company was taking energy transition seriously.

Q130 What would the Company need to do, alongside a utilization-based depreciation approach, to show a clear and consistent understanding and appreciation of its changing future?

A130 The Company's capital plans and proposals would need to reflect the same understanding of the future as the utilization forecast. It would not be appropriate to build assets for one future, while depreciating assets as though a different future is expected.

Q131 Should the Company develop a policy-consistent projection of future sales, capital needs, and asset utilization?

A131 Yes. This projection (or more likely a range of projections for different policy-consistent scenarios) would be essential for making prudent capital decisions and setting depreciation rates. The set of future pathways should reflect all available information regarding the likely trajectory for future gas use. Such a study would require evaluating which sets of assets will be used to provide fuel for which types of end uses, and the future of those end uses. It may be necessary, for example, to split existing depreciation accounts into subclasses such as buildings-only, mixed, and industrial-only. Once the Company has such projections, it should revise its depreciation approach to mitigate stranded cost risk and enhance equitable outcomes. This package should be reviewed by PURA and be examined by stakeholders in a rate case or similar proceeding. This process, including updated asset-type-level utilization forecasts, should be repeated every few years to keep depreciation aligned with asset utilization as the energy transition proceeds.

Q132 Do you have any particular guidance for PURA as it conducts such a review?

A132 In addition to giving such a plan the appropriate level of scrutiny for the quality and care of its construction, PURA should ensure ongoing consistency between

State policy, the Company's capital plans and investments, and the depreciation rates used for different assets.

Q133 Would it be helpful to the Company and its peers if PURA were to establish a common future framework for all of the state's gas utilities?

A133 Absolutely. We recommend that PURA open a docket for the purpose of establishing a common framework and planning parameters for the future of the natural gas system in Connecticut. This framework and planning process should draw upon the lessons learned in similar proceedings in other states, such as Case No. 20-80 in Massachusetts and the other dockets we discussed earlier in our testimony. PURA should also review the planning framework suggested for New York in Exhibit OCC-ASH-05.

XI. CONCLUSIONS AND RECOMMENDATIONS

Q134 What conclusions do you draw in this case?

A134 We find that:

- The general framework and path of the energy transition to deeply decarbonize Connecticut's economy is well-established. The Company has sufficient information to be taking prudent actions, as described in this testimony, to adapt to a changing future. Connecticut and other jurisdictions have completed studies, established policies, and conducted regulatory processes that the Company could have used to inform its planning.
- Successfully and safely navigating the energy transition will require the Company to make changes to its practices. The Company's filings do not reflect a reasonable understanding of the energy transition's implications for prudent management of the Company, its business model, and its

capital planning. The Company does not incorporate the best available information to inform its planning and capital decision-making.

- The Company is the expert on its own system, and it is the entity with an obligation to customers to make sure that it has the financial and operational strength to maintain a safe and reliable gas system. The timing of the Company's need to understand its own challenges is independent of the timing of state-led analyses. The Company has had many years to consider and undertake a study of its own system and business to understand and adapt to such a future, while it watches Connecticut and other states adopt increasingly stringent emission targets and take actions to make them reality. It has not done so.
- If the Company were in a competitive market, where competition punishes imprudence through a loss of market share, the Company's failure to consider these changes would be putting its future returns at risk. The regulatory process is intended to supply similar discipline.
- The Company's lack of good planning practice makes imprudent investments likely.
- The Company does not undertake well-established practices to consider NPAs to its capital investments.
- The Company's lack of planning for the energy transition risks creating inequitable outcomes that disadvantage low-income residents and renters.
- The Company's approach to prioritizing leak-prone pipe for replacement does not account for the energy transition or target the greatest cost-effectiveness of risk reduction.
- The Company has not developed a sales and asset utilization forecast consistent with State policy and its changing future. It has therefore not been able to develop a revised and equitable depreciation approach consistent with that future.

Q135 What are your recommendations to PURA based on these conclusions?

A135 We recommend that PURA:

- Find that the Company's planning process is flawed because it does not incorporate planning for the energy transition. PURA should direct the Company to update its practices to align with planning for Connecticut's energy future.
- Not approve cost recovery for investments that have not been shown to be prudent, accounting for what the Company should have known and the planning processes it therefore should have used at the time it made the investment. This includes assessment of NPAs.
- Not approve the Company's proposed K-bar or the expansion of the scope of the DIMP tracker. Capital additions should be subject to prudency review in a rate case before being added to rates.
- Direct the Company to develop and utilize an NPA assessment process to consider alternatives to all potentially avoidable investments.
- Open a docket for the purpose of establishing a common framework and planning parameters for the future of the natural gas system in Connecticut.

Q136 Does this conclude your testimony at this time?

A136 Yes, it does.