PlaNYC's Impact on Building Energy Policy: From Disclosure to Mandates in NYC and Elsewhere

DRAFT April 10, 2026

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Notes: 1) Please do not cite or circulate this draft without permission. 2) We still want to go back to the people we interviewed to confirm that they are fine with the quotations, and ask supplementary questions. 3) Katrina is responsible for errors and omissions at this stage. Cecil has reviewed this draft. Russell will be reviewing the draft next. 4) We welcome suggestions for changes and for other people to interview. Thank you.

1. Introduction

This paper analyzes the building energy policies that PlaNYC proposed and that New York City (NYC) implemented soon after the plan was released, and the impacts of these policies.

PlaNYC committed NYC to adopting policies to increase energy efficiency in large existing office, multi-family residential and institutional buildings. U.S. governments had not previously focused on increasing energy efficiency in these building segments notwithstanding all the efforts to improve energy efficiency since the 1970s energy shocks.[1] PlaNYC aimed to reduce energy consumption in these buildings primarily to mitigate energy supply constraints and higher energy prices that the plan anticipated if energy demand continued to rise and the city's population expanded to over nine million by 2030. In addition, PlaNYC emphasized that increasing building energy efficiency would help achieve the plan's citywide 30% greenhouse gas (GHG) reduction goal.

In 2009, as part of implementing PlaNYC, the Office of Long-Term Planning and Sustainability (OLTPS), worked with the staff and chair of the city council's environmental protection committee to legislate the City's first generation of policies to reduce energy consumption in large existing buildings. These first generation policies were light touch policies that did not impose significant costs on building owners. The most important laws were Local 84, the benchmarking law that requires large buildings to annually disclose their energy consumption and benchmark it to comparable buildings; and Local Law 87, the audit law that requires large buildings to audit the performance of building systems and tune them up and bring lighting systems up to the then-current energy code within 16 years.

Retrospective analyses of the impacts of the benchmarking and audit requirements show that, compared to expectations, these first generation approaches had modest effects on building energy consumption and other quantitatively measurable metrics.[2] The modest quantifiable impacts of these

[1] PlaNYC at 106, 135. [For the history of energy efficiency policies in the US, need to review Steven Nadel, Neal Elliott, and Therese Langer, Energy Efficiency in the United States: 35 Years and Counting (June 2015)].

[2] Karen Palmer & Margaret Walls, Does Information Provision Shrink the Energy Efficiency Gap? A Cross-City Comparison of Commercial Benchmarking and Disclosure Laws, 3 (Res. For the Future, Disc. Paper RFF DP 15-12, 2015); Ting Meng, David Hsu, and Albert Han, Estimating Energy Savings From Benchmarking Policies in New York City, 133 Energy 415 (2017); Fátima Uriarte Cáceres, Estimating Energy Savings and Greenhouse Gas Emission Reductions From Energy Rating and Disclosure Policies, 21:2 Industrial Data 53 (2018); Constantine E. Kontokosta, Danielle Spiegel-Feld & Sokratis Papadopoulos, The Impact of Mandatory Energy Audits on Building Energy Use, 5 Nature Energy 309 (2020); Luming Shang et al., Assessing Office Building Marketability

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informational approaches in achieving their primary goal is consistent with the limited effectiveness of such approaches in changing targeted behavior in other policy domains.[3]

However, the benchmarking and audit requirements still had major impacts notwithstanding the limited reductions in energy consumption that they produced. First, the benchmarking and audit requirements provided the city with extensive data about energy consumption and systems in large existing buildings. City officials subsequently used this data to design and implement Local Law 97 of 2019 (LL97), a second generation policy that, reflecting the rise of climate change as a preeminent policy concern after PlaNYC, mandates ambitious GHG emission reductions in large buildings. Second, the first generation policies helped to foster the growth of local networks of civil servants, private sector professionals and tradespeople, and advocates knowledgeable about building energy consumption. People in these networks helped to implement the first generation policies and make it possible to design, legislate and implement LL97. Third, beyond the City, other cities and states adopted policies similar to NYC's first and second generation building policies, presumably influenced in part by the example set by the City starting with PlaNYC.

PlaNYC's building policies are a significant example of NYC's history of pioneering local environmental efforts. Perhaps the closest parallel is the steps NYC took in the 1960s to try to address the city's heavily polluted air.[4] These air pollution control efforts did not succeed in cleaning up the city's air. But by failing they contributed to the momentum for the major federal environmental laws, such as the Clean Air Act, legislated in the 1970s. Perhaps in the future, New York City's early twenty-first century efforts to reduce building energy consumption and GHG emissions also will be regarded as an important stepping stone in the history of national decarbonization.

Plan for the paper

Part 2 describes the multi-pronged policy framework that PlaNYC proposed for increasing energy efficiency in large existing buildings. **Part 3** analyzes the first generation of building policies that the city adopted to implement PlaNYC's goal of reducing energy consumption in large existing buildings.

Part 4 addresses the impacts of the first generation of policies. It summarizes the quantitative studies finding that the benchmarking and audit laws had modest impacts on energy consumption, utility expenditures and occupancy rates. It discusses qualitatively the policies' most significant impacts: the data that the policies generated about building energy consumption and energy systems in large buildings in the city, the formation of networks of professionals concerned with building energy consumption in the city, and the implementation of similar policies in other cities and states. **Part 5** turns to LL97, the city's leading second generation building policy. It characterizes LL97 as an important legacy of PlaNYC, while recognizing that LL97 also departs from PlaNYC's approach to building energy regulation.

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before and after the Implementation of Energy Benchmarking and Disclosure Policies—Lessons Learned from Major U.S. Cities, 15 Sustainability (2023).

[3] See, e.g., Annie Brett, Rethinking Environmental Disclosure, 112 Cal. L. Rev. 1535 (2024); Daniel E. Ho, Fudging the Nudge: Information Disclosure and Restaurant Grading, 122 Yale L.J. 574 (2012); Omri Ben-Shahar & Carl E. Schneider, The Failure of Mandated Disclosure, 159 U.Pa. L. Rev. 647 (2011).

[4] See Scott Dewey, Don't Breathe the Air: Air Pollution and U.S. Environmental Politics, 1945-1970 (2000).

Part 6 concludes by underscoring that PlaNYC proposed local efforts to reduce building energy consumption as part of a broad effort by the city to work with New York State and privately owned utilities to address the city's energy needs. This insight that the city needs willing partners in the State and utilities carries over to today's challenge of decarbonizing the local building stock. Coordinated action by the City, State agencies, private utilities and building owners ultimately may be required to decarbonize local buildings.

2. Buildings in PlaNYC

PlaNYC aimed to prepare NYC to accommodate a population of nine million in 2030. Among the concerns that the plan's authors had[5] was that the city would not have sufficient energy for the expected expansion in the population. PlaNYC warned that the city's existing fleet of aging power plants would not supply enough power to meet demand by 2012 because demand was growing.[6] It cautioned that "[b]y 2030, population and economic growth will strain the city's energy network further. If current trends continue, energy demand could grow substantially."[7]

To mitigate the expected supply constraints and price increases, PlaNYC supported building new power plants in the city powered by natural gas, which it described as "the cleanest-burning fossil fuel."[8] It recognized that solar and wind were even cleaner, but concluded that "they are not yet financially feasible to play a large role" in "energy generation."[9]

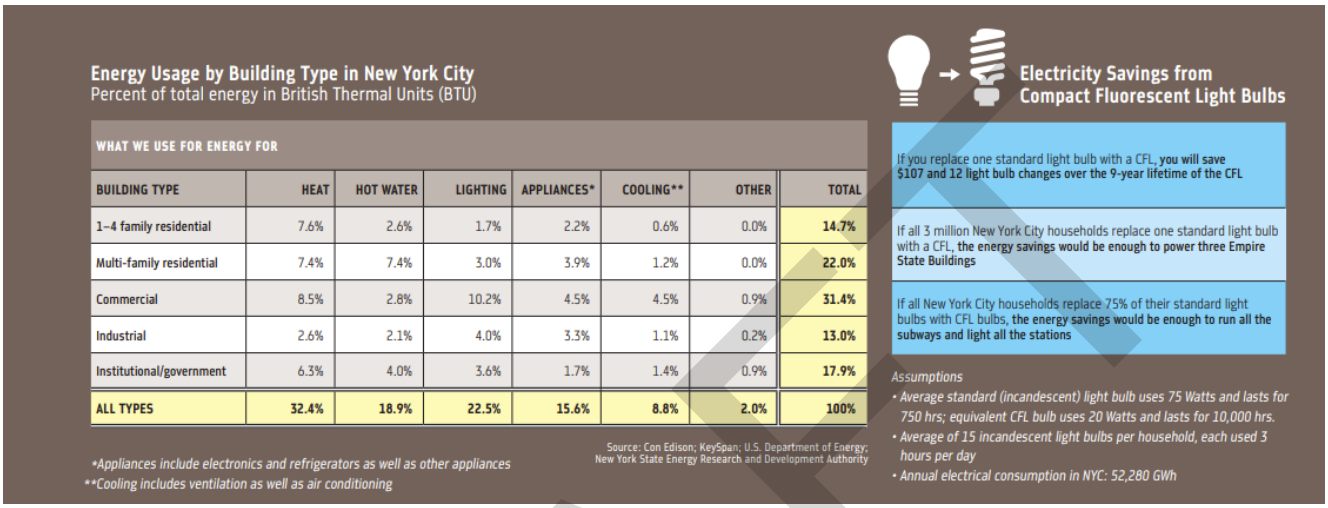
PlaNYC argued that in NYC, efforts to improve energy efficiency should focus on buildings. It pointed out that "[o]ver two thirds of our energy is used in buildings, compared to a national average of less than one third."[10] It argued in particular for upgrading energy efficiency in existing buildings, not just new buildings. To illustrate the slow rate at which buildings turn over, PlaNYC estimated that "by 2030, at least 85% of our energy usage and carbon emissions will come from buildings that exist today."[11] Drilling down even further, it argued for reducing energy consumption in large existing buildings. It pointed out that "less than 4% of our buildings contain roughly 50% of the city's built area."[12]

PlaNYC included a table breaking down energy usage by building type that showed that commercial buildings accounted for 31.4% of the city's energy usage, multi-family residential accounted for 22%, and institutional/government buildings for 17.9%.[13] The same table highlighted that reducing the energy consumed by lighting – especially in commercial buildings – heating and hot water, and to a lesser extent

[5] Question: Who had this concern or what was the impetus for the concern?
[6] PlaNYC at 101.
[7] PlaNYC at 101.
[8] PlaNYC at 102. See also id. at 112 (supporting expanding the natural gas infrastructure in the City).
[9] PlaNYC at 102. The 2011 update to PlaNYC was more optimistic about the introduction of renewable sources of generation, in part because of the creation of state and local incentives. PlaNYC 2011 Update at 105, 113. Still, the update supported building new transmission lines to bring more natural gas to the city, and converting buildings to natural gas from heavily polluting oils for heating and hot water. PlaNYC 2011 Update at 104, 106, 116.
[10] PlaNYC at 106.
[11] PlaNYC at 106. Question: should we refer to the back-of-the envelope basis for the 85 percent statistic?
[12] PlaNYC at 102.
[13] Energy Usage by Building Type in New York City, in PlaNYC at 107. Question: Where did the data in the table come from? McKinsey?

