New York Public Utilities Commission (Case Nos. 25-E-0072 and 25-G-0073): Direct and Rebuttal Testimony of Alice Napoleon in the Matter of Consolidated Edison Company of New York, Inc. regarding proposed gas-side investments, particularly as those investments relate to energy affordability and state decarbonization policy. On behalf of Natural Resources Defense Council, May 30, 2025.

Original filing available at: https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=25-E-0072&CaseSearch=Search

CORRIGENDA for Revised Version November 18, 2025

This document contains corrections to errors and differs from the original filing in the following ways:

- Table of Contents: updated
- Corrections to minor grammatical errors throughout
- Specified “gas” infrastructure where applicable throughout
- Page 17 at line 19: added “through the Gas Infrastructure Replacement and Reduction Program (GIRRP)”
- Page 21: Corrected format of in-text citations
- Page 25: Replaced Table 2 with corrected numbers for “All other investments” row and rounded values in “3-Year Average” column to the tenth decimal place
- Page 27 at line 3: added “more than”
- Page 30: added text to further define and distinguish the Electric Advantage and Energy Exchange programs, with new footnote
- Page 31: changed “All customers are required to disconnect from the segment of main to allow for pipe abandonment” to “For the NPA to move forward, all

customers served by the leak-prone pipe are required to disconnect from the segment of main to allow for pipe abandonment"

- Pages 33-34: changed "The Company has successfully implemented NPAs for one project under the Area Load Relief Program to date, and the anticipated capacity constraint is no longer projected to materialize (CETP Testimony, page 53). However, the Company has not identified any new opportunities for this project due to lack of forecasted load growth (CETP Testimony, page 54)" to "The Company partially implemented NPAs for one project under the Area Load Relief Program to date, however, the project ended part way through because one of the new business developments driving the anticipated capacity constraint did not materialize (Con Edison, Non-Pipes Alternatives Annual Expenditures & Program Report, Case 22-G-0065, November 2024). The Company has not identified any new opportunities for this project due to lack of forecasted load growth (CETP Testimony, page 54)."
- Page 38: added "for NPA implementation" to line 4 and "leak-prone" to line 17
- Page 38: changed "$1.2 billion" to "$749 million"
- Page 39 at line 7: changed "$467 million" to "$355 million" at line 1 and "$106 million" to "$80 million"
- Page 40: replaced Figure 4 with updated values
- Page 42 at line 2: replaced "As of November 2024, the Company had spent $742,830 and achieved or enabled the abandonment of 1,518 feet of main, resulting in a unit cost of $489/foot." With "As of November 2024, the Company had spent $742,830 to abandon or enable the abandonment of 1,139 feet of main, resulting in a unit cost of $652/foot."
- Page 48 at line 6: added "Con Edison indicates that"

- Page 50 at line 16: replaced “Con Edison should make adjustments to its proposed Service Replacement Program budget according to expected customer conversions.” With “Con Edison should make adjustments to its proposed Service Replacement Program budget according to the number of customers expected to disconnect from the gas system.”
- Page 51 at line 4: replace “Con Edison should adjust its proposed main replacement budget according to expected customer conversions from radial segments.” With “Con Edison should adjust its proposed main replacement budget according to expected customer disconnections from radial gas segments.”

BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

In the Matter of

Consolidated Edison Company of New York, Inc.

Case Nos. 25-E-0072 and 25-G-0073

May 30, 2025

Prepared Testimony of:

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Principal Associate
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ON BEHALF OF
NATURAL RESOURCES DEFENSE
COUNCIL
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Contents

1. Introduction and Qualifications

Q. Please state your name, title, and employer.

A. My name is Alice Napoleon. I am a Principal Associate at Synapse Energy Economics, Inc. ("Synapse Energy Economics") located at 485 Massachusetts Avenue, Suite 3, Cambridge, MA 02139.

Q. Please describe Synapse Energy Economics.

A. Synapse Energy Economics is a research and consulting firm specializing in electricity and gas industry regulation, planning, and analysis. Our work covers a range of issues, including economic and technical assessments of demand-side and supply-side energy resources, energy efficiency policies and programs, integrated resource planning, electricity market modeling and assessment, renewable resource technologies and policies, and climate change strategies. Synapse works for a wide range of clients, including state attorneys general, offices of consumer advocates, trade associations, public utility commissions, environmental advocates, the U.S. Environmental Protection Agency, U.S.

Department of Energy, U.S. Department of Justice, the Federal Trade Commission, and the National Association of Regulatory Utility Commissioners. Synapse's staff includes over 35 professionals with extensive experience in the energy industry.

Q. Please summarize your professional and educational experience.

A. Since joining Synapse in 2005, I have provided economic and policy analysis of electric and gas systems and emissions regulations on behalf of a diverse set of clients throughout the United States and in Canada. I have co-authored several reports and comments on the role of energy efficiency in New York State in meeting its Reforming the Energy Vision ("REV") objectives, as well as two white papers on natural gas regulatory reforms needed if New York is to meet its decarbonization targets. I have also provided policy analysis and technical support on issues related to the future of natural gas utilities in many other states, including Hawaii, Maryland, Colorado, Massachusetts,

Nevada, and California.

In numerous states and Canadian provinces, I have provided expert advice on demand-side management programs regarding a range of issues including incentive-setting methodologies, cost-benefit analysis, avoided costs, load forecasting, and locational demand-side management. I also co-authored a manual for regulators on designing performance incentive mechanisms, which has been highly utilized by many states.

Before joining Synapse, I worked at Resource Insight, Inc., where I supported investigations of electric, gas, steam, and water resource issues, primarily in the context of reviews by state utility regulatory commissions.

I hold a Master’s in Public Administration from the University of Massachusetts at Amherst and a Bachelor’s in Economics from Rutgers University. My resume is attached as Exhibit NRDC-AN-1.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of the Natural Resources Defense Council ("NRDC").

Q. Have you provided testimony before the New York New York Public Service Commission ("PSC" or "Commission")?

A. Yes. I previously testified in two Consolidated Edison Company of New York, Inc. ("Con Edison" or "Company") rate cases (Case Nos. 19-E-0065/19-G-0066 and 22-E-0064/22-G-0065. I also submitted testimony in Case Nos. 23-G-0225/23-G-0226 (The Brooklyn Union Gas Company/KeySpan Gas East Corporation), Case Nos. 20-E-0380/20-G-0381 (Niagara Mohawk Power Corporation), and Case No. 23-G-0627 (National Fuel Gas) on behalf of NRDC.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to review and critique several of the proposed gas-side investments by Con Edison, particularly as those investments relate to energy affordability and state decarbonization policy. Also, this testimony discusses Con Edison's proposal to extend eligibility for the Affordable

Multifamily Energy Efficiency Program – Electrification (AMEEP-E) pilot; electric rate options for customers with heat pumps; and an assumption in Con Edison's electric load forecasting. Finally, this testimony addresses treatment of Renewable Natural Gas (RNG) interconnection costs.

Q. Are you sponsoring any exhibits with your testimony?

A. Yes. I am sponsoring the following exhibits:

- Exhibit NRDC-AN-1: Resume of Alice Napoleon
- Exhibit NRDC-AN-2: Tables and graphs
- Exhibit NRDC-AN-3: Con Edison Responses to discovery cited in this testimony
- Exhibit NRDC-AN-4: *The Geospatial Tool Gas Utilities Need for Future Planning: Requirements and Next Steps for a Non-Pipeline Alternatives Analysis Tool* white paper

Q. How is the remainder of the testimony organized?

A. In Section 2, I provide a summary of my

conclusions and recommendations. Section 3 describes relevant climate policy background, including the *Climate Leadership and Protection Act* ("CLCPA" or "the Act") and Commission proceedings related to gas planning, as well as an overview of Con Edison's filing in the current rate case. In Section 4, I describe my concerns with the lack of incorporation of long-term planning into the investments proposed in this rate case. Section 5 describes the consideration of non-pipe alternatives (NPA) and the magnitude of investment in these alternatives relative to traditional, distribution system investments. In Section 6, I discuss the proposed change to the AMEEP-E pilot and electric rates for customers with heat pumps, and in Section 7 I present some concerns with Con Edison's load forecasting. Finally, in Section 8, I discuss issues with Con Edison's proposal to continue to socialize the cost of RNG interconnection.

