conEdison





2024 Steam Business Development Plan

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Disclaimer

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1. Executive Summary

More than 142 years after steam heating was introduced in Manhattan, Con Edison's district energy system is at an inflection point. Climate legislation has sharpened the focus on efforts to decarbonize buildings, and property owners and managers are assessing their options to comply with New York City's Local Law 97 (LL97). Prior to 2019, many buildings found the most economical choice to lower emissions was to convert from oil to gas. But with the introduction of LL97, the direction going forward is to transition away from fossil fuels altogether.

Con Edison Steam is poised to meet the moment as a reliable, lower-carbon energy choice for Manhattan buildings, particularly those for which electrification is infeasible. As per LL97, district steam is currently identified as the energy source with the lowest emissions per unit of energy delivered through 2029. But we have heard clearly from potential customers and consulting engineers who advise decision makers that they need more assurance about Steam's coefficient long-term before they will commit to a conversion.

Simply put, neither Con Edison steam nor New York City will be able to reach our mutual climate goals without working together to encourage more buildings to choose lower-carbon energy alternatives.

This Business Development Plan will detail our plans to market Con Edison Steam to hundreds of Manhattan buildings that are currently burning fossil fuels and that we believe would benefit from connecting to district steam.

This plan was developed in concert with both our Decarbonization Study and our Customer Electrification Challenges Study that analyzed the cost effectiveness and feasibility of large buildings in NYC to either convert to steam, electrify, or do nothing and continue with business as usual. The Electrification Challenges Study found that, given the significant variety and mechanical complexity of NYC's large commercial and multifamily buildings, decarbonized district steam can be a complementary solution to onsite building electrification to reach 2050 building decarbonization goals.

We hope that this work will spur continued dialogue and thoughtful conversations going forward that can help us remove roadblocks around the adoption of steam and move us closer to our shared goal of achieving a net-zero economy by 2050.

2. Background

2.1 Con Edison Overview

For over 200 years, Con Edison has provided New Yorkers with reliable energy and played a vital role in building the New York metro area into a world-class, 24/7 destination. However, as the impacts of climate change and extreme weather become more urgent, Con Edison believes that the clean energy transition is critical for New York's future.

Our Clean Energy Commitment is aligned with major city and state policies, stating our ambition to reach net-zero Scope 1 emissions by 2050, including reducing emissions from company-owned electric co-generation by 2040. Our decarbonization plans for the steam system are part of the larger decarbonization effort underway across the company.

New York State's ambitious climate law requires the transition to a zero-emission electric grid by 2040 and an 85% emissions reduction from all other sectors by 2050, which is why Con Edison is a key partner—working with customers, regulators, policymakers, and other stakeholders—in reimagining energy for the future.

In this document, we will outline our plans to sustain and grow the steam business, which we believe will play a key role in lowering building emissions to help New York City and State reach their climate goals.

2.2 Steam System Overview

Our steam system has served Manhattan customers since 1882, when its footprint covered several blocks of the Financial District. Today ours is the largest district steam system in North America, serving just over 1,500 customers with 105 miles of steam piping stretching from the Battery to 96th Street on the West Side and 89th Street on the East Side.

Our six generating stations have evolved from burning coal to burning 99% natural gas. About 60% of produced steam comes from steam-electric cogeneration. Cogeneration makes steam using the heat produced as a byproduct from electric power-generating facilities that otherwise would be wasted. Our steam system brings economic, environmental, and operational benefits to building owners and operators. The competitiveness of steam and the benefits it offers our customers are discussed in further detail in Section 4.

Our customers primarily use steam for building heating, hot water, and air conditioning[1], though it is also used for humidification, sterilization, food processing, and dry cleaning.

Our customers include landmarks like the Empire State and Chrysler Buildings, as well as the Guggenheim, the United Nations, Grand Central Terminal, and the Metropolitan Museum of Art. We also provide steam service to city-owned buildings, including 15 campuses run by the New York City Housing Authority. Altogether, Con Edison Steam serves approximately 3 million people who live, work, and travel through Manhattan.

2.3 Policy & Industry Trends

The focus on emissions reduction in state and local policy has led to increased interest in steam as a lower-carbon option among buildings considering decarbonization strategies. New York State (NYS) and New York City (NYC) lead the nation with ambitious climate policies, including the state-wide Climate Leadership and Community Protection Act (CLCPA) and the NYC Climate Mobilization Act (CMA). Both policies commit to a net-zero economy by 2050.

Fossil fuels used to power, heat, and cool buildings account for nearly 70% of NYC's carbon emissions. In 2019, NYC put forth Local Law 97 as part of the CMA, mandating that large buildings decrease emissions 40% by 2030 and 100% by 2050 relative to 2005 levels. This policy is accelerating the timeline in which building owners and managers must think about converting their fossil fuel systems to a lower-carbon alternative.

Steam customers generate zero on-site emissions at the building level (aside from any natural gas the building may use for cooking or another purpose). Improvements and efficiencies made at Con Edison's steam plants benefit all recipients in the district, sparing individual customers from needing to make costly upgrades to their own equipment. Steam can also have a significantly lower up-front capital cost, as compared to electrification, which can be critical for building decision makers looking for a near-term solution to comply with LL97.

[1] As of 2024, our steam system offsets just over 240 MW of coincident peak electricity demand as it powers nearly 500,000 tons of air conditioning capacity in the summer months.

As currently written in LL97's Article 320, district steam consumed on the premises of a covered building shall be calculated as generating 0.00004493 tCO2e per kbtu, the lowest greenhouse gas coefficient of energy consumption for calendar years 2024 through 2029. See Figure 2-2 for a comparison of coefficients among electric, natural gas, #2 fuel oil, and district steam. Additional benefits of steam include less space required on-site to house equipment, easier maintenance, and increased safety and reliability.