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appliances and cooling, would significantly reduce building energy consumption.[14] PlaNYC declared, "We must target our largest energy consumers – institutional buildings, commercial and industrial buildings, and multi-family residential buildings."[15] Not only would spurring these buildings to improve their energy efficiency reducing energy demand, but "the maximum impact will be achieved with minimal complexity." [16]



Energy Usage by Building Type in New York City
Percent of total energy in British Thermal Units (BTU)

WHAT WE USE FOR ENERGY FOR

BUILDING TYPE	HEAT	HOT WATER	LIGHTING	APPLIANCES*	COOLING**	OTHER	TOTAL
1–4 family residential	7.6%	2.6%	1.7%	2.2%	0.6%	0.0%	14.7%
Multi-family residential	7.4%	7.4%	3.0%	3.9%	1.2%	0.0%	22.0%
Commercial	8.5%	2.8%	10.2%	4.5%	4.5%	0.9%	31.4%
Industrial	2.6%	2.1%	4.0%	3.3%	1.1%	0.2%	13.0%
Institutional/government	6.3%	4.0%	3.6%	1.7%	1.4%	0.9%	17.9%
ALL TYPES	32.4%	18.9%	22.5%	15.6%	8.8%	2.0%	100%

*Appliances include electronics and refrigerators as well as other appliances
**Cooling includes ventilation as well as air conditioning

Source: Con Edison; KeySpan; U.S. Department of Energy; New York State Energy Research and Development Authority

Electricity Savings from Compact Fluorescent Light Bulbs

If you replace one standard light bulb with a CFL, **you will save $107 and 12 light bulb changes over the 9-year lifetime of the CFL**

If all 3 million New York City households replace one standard light bulb with a CFL, **the energy savings would be enough to power three Empire State Buildings**

If all New York City households replace 75% of their standard light bulbs with CFL bulbs, **the energy savings would be enough to run all the subways and light all the stations**

Assumptions
- *Average standard (incandescent) light bulb uses 75 Watts and lasts for 750 hrs; equivalent CFL bulb uses 20 Watts and lasts for 10,000 hrs.*
- *Average of 15 incandescent light bulbs per household, each used 3 hours per day*
- *Annual electrical consumption in NYC: 52,280 GWh*

Source: PlaNYC, page 107.

PlaNYC highlighted that reducing building energy consumption also would improve local air quality,[17] and lower the city's GHG emissions, 69% of which came from buildings.[18] Moreover, the plan presented reducing energy consumption as in the financial interests of building owners, not merely a public good. It indicated that its proposals for the private sector would pay back "within five years or less."[19] In the table from PlaNYC reproduced above, the box on the right exemplifies the emphasis on the private benefits of energy efficiency. It explains that "If you replace one standard light bulb with a CFL [Compact Fluorescent Light Bulb], you will save $107 and 12 light bulb changes over the 9-year lifetime of the CFL."[20]

Part 2.1 discusses the limited tools for increasing building energy efficiency in NYC before PlaNYC. Part 2.2 identifies key proposals in PlaNYC for increasing building energy efficiency.

[14] Energy Usage by Building Type in New York City, in PlaNYC at 107. According to the 2011 update to PlaNYC, "In New York City, 27% of our electricity is used to light buildings, accounting for 12% of our overall carbon emissions." PlaNYC 2011 Update at 109.
[15] PlaNYC at 103.
[16] PlaNYC at 108.
[17] PlaNYC at 127 ("Buildings and industry are responsible for roughly 55% of our PM 2.5 emissions. Improvements in efficiency, as targeted for our energy and carbon goals, will result in a 15% reduction in PM 2.5 for this sector, for a reduction of approximately 6% of overall city PM 2.5 emissions."). The chapter on air quality also highlighted the potential to reduce local air pollution and GHG emissions by changing the types of fuel oil burned in buildings, and launching a local air quality study. Id. at 127-129. This paper does not address the impact of the clean heat program.
[18] PlaNYC at 135.
[19] PlaNYC at 108. See the estimates of the payback period to consumers after the incentive in the table Key Areas for Targeted Energy Efficiency Initiatives, in PlaNYC at 108. Question: Who estimated the payback periods?
[20] Electricity Savings from Compact Fluorescent Light Bulbs, in PlaNYC at 107.

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2.1 The Limited Focus on Large Building Energy Consumption Before PlaNYC

Laurie Kerr, senior policy advisor at OLTPS, was the member of the PlaNYC team most responsible for PlaNYC's discussion of buildings.[21] An architect by training,[22] before joining the team, Kerr had worked at the NYC Department of Design and Construction (DDC), which is responsible for constructing new buildings and infrastructure. She knew from this experience that there was significant unrealized potential to reduce energy consumption in buildings.[23] DDC had a sustainability program when Kerr was there, and DDC had tested Leadership in Energy and Environmental Design (LEED) and energy efficiency strategies in newly constructed buildings. [24]

In the early 2000s, the energy requirements for buildings "were weak to nonexistent."[25] New York State had had an energy code since the late 1970s.[26] However, when work on PlaNYC started, the Code was five years out of date, and there had been only 10% improvements in the previous twenty years.[27] Kerr had worked on projects that significantly exceeded the code requirements, and knew there was room for improvement.[28] The code focused on new buildings, and provided limited incentives to improve energy efficiency in existing buildings. [29] Although renovations to existing buildings had to comply with the State Energy Conservation Construction Code, the code "exempt[ed] renovations of 50% or less of the building system or subsystem from compliance."[30] This was a major loophole. The State's energy code also was under-enforced; New York City did not enforce the code because it was a New York State code.[31]

2.2 PlaNYC's Policy Framework for Reducing Building Energy Consumption

[21] Who drafted the energy chapter's discussion of buildings? Who supplied the data for the tables? Is Kerr's title accurate?
[22] Is this an accurate description of Kerr's professional background?
[23] Interview December 19, 2025.
[24] PlaNYC indicates that the City had already "established new standards for new municipal buildings" and that "Investments in LED stoplights and retrofits to City-owned buildings have already saved the City money and reduced the City's energy consumption." PlaNYC at 106. Local Law 86 of 2005, "the first green buildings law, [mandated] … green building standards for City capital projects with an estimated cost of two million dollars or more." Committee on Environmental Protection, Infrastructure Division, Briefing Paper of the Infrastructure Division, Proposed Int. No. 476-A etc, 21 (June 26, 2009). [It would be good to cite these standards, if we can find them.]
[25] Interview December 19, 2025
[26] New York State Energy Conservation Construction Code Act of 1978, Chapter 397 of NYS Laws of 1978? Need to check citation and history of the development of the Code.
[27] Interview December 19, 2025. Need to find citations for highlighted points, and clarify what the 10% improvements were improvements to.
[28] Interview December 19, 2025.
[29] Interview December 19, 2025.
[30] Committee on Environmental Protection, Infrastructure Division, Briefing Paper of the Infrastructure Division, Proposed Int. No. 476-A etc, 5 (June 26, 2009); interview December 19, 2025.
[31] Interview December 19, 2025. See also Transcript of the Minutes of the Environmental Protection Committee, June 26, 2009 80 (Scott Frank, Jaros Baum Bolles) ("Since the New York State energy law was first enacted in 1976, New York City government took no action of any kind towards administering the energy code until 2007, 31 years later.") [hereinafter June 26 2009 Committee Transcript].

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PlaNYC proposed that the City lead by example in its own buildings, and commit to a 30% reduction in energy consumption "in buildings and operations by 2017" through "audits/retrofits, lighting upgrades, and improved maintenance."[32]

To spur the private sector to improve energy efficiency, PlaNYC proposed to use "challenges, requirements, and incentives."[33]

The City would "challenge the city's leading non-profit and commercial building owners to match the City's commitment to cut its own energy use by 30% in 10 years."[34]

For commercial and industrial buildings over 100,000 square feet, and multifamily buildings with over 50 units, PlaNYC proposed benchmarking and "retro-commissioning or audit[s]/retrofit[s]" that would payback within five years or less.[35]

Energy efficiency upgrades would be mandatory for large commercial, industrial and residential buildings by 2015.[36] PlaNYC proposed to create the New York City Energy Efficiency Authority, funded by a surcharge on ratepayers, to provide financial incentives for energy efficiency upgrades.[37]

Commercial and industrial buildings also would be required to upgrade their lighting to the energy code when renovating or tenants changed.[38] The city would establish a "[l]arge-[s]cale [d]irect [i]nstall [p]rogram for compact fluorescent lightbulbs "for all residential properties," including a voluntary program that would enable 180,000 units a year to replace incandescent bulbs for free.[39]