2. Summary of Conclusions and Recommendations

Q. Please summarize your conclusions.

A. I summarize my conclusions as follows:

- Con Edison is planning its gas system for a business-as-usual future.
- While Con Edison is making progress on NPA implementation, the scale of Con Edison's expenditure on NPAs is dwarfed by the size of its main and service replacement programs.
- There are many market-ready alternatives to pipe replacement that can be used to remediate leaking or leak-prone pipes. Con Edison uses each of these technologies, but in a limited capacity.
- The Affordable Multifamily Electrification Pilot ("Pilot") will help extend AMEEP-E eligibility to affordable and low-income buildings that would otherwise not be eligible for Clean Heat incentives and ensure that low-income residents are protected from energy cost increases after their buildings

convert to heat pumps. However, as proposed, the Pilot may result in financial windfalls to landlords.

- Despite potential benefits, customers may be hesitant to enroll in SC 1 Rate IV for customers with heat pumps, due to unfamiliarity with the rate structure. The Company does not currently engage in any marketing, education, and outreach activities related to SC 1 Rate III targeted at heat pump customers.
- A correction to the efficiency of heat pump water heaters in load forecasting would have potentially substantial impacts on overall forecasted consumption and emissions.
- Con Edison's proposal to continue the current cost recovery mechanism for RNG interconnection is problematic.

Q. Please summarize your recommendations.

A. I summarize my recommendations as follows:

- The PSC should order Con Edison to align gas planning with decarbonization mandates.
- The PSC should order Con Edison to develop a geospatial NPA tool as described in Exhibit NRDC-AN-4.
- Con Edison should eliminate all eligibility requirements for the Energy Exchange program and expand program offerings to all customers who require a service replacement for leaking services or services associated with main replacement.
- Regarding the Electric Advantage program, Con Edison should expand its program offerings to more main replacement projects.
- Con Edison should be required to report more metrics pertaining to its progress with NPAs.
- The Commission should require Con Edison to disclose more information about the benefit-cost analysis calculations for each NPA project.

- Con Edison should explore mechanisms to address the potential windfalls to landlords from participation in the Affordable Multifamily Electrification Pilot, such as by conditioning AMEEP-E incentives on an agreement from the landlord to reduce rent for tenants to reflect heating costs being shifted to customers' electric bills, from landlords' formerly centralized combustion equipment.
- The Company should promote both SC 1 Rate III and SC 1 Rate IV to Clean Heat program participants and other residential heat pump customers and offer the Price Guarantee to residential heat pump customers who enroll in either rate option.
- Con Edison should improve its electricity load forecasting by revising its assumption about the efficiency of heat pump water heaters.

- The Commission should deny Con Edison's request to continue the current cost recovery mechanism for RNG interconnection. The entity requesting interconnection to the gas system should be responsible for the full cost of interconnection.

3. Background and Overview of Filing

A. Background on Climate Policy in New York

Q. Please describe the relevant climate policies in New York.

A. In 2019, the Governor signed the CLCPA into law. The CLCPA calls for ambitious, economy-wide clean energy, co-pollution reduction, and climate targets. The Act requires a 40 percent reduction in greenhouse gas (GHG) emissions from 1990 levels by 2030 and an 85 percent reduction by 2050 across all sectors of the state's economy. This law also sets a goal for the state to achieve net-zero GHG emissions by 2050, which means all remaining emissions (above the required 85 percent reduction) must be offset. The CLCPA also established the Climate Action

Council (CAC) and tasked this body with preparing a Scoping Plan to serve as the roadmap to achieve the Act's targets and policy objectives.

The New York State Energy Research and Development Authority (NYSERDA) and the Department of Environmental Conservation (DEC) commissioned modeling of the statewide and economy-wide benefits, costs, and GHG emissions reductions of different pathways for achieving the CLCPA's emissions reduction goals ("Integration Analysis"). The Integration Analysis identified that widespread building electrification, decarbonized electricity, and aggressive energy efficiency measures are essential for New York to meet the CLCPA's targets and policy objectives.[1] Following the development of the Integration Analysis, the Scoping Plan indicated that the vast majority of

[1] New York State Climate Action Council Draft Scoping Plan: Integration Analysis Technical Supplement, p. 84-85. Prepared for the New York State Energy Research and Development Authority and New York State Department of Environmental Conservation. Available at https://climate.ny.gov/-/media/project/climate/files/Draft-Scoping-Plan-Appendix-G-Integration-Analysis-Technical-Supplement.pdf.

current fossil gas customers (residential, commercial, and industrial) need to transition to electricity by 2050. Further, the Scoping Plan identified statewide fossil gas use reductions of at least 33 percent by 2030 and 57 percent by 2035.[2] Emphasizing the importance of planning for the gas system transition, the Scoping Plan dedicates a full chapter on recommendations for the strategic downsizing of the gas system.[3]

Q. Have any Commission proceedings dealt with the CLCPA?

A. Yes. The Commission opened Case No. 20-G-0131 ("Gas Planning Proceeding") on March 19, 2020, 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" (Order Instituting Proceeding at 4).

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

[3] *Id.* at 250-363.

In the same proceeding, the PSC released the Order Adopting Gas System Planning Process (Planning Order) on May 12, 2022. The Planning Order requires the gas utilities to file long-term plans ("LTP") every three years and file annual reports in interim years. Per the Planning Order,[4] analyses underlying each long-term plan must consider energy efficiency and NPAs, and the utility must include an NPA-only scenario unless it presents sufficient evidence that an NPA-only scenario is not feasible. As required by the Gas Planning Order, utilities must compare alternatives based on benefit-cost analysis, bill impact analysis, and emissions impacts. In addition, each utility must present a likely and a preferred plan for its portfolio of investment.

Q. What are non-pipeline alternatives?

A. NPAs are solutions that meet customer energy needs while avoiding traditional gas infrastructure investments.

[4] New York Public Service Commission. Order Adopting Gas System Planning Process. Case Nos. 20-G-0131 and 12-G-0297. Issued May 12, 2022.

Q. Has Con Edison filed an LTP?

A. Yes. In Case 23-G-0147, Con Edison and its sister utility, Orange and Rockland (O&R), filed their Initial LTP on May 31, 2023. The Companies filed the Revised LTP on September 25, 2023, and received comments on it. The Final LTP was filed on November 29, 2023. Following each filing, PA Consulting, the consultant to the Department of Public Service staff, and stakeholders (including NRDC) submitted assessments and comments.

The Initial, Revised, and Final LTPs all evaluated three scenarios, including the Reference, Hybrid, and Deep Electrification pathways. The Reference Scenario reflects a business-as-usual approach and is not projected to be compliant with the CLCPA. Table 1, presented below and in Exhibit NRDC-AN-2, shows some key attributes of these pathways.

Table 1. Con Edison LTP Pathways Critical Assumptions

		Reference	Deep Electrification	Hybrid
End date of GIRRP		2040	2031	2040
2043	Customers	937,876	404,111	639,337
	Sales (TBTU)	152	31	110
	Cert. fossil gas (TBTU)	7.6	24.0	64.0
	RNG (TBTU)	0.0	6.0	39.0
	Hydrogen (TBTU)	0.0	0.0	7.0
	Simple weighted average fuel price ($/MMBtu)	$6.36	$9.21	$11.70

Q. Please describe the Commission's directives to Con Edison in Case 23-G-0147.

A. On September 20, 2024, the Commission issued an order on Con Edison's Final LTP. This Order found that "while the Final LTP has many positive elements, several others need to be refined and/or revised" and did specifically not approve it (Order at p. 2). Regarding future investments related to the LTP, this order

pointed out that relevant proposals would likely arise in rate or other Commission proceedings, and that the Commission would "address recovery of costs for specific proposals and actions associated with this LTP in Con Edison's and ORU's rate filings, or when addressing specific filings as required as part of this proceeding. We note that if a rate case proposal relates to an element of the Companies' LTP, such proposal will be subject to review through the traditional rate case process, without any presumption as to the outcome." (Order at 32).