Figure 2-1: Key NYS and NYC Policies

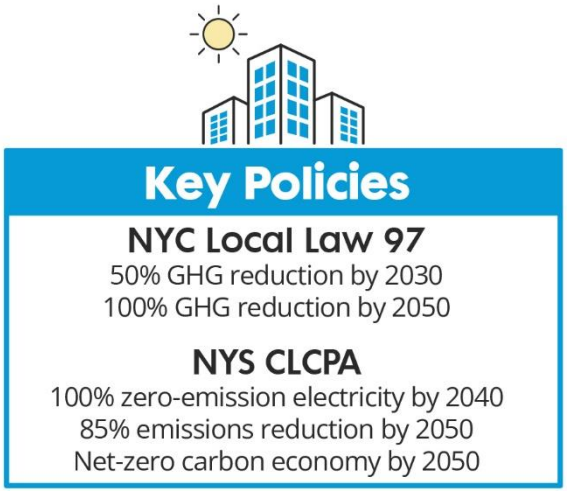
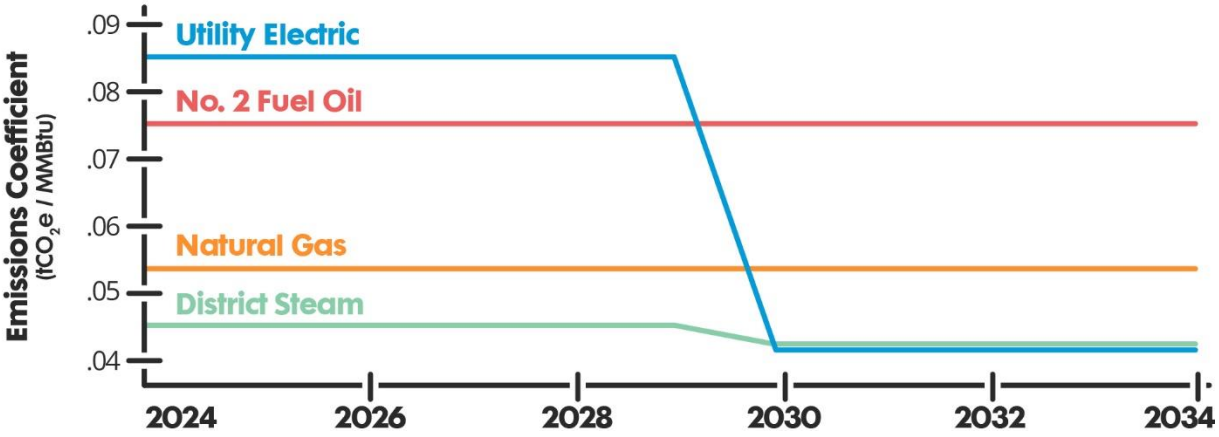


Figure 2-2: Emissions Coefficients Through 2034

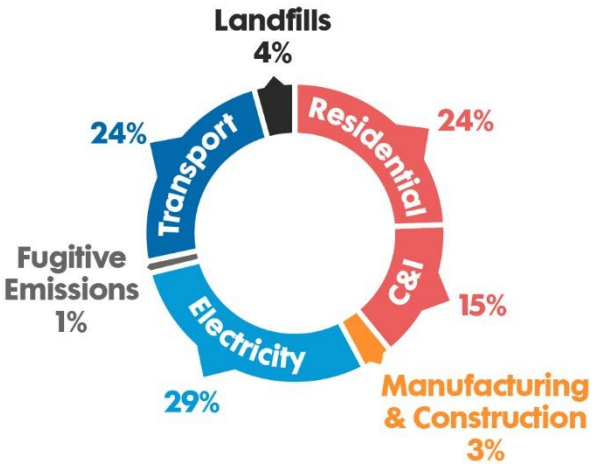


(Data source: NYC Sustainable Buildings Local Law 97 Requirements for Reporting Annual Greenhouse Gas (GHG) Emissions for Covered Buildings, Article 320 Info Guide, rev. 7/24/2024, page 44 of 97)

As shown in Figure 2-3, fossil fuel consumption for space heating, water heating, cooking, and other end uses in NYC's residential, commercial, and institutional buildings accounts for 39% of total NYC emissions.

Penalties from LL97 and the passing of Intro-2317[2] are putting further pressure on building owners to find solutions for reducing their carbon footprints. The diverse mix of building types, vintages, sizes, designs, and other characteristics in the residential, commercial, and institutional sector means that there is no "silver bullet" solution to decarbonize heating and cooking. Building owners and managers are currently evaluating their options in meeting near-term and long-term emissions limits for their buildings so they can minimize their LL97 fines.

Figure 2-3: Distribution of GHG Emissions across Sectors in NYC (2020)[3]



Evaluating the electrification potential of their buildings will soon become a major undertaking for building owners across NYC.

LL97 applies to most buildings larger than 25,000 square feet and emissions limits are set by building occupancy classification (e.g., commercial office, educational facilities, hospitals, religious facilities). The current version of the legislation provides emissions occupancy limits for most property types in the U.S. Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager. A building's annual GHG emissions are calculated from annual utility consumption data multiplied by GHG emissions coefficients for major energy sources (e.g., annual kWh consumption times CO2e/kWh emissions factor).

A set of proposed rules that the Department of Buildings (DOB) released on September 12, 2023[4] clarified several topics and alternative compliance pathways for buildings that did not yet meet the 2024 emissions limits. The proposed rules outlined a pathway for noncompliant

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[2] The New York City Council, "A Local Law to amend the administrative code of the city of New York, in relation to the use of substances with certain emissions profiles," May 27, 2021, https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=4966519&GUID=714F1B3D-876F-4C4F-A1BC-A2849D60D55A&Options=ID.

[3] NYC Mayor's Office of Climate & Environmental Justice, "NYC Greenhouse Gas Inventories: Inventory of New York City Greenhouse Gas Emissions." https://climate.cityofnewyork.us/initiatives/nyc-greenhouse-gas-inventories; https://www.nyc.gov/assets/sustainability/downloads/pdf/publications/New%20York%20City's%20Roadmap%20to%2080%20x%2050_Final.pdf

[4] "Getting 97 Done: A Plan to Mobilize New York City's Large Buildings to Fight Climate Change," p. 19, Accessed December 21, 2023, https://climate.cityofnewyork.us/wp-content/uploads/2023/09/Getting-_LL97Done.pdf.

buildings to prepare a "good faith effort" toward compliance and expanded on requirements for the prescriptive path outlined in Article 321 of LL97[5]. The proposed rules also introduced a new "negative emissions coefficient" credit to incentivize early electrification in buildings that otherwise would not face penalties until 2030. The DOB is still evaluating other rules on flexibility for complying with LL97 emissions limits through renewable energy credits and/or emissions offsets for renewable energy certificates (RECs) purchased in the New York Independent System Operator (NYISO) Zone J service territory, the downstate region of New York, as well as a set of instructions for taking credit for time-of-use carbon emissions coefficients.

With policies like LL97 imploring the acceleration of building decarbonization, utilities everywhere are strategizing how to enable their customers to adopt new technologies to lower their emissions. Advances in energy technology, like cold-climate electric heat pumps, create opportunities for lowering systemwide emissions. Con Edison continues to develop a portfolio of customer programs to enable building decarbonization and help customers lower their energy bills, including incentives to increase the efficiency of buildings such as building envelope measures. Other efforts include the company's upcoming hot water loop pilot, Clean Heat program, Utility Thermal Energy Projects, and other pilots.

2.4 Vision for Decarbonized Steam

Con Edison's district steam system is uniquely positioned to address the need for an alternative building decarbonization solution by investing in decarbonization technologies/strategies for its upstream steam supply to all customers. We envision the steam system playing a key role in decarbonizing difficult-to-electrify buildings within our service territory, supporting customers in being compliant with LL97 and other emissions reduction policies.