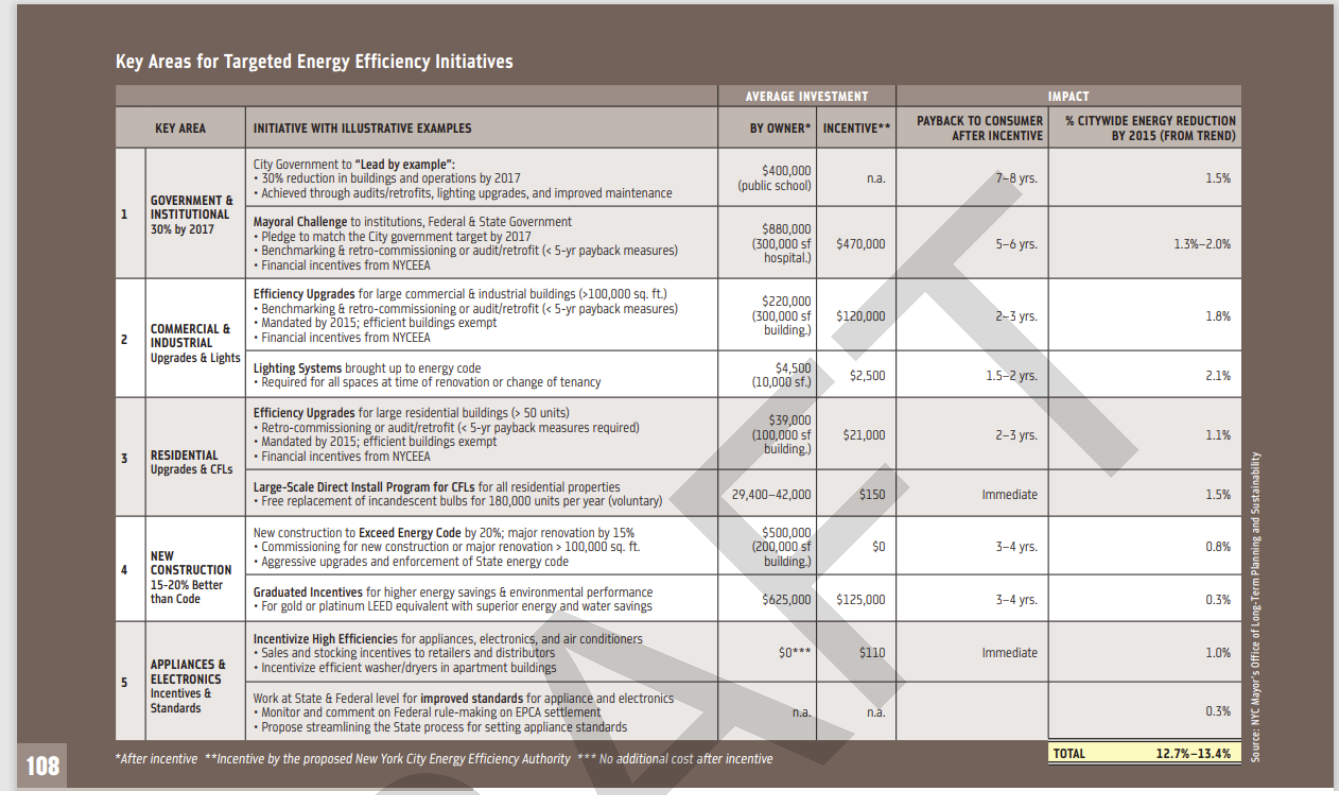
For new buildings, the city would increase the energy efficiency requirements in the next revisions to the city's building code, and seek changes to the State Energy Conservation Construction Code and other codes.[40]

[Note to readers: We would welcome information on issues such as: What were the sources of the ideas on page 108 in PlaNYC? Was it important in drafting PlaNYC that some of these measures were already being implemented by private building owners (eg benchmarking using Portfolio Manager)? Were the

[32] Key Areas for Targeted Energy Efficiency Initiatives, in PlaNYC at 108. Need to confirm that the 30% reduction was intended to be in energy consumption. PlaNYC just refers to 30% reduction.
[33] PlaNYC at 108.
[34] PlaNYC at 108.
[35] Key Areas for Targeted Energy Efficiency Initiatives, in PlaNYC at 108. See also id. at 110 ("We will make energy usage in buildings more transparent by encouraging building owners to file and Environmental Protection Agency Portfolio Manager survey, a web-based energy usage breakdown for buildings. This will enable us to analyze consumption patterns, and adapt our efficiency strategies to have the maximum impact.").
[36] Key Areas for Targeted Energy Efficiency Initiatives, in PlaNYC at 108. See also PlaNYC at 108 ("In many cases, such as the energy upgrades for large commercial and industrial buildings, we will incent behavior to encourage early adoption and then mandate compliance by 2015."). Question: Am I correctly interpreting PlaNYC as proposing mandatory energy efficiency upgrades in large commercial, industrial and residential buildings by 2015?
[37] Key Areas for Targeted Energy Efficiency Initiatives, in PlaNYC at 108. See id. at 107 (on the New York City Energy Efficiency Authority).
[38] Key Areas for Targeted Energy Efficiency Initiatives, in PlaNYC at 108.
[39] Key Areas for Targeted Energy Efficiency Initiatives, in PlaNYC at 108. Did the city establish the program to distribute compact fluorescent lightbulbs?
[40] Key Areas for Targeted Energy Efficiency Initiatives, in PlaNYC at 108. See also id. at 107

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ideas vetted with people before you included them in PlaNYC? If so, who? Did you realize that mandating energy efficiency upgrades would be controversial when you included the idea in PlaNYC?]



Key Areas for Targeted Energy Efficiency Initiatives

	KEY AREA	INITIATIVE WITH ILLUSTRATIVE EXAMPLES	AVERAGE INVESTMENT BY OWNER*	AVERAGE INVESTMENT INCENTIVE**	IMPACT PAYBACK TO CONSUMER AFTER INCENTIVE	IMPACT % CITYWIDE ENERGY REDUCTION BY 2015 (FROM TREND)
1	**GOVERNMENT & INSTITUTIONAL** 30% by 2017	City Government to **"Lead by example"**: • 30% reduction in buildings and operations by 2017 • Achieved through audits/retrofits, lighting upgrades, and improved maintenance	$400,000 (public school)	n.a.	7–8 yrs.	1.5%
		Mayoral Challenge to institutions, Federal & State Government • Pledge to match the City government target by 2017 • Benchmarking & retro-commissioning or audit/retrofit (< 5-yr payback measures) • Financial incentives from NYCEEA	$880,000 (300,000 sf hospital.)	$470,000	5–6 yrs.	1.3%–2.0%
2	**COMMERCIAL & INDUSTRIAL** Upgrades & Lights	**Efficiency Upgrades** for large commercial & industrial buildings (>100,000 sq. ft.) • Benchmarking & retro-commissioning or audit/retrofit (< 5-yr payback measures) • Mandated by 2015; efficient buildings exempt • Financial incentives from NYCEEA	$220,000 (300,000 sf building.)	$120,000	2–3 yrs.	1.8%
		Lighting Systems brought up to energy code • Required for all spaces at time of renovation or change of tenancy	$4,500 (10,000 sf.)	$2,500	1.5–2 yrs.	2.1%
3	**RESIDENTIAL** Upgrades & CFLs	**Efficiency Upgrades** for large residential buildings (> 50 units) • Retro-commissioning or audit/retrofit (< 5-yr payback measures required) • Mandated by 2015; efficient buildings exempt • Financial incentives from NYCEEA	$39,000 (100,000 sf building.)	$21,000	2–3 yrs.	1.1%
		Large-Scale Direct Install Program for CFLs for all residential properties • Free replacement of incandescent bulbs for 180,000 units per year (voluntary)	29,400–42,000	$150	Immediate	1.5%
4	**NEW CONSTRUCTION** 15-20% Better than Code	New construction to **Exceed Energy Code** by 20%; major renovation by 15% • Commissioning for new construction or major renovation > 100,000 sq. ft. • Aggressive upgrades and enforcement of State energy code	$500,000 (200,000 sf building.)	$0	3–4 yrs.	0.8%
		Graduated Incentives for higher energy savings & environmental performance • For gold or platinum LEED equivalent with superior energy and water savings	$625,000	$125,000	3–4 yrs.	0.3%
5	**APPLIANCES & ELECTRONICS** Incentives & Standards	**Incentivize High Efficiencies** for appliances, electronics, and air conditioners • Sales and stocking incentives to retailers and distributors • Incentivize efficient washer/dryers in apartment buildings	$0***	$110	Immediate	1.0%
		Work at State & Federal level for **improved standards** for appliance and electronics • Monitor and comment on Federal rule-making on EPCA settlement • Propose streamlining the State process for setting appliance standards	n.a.	n.a.		0.3%
					TOTAL	12.7%–13.4%

*After incentive **Incentive by the proposed New York City Energy Efficiency Authority *** No additional cost after incentive

108

Source: NYC Mayor's Office of Long-Term Planning and Sustainability

Source: PlaNYC, page 108.

3. NYC's First Generation of Light Touch Building Policies

A hallmark of PlaNYC was the desire of its drafters[41] to prepare a plan with concrete proposals that would be implemented and whose effects could be measured. Which of the policies outlined in PlaNYC were implemented? Which were not? Why?

In OLTPS, Laurie Kerr and Rohit Aggarwala, the director of the Office, led the implementation of the buildings policies.[42] They carried forth many of the elements of the multi-pronged strategy outlined in PlaNYC to reduce energy consumption from large existing buildings, with the notable exception of the proposal to mandate retrofits to reduce building energy consumption. Table 1 summarizes key proposals in PlaNYC, how these policies were implemented between 2007 and 2011, and key differences between the policies as proposed in PlaNYC and implemented.

3.1 The Greener, Greater Buildings Plan

[41] Are there people I should name here?

[42] Are Rit and Laurie the people who should be mentioned here? Should anyone else be mentioned here?

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The Greener, Greater Buildings Plan (GGBP), a package of four laws that the city council passed in December 2009, was a key component of OLTPS's implementation of PlaNYC's building energy policies.[43] OLTPS – in particular Rohit Aggarwala and Laurie Kerr – worked with council staff – including Rob Newman, Jeff Haberman and Laura Popa – and city council environmental protection committee chair Jim Gennaro to develop the laws.[44] Staff from OLTPS and the council committee repeatedly met with stakeholders in developing the laws.[45]

Three of these laws did not generate significant political controversy, perhaps because they imposed few costs on building owners. Several of the laws merely required building owners to undertake actions that some of them were already doing[46] and that stood to save owners money in short order after a minimal upfront investment.

Local Law 84 implemented PlaNYC's proposal that large buildings be required to disclose their energy performance and benchmark it. It required that buildings over 50,000 square feet – extended in 2016 to buildings over 25,000 square feet – annually disclose their energy consumption and benchmark it using Energy Star Portfolio Manager.[47] The 22,000 buildings over 50,000 square feet that it covered accounted for almost 50% of the city's energy consumption.[48] Some real estate owners in the city were already voluntarily benchmarking their buildings' energy performance,[49] so the law was diffusing a practice already adopted by forward-thinking building owners. However, even owners who had been benchmarking might not have been disclosing their performance. Real estate interests criticized the requirement to disclose building energy performance and benchmarking performance.[50] High energy

[43]See PlaNYC 2011 Update at 107 (referring to the four laws as the GGBP). In some documents, the GGBP is used to refer to the four laws and "creating a trained workforce that can reliably deliver improved energy performance" and the establishment of the New York Energy Efficiency Corporation. New York City Mayor's Office of Long-Term Planning and Sustainability, Overview of the Greener, Greater Buildings Plan at 1-2 (October 2014), https://www.nyc.gov/html/gbee/downloads/pdf/greener_greater_buildings_plan.pdf

[44] June 26 2009 Committee Transcript 16 (James F. Gennaro). Gennaro, the Committee chair, also thanked staff members Samara Swanston, Siobhan Watson, Nathan Toth, Anthony Hogrebe, Costa Constantinides, William Murray and Brad Groznik. Should other people be mentioned in the text?