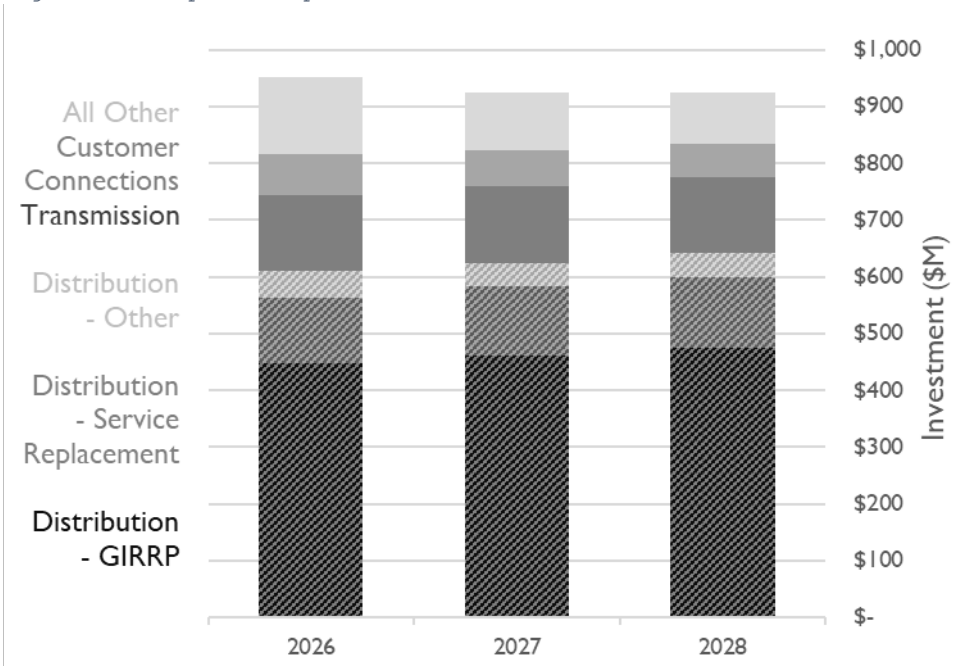
B. Overview of Aspects of the Rate Case Filing

Q. What is Con Edison proposing in this gas rate case?

A. Over the three-year rate period from 2026 to 2028, Con Edison is proposing about $1.4 billion in capital investments to replace leak-prone mains through the Gas Infrastructure Replacement and Reduction Program (GIRRP), $360 million to replace services, and almost $200 million for new customer connections (Exhibit NRDC-AN-3 at response to NRDC-2-8, attachment 1). Total

proposed capital investments are shown in Figure 1, shown below and in Exhibit NRDC-AN-2.

Figure 1. Proposed capital investments



Source: Exhibit NRDC-AN-3 at response to NRDC-2-8, attachment 1 (2026-2027 values); Exhibit NRDC-AN-3 at response to NRDC-2-7, attachment 1 (2029-2034 values).

In addition to these capital investments, in the rate case filing Con Edison discusses its portfolio of NPA programs, including the Electric Advantage Program, Energy Exchange Program, and the Area Load Relief Program.

Q. Is Con Edison making any notable proposals on the electric side?

A. Yes. Con Edison is proposing to expand eligibility for the Affordable Multifamily Energy Efficiency Program – Electrification (AMEEP-E) pilot and is requesting re-approval of the RNG interconnection cost recovery mechanism previously approved in Case 19-G-0066.

4. Con Edison's Proposed Investments Do Not Reflect Long-Term Planning

Q. What is your assessment of Con Edison's approach to gas system planning in this rate case?

A. Con Edison's approach in this rate case demonstrates adherence to a business-as-usual future. This scenario notably does not align with achieving the greenhouse gas (GHG) emission reduction targets mandated by the CLCPA. Despite the extensive time and resources the Company has invested in analyzing different strategies for achieving decarbonization (i.e. within its long-term plan and elsewhere), this rate case filing appears to be most consistent with Con Edison's Reference scenario from the LTP. Importantly,

the Commission underscored the importance of moving beyond the Reference Pathway to a planning strategy that explicitly advances decarbonization while limiting impacts on affordability, minimizes potential stranded assets, and emphasizes significant reductions in gas usage through strategic electrification and the deployment of non-pipe alternatives (NPAs). (*See* Order at 29-32, 53-57).

Q. Do the LTP Hybrid and Deep Electrification scenarios support the Con Edison gas system investments proposed in this case?

A. No, the proposed investments do not appear to support Hybrid or Deep Electrification scenarios. As described above, these scenarios were developed as part of Con Edison's LTP filing to model different strategies for achieving CLCPA-compliant emission reductions. Con Edison presents these scenarios in its Integrated Long-Range Plan included as Exhibit 1 to the Clean Energy Transition Panel Testimony in this rate case. However, when asked to answer questions about the forecasts and modeling

assumptions of the Hybrid and Deep Electrification scenarios in discovery, the Company objected, stating that the information was "irrelevant", "not reasonably calculated to lead to the discovery of admissible evidence", and "seeks information that exceeds the scope of this proceeding" (Exhibit NRDC-AN-3 at response to NRDC-2-10). The Company states that the Hybrid and Deep Electrification pathways "represent potential outcomes based on, as yet, unrealized dependencies."

Q. Does Con Edison account for the uncertainties of future gas demand?

A. No, Con Edison appears to be planning future investments based on present conditions (Exhibit NRDC-AN-3 at response to NRDC-2-23 and NRDC-4-75). For example, the Company's new customer connections forecast is based on current statutory and regulatory requirements; it does not take into account future uncertainties regarding NYCRR 14 part 230, the policy dictating the length of entitlements for new connections (Exhibit NRDC-AN-3 at response to

NRDC-4-75).

Q. As you noted above, the Commission did not approve Con Edison's Final LTP. What should Con Edison have done in this proceeding?

A. The Company could have used — but did not use - this case as an opportunity to explore and present investment proposals that would have more effectively aligned with the Commission's guidance for CLCPA compliance by prioritizing options that achieve the greatest emission reduction potential at the lowest possible impact on affordability.

Q. What are your recommendations regarding Con Edison's planning practices?

A. I recommend that the Commission direct Con Edison to do the following:

- align planning and investment proposals with the State's decarbonization mandates, as set forth in the CLCPA and supported by the Commission's guidance in recent orders.
- modify its traditional gas distribution system investment programs and associated

budgets. Specifically, the Company should scale up investments in NPA programs, as described further in the next section of this testimony, to more effectively support the CLCPA targets.

- develop a geospatial data tool, as described in Exhibit NRDC-AN-4, to proactively identify and prioritize segments of its gas distribution system where NPAs are technically feasible, cost-effective, and aligned with safety, environmental, and equity considerations.

5. Con Edison Considers Alternatives to Traditional Gas Infrastructure but Not at the Needed Scale

A. Traditional Gas Infrastructure Investments

Q. Please describe Con Edison's proposed gas distribution system investments.

A. On average, Con Edison is proposing to invest $625 million in the gas distribution system per year between 2026 and 2028, accounting for more than two-thirds of the total proposed capital budget. Four programs within the distribution

system investment category address leaking or leak-prone pipes on the system: the Gas Infrastructure Replacement and Reduction Program (GIRRP), the Large Diameter Gas Main Program, the Service Replacement Program, and the Distribution Integrity Main Enhancement program. Here I focus on the first three of these programs. Notably, the GIRRP is the largest of these programs, accounting for 74 percent of the gas distribution system budget, or 49 percent of all proposed gas investments, and the Service Replacement Program accounts for roughly 13 percent of total gas investments (Exhibit NRDC-AN-3 at response to NRDC-2-8, attachment 1). Table 2 (presented below and in Exhibit NRDC-AN-2) shows three notable programs for distribution system investment relative to the Company's total gas capital budget.

Table 2. Proposed gas capital investments

Program	**RY1 2026**	**RY2 2027**	**RY3 2027**	**3-Year Total**	**3-Year Average**
GIRRP	$448.4	$461.6	$475.0	$1,385.1	$461.7

Large Diameter Gas Main	$9.0	$9.0	$9.3	$27.2	$9.1
Service Replacement	$114.3	$120.9	$124.7	$359.9	$120.0
Other distribution investments	$37.8	$32.9	$33.1	$103.9	$34.6
Distribution - subtotal	$609.5	$624.5	$642.1	$1,876.1	$625.4
All other investments	$342.4	$299.6	$283.1	$925.0	$308.4
Total	$951.9	$924.0	$925.1	$2,801.1	$933.7

Source: Exhibit NRDC-AN-3 at response to NRDC-2-8, attachment 1.