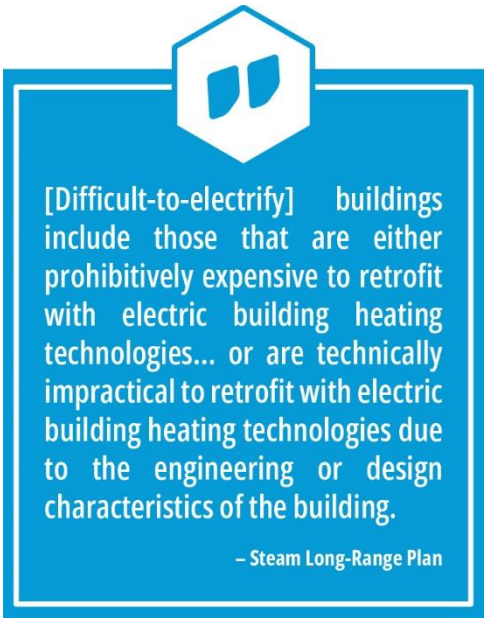
Con Edison's Steam Long-Range Plan[6] details the long-term strategy for how our steam system plans to decarbonize to support the CLCPA goal of achieving net-zero economy-wide emissions by 2050. Con Edison's Steam Operations Decarbonization Study filed in Case 22-S-0659 has identified a pathway to decarbonize through significant capital investments in

[5] NYC Sustainable Buildings, Affordable Housing. Affordable Housing - Sustainable Buildings (nyc.gov). at https://www.nyc.gov/site/sustainablebuildings/requirements/affordable-housing.page#:~:text=Article%20321%20establishes%20Energy%20Conservation,not%20covered%20under%20Article%20320

[6] Consolidated Edison Company of New York, "Steam Long Range Plan." https://www.coned.com/-/media/files/coned/documents/our-energy-future/our-energy-projects/steam-long-range-plan.pdf

technologies like electric boilers, industrial heat pumps, thermal energy storage, and molecule-based technologies (through the use of low-carbon fuels).

As an alternative to replacing onsite fossil fuel heating equipment with electric heat pumps, many large commercial and multifamily buildings in Manhattan could connect directly to Con Edison's district steam mains as a full heating and domestic hot water replacement solution. As Con Edison's decarbonization investments ramp up in tandem with the CLCPA's goals, existing and new steam customers would take advantage of a district energy source that becomes cleaner over time and may offer a more cost-effective, rapid, and streamlined transition in comparison to onsite electrification.



Our vision for steam is to retain our current customer base and attract new customers drawn to a lower-carbon energy option, particularly for buildings where electrification may not be feasible. Additional benefits to customers include a significantly lower up-front capital cost, as compared to electrification, which can be critical for building decision makers looking for a near-term solution to reduce LL97 penalties.

3. Market Assessment

3.1 Existing Steam Footprint

Our steam system currently includes 105 miles of steam piping that serves just over 1,500 customers. We can produce 10,800 Mlbs/hr of steam from six generating stations, including cogeneration at our East River Generating Station that enables 700 MW of electric capacity. Our system pressure ranges from 125 to 180 psi.

Our service territory runs from 96th Street on the Upper West Side to 89th Street on the Upper East Side, down to the southernmost tip of Manhattan (see Figure 3-1). Included is our steam tunnel that connects our steam system with the Brooklyn Navy Yard Cogeneration Partners (BNYCP).

We deliver steam to a diverse set of building types across Manhattan. Figure 3-2 shows a breakdown of Con Edison's current district steam customer base.

Figure 3-1: Con Edison Steam System Overview



Figure 3-2. Con Edison District Steam Customer Segments[7]

Building Segment	Percent of Steam Market in NYC (by customer account)
Commercial Office	37%
Residential	35%
Other Commercial	13%
Commercial Hotels	5%
Educational Facilities	4%
Hospitals	13%
Religious Facilities	2%
Museums	1%

Generation

Our steam system generating plants (denoted by the red locator icons in Figure 3-1 on the prior page) have a total capacity of 10,800 Mlbs/hr, 41% higher than the existing peak demand of 7,643 Mlb/hr. We maintain a certain level of reserve capacity to compensate in the event of unexpected equipment failure or when demand is higher than projected to prevent system pressures from going below the required operating range. This reserve also allows us to perform scheduled maintenance throughout the year, accept new customers and increase existing service to current customers. This reserve capacity has been an asset for customers switching to steam from fossil fuels, especially those that cannot readily switch to electric building heating.

This capacity consists of steam-electric plants, steam-only plants, and capacity supplied under our long-term contract with the Brooklyn Navy Yard. Our four largest steam supply units can generate over 700 MW of electricity. Three of the four are steam-electric cogeneration units.

Distribution

Distribution is the essence of our steam system and must be carefully maintained to continue serving our customers. Because our steam is used for things such as food

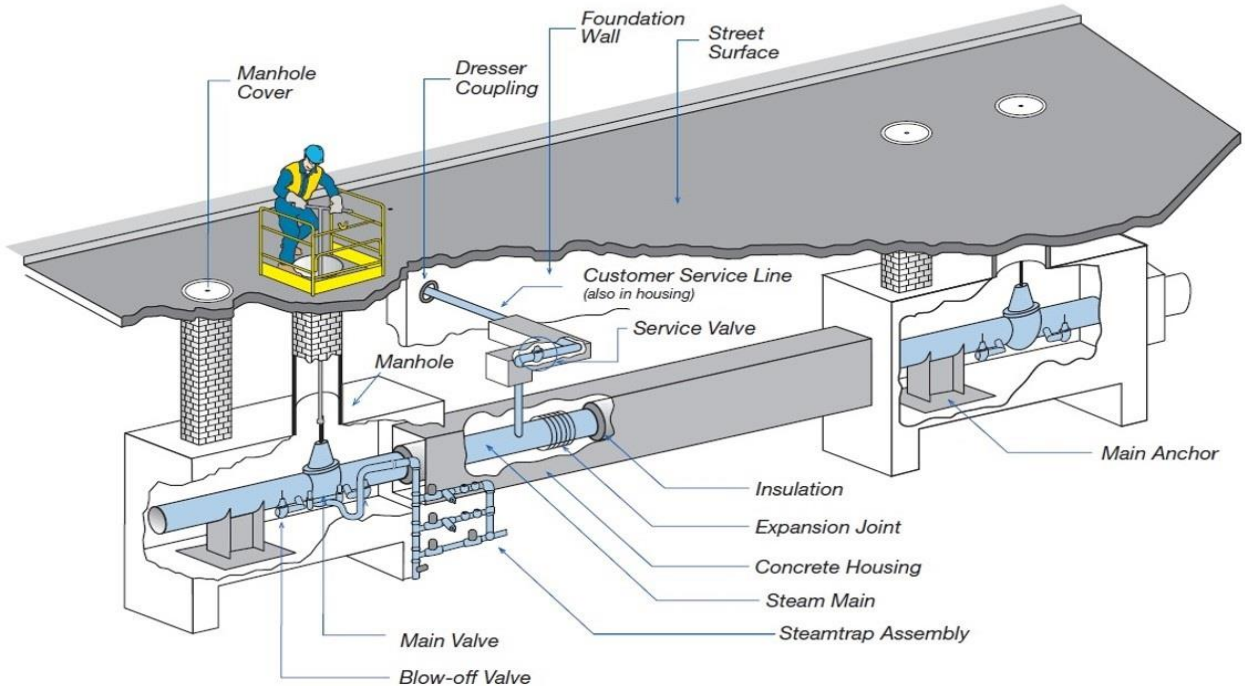
[7] Con Edison, Long-Range Plan: Our District Steam System, 2021, https://www.coned.com/-/media/files/coned/documents/our-energy-future/our-energy-projects/steam-long-range-plan.pdf.