[45] Should stakeholders be identified in the text?

[46] Testimony of Russell Unger, Executive Director, Urban Green Council/U.S. Green Buildings Council, N.Y. Chapter, Before the New York City Council Committee on Environmental Protection, June 26, 2009.

[47] Why was the threshold for benchmarking lowered to 50,000 square feet from 100,000 square feet mentioned in PlaNYC?

[48] June 26 2009 Committee Transcript 24-25 (Rohit Aggarwala).

[49] At a June 2009 meeting of the city council's Environmental Protection Committee hearing on the GGBP, a representative from EPA testified that "in the New York City metropolitan region, more than 4,000 commercial buildings representing over 1 billion square feet of space have already benchmarked with Portfolio Manager." June 26 2009 Committee Transcript 42 (Alexandra Sullivan). See also id. at 84 (Marilyn Davenport, Senior Vice President, REBNY testifying that REBNY members have been benchmarking). Benchmarking started earlier for commercial than multifamily residential buildings, and Portfolio Manager was beginning to enable benchmarking by multifamily buildings in 2009. Id. at 43-44.

[50] The Building Owners and Managers Association of Greater New York argued that "building owners should be able to release their benchmarking results at their discretion." June 26 2009 Committee Transcript 99 (Sylvester Giustino, Director of Legislative Affairs of the Building Owners and Managers Association of Greater New York). The Council of New York Cooperatives and Condominiums "question[ed] the usefulness of disclosing the energy statistics of comparable buildings." June 26 2009 Committee Transcript 196 (Maryann Rothman, Executive Director, Council of New York Cooperatives and Condominiums).

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users, such as television studios, were particularly concerned with disclosure because they were worried about negative reputational repercussions of being high energy users.[51] Gathering information would focus owner (or manager) attention on building energy performance. Requiring its disclosure would enable tenants and investors to use the information, and potentially create a market incentive to upgrade buildings if private actors sufficiently value efficiency.

Local Law 88 required non-residential buildings over 50,000 square feet to upgrade their lighting to code and sub-meter tenant spaces by 2025.[52] This law implemented PlaNYC's proposal that commercial and industrial buildings be required to upgrade their lighting. Lighting upgrades reduce energy costs, and PlaNYC estimated that the payback period would be under two years. The law was amended in 2016 to cover nonresidential buildings over 25,000 square feet and common areas in residential buildings over 25,000 square feet.[53]

Local Law 85 created a New York City Energy Conservation Code, which exceeded the requirements of the State Energy Conservation Code. The City Code removed the loophole in the State Code for renovations that exempted replacements of less than 50% of a building's system or subsystem.[54] Henceforth, owners renovating their buildings would have to bring the renovated parts up to code and there would no exemptions for changes to 50% of less of a system or subsystem.[55] OLTPS estimated that the Code changes would not significantly increase costs for buildings,[56] although some stakeholders told the city council environmental protection committee that the code changes would be costly.[57]

Local Law 87 was the most politically contentious component of the GGBP. It required that buildings over 50,000 square feet audit their energy systems every ten years, and disclose the audits to the city. What was controversial was the requirement that building owners implement energy efficiency upgrades identified in the audits that would pay for themselves.[58] As mentioned above, PlaNYC proposed that energy efficiency upgrades be mandatory in large buildings by 2015.[59] This proposal was reflected in Intro. No. 967 from April 2009, the first version of the bill introduced in the council that later became Local Law 87. Intro. No. 967 required that building owners required to audit implement "all the retro-commissioning *and retrofit measures* identified in the audit report as having a simple payback of not more than 7 years, or at the option of the owner, retro-commissioning and retrofit measures that when

[51] Need source for this point about high energy users/television studios.
[52] June 26 2009 Committee Transcript 30 (Rohit Aggarwala).
[53] https://www.nyc.gov/html/gbee/html/plan/ll88.shtml
[54] June 26 2009 Committee Transcript 17-18 (Dan Garodnick).
[55] June 26 2009 Committee Transcript 26-27 (Rohit Aggarwala). PlaNYC also led to other actions concerning codes. After 2007, "[a]t the request of Mayor Bloomberg and Speaker Quinn, the Urban Green Council (UGC) assembled the New York City Green Codes Task Force, consisting of more than 200 experts in design and construction." PlaNYC 2011 Update at 108. Of its 111 recommendations for code changes, 22 were implemented by 2011. PlaNYC 2011 Update at 108. The report of the Green Codes Task Force is here. Should the discussion of the Green Codes Task Force be relegated to a footnote or should the Task Force be discussed more prominently?
[56] June 26 2009 Committee Transcript 51-52 (Rohit Aggarwala).
[57] Need to add citations to the testimony before the committee. It would be interesting to search for evidence of whether the code changes increased costs.
[58] June 26 2009 Committee Transcript 42 (Marilyn Davenport, Senior Vice President, REBNY) 101 (expressing support for the audit and retro-commissioning requirements while opposing mandatory retrofits).
[59] Need to confirm the mandatory upgrades by 2015.

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combined equal or exceed the overall reduction in energy consumption of the retrofit and retro-commissioning measures with a simple payback of not more than 7 years."[60]

Many elements of the real estate industry opposed the mandatory retrofit requirement, even though it was cabined to measures that would pay back in a set period.[61] At a hearing on the GGBP in June 2009 before the city council committee on environmental protection, Marilyn Davenport, Senior Vice President of the Real Estate Board of New York (REBNY), testified that her organization could support three of the four bills with changes, but that one – the audit bill with the retrofit mandates – was "unworkable as written."[62] She argued that "the bill does not account for the different types of buildings, the different types of building systems, the different lease structures within the same building."[63] Buildings lacked access to financing to implement mandatory retrofits, and "the simple payback is really just not simple at all."[64] The Building Owners and Managers Association of Greater New York and the Rent Stabilization Association also opposed mandatory retrofits.[65]

There was similarly widespread opposition to mandatory retrofits from residential real estate owners and tenant advocates. At the June hearing, the Council of New York Cooperatives and Condominiums warned that the retrofit requirement "imposes large expenditures on buildings whose shareholders or unit owners may be struggling to make ends meet."[66] It urged the Council "not to adopt vague legislation that will directly affect thousands of New York City homeowners, particularly in this time of financial crisis."[67] Affordable housing developers decried the retrofit requirement as an "unfunded mandate" that buildings with income based rent restrictions would not have the capital to fulfill.[68] Advocates for low-income residential tenants worried that retrofit requirements would lead building owners to increase rents, including for rent-stabilized apartments, even if the retrofits resulted in net savings for building

[60] Into. No. 967, Section 1 (adding section 28-308.3). Italics added.
[61] See Andrew C. Revkin, City Plans to Make Older Buildings Refit to Save Energy, N.Y. Times (April 22, 2009), https://www.nytimes.com/2009/04/22/science/earth/22green.html.
[62] June 26 2009 Committee Transcript 84 (Marilyn Davenport, REBNY)
[63] June 26 2009 Committee Transcript 87 (Marilyn Davenport, REBNY)
[64] June 26 2009 Committee Transcript 87 (Marilyn Davenport, REBNY). See also id. at 90 ("The variations in terms of the leases for commercial properties also make calculation of payback an attribution of cost extremely difficult, particularly where buildings are not sub metered." (Ramon Cruz, Vice President for Energy and Environment, Partnership for New York City).

Trinity Real Estate, a large property owner in the city, warned that, under existing commercial leases, owners might be required to implement upgrades that would financially benefit tenants but not pay back for owners. Transcript of the Minutes of the Environmental Protection Committee, June 26, 2009 77 (Emily Lloyd, Chief Operating Officer, Trinity Real Estate).
[65] June 26 2009 Committee Transcript 99 (Sylvester Giustino, Director of Legislative Affairs of the Building Owners and Managers Association of Greater New York; Rent Stabilization Association, Memorandum in Opposition Intro. 967 (written testimony from June 26 2009 Committee on Environmental Protection hearing).
[66] June 26 2009 Committee Transcript 197 (Maryann Rothman, Executive Director, Council of New York Cooperatives and Condominiums). See also the testimony of Gregory Carlson from the Federation of New York Housing Cooperatives and Condominiums. Id. at 212-216.
[67] June 26 2009 Committee Transcript 197-198 (Maryann Rothman, Executive Director, Council of New York Cooperatives and Condominiums).
[68] June 29 2009 Committee Transcript 238-240 (Camilla Kisco, New York State Association For Affordable Housing). See also id. at 249 (Aaron Behr, Community Development Officers, LISC).

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owners.[69] City council members echoed the tenant advocates' concerns that mandating retrofits would increase rents. [70]

In the end, the OLTPS dropped the mandatory retrofit requirement from the audit bill. Buildings over 50,000 square feet would merely be required to undertake energy efficiency audits every ten years, and implement retro-commissioning measures. These are low-cost methods of upgrading energy efficiency that, unlike retrofits, do not entail major capital investments. They include "repairs of defects, cleaning, adjustments of valves, sensors, controls or programmed settings, and/or changes in operational practices."[71]

In an interview in 2026, Rohit Aggarwala recalled that "concerns about [the] enforceability [of a mandate requirement] were key" to the decision to drop it.[72] He remembers "sitting in [a] room with Laurie Kerr [and] Laura Popa and trying to figure out how to write … in a rule that we could defend" mandating retrofits estimated to payback in seven years.[73] "Top of mind was, if you're looking at [a] payback period for [an energy conservation measure], do you use today's prices or whose projection do you use?."[74] Aggarwala explained that the city did not drop the mandate requirement because of opposition from the real estate industry, but noted that there is "[n]o question that once we stepped back, a lot of real estate opposition fell back."[75] Reducing the opposition of the real estate industry likely eased the passage of the GGBP given the influence of the industry in NYC politics in the 2000s.