Q. Please describe the GIRRP.

A. The GIRRP is a program for removing leak-prone pipe from the Company's gas system. The Company defines leak-prone pipe as "small diameter (12" or smaller) cast iron, wrought iron, and unprotected steel (pre-1972) mains" (Exhibit GIOP-1, page 7). From 2020 to 2024, Con Edison replaced an average of 86 miles of leak-prone pipe per year under the GIRRP (Exhibit NRDC-AN-3 at response to NRDC-4-74).

Q. What are Con Edison's proposed investments for the GIRRP?

A. Con Edison is proposing to invest nearly $1.4 billion on leak-prone main replacement through the GIRRP in the next three years (Exhibit NRDC-AN-3 at response to NRDC-2-8, attachment 1), with a goal of replacing or abandoning 80 miles each year, or 240 miles total (GIOP Panel Testimony, page 17). Additionally, Con Edison replaces services associated with each segment of main replaced through the GIRRP, however service replacement costs are recorded under the Service Replacement Program (discussed later). Con Edison states that it replaces approximately one service for every 150 feet of main replaced through the GIRRP (Exhibit GIOP-1 Redacted, page 15). This implies approximately 2,800 service replacements resulting from the GIRRP per year, or more than 8,400 service replacements total from 2026-2028.

Q. Please describe the Large Diameter Gas Main Program.

A. The Large Diameter Gas Main Program focuses on

rehabilitating distribution pipes 16” and larger. Con Edison considers methods for resealing pipe joints and relining the interior of pipes, as well as pipe replacement within this program.

Q. What is the Company’s proposed budget for the Large Diameter Gas Main program?

A. Con Edison proposed a budget of $27 million over three years for this program, just 1 percent of its total gas capital budget. Notably, half of the proposed budget is for resealing pipes and roughly 12 percent of the budget is for relining (See Table 3, below, also included in Exhibit NRDC-AN-2). However, since the program only makes up 1 percent of the Company’s proposed investments, the magnitude of these alternatives is negligible.

Table 3. Large Diameter Gas Main Program proposed budget by method (million $)

Method	**2026**	**2027**	**2028**	**% of Total**
CISBOT	$4.55	$4.55	$4.62	50%
CIPL	$1.05	$1.05	$1.08	12%

Replacement	$3.39	$3.39	$3.57	38%
Total	$8.99	$8.99	$9.27	100%

Source: Exhibit NRDC-AN-3 at response to DPS-42-894.
Note: "CISBOT" stands for Cast-Iron Sealing Robot, and "CIPL" stands for cured-in-place liners.

Q. Please describe the Service Replacement Program.

A. The Service Replacement Program is a catchall program that records the replacement of services that are actively leaking, pre-1972 "vintage" services, leak-prone services identified by the Distribution Integrity Management Program (DIMP), and services replaced as part of the GIRRP (GIOP Testimony, page 21). The Company has replaced an average of 5,300 services per year for each of the last five years (Exhibit NRDC-AN-3 at response to DPS-25-592).

Q. What is the Company's proposed budget for the Service Replacement program?

A. The Company is proposing to spend roughly $360 million on service replacements between 2026 and 2028, expecting to replace roughly 4,700 services each year (Exhibit NRDC-AN-3 at response to DPS-42-897).

B. NPA Programs

Q. What programs does Con Edison offer that seek to avoid traditional gas system investment?

A. Con Edison has made laudable progress in establishing an NPA assessment framework and implementing NPAs. Con Edison has three programs that implement NPAs: the Electric Advantage Program, the Energy Exchange Program, and the Area Load Relief Program. The Company petitioned to implement NPA projects in Case 19-G-0066, which the Commission approved in June 2022. Among other things, the order required Con Edison to file an Implementation Plan to be updated annually, and report annually on expenditures and implementation progress.

Q. What measures does Con Edison consider within its NPA programs?

A. According to its NPA Deployment Plan, filed in January 2025, in case 23-G-1047, Con Edison considers the following NPA measures for the Electric Advantage program: air-source heat pumps, heat pump water heaters, induction and electric stoves, heat pump dryers,

weatherization, and building envelope upgrades. For the Energy Exchange program, the Company offers non-space heating electrification measures including heat pump water heaters, induction and electric stoves, heat pump dryers, weatherization, and building envelope upgrades;[5] it also provides incentives for electric panel upgrades and wiring and gas equipment removal. For the Area Load Relief program, Con Edison offers gas and electric energy efficiency measures including steam trap replacements, pipe insulation, building envelope upgrades, and air- and ground-source heat pumps.

Q. Please describe the Electric Advantage Program.

A. The Electric Advantage Program identifies opportunities for NPAs in place of leak-prone pipe replacement projects under the GIRRP. Projects that pass an initial suitability screening undergo feasibility modeling and a cost-effectiveness assessment. For feasible projects that score 1.0 or greater on the

[5] Customers of the Energy Exchange program can apply for space heating electrification incentives separately through the Company's Clean Heat Program.

societal cost test, the Company and an implementation contractor pursue outreach to determine customers' interest in participating. For the NPA to move forward, all customers served by the leak-prone pipe are required to disconnect from the segment of main to allow for pipe abandonment (except in limited cases, such as when the participation of an end-of-main customer allows for partial pipe abandonment).[6] Complete pipe abandonment is not assured for all projects under implementation; partial or full pipe replacement may still be required if an emergent issue occurs before electrification is complete.[7]

Q. What are the Company's accomplishments in the Electric Advantage program to date?

A. As of March 2025, the Company has identified 132 projects that are feasible and cost-effective (i.e. with a benefit-cost analysis score greater than or equal to 1.0) under the Electric Advantage Program.[8] To date, the Company has

[6] July 2024 Implementation Plan, page 14.
[7] July 2024 Implementation Plan, page 17.
[8] BCA Filing, March, 2025, page 3.

spent $1.4 million on NPA implementation, electrifying 19 buildings and abandoning 800 feet of main (Exhibit NRDC-AN-3 at response to NRDC-3-58-Supplemental).

Q. Describe the Energy Exchange Program.

A. The Energy Exchange Program identifies opportunities for NPAs to avoid gas service replacement; specifically, the replacement of pre-1972 services. Con Edison is systematically replacing its entire inventory of about 34,000 pre-1972 services, which represent roughly 10 percent of all services on its system (NPA Deployment Plan, January 2025, Case 23-G-1047). On average, the Company has replaced a little over 3,000 pre-1972 services a year for the last five years (Exhibit NRDC-AN-3 at response to NRDC-3-53). The Energy Exchange program identifies 100 of these pre-1972 services each year as candidates for an NPA. The Company targets single-family, non-heating residential customers located in disadvantaged communities for NPA treatment (NPA Deployment Plan, January 2025, Case 23-G-1047).

Q. What are the Company's accomplishments in this program to date?

A. Since this program launched in August 2024, Con Edison has spent $73,000, electrifying 4 buildings (Exhibit NRDC-AN-3 at response to NRDC-3-58-Supplemental).

Q. Please describe the Area Load Relief Program.

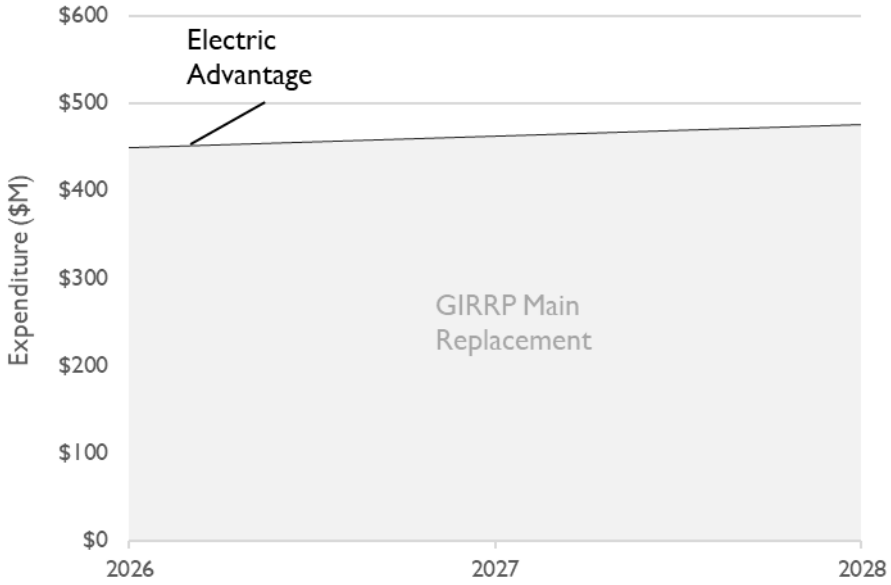
A. The Area Load Relief Program identifies opportunities for NPAs on areas of the gas system where there is a projected capacity constraint. The Company partially implemented NPAs for one project under the Area Load Relief Program to date, however, the project ended part way through because one of the new business developments driving the anticipated capacity constraint did not materialize (Con Edison, Non-Pipes Alternatives Annual Expenditures & Program Report, Case 22-G-0065, November 2024). The Company has not identified any new opportunities for this project due to lack of forecasted load growth (CETP Testimony, page 54). While acknowledging the existence and achievements of this program, this testimony does not focus on

the Area Load Relief program.

