BENEFIT-COST ANALYSIS: NON-PIPES ALTERNATIVE TO GAS INFRASTRUCTURE REPLACEMENT

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Overview

Consolidated Edison Company of New York, Inc. ("Con Edison" or the "Company") has commenced implementing a program of Non-Pipes Alternative ("NPA") projects called the Con Edison Electric Advantage ("EA") Program to eliminate the need for replacing segments of leak-prone gas mains by providing customers with electric alternatives for all fossil fueled equipment and facilitate their disconnection from the gas system.[1]

Between 2022 and 2024, the Company filed the benefit-cost analysis ("BCA") results for 108 main replacement projects that were feasible and cost-effective for an NPA based on their location within the gas distribution system and the number and types of customers connected for service.[2] This filing provides the BCA results for 24 new NPA projects the Company identified as having reasonable certainty regarding the implementation costs, and they have been found to be feasible and cost-effective. These 24 additional projects will bring the Company's new total of feasible and cost-effective NPA to main replacement projects from 108 to 132. The Company will continue to identify and evaluate eligible segments of mains for potential NPAs. Projects identified as cost-effective and feasible will be added to this program on an ongoing basis.

The Company developed a combined suite of services to offer customers including, but not limited to, space heating and domestic hot water electrification; fuel switching measures for gas connected appliances such as stoves and dryers; weatherization and other building energy efficiency improvements; and electrical upgrades to accommodate additional load from the new

[1] Case 19-G-0066, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Gas Serv., et al.,* ("Gas Rate Proceeding") Order Approving Non-Pipes Alternative Projects Amortization Period and Shareholder Incentive Mechanism for Specified Projects (issued and effective June 17, 2022) ("June 2022 Order").

[2] Of this total of 108 main replacement projects, 86 gas mains are active and currently being pursued, nine NPA locations have been electrified, and13 gas mains have been replaced under traditional means as of February 1, 2025.

equipment. In addition, after issuing a Request for Proposal ("RFP") to solicit an Implementation Contractor ("IC") for the EA program, the Company executed a contract with the selected IC to provide an end-to-end customer experience for the sales, design, installation, and operational education of these electrification projects. Each project was individually analyzed and modeled based on a custom set of electric measures expected to meet the existing fossil fuel usage. Based on these models, each project provides its own set of net benefits for customers and achieves a societal cost test ("SCT") result greater than one (1.0), indicating that the solutions will provide a cost-effective alternative to a traditional infrastructure approach.

Once reasonable cost certainty for additional EA NPAs has been determined, the Company will notify the Department of Public Service Staff ("DPS Staff"). The Company will submit an Annual Report to provide information on the performance of all EA NPA projects, including NPA expenditures, any costs of NPA projects incremental to the Company's revenue requirement, in-service dates, and explanations of which NPAs have displaced a project subject to capital investment reconciliation. Additionally, the Company will file a BCA in accordance with PSC guidelines.

BCA Summary

Table 1: 2025 Year-to-Date Electric Advantage NPA Projects and BCA summary

Project ID	Total Energy Savings (MMBtu/yr)	Total Benefits (NPV to 2025)	Total Costs (NPV to 2025)	BCA SCT Score	Con Edison Investment (NPV 2025)[3]	Customer Portion of Net Benefits (70% of Net Benefits)	Performance Incentive (30% of Net Benefits)[4]
M028	45.20	$73,286	$65,292	1.122	$72,895	$5,596	$2,398
M041	22.80	$202,940	$36,353	5.582	$36,481	$116,611	$49,976
Q055	256.58	$155,822	$154,305	1.010	$151,239	$1,062	$455
Q059	288.49	$479,674	$293,923	1.632	$278,187	$130,025	$55,725
Q064	89.57	$88,601	$86,994	1.018	$70,821	$1,125	$482
Q066	536.92	$991,785	$438,743	2.261	$389,844	$387,129	$165,912
W163	225.77	$184,242	$153,641	1.199	$133,999	$21,421	$9,181
W170	82.69	$238,978	$70,743	3.378	$60,246	$117,765	$50,471
W187	4.25	$73,204	$50,433	1.452	$42,256	$15,940	$6,831
W190	99.47	$97,384	$75,735	1.286	$67,272	$15,154	$6,495
W200	115.60	$92,937	$78,791	1.180	$73,104	$9,902	$4,244
W202	303.08	$360,533	$235,599	1.530	$209,625	$87,454	$37,480
W210	187.54	$230,591	$166,023	1.389	$147,635	$45,197	$19,370
W214	459.15	$456,884	$334,416	1.366	$291,019	$85,728	$36,740
W218	104.44	$138,121	$118,128	1.169	$105,306	$13,995	$5,998
W232	240.89	$217,687	$200,082	1.088	$174,480	$12,323	$5,281
W235	384.68	$289,631	$284,661	1.017	$250,688	$3,479	$1,491
W237	676.85	$373,731	$359,302	1.040	$341,958	$10,100	$4,329
W245	153.73	$136,258	$126,581	1.076	$108,699	$6,774	$2,903
W246	179.11	$224,611	$141,201	1.591	$125,826	$58,387	$25,023
X011	436.42	$504,260	$487,715	1.034	$469,837	$11,581	$4,963
X041	214.82	$152,772	$134,317	1.137	$121,593	$12,919	$5,537
X050	1151.12	$710,771	$560,397	1.268	$543,435	$105,262	$45,112
X055	1606.70	$968,292	$666,247	1.453	$657,541	$211,431	$90,613

[3] Includes planned expenditures for NPA incentives and non-incentive related costs. The incentive and non-incentive costs shown in the Company's BCA model in Table 1 are adjusted to account for regulatory asset treatment of NPA program expenditures and may differ from the program participant incentive costs as a result.