processing and medical sterilization, preserving the integrity and purity of our distribution system is critical. Geographically, the steam system's distribution grid (shaded in blue in Figure 3-1 on page 7) consists of four main areas:

- Midtown, accounts for approximately 59% of peak demand
- Downtown, accounts for approximately 21% of peak demand
- Upper West Side, accounts for approximately 7% of peak demand
- Upper East Side, accounts for approximately 13% of peak demand.

Our Steam Distribution system consists of many different pieces of equipment, including manholes, valves, pipes, insulation, and other components (Figure 3-3).

Figure 3-3: Cutout Example of Our Steam Distribution System



3.2 Retention of Existing Customers

We recognize that the long-term sustainability of our steam system is dependent on our ability to retain our current customer base. We have seen a 5% decrease in our total customer count since 2020, due in large part to building electrification projects and

demolitions of older buildings. Despite a decrease in the number of customers on steam, several large new customers have joined the system recently, keeping our consumption relatively flat. We must focus on keeping customers that are already connected to steam while pursuing our new business leads.

Each customer we retain and each additional customer that we add to our system will help spread decarbonization costs across a broader base of ratepayers, reducing the impact of bill increases in the future.

In 2024, we enhanced our account management practices to introduce more opportunities for customer education and engagement. See Section 6 for more details.

Access to a new billing dashboard will allow account managers to track customer bills and flag any anomalies such as higher or lower than expected bills. We can then contact the customer to offer a free energy assessment to recommend ways to make their system more efficient or troubleshoot any system issues that might be causing unusual usage patterns.

We will also enhance our outreach to a broader range of our portfolio customers to increase retention. At a recent American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) event, we learned from representatives from smaller B- and C-class buildings that they don't currently have an organized forum to hear from us. We are working to improve our outreach beyond our largest portfolios to include the broadest possible group of owners of portfolios of all sizes. We will continue to look for ways to engage our current customers, including an audit of our contact information to make sure we're reaching the right people as there is often turnover among management companies.

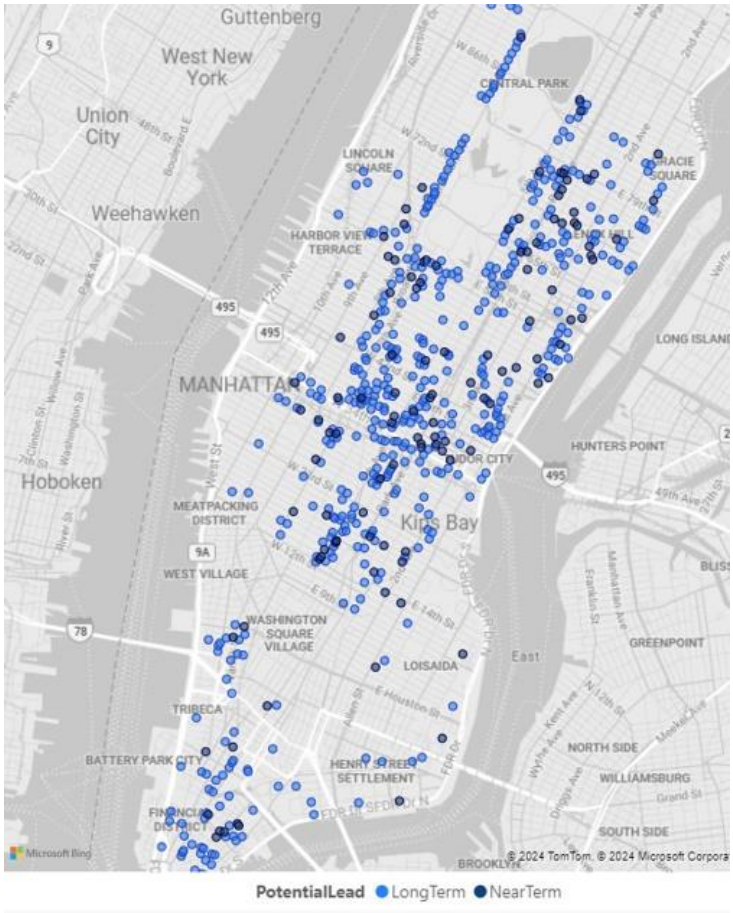
3.3 Assessment of New Business Potential

In 2024, Con Edison analyzed natural gas and fuel oil consumption data for Manhattan buildings along with proximity to existing steam mains, building age, building floorspace, and estimated steam demand and revenue values. The dataset was used to understand the magnitude of potential priority building conversions to district steam, specific challenges associated with those conversions, and the added capacity that may be required in the steam network to serve these new customers. The results are documented in the Electrification Challenges in Dense Urban Environments Study (Electrification Challenges), Case 22-S-0659, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Steam Service, issued April 4, 2024.

Figure 3-5 summarizes the priority customer count along with gross floor area, approximate steam consumption, peak demand, and emissions impact. Priority customers are grouped into near-term (by 2030) and long-term (by 2050) categories. The dataset includes a "Lead Grade" metric, which analyzed business development opportunities based on the following criteria:

- Distance from steam main (shorter distance, higher score)
- Building square footage (SF) (larger SF, higher score)
- Building age (older building, higher score)
- 5 Year pure base revenue (PBR) (larger PBR, higher score)
- $0 cost connection (no cost, higher score).

Figure 3-4: A geographical representation of near- and long-term new business leads



Near-term candidates are those properties with a lead score above 50% and an LL97 penalty in 2024-29. Long-term candidates are properties that scored in the top 30% of customers based on lead score.

Out of 1,112 potential customer properties in the dataset, 607 total properties were considered priority candidates, with 119 being near-term candidates and 488 being long-term candidates. Roughly half of the fossil fuel buildings analyzed are priority candidates for district steam conversion, representing the

potential for a 40% increase from the current district steam customer base of 1,500 properties and 490 million SF. The remaining 505 properties in the dataset could still be considered for conversion, pending further study of site-specific building characteristics and needs. A full discussion of this analysis can be found in Section 2.3 of our Electrification Challenges report.