Q. Please compare the Company's gas infrastructure investment programs with its NPA expenditures.

A. The scale of Con Edison's expenditure on NPAs is dwarfed by the size of its main and service replacement programs. Figure 2 shows projected GIRRP expenditure relative to theoretical expenditure for the Electric Advantage Program, assuming the Company spends the same amount each year as the program's total expenditure to date (see below and Exhibit NRDC-AN-2). In this graph, the Electric Advantage Program expenditures are shown with a barely visible black line.

Figure 2. Projected main replacement versus theoretical NPA expenditures

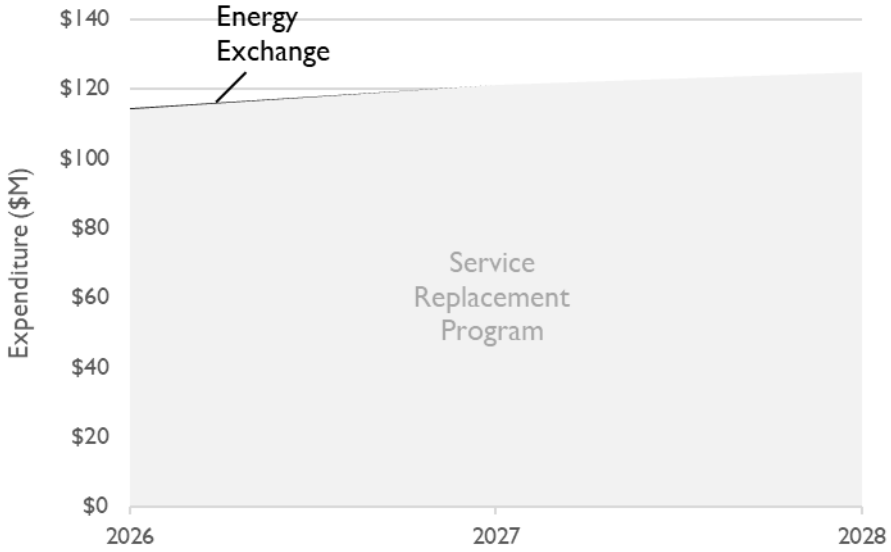


Source: Exhibit NRDC-AN-3 at response to NRDC-2-8, attachment 1 (GIRRP expenditure); Exhibit NRDC-AN-3 at response to NRDC-3-58-supplemental (Electric Advantage expenditure to date.)

Figure 3 (provided below and in Exhibit NRDC-AN-2) shows projected Service Replacement Program expenditure relative to theoretical expenditure for the Energy Exchange Program, assuming the Company spends the same amount each year as the program's total expenditure to date. As is the case with Electric Advantage expenditures in Figure 2, the Energy Exchange Program outlays can barely be seen relative to

the Service Replacement Program expenditures.

Figure 3. Projected service replacement versus theoretical NPA expenditures



Source: Exhibit NRDC-AN-3 at response to NRDC-2-8, attachment 1 (Service Replacement Program expenditure); Exhibit NRDC-AN-3 at response to NRDC-3-58-supplemental (Energy Exchange expenditure to date).

While I acknowledge that Con Edison is making progress on NPA implementation, these figures demonstrate the magnitude of the Company's continued infrastructure investments and the opportunity for avoided costs if the Company expanded its NPA programs. If we put these investments into a capital recovery model (to include carrying costs), these NPA

investments would appear even smaller relative to traditional investments.

Q. Are there sections of the gas system that are ripe for NPAs?

A. Yes. Radial gas mains are segments of main located at the furthest points of the distribution system with no main beyond them, terminating at a dead-end. There are almost 10,000 radial segments on Con Edison's system, making up nearly 500 miles of main; of those, 130 miles are leak-prone radials, 30 miles of which have three or fewer customers attached (NPA Deployment Plan, January 2025, Case 23-G-1047).

Radial mains are highly suitable for NPAs because abandoning these segments will not disrupt the hydraulic flow of the gas system. It is not feasible to remove a segment of main in the middle of the distribution system where downstream customers are still relying on the flow of gas from upstream. Electrifying customers beginning with radial segments enables the Company to methodically work upstream and

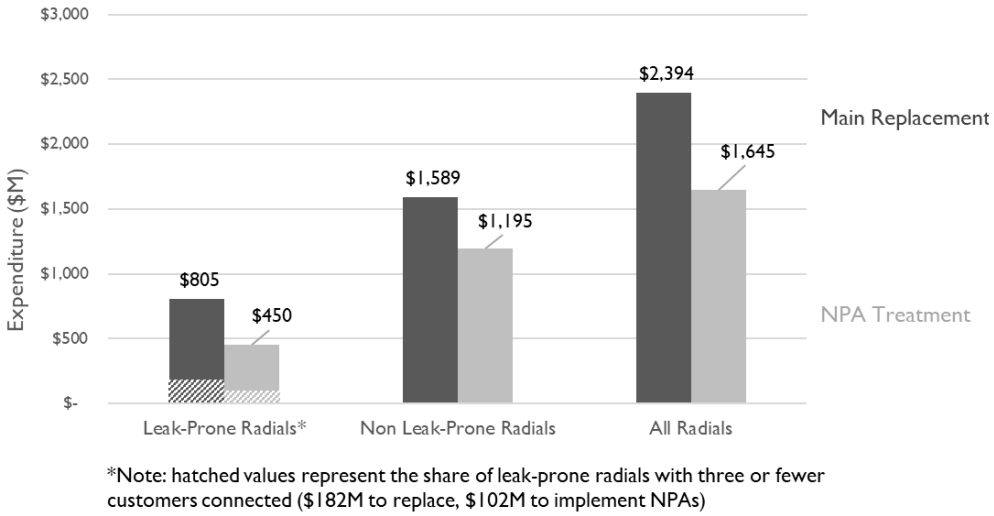
avoid many of the hydraulic barriers related to removing segments of pipe. The Electric Advantage Program currently targets leak-prone radial mains for NPA implementation (NPA Deployment Plan, January 2025, Case 23-G-1047). Geospatial data tools (including the one described in Exhibit NRDC-AN-4) can help with identification of these and other suitable mains for alternatives to traditional infrastructure proposals.

Q. Through the Electric Advantage Program, what are the potential avoided costs of replacing radial gas mains?

A. If the Company were to electrify customers on all radial gas mains (including those that Con Edison defines as leak-prone, as well as those that are not leak-prone) with NPAs, as opposed to replacing the segments of main, it could potentially avoid over $749 million of investment (see Figure 4, below and in Exhibit NRDC-AN-2). If Con Edison implemented NPAs for just the leak-prone radial segments (left-most bars in Figure 4), avoided costs would be $355

million (the difference between the expenditures for replacing leak-prone radials and using NPAs to retire those radials). Implementing NPAs just for leak-prone radials with three or fewer customers (cross-hatched portions of bars on the left) would still avoid $80 million of investment.

Figure 4. Theoretical expenditure on replacement versus NPA treatment of radial mains



Source: Exhibit GIOP-1, page 10 (leak-prone main replacement unit cost); Exhibit NRDC-AN-3 at response to NRDC-3-46 (used to calculate 'other radials' replacement unit cost); NPA Annual Report, November 2024, Case 22-G-0065 (used to calculate Electric Advantage unit cost).

These values are conservative for a few reasons. This analysis assumes that all radial

mains are replaced today. Taking into account carrying costs, the savings to customers would be greater. Additionally, the unit cost for NPA treatment does not account for the length of services that were abandoned for each successful project. Therefore the NPA unit cost is likely overstated.