[4] Customers receive 70 percent of an NPA portfolio's net benefits, and the utility's shareholders earn 30 percent. The Company recovers incentive through the Monthly Rate Adjustment after it has been earned, i.e., once the requisite customer sided solutions are operational as defined in the Petition Order.

Each project under this program is treated as its own NPA, providing benefits at a project specific cost. These result in a SCT score and net benefits that are outlined for each individual project in Table 1 above.

Table 2 below is a summary from Con Edison's BCA, which calculates the net present value of the costs and benefits of EA NPAs. The Company identified the following benefits associated with pursuing the NPAs over the traditional solution:

- Avoiding 127,631 dekatherms of gas consumption, saving customers up to $308,086;
- Avoiding 182 dekatherms of peak day gas capacity with a corresponding customer savings of $177,975;
- An increase of 10,378 MWh of electric consumption and a decrease of 0.06 MW in peak electric system load, corresponding to a disbenefit of ($289,229) in electric system impacts;
- Avoiding 21,609 MMBTU of oil consumption, saving customers up to $315,183;
- The net avoidance of CO_2 emissions, supporting New York State and New York City CO_2 emission reduction goals and providing up to a $318,044 benefit; and
- Eliminating the need to build the traditional solutions, saving customers up to $6,612,936.

The Company identified the following costs associated with implementing the NPA projects:

- $3,427,235 in additional program participant incentive costs to accelerate market adoption of energy efficiency and electrification at the specified NPA locations;

- $754,559 of incentive costs from other efficiency and electrification programs funded by customers in the specified NPA projects;
- The combined incentives allow for customers to pay $0 to participate in this program;
- $1,137,832 in costs associated with the Company's administration and implementation of the NPA program, for items such as planning, marketing, reporting and payments to independent contractors for quality control, evaluation, measurement, and verification.

Table 2: Electric Advantage NPAs: Societal Benefits and Costs[5]

Gas Benefits (NPV to 2024)	Gas Avoided Commodity Costs of Upstream Supply Benefit	$308,086
	Gas Avoided Upstream Capacity & On-System T&D Costs	$177,975
	Avoided Gas Main and Service Replacement Benefits	$6,612,936
Electric Benefits / Disbenefits (NPV to 2024)	Electric Avoided Generation Capacity Cost + LBMP[6] + T&D[7] Costs Benefit	($289,229)
Oil Benefits (NPV to 2024)	Oil Avoided Commodity Costs	$315,183
Carbon Benefits (NPV to 2024)	Net Avoided CO2 benefits	$318,044
Total Benefits	**$7,442,995**	
Program Costs (NPV to 2024)	NPA Incentive Costs	$3,427,235
	Other Incentives from Programs Funded by Customers	$754,559
	Con Edison NPA Program Customer Cost	$0
	Con Edison Program Implementation + Administration + EM&V[8] Costs	$1,137,832
Total Costs	**$5,319,626**	
Societal Cost Test (SCT) Score	**1.40**	

[5] Totals may differ due to rounding.
[6] Locational Based Marginal Pricing
[7] Transmission and Distribution
[8] Evaluation, Measurement, and Verification

Appendix A: Traditional GIRRP Project Information

Description

The Company's Gas Infrastructure Replacement or Reduction Program ("GIRRP"), formerly Main Replacement Program ("MRP"), is designed to replace or reduce leak-prone gas mains, defined as small diameter (12" and smaller) cast iron, wrought iron, and unprotected steel (pre-1972) mains. Planned main replacement is driven by reasons such as top-ranked risk replacement, methane emissions opportunities, and system planning improvements. The Company utilizes a computer-based probabilistic risk model to prioritize the risk-based planned portion of the replacement program.

Under the Con Edison Electric Advantage NPA program, customers currently connected to a selected main would convert all their gas uses to electricity, eliminating the need to replace the main. NPAs may displace a traditional project subject to the Net Plant Reconciliation mechanism, depending on the estimated timeframe for execution of the traditional capital project. Projects with an estimated traditional need that correspond to rate years with established net plant targets will be subject to the Net Plant Reconciliation mechanism. If subject to net plant reconciliation, the deferral of capital projects to implement NPA will reduce the net plant reconciliation target.

Justification Summary

The GIRRP serves an important safety function by mitigating the risk of a gas distribution event. The program mitigates the risk of fire or explosion on the gas distribution system, by abandoning leak prone gas mains or by replacing them with plastic and/or protected steel. These materials are proven to be safer and more resilient. Methane emission reduction will

be addressed by focusing on the replacement or reduction of cast iron, wrought iron, and unprotected steel pipes, which are significant contributors to fugitive methane emissions. This program also mitigates the risk of a significant customer loss event through the proactive replacement or abandonment of low-pressure gas mains within flood zones. This will reduce the likelihood of water infiltration and gas service outages during a flood event or water main break. Planned main replacement can be driven by multiple reasons such as high risk, methane emissions opportunities, or system planning improvements. Emergent main replacement occurs due to conditions such as irreparable leaks, cast iron encroachments, or compromised main conditions discovered by field personnel. Replacement of leak prone pipe also supports the reduction of operations and maintenance costs for leak repair, by replacing gas assets with higher leak maintenance costs, with plastic and protected steel mains which leak at much lower rates.