Table 3-5: Con Edison District Steam Priority Customer Candidates Summary

Summary	Near-Term	Long-Term	Total Candidates
Number of Customers	119	488	607
Gross Floor Area (Thousand SF)	12,836	158,887	171,722
Annual Equivalent Steam Consumption (Mlbs/yr)	606,434	4,848,754	5,455,188
Estimated Steam Winter Peak (lbs/hr)	505,108	6,406,117	6,911,225
Estimated Summer Peak (lbs/hr)	170,080	2,011,917	2,181,997
Onsite Fossil Fuel Emissions (tons/yr)	72,558	369,409	441,967
Potential Emissions Reduction (tons, 2024-2050)[8]	697,233	4,658,706	5,355,939

3.4 Physical Expansion

We are considering three approaches to gradually expand our steam system in the future. Our system is capable of generating more steam than is needed to meet current peaks, so there are no immediate limitations on adding additional customers.

Our first priority is to optimize our existing infrastructure and focus on filling in gaps within the existing footprint in areas like the Garment District, Chelsea, Greenwich Village, and Midtown West where there are several blocks without a nearby main. We aim to focus on streets that are currently within a block or two of existing steam and where there are multiple leads with aging boilers and imminent LL97 penalties. Convincing more than one building on a block to convert to steam at the same time could open opportunities for cost-sharing to lessen construction costs to connect to a main more than 250 feet away.

[8] Potential Emissions Reduction from Decarbonized District Steam assumes that all on-site fossil fuel sources in the dataset are converted to district steam in 2024. Because fossil fuel is used for sources other than heating (e.g., electric generators), the actual potential reduction is somewhat lower.

Next, we will focus on organic growth on the fringes of our existing service territory. Every new customer we connect opens more opportunities for other buildings within 250 feet of a main. Potential customers as far north as Washington Heights have expressed interest in connecting to steam, not realizing the extent of our current footprint. These conversations have revealed that there may be a market beyond 96th Street, including several housing campuses as near as 97th Street.

Lastly, and further into the future, we could consider the potential to expand beyond Manhattan. Our system could technically support expanding into Queens and Brooklyn via our plants at Ravenswood and Hudson Avenue, respectively. Both plants have nearby housing campuses that could hypothetically serve as anchors, however such expansion would be very costly and is not something we are pursuing at this time.

The subset of customers identified in our Electrification Challenges report, and discussed in Section 3.2, will be our main focus for expanding the steam system within our existing network.

4. Competitive Posture of Steam Service

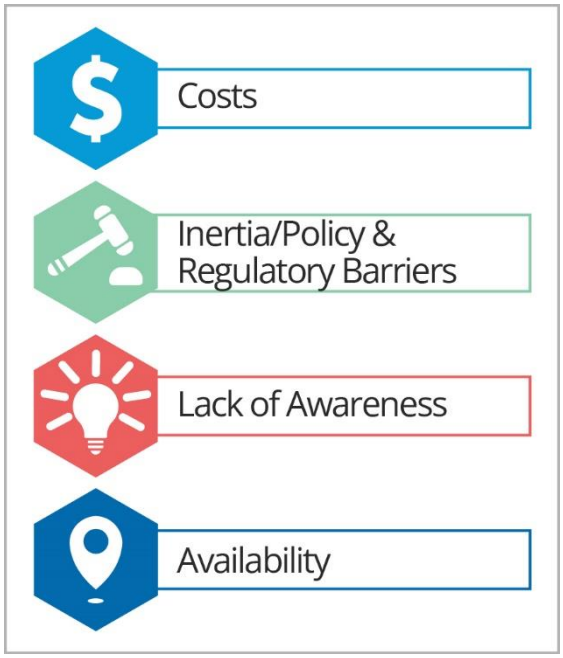
4.1 Obstacles to Steam Adoption

Con Edison hosted focus groups and one-on-one interviews in October 2024 with four industry experts from several consulting engineering and real estate firms in addition to four potential steam customers representing both commercial and multifamily buildings. The goal was to hear directly from the people who would be influencing decisions about whether a building should connect to steam. These interviews in conjunction with the Electrification Challenges study provide qualitative and quantitative evidence on the obstacles of steam adoption, as perceived by perspective customers.

Interviews with customers and engineers revealed several common concerns:

1. Cost – Steam is generally more expensive than oil and natural gas, making steam potentially less competitive for customers who face no or low LL97 penalties for the next several years. Con Edison has shown that in many cases a conversion to steam is a more economical option than replacing fuel-burning boilers over a 25-year lifecycle, but our research has found that customers consider seven to 15 years to be the time period for which they expect a return on their investment. Economically, the cost to convert to steam can exceed potential LL97 fines for non-compliance. When penalties are minimal, remaining non-compliant may be financially advantageous for customers, weakening incentives for conversion. As such, the company plans to focus on customers who are at risk for LL97 penalties.
2. Inertia – Many potential customers are employing a wait and see approach before committing to an energy conversion. For those buildings, the most cost-effective option is to try to extend the life of existing equipment in the meantime; there is no incentive to make a significant and costly change now.

Figure 4-1: Major Perceived Obstacles to Steam Adoption



3. Lack of awareness – Potential customers may lack awareness of both LL97 and of the availability of steam in their neighborhood. Conversations with our leads have revealed that some building owners and managers are unaware that steam is an option, and those who know about the steam system may be unaware of its long-term viability and of the company's decarbonization plans.
4. Availability – Geographical limitations also impact steam's competitiveness, as our steam service is not available across our service territory and there are limitations to the accessible distance to steam sources. For buildings more than 250 feet away from a steam main, initiating service involves substantial construction costs and logistical hurdles, such as extending the piping to the building's foundation wall and installing a pressure reduction valve (PRV) station.

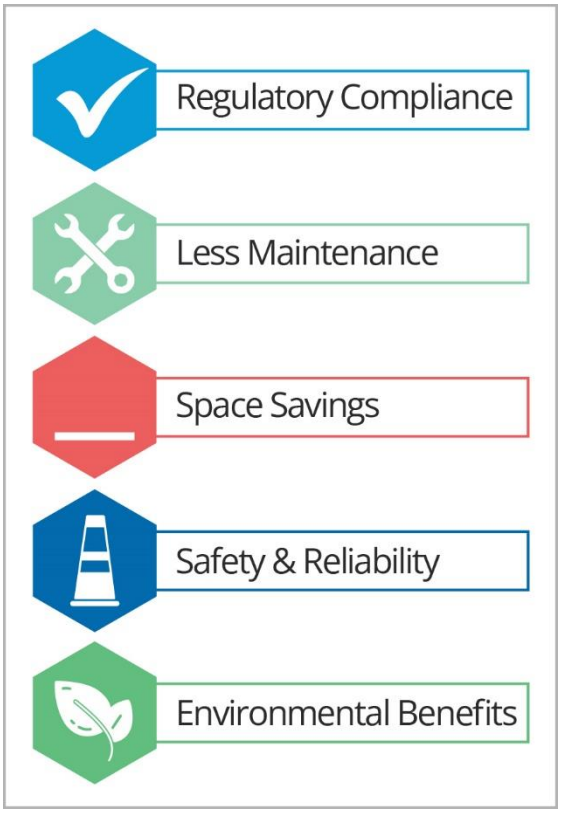
4.2 Value Proposition for Steam

Despite the perceived obstacles, steam offers unique advantages that can make it a valuable option for certain customers. The Electrification Challenges study discusses these topics in greater detail including comparisons of upfront, operating, and lifecycle cost for 10 proxy buildings across NYC to reach net-zero emissions by 2050 through electrification and decarbonized district steam.