Q. How did you develop Figure 4?

A. I developed this figure by applying the unit cost of main replacement and the unit cost of NPA implementation to the Company's radial main inventory. The leak-prone pipe replacement average unit costs come from the GIRRP ($1,166/foot), and the non-leak-prone pipe replacement unit costs come from the Company's total abandonment mileage and expenditure ($868/foot). The NPA implementation unit cost comes from the Company's reported values on expenditure to date for projects that completed full or partial main abandonment within the Electric Advantage Program. As of November 2024, the Company had spent $742,830 to abandon or enable the abandonment of 1,139 feet of main,

resulting in a unit cost of $652/foot.

Q. How could the Company expand NPA offerings to more customers through the Energy Exchange Program?

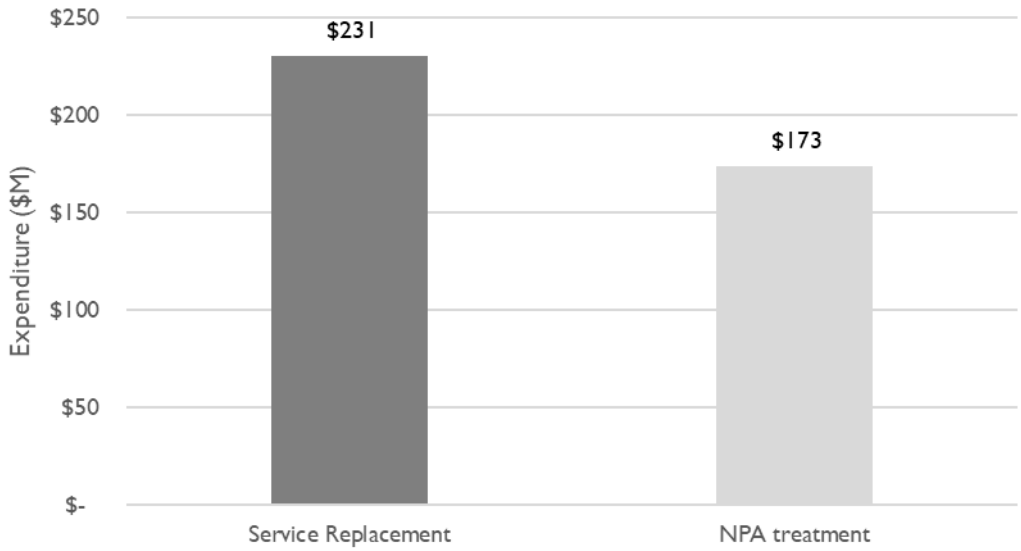
A. Con Edison currently only pursues 100 NPA opportunities a year within the Energy Exchange Program (NPA Deployment Plan, January 2025, Case 23-G-1047), while historically replacing over 3,000 of these services a year on average (Exhibit NRDC-AN-3 at response to NRDC-3-53). Moreover, the Energy Exchange Program targets non-heating customers, limiting the potential load reduction from implementing NPAs. The Company should expand the scope of the Energy Exchange Program to include more services each year and extend eligibility to gas heating customers.

Q. Through the Energy Exchange Program, what are the potential avoided costs from replacing pre-1972 services?

A. If the Company were to implement NPAs for all pre-1972 services instead of replacing them, it could avoid $57 million of infrastructure

investments (Figure 5, provided below and in Exhibit NRDC-AN-2). This assumes that all services would be replaced today; savings to ratepayers are higher when taking into account the carrying costs.

Figure 5. Theoretical expenditure on replacement versus NPA treatment of pre-1972 services



Sources: Exhibit NRDC-AN-3 at response to NRDC-3-53; Exhibit NRDC-AN-3 at response to NRDC-3-58-supplemental; Exhibit NRDC-AN-3 at response to DPS-42-897.

Of course, it is not likely that all service replacements could be avoided with NPAs. Nonetheless, the graph shows the scale of the opportunity that is not being adequately pursued.

Q. How did you develop this figure?

A. I developed Figure 5 by applying the unit cost of service replacements and the unit cost of NPA implementation to the Company's inventory of pre-1972 services. The service replacement unit costs come from the Company's projected expenditure and number of services to be replaced through the Service Replacement Program from 2026 through 2028 (three-year average $25,234/service). The NPA implementation unit cost comes from the Company's reported values on expenditure and number of buildings electrified to date through the Energy Exchange Program. As of Q1, 2025, the Company had spent $73,000 and electrified four buildings through the Energy Exchange Program; I converted this to a unit cost of $18,250/service, and applied a 2 percent annual inflation rate for a three-year average of $18,989/service. I assumed that Con Edison will continue to replace pre-1972 services at roughly 3,045 units a year (based on historical replacements from 2020 to 2024). I multiplied the respective unit costs by the projected

number of annual service replacements. Figure 5 reflects the cumulative three-year average expenditure to replace a total of 9,135 services.

Q. What is Con Edison's current approach for rehabilitating leak-prone pipelines?

A. Pipe replacement is Con Edison's primary approach for addressing leak-prone pipe. From 2020 to 2024, Con Edison spent $2.2 billion on pipe replacement (Exhibit NRDC-AN-3 at response to NRDC-3-46), compared with $221 million on alternative solutions (including pipe repair, relining, joint sealing, and NPAs)(Exhibit NRDC-AN-3 at response to NRDC-4-74, Exhibit NRDC-AN-3 at response to NRDC-4-78, Exhibit NRDC-AN-3 at response to NRDC-3-58-supplemental).

Q. What are some available technologies that offer alternatives to pipe replacement?

A. There are many market-ready alternatives to pipe replacement that can be used to remediate leaking or leak-prone pipes, including the following options.

- Pipe repair includes various methods for patching active leaks or areas of corrosion on a pipe without replacing the segment of pipe.
- Beneficial electrification NPAs involve eliminating gas-powered equipment and infrastructure entirely in place of efficient electric alternatives. Efficient electric alternatives to gas-powered end uses include heat pump space heaters, heat pump water heaters, and induction stoves.
- Pipe lining eliminates leaks by inserting a thin, seamless sleeve into pipes that adheres to the interior of the pipe wall, extending the useful life of the pipe by 30-50 years (Exhibit NRDC-AN-3 at response to DPS-12-360). Technologies include Starline cured-in-place liners (Progressive Pipeline Management, Cured-In-Place-Lining As a Pipeline Rehabilitation Emissions Reduction Tool, accessible at:

https://northeastgas.org/files/galleries/Day_1,_Session_2_Cured_in_Place_Liners_as_a_Pipeline_Rehabilitation_Emissions_Reduction_C_GIAMBRONE.pdf).

- Joint sealing is a method for eliminating leaks by resealing the joints between two segments of pipe from the inside. Automated technologies exist to navigate the interior of pipes, identify joints, and apply sealant. In limited circumstances, Con Edison uses a technology called the cast iron sealing robot ("CISBOT") to seal joints on large diameter mains.

Q. To what extent does Con Edison use these alternative technologies?

A. Con Edison uses each of these technologies in a limited capacity.

- Con Edison considers pipe repair for non-GIRRP projects; however, Con Edison indicates that replacement is the preferred method if the location of the leak cannot be

determined, if the leak occurs near a sensitive customer (i.e. school, hospital, nursing home), or if the leak cannot be permanently secured through repair (Exhibit NRDC-AN-3 at response to NRDC-4-74).

- The Company considers beneficial electrification for GIRRP projects, the Service Replacement Program, and capacity expansion projects. Con Edison implements electrification through its three NPA programs, the Electric Advantage Program, the Energy Exchange Program, and the Area Load Relief Program.

- Con Edison considers pipe lining and sealing methods within the Large Diameter Gas Main Program. In the last five years, the Company remediated 3.2 miles of pipe through sealing and 0.1 mile through relining (Exhibit NRDC-AN-3 at response to NRDC-4-78). Con Edison does not consider lining or sealing for any other programs (Exhibit NRDC-AN-3 at response to NRDC-4-78).

Q. Does Con Edison appear to use alternatives as much as feasible?

A. No.

Q. How could a geospatial tool be useful in identifying opportunities for alternatives?

A. Con Edison could use a geospatial tool to identify which areas are best suited for NPAs. The tool could help Con Edison determine where to target NPA implementation or other alternatives to replacement, such as pipe repair, lining, joint sealing, etc. This tool could be powerful in identifying near-term actions that meet the system need while minimizing the risk of stranded assets. The scope of this tool is described in more detail in Exhibit NRDC-AN-4.