The idea of the city mandating that buildings invest in energy efficiency upgrades did not disappear after it was dropped from the GGBP. In 2013, on the Bloomberg administration's last day in office, OLTPS published a report suggesting that the city commit to reducing its GHG emissions by 80% by 2050. The report revived the idea of mandating building-level changes to achieve the more ambitious climate goal.[76] Several years later, when the de Blasio administration picked up the idea of building mandates, it confronted some of the same issues that stymied the proposal for mandates in the GGBP: Can buildings afford retrofits? How could tenants in rent-stabilized apartments, which constitute over 40% of the city's residential rental stock, be protected from rent increases if rent-stabilized buildings were required to retrofit?[77] The mandates debate in 2009 was a dry run for the debate about LL97 a decade later. But the

[69] June 26 2009 Committee Transcript 56-57 (Daniel Garodnick); id. at 225-232 (David Robinson, Legal Services NYC; Maggie Russell-Ciardi, Executive Director, Tenants and Neighbors) (proposing measures to reduce the impact on tenants of mandatory audits, especially rent-stabilized and Mitchell-Lama tenants).
[70] Transcript of the Minutes of the Environmental Protection Committee, June 26, 2009 56-57 (Daniel Garodnick); id. at 65-66 (Melissa Mark-Viverito).
[71] Local Law 87
[72] Interview January 12, 2026.
[73] Interview January 12, 2026.
[74] Interview January 12, 2026.
[75] Interview January 12, 2026. [fell back or fell away?] [Rit: are these quotes accurately conveying your recollections?] The New York Times reported that REBNY supported the GGBP after the retrofit requirement was dropped. Mireya Navarro, Bloomberg Drops an Effort to Cut Building Energy Use, N.Y. Times (December 4, 2009), https://www.nytimes.com/2009/12/05/science/earth/05bloomberg.html.
[76] City of N.Y., New York City Pathways to Deep Carbon Reductions 46 (2013)
[77] Testimony of the Mayor's Office Before the New York City Council Committee on Environmental Protection, December 4 2018 (testimony of Mark Chambers, Director, Mayor's Office of Sustainability) (expressing interest in working with the council to devise ways of encouraging GHG emission reductions from buildings with rent stabilized or income restricted units "without unnecessarily burdening tenants"); NYC Rent Guidelines Board, https://rentguidelinesboard.cityofnewyork.us/resources/apartment-hunting/housing-

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outcome was different in 2019, in part because the political landscape changed, and the implementation of the GGBP facilitated the adoption of mandates in LL97.

	PlaNYC	Policies implemented 2007-2011	Key differences between proposals in PlaNYC and implemented policies
City buildings			
	City to reduce energy consumption 30% in city buildings by 2017	The city adopted a goal of reducing city GHG emissions by 30% below 2006 levels by 2017[78]	The city defined the 30% reduction goal as applying to GHG emissions (vs energy consumption)
Private buildings			
Carbon Challenge	City to challenge institutions and governments to match city's commitment to cut energy use by 30%	In 2007, the city challenged leading universities and hospitals to reduce carbon emissions by 30% by 2017. [79] By 2011, 29 institutions were participating. [80]	The challenge focuses on reducing carbon emissions (vs energy consumption)[81]
Benchmarking requirement[82]	For commercial & industrial buildings over 100,000 sq ft	Local Law 84 requires buildings over 50,000 sq ft to benchmark and disclose their performance	Applies to residential (and commercial and industrial) buildings 50,000 sq ft and over (vs commercial & industrial buildings over 100,000 sq ft)[83]
Retro-commissioning or audit/retrofit (under 5 year payback) requirements	For commercial & industrial buildings over 100,000 sq ft	Local Law 87 requires audits and retro-commissioning by buildings 50,000 sq ft and over	Audit and retro-commissioning requirements apply to residential buildings over 50,000 sq ft (not just industrial & commercial buildings meeting the size threshold)

types/#:~:text=About%20one%20million%20of%20New,living%20in%20market%20rate%20housing (1 out of 2.3 million rental units are rent-stabilized).

[78] PlaNYC 2011 Update at 111.

[79] PlaNYC 2011 Update at 111-112.

[80] PlaNYC 2011 Update at 104, 111. Id. at 112 (showing graphs of "New York University's Energy Reductions" and "Key Components of NYU's Energy Reduction Strategy"). [Did NYU sign on to the mayoral challenge?]

[81] Officially, the metric was emissions but energy efficiency was preeminent because the grid coefficients were held constant, except for fuel switching. Cecil Scheib.

[82] Does the benchmarking law also apply to city-owned buildings?

[83] Why was the threshold for benchmarking lowered to 50,000 square feet from 100,000 square feet mentioned in PlaNYC?

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	PlaNYC	Policies implemented 2007-2011	Key differences between proposals in PlaNYC and implemented policies
Mandatory energy efficiency upgrades by 2015[84]	For commercial & industrial buildings over 100,000 sq ft & residential buildings with over 50 units		No mandatory energy efficiency upgrades
Lighting upgrades	Commercial & industrial buildings to bring lighting up to code	Local Law 88 requires nonresidential buildings over 50,000 sq ft to bring lighting up to code by 2025	Local Law 88 limits lighting upgrades to buildings over 50,000 sq ft
Codes	"New construction to Exceed Energy Code by 20%, major renovations by 15%"; "[a]ggressive upgrades and enforcement of State energy code"[85]	Local Law 85 created a New York City Energy Conservation Code, which exceeded the requirements of the State Energy Conservation Code	?[86]
Other			
New York City Energy Efficiency Authority	City to establish Authority funded by ratepayer surcharges to fund incentives to reduce energy demand	In 2011, the City established the New York City Energy Efficiency Corporation using over $37 million in surplus federal American Recovery and Reinvestment Act of 2009 funding. It has a revolving loan fund and offers credit enhancements. [87]	The city created a corporation (not an authority) and it seeded it with surplus federal stimulus funds for recovering from the 2008 financial crisis, not surcharges on ratepayers

Table 1 Key proposals in PlaNYC, how these policies were implemented between 2007 and 2011, and key differences between the policies as proposed in PlaNYC and implemented.

4. The Impacts of PlaNYC Building Energy Policies

PlaNYC's light touch building energy policies were developed in an era when there was considerable optimism that mandating the disclosure of information would help to change behavior and address a wide range of problems. During roughly the same period in which the city council passed the GGBP, New York City required restaurants to publicly display health and safety grades and calorie counts. Other governments, including the federal government, similarly adopted informational approaches to address public health and environmental problems.[88]

[84] [Am I correctly interpreting PlaNYC as requiring mandatory energy efficiency upgrades by 2015?]
[85] PlaNYC at 108 (Key Areas for Targeted Efficiency Initiatives).
[86] Were there any key differences between the code-related discussion in PlaNYC and what was implemented? Perhaps the requirements for regular upgrades is a difference, as opposed to the single jump mentioned in PlaNYC?
[87] https://www.c40.org/case-studies/c40-good-practice-guides-new-york-city-new-york-city-energy-efficiency-corporation/
[88] Eg federal calorie counts

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Retrospective studies of the impacts of the benchmarking and audit requirements show they reduced building energy consumption to some extent, but not significantly compared to the overall reduction goals. The limited effectiveness of these informational approaches in achieving their primary goal is consistent with the limited effectiveness of such approaches in changing targeted behavior in other policy domains.[89]

However, PlaNYC's building energy policies should not be judged by their impacts on building energy consumption and other quantifiable metrics alone. These policies had important consequences, even they were not the consequences most in the minds of the originators of the policies. The policies created datasets about building energy consumption and systems, helped to build networks of building energy professionals incentivized to reduce building energy consumption, and likely contributed to the diffusion of building energy policies in other cities and states.

Part 4.1 summarizes the published studies showing that mandatory benchmarking and audits had limited effects on energy consumption and other quantifiable metrics. Part 4.2 qualitatively discusses the more significant, if hard to quantify, impacts of PlaNYC's building energy policies.

4.1 Quantitative Studies of Impacts on Energy Consumption, Greenhouse Gas Emissions, Utility Expenditures and Occupancy Rates

Several quantitative empirical studies attempt to assess the impacts of Local 84's benchmarking and Local Law 87's audit requirements on energy consumption, utility expenditures, greenhouse gas emissions, and occupancy rates in covered buildings. These studies should be distinguished from studies reporting that energy consumption and greenhouse gas emissions in buildings covered by Local Laws 84 and 87 declined after the laws were passed.[90] These declines suggest that the laws had an impact, but the studies are not designed to establish that the laws themselves caused the declines that the studies report.[91]

Focusing on the empirical studies designed to study the effects of LL84 and LL87, there are more studies of the impacts of benchmarking[92] than audits[93] on building energy consumption and other building performance metrics. The studies, which use data from the first several years in which the benchmarking and audit laws were in force, find the laws had modest effects. The studies tend to focus on the laws'

[89] See, e.g., Annie Brett, Rethinking Environmental Disclosure, 112 Cal. L. Rev. 1535 (2024); Daniel E. Ho, Fudging the Nudge: Information Disclosure and Restaurant Grading, 122 Yale L.J. 574 (2012); Omri Ben-Shahar & Carl E. Schneider, The Failure of Mandated Disclosure, 159 U.Pa. L. Rev. 647 (2011).

[90] See, e.g., K. Seiden, J. Luboff, D. Chwastyk, E. Merchant, R. Russell, S. Cooper, A. Szlachetka, S. Winter Associates, M. Rode, New York City Benchmarking and Transparency Policy Impact Evaluation Report (May 2015); Richard Leigh, Sean Brennan, Megha Jain, Laurie Kerr, Jamie Kleinberg, Xiaoyu Qin, Cecil Scheib, Urban Green Council, Benchmarking and Audit Data Inform Building Science, in ACEEE Summer Study on Energy Efficiency in Buildings 3-11 (2016); Urb. Green Council, New York City's Energy and Water Use 2014 and 2015 Report (2017); Urban Green Council & City of New York, New York City's Energy and Water Use Report: 10 Years of Data 7 (2020), https://www.urbangreencouncil.org/wp-content/uploads/2022/08/2020_nyc_benchmarking_report.pdf.

[91] On the inadequacy of before and after results to establish policy impacts, see Palmer & Walls.

[92] Palmer & Walls; Meng et al.; Cáceres; Shang et al.

[93] Kontokosta, Spiegel-Feld & Papadopoulos.

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effects in samples of office buildings,[94] whose behavior may have been more affected by the laws than multi-family residential buildings.[95]

Because the studies rely on data from the 2010s, the long-term impacts of benchmarking and audits on buildings are unknown. Varying hypotheses are possible about the influence over long time periods of benchmarking and audit requirements. There could be a time lag, in which building owners use the information from benchmarking and audit reports many years after the reports are first produced to increase energy efficiency in conjunction with major renovations or refinancings.[96] Alternatively, the effects of benchmarking and audits might attenuate over time, perhaps because building owners make low-cost changes soon after they receive the first reports and then ignore the reports and subsequent versions of them.