Steam may be more suitable for specific building types, particularly those requiring high heating capacities and reliability, such as healthcare facilities. For hard-to-electrify buildings, district steam presents a practical lower-carbon solution. Converting buildings from natural gas or fuel oil boilers to district steam involves only a few modifications, such as extending a pipe from the district main and adding a PRV station and meter. This new steam service integrates with existing HVAC, piping, and radiator networks, which minimizes disruption compared to full electrification. For buildings with a hydronic distribution system, minor redesigns in boiler rooms and additional steam-to-water heat

exchangers may be required, but the overall process is less intrusive than a full infrastructure replacement.

Figure 4-2: Benefits of Steam Adoption



Although steam can potentially have higher annual utility costs, its capital costs can be significantly lower than electrification, resulting in lower lifecycle costs. The upfront expense of converting to an electric heating system, especially in larger or older buildings, can be prohibitively high, making steam a cost-effective alternative.

Additionally, steam systems require less maintenance than traditional heating systems. With no fuel combustion on-site, there is a reduced need for maintenance, lowering long-term operational costs. Furthermore, because steam systems eliminate the need for fuel storage and combustion equipment, they offer a space-saving benefit that is particularly advantageous in dense, urban settings where mechanical space can be scarce.

In comparison to electrification, district steam offers several advantages including potentially lower lifecycle costs, reduced noise, fewer tenant disruptions, and the ability to leverage existing infrastructure. Additionally, a centralized approach to decarbonization means that we manage emission reduction across the district system rather than relying on individual buildings, which can make compliance more manageable and affordable. As we work to decarbonize the upstream steam supply, buildings with existing district steam connections will see their emissions decrease without having to implement their own major new investments.

Our district steam system allows buildings to reduce carbon emissions without undertaking immediate, large-scale electrification projects. This ability to achieve compliance in the short term can be particularly valuable for building owners seeking a flexible, phased approach to decarbonization. Our commitment to decarbonizing the

steam supply further enhances steam's environmental profile, allowing customers to make strides toward sustainability goals without complete infrastructure overhauls.

Our current timeline to initiate our decarbonization plans will see the first new technologies online in our steam generating stations in 2029, just before the next phase of LL97 begins in 2030. At that point, our coefficient will be nearly identical to the coefficient granted for utility electricity. Potential customers will likely be more inclined to consider steam if we can accelerate our plans to achieve our decarbonization goals sooner.

4.3 Potential Approaches to Accelerate Steam Adoption

To increase steam's adoption rate and overcome current obstacles, we can take several steps to enhance steam's marketability:

- **Investment in Decarbonized Generation:** Prioritize and accelerate investment in technologies that reduce steam's carbon footprint as outlined in our Decarbonization Study and Implementation Plan and continue our conversations with the Department of Buildings and other key stakeholders around our decarbonization roadmap.
- **Outreach and Education:** Many potential customers are unaware of steam's benefits and the advancements made in reducing its environmental impact. We plan to launch more educational programs to inform stakeholders of steam's reliability, efficiency, and future decarbonization plan, positioning it as a lower-carbon alternative. Our strategy for outreach and education is discussed in detail in Section 6.
- **Safety Concerns:** Addressing safety concerns around high-pressure steam can be a valuable approach to reassure prospective customers. We could implement and publicize enhanced safety protocols, ensuring that industries with strict safety requirements feel confident in adopting steam.
- **Enhanced Marketing:** There is a knowledge gap among potential steam customers where some are very well versed in district energy and its LL97 implications while others are less informed and may not realize that steam is available in their area. We will continue to improve our website to include sections for both current and potential customers. We would also like to highlight specific benefits of steam by customer type (for example, residential vs. commercial) with corresponding relevant case studies, as well as add a new cost-comparison tool that will show

potential customers anticipated costs for remaining on fossil fuels, converting to steam, or electrifying their building.

- **Discount Program:** Cost was consistently identified as a chief barrier to steam conversion - both in our research and in our interactions with some of our leads, we will create and market available discounts to overcome price sensitivity among potential customers. Informed by the results of our Marginal Cost Study and this Business Development Plan, we will file a proposal for a discounted Steam Promotion Rate for commission consideration by March 31, 2025.

5. Equitable Access

5.1 Accessibility to All Customer Segments

District steam provides an equitable energy option that can serve a broad range of customer needs while supporting the city's sustainability goals. Whether a potential customer is a multi-building residential campus or a single storefront drycleaner, we are generally able to offer a free connection to our steam system to any building located within 250 feet of an existing steam main.

If applicable, the connection cost would be the difference between Con Edison's construction costs and the 5-year revenue forecast, with the customer paying in three installments prior to the connection. The current district steam tariff also allows for reimbursement of these connection costs over time through a 10% discount on the monthly district steam bills (including taxes and fees) for 120 months (10 years) or until the connection cost is refunded, whichever occurs first. The minimal changes required to connect to steam, paired with these cost offsets, enable easier access to district steam for a broad range of building owners, including those seeking an affordable path to lower-carbon energy.

By providing accessible connections, offering discounted rates, and being an alternative to gas and oil for hard-to-electrify buildings, our steam service can meet the heating needs of diverse customer segments.

Steam service can be especially advantageous for larger and older buildings, such as multifamily residences, hospitals, and other high-capacity spaces. These buildings can face technical and economic obstacles in converting to electric systems, making district steam a practical alternative for supporting their building needs. By serving these hard-to-electrify structures, we can help building owners reduce carbon emissions without the substantial investments associated with full electrification.

5.2 Discounted Steam Promotion Rate

We are currently considering the parameters of a promotional rate to incentivize new customers to transition to district steam.

A discount program would potentially target buildings near existing steam infrastructure to minimize connection costs, including disadvantaged communities (DACs), NYCHA buildings, and new customers converting from oil or gas heating. Additional opportunities include separately metered steam services for new construction, vacant building spaces, and mixed-use commercial buildings transitioning partially to residential. By focusing on these sectors, the program would support both hard-to-electrify buildings and projects tied to local economic growth.