Q. What are your recommendations concerning the Energy Exchange Program?

A. Con Edison should eliminate strict eligibility requirements for this program (including single family, non-heating, disadvantaged community location) and expand program offerings to all customers who require a service replacement for

leaking services or services associated with main replacement. Additionally, the Company should notify all customers scheduled for a service replacement about scheduled replacement, educate those customers about electric alternatives to gas appliances, and give them the option to opt out of the service replacement. Con Edison should make adjustments to its proposed Service Replacement Program budget according to the number of customers expected to disconnect from the gas system.

Q. What are your recommendations concerning the Electric Advantage Program?

A. Con Edison should expand its program offerings to more main replacement projects. In particular, the Company should be pursuing NPAs for all radial main replacement projects, not just leak-prone radial mains. Con Edison should adjust its proposed main replacement budget according to expected customer disconnections from radial gas segments.

The Company should update its NPA Screening and Suitability Criteria, approved in 2022 in

Case 20-G-0131, based on lessons learned from the first few years of implementing NPAs and incorporate stakeholder feedback.

The Company should develop more educational materials and proactively notify customers about electric alternatives well before the time for replacement comes.

For each NPA project under the Electric Advantage Program that does not achieve main abandonment, the Company should be required to file a report explaining why the project was closed, including information about cost assessment, customer participation, and the cause of project closure.

Q. What are your recommendations concerning the Company's NPA programs in general?

A. The Commission should require Con Edison to report more metrics pertaining to its NPA process and progress. The Company should report more about the number and type of projects identified as potential opportunities for each NPA program, and how each opportunity performed on each of the Company's screening and

suitability criteria.

The Company should also be required to disclose more information about the benefit-cost analysis calculations for each successful NPA project, as well as the ones that Con Edison did not proceed with because not all adjacent customers elected to participate.

Q. What are your recommendations concerning joint sealing and pipe lining?

A. Con Edison should expand its consideration of joint sealing and pipe lining to more projects. Pipe lining and joint sealing eliminate the near-term need to replace a pipe, thereby reducing the risk of stranded assets.

Con Edison dismisses the use of cured-in-place liners on leak-prone pipe as a way to reduce emissions, stating that the emissions factor for lined and unlined leak-prone pipe is the same under EPA Subpart W (Exhibit NRDC-AN-3 at response to NRDC-4-79). However, pipe lining has proven to be an effective way of reducing methane emissions and, thus, improving safety (Progressive Pipeline Management, Cured-In-

Place-Lining As a Pipeline Rehabilitation Emissions Reduction Tool). Moreover, pipe lining is less costly than replacement and does not require the excavation of the entire pipe. Con Edison should conduct an analysis investigating the effectiveness of cured-in-place liners on improving the safety of leak-prone pipes.

6. Con Edison Can Do More to Promote Heat Pump Adoption at Affordable Housing Facilities and Electric Rate Designs that Encourage Electrification

A. Affordable Multifamily Electrification Pilot

Q. Describe Con Edison's proposed Affordable Multifamily Electrification Pilot.

A. The Affordable Multifamily Electrification Pilot will provide bill credits to cover incremental heating costs following heat pump installations for residents who live in naturally occurring affordable housing (NOAH) and low-income cooperative buildings and are enrolled in Con Edison's existing bill discount program, the energy assistance program (CES Panel Testimony, page 20-22). Con Edison explains that heating costs are typically included in rent or common

charge in buildings with centralized fossil heating systems tied to the building gas meter; however, in-unit heat pumps are likely to be tied to residents' individual electric meters, making residents responsible for heating charges as part of their electric bill and thereby increasing their total housing costs (rent plus energy costs) when unregulated NOAH and low-income cooperative buildings convert to heat pumps (CES Panel Testimony, page 20). The Pilot will enable the Company to extend eligibility for its Affordable Multifamily Energy Efficiency Program – Electrification (AMEEP-E), which is currently targeted at regulated affordable multifamily buildings subject to requirements that prevent the aforementioned cost shift, to NOAH and low-income cooperative buildings (CES Panel Testimony, page 21-22). Con Edison requests $1.2 million for O&M and proposes to defer the costs associated with the bill credits to the next rate period, citing a lack of firm estimates on program participation (CES Panel Testimony, page 24; Accounting Panel Testimony,

page 113).

Q. How will the Pilot generate learnings to inform policy recommendations?

A. The Company states that it will collect data to quantify participating residents' total housing cost changes, including changes in energy burden, housing burden, consumption profiles, and energy savings resulting from conversion to heat pumps (CES Panel Testimony, page 23). The Company will also convene a working group comprised of experts on affordable housing and develop a final report summarizing findings and policy recommendations (CES Panel Testimony, page 24).

Q. Do you support Con Edison's proposed Affordable Multifamily Electrification Pilot?

A. Yes. The Pilot will help extend AMEEP-E eligibility to affordable and low-income buildings that would otherwise not be eligible for the AMEEP-E incentives for affordable housing and ensure that low-income residents are protected from total housing cost (rent and energy) increases after their buildings convert

to heat pumps. The data collected under the Pilot will also inform long-term policy solutions to address barriers to heat pump adoption in NOAH and low-income cooperative buildings, ensuring that progress towards New York's climate and electrification goals are achieved in an equitable manner.

Q. Do you have any concerns with the Pilot?

A. Yes. As proposed, the Pilot may result in financial windfalls to landlords, who will have no incentive to reduce rent for tenants after electrification to reflect the shift in responsibility for heating costs, from landlord to tenant.

Q. How should Con Edison address this concern?

A. Con Edison should explore mechanisms to address the windfalls to landlords, such as by conditioning AMEEP-E incentives on an agreement from the landlord to reduce rent for tenants to reflect the landlord's reduced operating costs and the tenants' increased costs when they pay for heat directly on their electric bills. At minimum, Con Edison should study the magnitude

of the cost impacts on landlords and provide policy recommendations to address this issue in the future.

Q. How does the May 15, 2025 Order in Cases 14-M-0094, 18-M-0084, and 25-M-0248 affect Con Edison's proposed Affordable Multifamily Electrification Pilot and its inclusion in this rate case?

A. The May 15, 2025 Order clarifies the Commission's intent to limit consideration of customer-facing energy efficiency and building electrification (EE/BE) efforts by utilities—including pilots, demonstrations, or supplemental programs—to generic EE/BE proceedings rather than within utility rate cases or gas system long-term plans. Specifically, the Order indicates that since utility EE/BE cost recovery will be administered through the SBC surcharge or similar mechanism starting January 1, 2026, the Commission expects these initiatives to be proposed, reviewed, and authorized solely within the scope of the budgets established in those generic

proceedings. This means that incremental customer-facing EE/BE programs, such as Con Edison's proposed Affordable Multifamily Electrification Pilot, should not be included as new proposals for cost recovery in this rate proceeding, but rather within the appropriate generic EE/BE proceedings, consistent with portfolio Implementation Plan submissions.

Q. What are the implications of this directive for Con Edison's proposal?

A. The implication is that Con Edison should not be seeking cost recovery for the Affordable Multifamily Electrification Pilot through this rate case. Instead, any such proposal, including related costs, should be submitted and justified within the framework of the Commission-established budgets and procedures for EE/BE portfolios. The utility's inclusion of the Pilot in this rate case may therefore be inconsistent with the Commission's clear guidance in the May 15, 2025 Order.

Q. What should Con Edison do to align with the Order?

A. Con Edison should move this proposal out of the rate case and present it in the generic EE/BE proceeding, consistent with my recommendations to address concerns about windfalls to landlords.

B. Select Pricing Plan Price Guarantee

Q. Describe Con Edison's Select Pricing Plan (SPP) Price Guarantee.

A. The SPP Price Guarantee is available to residential ground source heat pump (GSHP) and air source heat pump (ASHP) customers who enroll in the optional SC 1 Rate IV, providing a credit for any difference between what the customer paid during the first twelve-month period under SC 1 Rate IV and what the customer would have paid under SC 1 Rate I, the default rate (CES Panel Testimony, page 32). Con Edison proposes to extend the SPP Price Guarantee to new customers through December 31, 2028, and to remove the current enrollment cap of 500 GHSP

and 500 ASHP customers (CES Panel Testimony, page 33-34). The Company estimates the total amount to be paid under the SPP Price Guarantee at $792,044 by December 31, 2028 for 36,000 customers in total, reflecting successful enrollment of 1,000 customers each month over three years. (NRDC 5-98, Attachment 1).