[Note: The following summaries will be shortened or removed. They are included here to provide initial readers an overview of the academic scholarship on the impact of LL84 and LL87.]

Energy Consumption

Published studies show that the **benchmarking and audit** requirements resulted in limited reductions in building **energy consumption**.

In a study published in 2017, **Meng et al.** analyzed **energy savings** attributable to Local Law 84 from 2011 to 2014 in **office buildings** using a difference-in-differences approach.[97] Meng et al. separately analyzed the effects of two mechanisms through which the benchmarking law could reduce energy consumption: 1) the disclosure of energy use data and Energy Star scores, and 2) the disclosure of Energy Star scores alone. They analyzed the effects of disclosing energy use data and Energy Star scores by comparing the source energy use intensity (EUI) of a control group of city-owned office buildings that disclosed energy data starting in 2011, and a treatment group of privately-owned office buildings required to disclose energy data starting in 2012. They analyzed the effects on source EIU of the disclosure of Energy Star scores using a control group of non-scored privately owned office buildings and a treatment group of scored privately owned office buildings. Meng et al. found that "the total disclosure of energy use and Energy Star scores can be credited with a 6% reduction in building energy use intensity (EUI) three years later and a 14% reduction in EUI four years later. The disclosure of Energy Star scores decreased building EUI by 9% three years later and 13% four years later."[98] These findings are "independent" of each other; Meng et al. explained that their finding that disclosing Energy Star scores alone had slightly different effects than disclosing these scores and energy use may have been related to their use of different control groups in testing the two mechanisms. Meng et al. underscored that the reduction in energy use was "statistically significant only in the third and fourth years of NYC's benchmarking ordinance,"

[94] Palmer & Walls; Meng et al.; Shang et al.
[95] Kontokosta, Spiegel-Feld & Papadopoulos (analyzing the impacts of LL87 audit requirements on office and multifamily buildings).
[96] Kontokosta, Spiegel-Feld & Papadopoulos at 312 (hypothesizing about the impacts of audits over time).
[97] Ting Meng, David Hsu & Albert Han, Estimating energy savings from benchmarking policies in New York City, 133 Energy 415 (2017).
[98] Ting Meng, David Hsu & Albert Han, Estimating energy savings from benchmarking policies in New York City, 133 Energy 415, 416 (2017).

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perhaps because it took time for people to absorb the information and assimilate it into decision-making. [99]

In a little-article study published in 2018, **Cáceres** estimated the impacts of disclosing Energy Star scores under NYC's benchmarking law on **energy consumption and greenhouse gas emissions** in **multifamily housing buildings** between 2011 and 2016.[100] The study used a difference-in-differences matching approach, and had three years of data on Energy Star scores.[101] It found that "[t]he disclosure of Energy Star Scores to the public decreased the source EUI by 0.58 percentage points" and "increased … GHG emissions [by] … 0.35 percentage points. However, these impacts are not statistically significant. From the results obtained, it seems that the Energy Star Scores have not attracted the attention of market actors to energy use."[102]

In an article published in 2020, **Kontokosta, Spiegel-Feld and Papadopoulos** analyzed the impacts of Local Law 87's **audit** requirement on **energy consumption** in **multifamily residential and office buildings** using data from 2011 through 2016.[103] They found that properties required to implement an audit experienced "postaudit energy use reductions of 2.5% for multifamily and 4.9% for office buildings compared to non-audited properties. The magnitude of the savings is found to be consistent with what could be achieved through low-cost and no-cost energy efficiency improvements."[104] In a 2022 article, Lai, Papadopoulos, Fuerst, Pivo, Sagi and Kontokosta use "four years of energy audit reports" and building permit data to analyze the extent to which buildings adopted energy conservation measures recommended in the mandatory audits.[105] They find that office buildings are more likely to adopt measures recommended in audits than multifamily residential buildings.[106] This finding suggests that the greater reduction in postaudit energy consumption in office than multifamily buildings (reported in the 2020 article by some of the same authors) might be related to greater adoption by office buildings of recommended energy conservation measures. The 2022 article includes many other findings drawing on the audit data, including that the office and multifamily buildings that adopt measures recommended in audits "tend to be larger, higher value properties with higher initial EUI."[107]

In an article published in 2018, **Papadopoulos, Bonczak and Kontokosta** used NYC benchmarking data from 2011 through 2016 to **cluster office and multifamily buildings** into groups with similar energy performance, and **identify the characteristics of buildings** whose energy performance improved or declined in this period. [108] They did not examine the impacts of the benchmarking on building energy

[99] Meng et al., supra note xx, at 420.
[100] Fátima Uriarte Cáceres, Estimating Energy Savings and Greenhouse Gas Emission Reductions From Energy Rating and Disclosure Policies, 21:2 Industrial Data 53 (2018).
[101] Fátima Uriarte Cáceres, Estimating Energy Savings and Greenhouse Gas Emission Reductions From Energy Rating and Disclosure Policies, 21:2 Industrial Data 53 (2018).
[102] Fátima Uriarte Cáceres, Estimating Energy Savings and Greenhouse Gas Emission Reductions From Energy Rating and Disclosure Policies, 21:2 Industrial Data 53 (2018).
[103] Constantine E. Kontokosta, Danielle Spiegel-Feld & Sokratis Papadopoulos, The Impact of Mandatory Energy Audits on Building Energy Use, 5 Nature Energy 309 (2020)
[104] Kontokosta et al.
[105] Lai, Papadopoulos, Fuerst, Pivo, Sagi and Kontokosta.
[106] Lai, Papadopoulos, Fuerst, Pivo, Sagi and Kontokosta.
[107] Lai, Papadopoulos, Fuerst, Pivo, Sagi and Kontokosta.
[108] Sokratis Papadopoulos, Bartosz Bonczak, Constantine Kontokosta, Pattern Recognition in Building Energy Performance Over Time Using Energy Benchmarking Data, 221 Applied Energy 576 (2018). See also Sokratis

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consumption, but rather identified patterns in building energy use during the early years when LL84 required benchmarking and the characteristics of buildings with similar patterns. They use weather normalized site EUI to assess energy performance. They "find that energy reductions are mostly driven by Office buildings, with larger, newer, and higher-value buildings showing significant improvement in terms of energy use intensity between 2011 and 2016."[109]

Utility Expenditures and Occupancy Rates

In a 2015 discussion paper for Resources for the Future, **Palmer & Walls** analyzed the impacts of **benchmarking** laws in Austin, New York City, San Francisco and Seattle on **quarterly utility expenditures** per square foot in **investor-owned office buildings** between the first quarter of 2012 and the third quarter of 2013.[110] The data came from the National Council of Real Estate Investment Fiduciaries; utility expenditures cover spending on "natural gas, electricity, and water and sewer," but water and sewer are only 10 percent of "overall utility costs."[111] Palmer & Walls find that, in their "central specification, which includes a large set of buildings in cities across the country as controls, average utility expenditures per square foot are approximately 3 percent lower in buildings covered by the laws." In New York City, Palmer & Walls report that benchmarking reduced average utility expenditures by 3.5%. Palmer & Walls suggest that since they are looking at the impacts of the laws shortly after they were implemented, they are picking up the effects of buildings focusing on their energy consumption due to the need to report it, which they call "the attentiveness effect."

In a 2023 article **Shang et al**. analyzed the effects of benchmarking laws in New York City, Washington D.C., San Francisco and Seattle on the **annual occupancy rate** of different classes of **office buildings**. For New York City, they had occupancy data from 1994 to 2017; they seem to assume NYC implemented benchmarking in 2009, when the city council legislated Local Law 84, rather than when the law required benchmarking.[112] They did not find strong impacts of benchmarking on occupancy rates in NYC; as they mention, the 2008 financial crisis and its after-effects might have confounded their results. This study suggests that Local Law 84 had limited effects on real estate market performance in the years after the law was passed, assuming occupancy rate is a good proxy for such performance.

4.2 Qualitative Discussion of the Impacts on Data, Professional Networks and Other Jurisdictions

While the empirical studies discussed above suggest that LL84 and LL87 only modestly achieved their intended goal of reducing building energy consumption, mandatory benchmarking and audits had other effects. The laws produced data about building energy consumption and systems for large buildings in the city. They contributed to the formation of networks of people knowledgeable about building energy consumption and how to reduce it. The laws also likely helped to diffuse benchmarking and audit requirements to other cities and states. These other effects are likely more consequential than the

Papadopoulos & Constantine Kontokosta, Big Buildings and Big Data: Do Energy Disclosure Policies Impact Energy Use Over Time?, in ASCE International Workshop on Computing in Civil Engineering 248 (2017).

[109] Papadopoulos, Bonczak & Kontokosta at 585.

[110] Pamer & Walls. They assume Local Law 84 required benchmarking for privately-owned buildings starting in December 2011.

[111] Palmer & Walls.

[112] Luming Shang et al., Assessing Office Building Marketability before and after the Implementation of Energy Benchmarking and Disclosure Policies – Lessons Learned from Major U.S. Cities, 15 Sustainability (2023) (Table 1: Summary of the integrated database).

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apparently limited improvements in building energy performance that LL84 and LL87 directly incentivized in the years immediately following their passage.

Data

Mandatory benchmarking generated data about the amount and sources of energy consumption and greenhouse gas emissions by large existing buildings covering "almost half of [the city's] … total floor area."[113] Mandatory audit requirements generated data about large building envelopes (such as the types of windows, and walls and frames), energy systems (such as types of lighting technology, and heating and hot water systems), potential energy conservation measures (ECMs) for improving the energy performance of these buildings, and estimates of the costs and savings from these measures.

Soon after the data became available, city policymakers, policy organizations, such as the Urban Green Council, and academics used the data to learn about the energy profiles of buildings in the city, trends in building energy performance, the factors behind these trends, and options for improving building energy performance. The studies discussed above illustrate some of the uses that academics and policy organizations have made of the data. In the policy sphere, in Local Law 33 of 2018, the city built on the requirement in LL84 that buildings disclose their benchmarking data and mandated that buildings display letter grades based on this data that signal their energy efficiency compared to other buildings.[114] In 2019, the benchmarking data was critical to the design and early implementation of LL97, as discussed in part 5 of this paper.