In the short term (0-5 years), this approach could accelerate steam adoption by lowering entry barriers and delivering immediate cost savings. Over the medium term (5-10 years), we can assess customer retention and evaluate how steam's operational and maintenance advantages compare to evolving electricity rates. Long term (10-15 years), the promotional rate's conclusion would encourage customers to consider steam's lasting benefits, reinforced by our decarbonization efforts and steam's growing environmental advantages.

Upon approval of the proposed promotional rate, we will target our outreach and education related to the target customer groups. Using the Climate Justice Working Group's DAC map, we can identify which of our leads is located within a DAC and follow up with targeted messaging and on-the-ground outreach to educate building owners on the expanded benefits of steam, utilizing the promotional rate.

Similarly, using the publicly available LL97 building information we can identify buildings on oil or gas whose owners and managers may already be looking for cost-efficient ways to reduce emissions. From our customer interviews, we understand that cost is the primary priority for building owners, almost ubiquitously. This promotional rate can very well change the calculus for converting to steam in such a way that implores them to consider steam more seriously than ever before.

Increasing steam's accessibility and affordability, helping customers comply with local regulations, and creating economies of scale through load growth are some of the key advantages of the program. With careful planning, this initiative can position steam as a clean, reliable, and economically viable energy solution for NYC.

6. Outreach and Education Strategy

6.1 Current Customer Outreach and Education Activities

Con Edison engages with existing and potential district steam customers through regular events hosted both online and in-person.

Steam Events

Con Edison's event calendar is listed at conEd.com/Steam[9] and events are also publicized in advance via email to customers. We publicize our Spring and Fall "Building on Steam" seminars on LinkedIn to reach a wider audience.

- **Hands-On Training:** We host monthly two-hour training sessions at the Con Edison Learning Center in Long Island City. The classroom includes a mockup of a typical steam station to give customers the opportunity to learn more about the steam system, benefits, and maintenance. The events are targeted to steam customers, building owners, managers, engineers, and maintenance staff.
- **Online Webinars:** In summer 2024 we launched "Log On & Learn," a monthly webinar series targeted at current and potential customers who would like to learn more about steam services. October's webinar was titled "Is Your Steam System Up to Snuff?" detailing the advantages of Con Edison's free energy assessment, how to request one, and walking customers through the energy assessment process. November's webinar covered the maximization of steam efficiency, specifically pipe insulation, building envelope upgrades, and building envelope incentives. December's session outlined the past, present, and future of steam.
- **Annual Seminars:** Con Edison holds an annual fall and spring seminar called "Building on Steam." These events bring in relevant industry experts to speak on the latest steam technologies, safety enhancements, real estate trends, and service offerings.

[9] https://www.coned.com/en/commercial-industrial/steam/steam-events

- **Steam Plant Tours:** We have seen great success hosting key customers and stakeholder groups for tours of our East River Generating Station. The tours generally include an hourlong presentation about the past, present, and future of steam, including a discussion about our decarbonization plans and an outlook on LL97. We conclude with a tour of the plant itself, where visitors can see potential locations for future decarbonization technology and better appreciate the complexities of transitioning a plant that has been in continuous operation for nearly 100 years.
- **Presence at Industry Events and Expos:** Con Edison Steam will attend and exhibit at industry events like the Cooperator Expo, as well as seek opportunities to speak on panels about decarbonization strategies and energy options for hard-to-electrify buildings or those looking to transition from gas or oil.

Research and Insights

Working with our internal Research team, we plan to continue hosting focus groups, fielding surveys, and conducting other research into the barriers of steam conversions and how to address them to make our business more competitive.

- **Customer Satisfaction Survey:** Each year we conduct customer satisfaction surveys at the end of Q2 and Q4 to check in with our customers and ensure they are satisfied with their service. We collect feedback related to both emergency work and non-emergency and billing inquiries. In Q4 2023, our satisfaction score was 90.5% for non-emergency calls and 97.1% for emergency calls.
- **Lunch and Learns:** Feedback from the October 2024 focus groups included recommendations to continue hosting lunch and learns with consulting engineers, architects, and other decision makers and influencers who can help us make the case for steam among building owners and managers. Whether done in-person or virtually, we heard that more frequent updates and conversations will get us closer to the behind-the-scenes decisions being made when buildings are considering their energy choices and help keep steam top of mind.

Customer Education and Engagement

We have already made improvements to our conEd.com/Steam website, but we recognize that we have more work to do to clearly present the benefits of steam and the steps needed to become a customer.

- **Customer Feedback:** We will aim to test new website content with current and potential customers to ensure their needs are met for more information around the benefits of being a steam customer and how to convert from oil or gas to steam.
- **Case Studies:** We will create case studies to highlight existing buildings on steam and explore the benefits specific to different types of customers.
- **Steam Model:** Our focus groups revealed an area for improvement in how we explain the startup and long-term costs of steam compared to remaining on fossil fuels or converting to electrification. Consulting engineers suggested adding a model on our website where a prospective customer could input some basic details about their property and generate an apples-to-apples comparison that would show what the building will look like on steam in the next 10, 15, 20+ years down the road.
- **Learning Library:** We plan to build out our website to incorporate a learning library where current and prospective customers can find short explainer videos, reports, and other information about a range of topics from how to become a customer to how to maximize the efficiency of a steam system.

6.2 New Business Outreach and Education Strategy

Con Edison's customer outreach strategy for new business is based on the 607 priority customer candidates described in Section 3.2. This dataset helps Con Edison's sales team prioritize outreach according to which decision makers are most likely to convert. Current engagements made by the sales team are flexible, sometimes in the form of phone calls, emails, door-to-door salesmanship, or conversations at conferences and industry meetings.

Audience Segmentation

Our prospective customers are generally categorized by two key verticals that account for the majority of our leads: office buildings and multifamily buildings. We also plan to create messaging specific to other key groups such as hotels, healthcare/laboratories, schools, and museums. Each audience has different energy needs and we should clearly state the benefits as they pertain to different customer types.

We can segment our leads by square footage, zip code, neighborhood, building type, and building classification (residential or commercial) to target potential customers more granularly.

As discussed in Section 5.2 above, upon the approval of the promotional rate we will specifically target leads located within DACs to reach potential customers who would stand to benefit the most from lower emissions in their neighborhoods.

In addition to these targeted outreach groups, our forecasting team has compiled a geocoded list of 439 potential customers who all qualify for a $0 cost for connection to steam. These customers will increasingly be a focus of our outreach strategy as the customers with the lowest barrier to entry into steam service. We will continue to work to reach the decision makers in these buildings and send material that educates tenants on the benefits of steam to start the conversation and generate interest around steam conversion.