Q. Do you support Con Edison's proposal to extend and expand the SPP Price Guarantee?

A. Yes. While SC 1 Rate IV leads to savings for most heat pump customers compared to the standard SC 1 Rate I, with 85 percent of customers seeing bill reductions under SC 1 Rate IV (CES Panel Testimony, page 33-34), customers may still be hesitant to enroll in SC 1 Rate IV due to unfamiliarity with the rate structure (instead of flat volumetric charges, SC 1 Rate IV bills customers via seasonal, time-varying demand charges, which are uncommon for residential rates). These customers would miss out on the potential bill reductions under SC 1 Rate IV. The Price Guarantee can help provide reassurance to customers hesitant to enroll in

SC 1 Rate IV, thereby increasing enrollment and further incentivizing heat pump adoption.

Q. What other electric rates are suitable for customers with heat pumps?

A. SC 1 Rate III is also suitable and may be simpler for residential heat pump customers to understand compared to SC 1 Rate IV. Like SC 1 Rate IV, SC 1 Rate III is a seasonal, time-varying rate with the highest prices during summer on-peak periods, followed by winter on-peak periods, and lower prices during off-peak periods (Exhibit ERP-2, Schedule 3, Table No. 3). Because heat pump load is concentrated in winter months, heat pump customers will likely see lower bills compared to a rate that is not seasonally differentiated (e.g., the standard SC 1 Rate I). Time-differentiated charges during both summer and winter also enable customers to further reduce their bills by shifting load away from peak periods. However, in contrast to SC 1 Rate IV, SC 1 Rate III bills customers via volumetric charges instead of demand charges (Exhibit ERP-2, Schedule 3, Table No. 3 and

Table No. 4).

Q. Does Con Edison currently market SC 1 Rate III to heat pump customers?

A. No. Con Edison promotes SC 1 Rate IV to heat pump customers by including information about the rate in emails, bill messages, and education materials targeted at Clean Heat participants (EDF 1-8). However, the Company does not currently engage in any marketing, education, and outreach activities related to SC 1 Rate III targeted at heat pump customers (NRDC 7-126c).

Q. How does heat pump customer enrollment in SC 1 Rate III compare to that in SC 1 Rate IV?

A. In 2024, 215 heat pump customers are enrolled in SC 1 Rate IV, accounting for 53 percent of the total SC 1 Rate IV enrollment (NRDC 5-95c). In comparison, 77 heat pump customers are enrolled in SC 1 Rate III in 2024, accounting for only 3 percent of the total SC 1 Rate III enrollment (NRDC 7-125a).

Q. How should Con Edison encourage residential heat pump customer enrollment in SC 1 Rate III?

A. The Company should promote both SC 1 Rate III

and SC 1 Rate IV to Clean Heat program participants and other residential heat pump customers and offer the Price Guarantee to residential heat pump customers who enroll in either rate option. Con Edison should also provide robust tools to help customers analyze which rates would be most beneficial for them based on their actual or projected electric load. These activities would encourage heat pump customers to enroll in cost-reflective rate designs that best fit their needs and allow them to reduce their bills, which in turn make heat pump adoption more financially attractive.

Q. What data should Con Edison collect from heat pump customers enrolling in the Price Guarantee?

A. The Company should conduct customer surveys on the importance of the Price Guarantee on customers' decision to install a heat pump and to enroll in SC 1 Rate III and SC 1 Rate IV. This data would enable the Company, the Commission, and stakeholders to evaluate the long-term benefits of the Price Guarantee in

driving heat pump adoption and enrollment in dynamic rates that reflect varying costs by time of day and season.

7. Con Edison's Assumption Regarding Heat Pump Water Heater Efficiency May Inflate the Electric Load Forecast

Q. Are there any areas for improvement in the key assumptions or methodologies Con Edison used to develop its load forecasts?

A. Yes. I find that Con Edison could improve its electricity load forecasting by revising its assumption about the efficiency of heat pump water heaters.

Q. Please explain Con Edison's current assumption regarding heat pump water heater efficiency and how it could be improved.

A. To estimate the load impacts of heat pump water heaters (HPWH), the Company assumes a Uniform Energy Factor (UEF) of 2.18 as the average efficiency. This assumption significantly understates the actual performance of HPWHs and results in an overestimation of the electricity load associated with new water heaters. A UEF of 2.18 reflects the federal minimum efficiency

standard, not the average efficiency of currently available models. To support this assumption, the Company provided the following statement:

> "The Company's forecast accounts for the consumer's choice of electric hot water equipment, both within and outside the Clean Heat program. The New York State's Technical Resource Manual (TRM) baseline efficiencies for electric water heaters were selected to best represent the full range of equipment available on the market." (Exhibit NRDC-AN-3 at response to NRDC-6-118. Subpart (a).)

The minimum efficiency rating should not be set to reflect the full range of equipment available on the market. Instead, the Company should base this value on the efficiency ratings of HPWH models currently available. The ENERGY STAR Product Finder is the most appropriate data source, listing approximately 560 certified models from a wide range of manufacturers,

including major brands such as Rheem, A. O. Smith, and Bradford White. This extensive listing indicates that the majority of HPWH models on the market meet ENERGY STAR criteria. The average UEF across all listed HPWH models is approximately 3.7.

Q. If the efficiency factor were corrected, what would the implications be?

A. Using the higher average efficiency value (3.7), rather than the minimum UEF of 2.18, would result in an estimated 40 percent reduction in electricity use from HPWHs compared to the Company's analysis. A reduction in the projected electricity use for HPWHs would have small impacts on peak electric load but potentially substantial impacts on overall consumption and emissions.

8. The Costs of RNG Interconnection Should Not Be Recovered from All Customers

Q. What is the mechanism for recovering RNG interconnection costs?

A. Currently the Company would recover all costs necessary to interconnect local RNG supplies

through the MRA, the Monthly Rate Adjustment, up to a cap of $10 million capital over the term of the Gas Rate Plan. The Company will file to incorporate these costs into base rates in the Company's next gas rate filing (GIOP testimony, p. 62).

Q. Has the Company recovered RNG interconnection costs?

A. Con Edison indicates that it has not incurred any such costs (GIOP testimony, p. 63).

Q. Do you expect Con Edison to incur such costs in the future?

A. Possibly, yes. Con Edison included RNG as a low-carbon supply option in both the Hybrid and Deep Electrification pathways in its LTP (Consolidated Edison Company of New York, Inc. and Orange & Rockland Utilities, Inc. May 31, 2023. Gas System Long-Term Plan).

Q. What is Con Edison's request regarding the treatment of RNG interconnection costs?

A. In the GIOP panel testimony, Con Edison indicates that it wants to continue using the same RNG interconnection cost recovery mechanism

going forward, i.e. include such costs in the MRA to be incorporated into base rates at the next rate case (p. 63).

Q. What do you think of this proposal?

A. This proposal is problematic for multiple reasons, consistent with arguments I presented in the previous Con Edison rate case (Direct Testimony of Alice Napoleon and Asa Hopkins PhD, Case Nos. 22-E-0064 and 22-G-0065, May 20, 2022) and with comments NRDC raised in the LTP process (Initial Comments of Natural Resources Defense Council, Case 23-G-0147, August 21, 2023).

- As a CLCPA compliance strategy, RNG could extend reliance on the gas system and should not be used as a fuel for broad distribution to buildings. Rather, such fuels should be reserved for end uses that have no other readily available, viable alternatives. Further, the costs of such interconnections are themselves traditional gas infrastructure and should be subject to review for NPAs.

- RNG would not benefit Con Edison's customers

unless the Company retains the environmental attributes of the RNG. It does not appear that Con Edison will have any claim to the attributes of the RNG that is interconnected.

- The GHG emissions benefits of RNG are dubious, and combustion of RNG releases harmful emissions. The carbon intensity of RNG varies substantially depending on certain factors such as feedstocks and production methods, and in some cases (such as thermal gasification) it does not reduce GHG emissions relative to combustion of fossil gas.

Q. What do you recommend?

A. The entity requesting interconnection for RNG to the gas system should be responsible for the full cost of interconnection. This is consistent with how interconnection costs are paid on the electric side. It is not clear why responsibility for gas interconnection costs should be different than those of the electric system.

Q. Does this conclude your testimony?

A. Yes.