Notably, however, there have been concerns for many years about the quality of the data that mandatory benchmarking and audits provide. Papadopolous, Bonczak and Kontokosta warned in a 2018 academic article using the benchmarking data that "Due to the self-reported nature of the energy data, we often encountered entry errors in both energy consumption and building characteristics (e.g. floor area), raising data quality and reliability concerns."[115] In their 2020 article showing the limited changes in energy consumption induced by the mandatory audits under LL87, Kontokosta, Spiegel-Feld and Papadopoulos suggested that the limited impacts of the audits in reducing building energy consumption might be due to poor quality audits.[116] The concerns about data errors data were prescient. Inaccuracies in benchmarking data became salient in implementing LL97, when the data was no longer merely for

[113] Richard Leigh, Sean Brennan, Megha Jain, Laurie Kerr, Jamie Kleinberg, Xiaoyu Qin, Cecil Scheib, Urban Green Council, Benchmarking and Audit Data Inform Building Science, in ACEEE Summer Study on Energy Efficiency in Buildings 3-11 (2016) (referring to the coverage of LL84 and LL87 data).

[114] Local Law 33 of 2018. See also Urban Green Council & City of New York, New York City's Energy and Water Use Report 10 Years of Data 5 (2020, https://www.urbangreencouncil.org/wp-content/uploads/2022/08/2020_nyc_benchmarking_report.pdf.

[115] Papadopolous, Bonczak and Kontokosta at 585. See also Richard Leigh, Sean Brennan, Megha Jain, Laurie Kerr, Jamie Kleinberg, Xiaoyu Qin, Cecil Scheib, Urban Green Council, Benchmarking and Audit Data Inform Building Science, in ACEEE Summer Study on Energy Efficiency in Buildings 3-11 – 3-12 (2016) ("Many property floor areas differ by more than 10% and sometimes over 30% between data sources. Correct floor areas are vital for accurate EUIs, so validation of floor area data should be required, perhaps by a design professional….The low quality of some benchmarking reports indicates that cities should provide training and consider requiring certification for benchmarking consultants.").

[116] Kontokosta, Spiegel-Feld & Papadopoulos at 312.

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informational purposes, but also for a regulatory program that portends significant costs for building owners.[117]

Networks

In implementing the GGBP, OLTPS sought to create communities of people to improve building efficiency.[118]

OLTPS's 2011 update to PlaNYC refers to some of the Office's efforts to stimulate the formation of these communities. For example, the report indicates that the city "helped create Amalgamated Green, a group of 30 stakeholders, including … unions, … REBNY, City University of New York (CUNY), professional societies, and energy training providers" to educate people about "the new specialties of energy efficiency."[119] It mentions that the Urban Green Council created a presentation about the GGBP and a class funded by NYSERDA that chapters of the American Institute of Architecture would be delivering.[120]

The Green Codes Task Force, assembled by the Urban Green Council, also helped to socialize the GGBP by bringing industry participants into conversations about it. [Note to readers: We would like to further discuss the role of Green Codes Task Force in socializing the GGBP. In addition, we welcome suggestions for other examples of how PlaNYC and the GGBP helped to create networks of building energy professionals and tradespeople in the city.]

Other Jurisdictions

New York City was not the first large city to legislate benchmarking and audit requirements for large buildings. In 2008, Austin, Texas was the first of the 20 most populous cities in the U.S. to require benchmarking and audits.

However, after New York City legislated the GGBP, 11 of the 20 most populous cities adopted benchmarking laws. Six of the 11 cities also legislated audit requirements.[121] Table 2 lists the cities among the 20 most populous that adopted benchmarking and audit requirements after 2009. (The top 20 include NYC.)

	Year Benchmarking Legislated	**Year Audits Legislated**
Seattle	2010	2016
San Francisco	2011	2011
Philadelphia	2012	2019
Chicago	2013	
Denver	2016	

[117] See generally Christine Billy et al., The Implementation of Local Building Performance Standards: An Analysis of Progress to Date and Guide for Future Policy 44-45 (2026). [Confirm with Christine that the concerns applied in NYC.]

[118] Who was responsible at OLTPS for the community outreach, communications and workforce development components of implementing the GGBP? Which of the efforts were most significant in building networks, expertise on building energy efficiency?

[119] 2011 Update to PlaNYC at 110.

[120] 2011 Update to PlaNYC at 110.

[121] Katrina M. Wyman & Danielle Spiegel-Feld, Local Greens: Cities and Twenty-first Century Environmental Problems 179 (2025). The cities among the 20 most populous without benchmarking (or audits) are Charlotte, Dallas, Fort Worth, Jacksonville, Oklahoma City, Phoenix, and San Antonio. Id. at 179.

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	Year Benchmarking Legislated	Year Audits Legislated
Los Angeles	2016	2016
San Jose	2018	2018
San Diego	2019	2019
Columbus	2020	
Indianapolis	2021	
Houston	2022	

Table 2: Cities among the top 20 most populous US cities that adopted benchmarking and audit laws after 2009

As indicated in Table 3, eight states also have legislated benchmarking, all since 2015.[122]

	Year Benchmarking Legislated
California	2015
New Jersey	2018
Colorado	2021
Maryland	2022
Massachusetts	2022
Washington State	2022
Oregon	2023
Minnesota	2023

Table 3: States with benchmarking laws.

We do not (yet) have evidence that New York City's adoption of benchmarking and audit laws caused other cities and states to adopt similar laws. However, New York's actions may have contributed. In 2014, Bloomberg Philanthropies, the Doris Duke Charitable Foundation and the Kresge Foundation funded a City Energy Project, partly to encourage U.S. cities to adopt measures to improve the energy efficiency of buildings that the Bloomberg administration had implemented in New York City.[123] Of the 10 cities that initially participated, seven adopted benchmarking laws after 2014 (Atlanta (2021), Denver (2016), Houston (2022), Kansas City (2015), Los Angeles (2016), Orlando (2016), and Salt Lake City (2017)).[124]

[122] Joe Burns & Julia Himmel, The 2026 Map of Building Performance Standards Across the U.S., Facilities Drive (November 12, 2025), https://www.facilitiesdive.com/news/map-tracking-building-performance-standards-across-the-us/743214/#washington. [Need to confirm when the states mandated benchmarking. Testimony from 2009 suggests that California and a few other states were already requiring benchmarking. Transcript of the Minutes of the Environmental Protection Committee, June 26, 2009 45.]

[123] [Is the text accurately characterizing the City Energy Project?] Natural Resources Defense Council, News Release, Mayors from 10 Major Cities United to Cut Climate Pollution From Buildings, (January 29, 2014), https://www.nrdc.org/press-releases/mayors-10-major-cities-unite-cut-climate-pollution-buildings#:~:text=January%2029%2C%202014%20%E2%80%93%20The%20mayors,vehicles%20every%20year%2C%20and%20lower

[124] Natural Resources Defense Council, News Release, Mayors from 10 Major Cities United to Cut Climate Pollution From Buildings, (January 29, 2014), https://www.nrdc.org/press-releases/mayors-10-major-cities-unite-cut-climate-pollution-buildings#:~:text=January%2029%2C%202014%20%E2%80%93%20The%20mayors,vehicles%20every%20year%2C%20and%20lower. On when the cities adopted benchmarking laws, see Joe Burns & Julia Himmel, The 2026 Map of Building Performance Standards Across the U.S., Facilities Drive (November 12, 2025),

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[Note to readers: Do you have evidence that you could share that New York's mandatory benchmarking and audit requirements contributed to other cities legislating such requirements? What led to the diffusion of benchmarking and audit requirements to other cities and states? Did Bloomberg Philanthropies, C40 and other foundations or networks of professionals expressly seek to diffuse these policy ideas (in more ways than the City Energy Project)? If foundations facilitated the policy diffusion, what were the mechanisms of diffusion? (e.g., funding, staff, conferences?) Did IMT play a role in diffusing the policies?]

5. NYC's Second Generation of Building Policies: Local Law 97's Mandates

In 2016, the de Blasio administration appointed Mark Chambers as head of its Mayor's Office of Sustainability (MOS) – the successor to OLTPS -- to establish building performance standards. An architect by training, Chambers had previously headed Washington DC's Sustainability and Energy office.[125] In 2019, twelve years after PlaNYC, NYC legislated Local Law 97, the principal component of the Climate Mobilization Act, the local version of the Green New Deal. LL97 caps the GHG emissions of large buildings in the city starting in 2024, and requires that these buildings essentially eliminate their GHG emissions by 2050. The law aims to decarbonize these buildings by electrifying them, on the assumption that grid-supplied electricity will decarbonize over time.

LL97 is as much a legacy of PlaNYC as many of the impacts discussed above in part 4. LL97 continues the regulatory focus that PlaNYC initiated on energy in large existing buildings. LL97 regulates the GHG emissions of buildings 25,000 square feet and larger, the same buildings required to benchmark since a 2016 legislative amendment to the benchmarking law.[126]

LL97 picks up the idea of individualized building mandates dropped from the audit law in 2009, albeit requiring GHG, not energy consumption, reductions. Perceptions that policies PlaNYC inspired did not sufficiently change building energy consumption contributed to legislating mandates in the late 2010s. In 2017, Mayor Bill de Blasio implicitly linked his support for requiring changes in building energy systems to the inadequacy of voluntary approaches. "We gave people a very fair amount of time for the private sector to come forward and really agree to voluntary goals that will be sufficient," he stated. "It [is] time to move to mandates."[127]

MOS used the benchmarking data generated by LL84 to design LL97 and indeed it is virtually impossible to imagine LL97 existing without this data. The existence of data about GHG emissions from the thousands of large buildings in NYC enabled MOS to design a law regulating these emissions, with an awareness of how far the regulated buildings were from achieving the city's ambitious emission reduction goals. The data also enabled the city to design a glidepath to achieve this goal by 2050. For example, MOS intentionally designed the first set of LL97 building caps, which took effect in 2024, to require actions by only 20% of covered buildings to ease the initial implementation of the law. The

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https://www.facilitiesdive.com/news/map-tracking-building-performance-standards-across-the-us/743214/#washington.

[125] Interview January 9, 2026.

[126] Local Law 133 of 2016. https://www.nyc.gov/assets/buildings/local_laws/ll133of2016.pdf. Should we discuss why Local Law 133 expanded the buildings required to benchmark to buildings over 25,000 square feet?