Beyond the aforementioned in-person events, webinars, and annual seminars, we hope to host our first Clean Energy Summit in Spring 2025 to gather key groups of potential customers for a symposium focused on Con Edison Steam. We also plan to invite representatives from our Energy Efficiency and Clean Heat teams to help provide a broader view of energy options for Manhattan buildings. The targeted audience of these events will be discussed in expanded detail in Section 6.3.

Collaboration with Government and Business Partners

We will continue to work closely with our internal government affairs teams to keep open lines of communication with our stakeholders and stay informed of changes to policies and regulations. Our NYC government affairs liaison has included Con Edison steam representation in meetings with the Department of Buildings and arranged a recent tour of our East River Generating Station with representatives of DOB and the Mayor's Office of Climate and Environmental Justice. Our stakeholders were able to hear about our plans for the present and future of the steam system and see for themselves where we plan to implement the technologies that will decarbonize our steam system.

Working closely with city officials will help us continue to socialize the importance of maintaining Steam's place as a lower-carbon energy choice. Especially as the first round of LL97 policies begin to impact building owners, it is important that we stay involved in the conversations related to compliance and future building emissions policies so that steam stays at the forefront of customers' minds as an alternative to fossil fuels, particularly when electrification is not an option. We look forward to working more closely together going forward as we view a strong partnership as vital to achieving our mutual goals.

In addition, we attend monthly Energy and Sustainability Committee meetings hosted by the Building Owners and Managers Association (BOMA) to hear directly from the building

industry about energy concerns and how Con Edison Steam may be an attractive option for hard-to-electrify buildings. Upon the conclusion of our Decarbonization Study, we plan to host a readout of the results at a joint meeting attended by members of both BOMA and the Real Estate Board of New York.

6.3 Messaging & Communication

Messaging by Target Audience

Considering our target customer groups, we will focus our messaging to cater to their specific concerns that we believe can be addressed by steam adoption. We've found that cost is the chief roadblock among our customer groups, so we intend to emphasize the potential financial benefits of steam, especially in consideration of the potential promotional rate and impending LL97 fines.

In addition to focusing on cost, from our customer interviews we understand that building owners and managers value ease of use and maintenance of their HVAC systems. As we continue to communicate directly with building owners and managers, we will highlight the ease of maintenance of steam as compared to fossil fuel alternatives, in addition to the lower long-term cost of ownership.

Lastly, as the local community continues to voice their interest in decarbonization and achieving NYC's ambitious climate goals, we will work internally to message the environmental benefits of steam, including cleaner air for residents in steam buildings, to community interest groups as we engage with them.

We've heard from our customer interviews that tangible success stories resonate strongly with potential customers, so we will continue to collect examples of buildings in each customer group to include in future communications. We know the community of building owners and managers works closely with each other, so we will also continue to encourage our existing customers to include us in the organic discussions they have with others on steam.

Communication Tactics & Channels

We communicate with current and potential steam customers and our stakeholders through in-person events including training and tours, as well as webinars, information on our website, email, and direct mail.

Our in-person channels include the seminars and workshops described in Section 6.1 as well as industry events and new hands-on training. An example of an industry event is the

ASHRAE decarbonization conference which took place in Manhattan mid-October 2024. This event was attended by Con Edison steam engineers and allowed for relevant industry customers to approach these employees and discuss the benefits of district steam and potential applications for implementation. Con Edison aims to grow its presence at such industry events to boost face-to-face communication channels with interested buyers.

Finally, to make it easier to understand the costs and emissions impact of converting to steam, we are investigating the development of tools and resources that we can publish to further engage potential customers. From our customer interviews, it was emphasized that numbers speak the clearest to building decision makers considering steam. Publishing a calculator to give customers a clear comparison on the cost of steam versus electric and gas heating and cooling would be a powerful way to illustrate to potential customers the possible cost and emissions savings of steam for their specific building.

6.4 Impact Measurement

We measure the success of our events by tracking attendance and surveying attendees afterwards to learn what topics resonate and what our customers want to hear more about next.

We can see the impact of our recent email and direct mail campaign to advertise free steam energy assessments based on the influx of appointments made. In addition, we can track visits to a vanity URL created for the campaign, so we know that all 11 appointment requests made after the campaign launched are directly attributable to a promotional postcard, business letter, or email.

We also have robust analytics for emails sent through our corporate email vendor. When we send an email campaign, we receive a detailed report that shows which customers opened and engaged with it.

6.5 Incentives

The central aim of our customer outreach and education is to retain our current steam customers and grow our business. As we heard in our customer interviews, the main hurdle to steam adoption is cost. With this in mind, we aim to educate all customers, existing and potential, about our incentives to convert to and remain on steam.

- **Energy Assessment:** Con Edison provides steam customers a free energy assessment every 10 years. This assessment includes tools and information to help customers lower energy costs, boost equipment performance, and reduce

environmental impact. The assessment includes a detailed analysis of energy waste, upgrade suggestions to minimize costs, and funding and incentive information from Con Edison and NYSERDA.

- **Negotiated Fuel Cost Program:** This fuel hedging program allows customers to lock in a fixed price for a portion of their steam Fuel Adjustment Charge during the heating and cooling seasons. The program is offered each summer and winter to reduce volatility associated with fuel costs.
- **Zero-Cost Connection:** Customers located within 250 feet of an existing steam main generally qualify for a free connection to the main, depending on their five-year revenue potential once they are on the system.
- **Competitive Pricing:** While monthly steam bills may be higher than other energy sources, we maintain that lower maintenance and capital costs make steam a competitive choice in the long term. Steam has a significantly lower upfront cost than electrification and maintaining a steam system is more economical than replacing a fossil fuel-burning boiler and facing LL97 penalties. In addition, the pending promotional rate, discussed in Section 5.2, would be an additional monetary incentive for new customers to connect to the steam system.

7. Conclusion

Con Edison Steam has identified a path towards system decarbonization and customer growth. We believe that a decarbonized steam system will be a key player in the clean energy future, and that adding additional district steam customers will be vital to achieving Con Edison and NYC's mutual emission reduction goals.

The building mix in NYC is aging and dense, making traditional electrification solutions cost-prohibitive or logistically infeasible for many customers. Steam provides an important alternative to building electrification, with the potential to achieve emissions reductions that customers would otherwise not have if they remain on fossil fuels.

In this Plan we have discussed the potential market for steam and opportunities for physical expansion of our steam system to grow our business. We have identified obstacles to steam adoption including cost and lack of awareness of steam's availability and viability, contrasted with the value steam offers customers compared to fossil-fuel or electric alternatives. We've detailed how we intend to encourage equitable access to steam, our overall outreach and education strategy to engage with our key customer groups, and the messages and channels we will use to promote district steam as a lower-carbon energy choice.

We welcome the opportunity to have further conversations with our stakeholders around our decarbonization and business development plans. It is our hope that, working together, we can chart a course for how decarbonized district steam can be a key energy option toward building a more sustainable future for the city that we share.