[127] Bill de Blasio, September 14, 2017. The quotation in is Wyman & Spiegel-Feld, Local Greens at 64. [I need to check the original source.]

benchmarking data were instrumental in achieving this goal. MOS used the benchmarking data to define in the law the GHG emission limits per square foot for different building types for 2024 to enable most covered buildings to comply with their 2024 caps from the start.[128] MOS also used the benchmarking data to define more stringent GHG emission limits per square foot in the law to take effect in 2030.[129]

The Department of Buildings (DOB) also has used the benchmarking data in implementing LL97. For example, DOB used the benchmarking data to help define the GHG emissions limits per square foot for 2035-2050 for different building types consistent with the law's goal of gradually reducing building GHG emissions.[130] DOB's estimates since LL97 was passed of how far buildings are from complying with their 2024 caps are based on information about building energy consumption and GHG emissions in the benchmarking reports that buildings file annually. For example, in 2023, the Mayor's Office released the "Getting 97 Done" report that stated that "Only 11 percent of properties covered by Local Law 97 are currently not in compliance with their emission limits for the 2024-2029 compliance period — down from 20 percent when the law was passed."[131] The city estimated the percentage of buildings in compliance using information in the benchmarking data about existing building energy consumption and GHG emissions.[132]

In addition to the tangible ways in which LL97 drew on ideas in PlaNYC and data generated by its initiatives, LL97 also resulted in part from the community of experts about building energy consumption that PlaNYC helped to foster. In August 2018, ten months after city council member Costa Constantinides introduced the first version of the bill that became LL97, Urban Green Council released a report from a "consensus-based process" involving over 70 stakeholders – including REBNY and other real estate interests, unions, and environmentalists – recommending a different approach to enlisting large buildings in reducing GHG emissions.[133] LL97 did not adopt the report's overarching recommendation that large buildings be mandated to increase their energy efficiency. However, ideas from the report were incorporated into LL97, such as the proposal that buildings with rent-stabilized apartments should only be required to implement "low-cost energy saving measures," not mandated to make costly changes that might translate into higher rents for tenants.[134]

The community of building energy experts that PlaNYC helped to grow also is involved in implementing LL97. LL97 required that DOB establish an advisory board to help in implementing the law. Many of the

[128] §28 -320.3.1 Annual building emissions limits 2024 -2029. Need to confirm the points in the text.
[129] §28 -320.3.2 Building emissions limits for calendar years 2030 through 2034. Need to confirm the points in the text. Are there other concrete examples of how the benchmarking data was used in designing LL97? Are there examples of the use of the audit data in designing LL97?
[130] Need to confirm the points in the text. §28 -320.3.4 Building emissions limits for calendar years 2035 through 2050; §28 -320.3.5 Building emissions limits on and after calendar year 2050. See 1 RCNY §103-14, https://www.nyc.gov/assets/buildings/rules/1_RCNY_103-14.pdf.
[131] https://www.nyc.gov/mayors-office/news/2023/09/mayor-adams-launches-getting-97-done-comprehensive-mobilization-strategy-reduce-building
[132] Is it accurate to state the city used the benchmarking data to estimate the percentage of buildings in compliance? Who in the city estimated the percentage of buildings in compliance? (DOB?)
[133] Urban Green Council, Blueprint for Efficiency 4 (2018).
[134] Urban Green Council, Blueprint for Efficiency 16 (2018). [Are there other examples of people and groups who had been involved with PlaNYC or its implementation being involved in the creation of LL97? For example, should the paper refer to some of the people and groups who testified about LL97 (or would that be unnecessary detail)?]

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members of the board and its working groups were long-time participants in buildings policy in the city.[135]

Yet, notwithstanding all the ways in which LL97 descends from PlaNYC, LL97 also departs significantly from the building energy policies that PlaNYC initiated. First, LL97 primarily seeks to reduce building GHG emissions, not energy consumption. The shift in the policy priorities reflects the preeminence of limiting climate change as a policy concern in 2019. The city was no longer seeking primarily to reduce demand for energy, but rather to mitigate global temperature increases. NYC legislated LL97 during the first Trump administration, when climate activists turned to local and state governments to advance climate policy in the face of the administration's withdrawal from climate policy.[136] Notably, however, the shift to limiting climate as the primary goal in regulating building energy did not inherently necessitate adopting GHG as opposed to energy efficiency based mandates. The first version of the bill introduced in the city council that ultimately became LL97 would have established whole energy caps on building energy use – as well as caps on fossil fuel use in buildings.[137] Other cities and states that have passed mandatory building performance standards to address climate change formulate the standards as requirements to improve energy efficiency, rather than reduce GHG emissions.[138]

LL97 also departs from PlaNYC in the scale of its ambitions for the large building stock. LL97 not only legislated mandates; it also legislated ambitious mandates that if they are enforced will require major investments by building owners. As mentioned above, the city estimated in 2023 that buildings would need to invest $12-$15 billion to meet the 2030 LL97 caps. PlaNYC's signature elements were informational policies, most notably benchmarking and audit requirements, that did not impose large costs on building owners. The changes to lighting that PlaNYC mandated had short payback periods for building owners. Moreover, PlaNYC expressly justified its proposals as benefitting building owners, as well as society more generally, and included projections of the payback periods for its recommendations. LL97 presents greater challenges for building owners than PlaNYC policies, reflecting perhaps the lesser political power of the real estate industry in 2019 compared with 2007-2009.

The scope of the legal obligation that LL97 places on building owners to decarbonize their buildings exemplifies the challenges that the law presents for building owners. Under the law, a building's GHG emissions include emissions from onsite combustion of fossil fuels, such as natural gas for heating and hot water, and emissions from grid-supplied electricity used in the building. Building owners are accountable for these electricity emissions even though they have no control over the carbon intensity of the electric grid, which is primarily determined at the state and federal levels. Building owners can reduce their emissions from grid-supplied electricity by reducing their consumption of this electricity, but they cannot individually decarbonize the fuels using to generate grid-supplied power. To mitigate the consequences of attributing to buildings emissions that they cannot control, the city, in implementing

[135] NYC Buildings, Local Law 97 Advisory Report 29-30, https://www.nyc.gov/assets/buildings/pdf/ll97_ab_report.pdf. [Are there better examples of people "schooled" by PlaNYC and its progeny influencing LL97 implementation?]

[136] Wyman & Spiegel-Feld, Local Greens.

[137] Int. No. 1745, introduced by council member Costa Constantinides on October 30, 2017. Was the focus on electrification supposed to incorporate both of these as a single cap? If you mandate emissions caps, you are encouraging both reduction and electrification as means to the same goal.

[138] Christine Billy et al., The Implementation of Local Building Performance Standards: An Analysis of Progress to Date and Guide for Future Policy (2026).

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LL97, has established coefficients for the carbon intensity of the grid that assume that New York State will meet its objectives for decarbonizing grid-supplied electricity through 2034.[139] This workaround means that in the near-term the law requires building owners not to fully decarbonize, but rather to eliminate their onsite combustion of fossil fuels. While a more modest objective compared with full decarbonization, eliminating onsite fossil fuel combustion is nonetheless an ambitious objective, as suggested by the $12-$15 billion cost estimate for achieving the 2030 caps. By comparison, in encouraging building owners to reduce energy consumption, PlaNYC sought to enlist them in a goal that they have much greater ability to achieve compared with full-building decarbonization, counting grid-supplied electricity emissions.

6. Conclusion

This paper argues that the most consequential impacts of PlaNYC's building energy policies were not their intended impacts on building energy efficiency, but the ways in which the policies created data and fostered networks that contributed to the development of LL97, and provided models for other jurisdictions. While LL97 departs in important respects for PlaNYC's building energy policies, it would not have been possible without those policies.

Two decades after PlaNYC, existing building energy regulation in NYC is in a quandary.[140] The city is committed to achieving net zero GHG emissions from large buildings covered by LL97 by 2050.[141] However, the city lacks the legal authority to require that grid-supplied electricity, a major source of building emissions, is generated from zero GHG emission sources. New York State, which has more control of the mix of electricity generation sources, is behind in achieving its goals to decarbonize grid-supplied electricity. As mentioned above, to avoid penalizing building owners for delays in decarbonizing grid-supplied electricity, the city regulations implementing LL97 enable owners to assume that the state is meeting its schedule for decarbonizing this electricity through 2034.[142] Thus, in the near-term, the city's implementing regulations have converted LL97 into a tool for reducing onsite fossil fuel combustion in large buildings, presumably in many cases by electrifying them. However, removing onsite fossil fuel combustion from these buildings is still a highly ambitious objective, as suggested by the city's estimate that the 2030 caps will require building owners to invest $12-$15 billion.[143] The slow pace of the state led decarbonization of the electric grid raises questions about the benefits of forcing building owners to electrify in the near-term given the upfront costs. Other cities that have adopted building performance

[139] Christine Billy et al., The Implementation of Local Building Performance Standards: An Analysis of Progress to Date and Guide for Future Policy 20-21 (2026).
[140] https://www.cityandstateny.com/policy/2026/02/residential-buildings-struggle-meet-nycs-decarbonization-goals/411578/
[141] https://www.nyc.gov/assets/buildings/pdf/article_320_guide.pdf
[142] Christine Billy et al., The Implementation of Local Building Performance Standards: An Analysis of Progress to Date and Guide for Future Policy 20-21 (2026).
[143] Mayor Adams Launches "Getting 97 Done," Comprehensive Mobilization Strategy To Reduce Building Emissions (September 12, 2023), https://www.nyc.gov/mayors-office/news/2023/09/mayor-adams-launches-getting-97-done-comprehensive-mobilization-strategy-reduce-building

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standards comparable to LL97 are facing similar challenges as the standards' costs to building owners become apparent.[144]

In thinking about a path out of the current morass that might enable the city to decarbonize its building stock, it may be relevant to recall that PlaNYC initiated city regulation of energy consumption in the city's large existing buildings as part of a broad strategy to meet the city's demands for energy. The broad strategy that PlaNYC charted did not envision local regulation of building owners alone meeting these needs. It envisaged the city working with a range of actors in addition to building owners, including State agencies such as the Public Service Commission and the New York Power Authority, and utilities such as Con Edison. It also recognized that federal assistance would be required, in particular Federal Energy Regulatory Commission approval of the new natural gas infrastructure that the plan favored to help boost energy supplies.[145]

Decarbonizing the city's buildings will likely similarly require actions by multiple parties in addition to building owners and the city. As in the mid-twentieth century, when city policies were insufficient to address the city's air and water pollution problems,[146] addressing climate change will likely necessitate willing partners at higher levels of government. Perhaps the city's efforts, through LL97 and other tools, will help to make the case for state and federal action. To the extent the city's policies are successful, they may be models for other jurisdictions. If the local tools fail, the failure may strengthen the arguments for assistance from the State and the federal governments. Alternatively, failure may inspire a new generation of local actors to develop yet another set of municipal building energy policies.

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[144] Christine Billy et al., The Implementation of Local Building Performance Standards: An Analysis of Progress to Date and Guide for Future Policy 44-45 (2026).
[145] PlaNYC at 111-112.
[146] See Scott Dewey, Don't Breathe the Air: Air Pollution and U.S. Environmental Politics, 1945-1970 (2000).