ENERGY EDUCATION

UNDERSTANDING CARBON REDUCTION AND COMPLYING WITH LOCAL LAW 97

- Commercial buildings
- Industrial buildings
- Residential buildings

Direct Energy | nrg

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Key words and definitions

Climate change – long-term changes in typical temperatures and weather patterns due to human factors

Climate change mitigation – cutting the emissions of heat-trapping gases in order to slow the pace of global warming

Climate change adaptation – making conscientious changes and adjusting our way of life to avoid the impacts of climate change

EXECUTIVE SUMMARY

Beginning January 1, 2024, New York City's five boroughs, The Bronx, Brooklyn, Manhattan, Queens, and Staten Island, will be closely monitoring the electricity and heat usage of buildings. The implementation of Local Law 97 aims to significantly reduce carbon emissions and imposes hefty fines for non-compliance. The first compliance reporting period from 2025-2029 focuses on the largest emitters, while the second reporting period from 2030-2034 expands the scope and will impact more buildings. It's important to prepare for both environmental and financial consequences before Local Law 97 goes into effect.

New York City climate rules and regulations can seem complicated and intimidating. This document is designed to help you understand the local laws, how they impact your business, and the steps you can take to achieve compliance. Direct Energy is now part of NRG Energy Inc., a one-stop trusted partner for our NYC customers looking for cost-effective, efficient, and resilient energy strategy guidance. We use our expertise to optimize market opportunities for you while minimizing your exposure to costly non-compliance. Whether setting sustainability targets or navigating regional laws we are here to provide customized frameworks to help you achieve your goals.

This eBook is not intended to provide legal advice. Please discuss the full impact of Local Law 97 with your legal counsel.

Snapshot of NYC Building Energy Laws

NYC's local laws should not be considered separately, but rather as a whole that requires a comprehensive compliance strategy. It's important to understand your building and the options available to meet compliance goals ahead of any due dates (think many months or even a year or two ahead). This will help ensure that you're in the best position to leverage incentives, rebates, and project schedules aligned with compliance deadlines.

Local Law 84 (LL84): Annual requirement to benchmark your building's energy and water consumption using ENERGY STAR Portfolio Manager®

- **Deadline:** May 1 of every year
- **Fees:** Quarterly penalty of $500; up to $2,000 per year
- **Minimum building size:** 50K square feet
- **How NRG can help:** Our team will work with you to collect 12 months of electricity, natural gas, steam, and water data to submit through the EPA Portfolio Manager tool to:
  1. Verify your facility's Energy Star Score
  2. Compare performance against peer buildings

Buildings with an Energy Star Score of 75 or higher are eligible for Energy Star Certification, NRG can also assist with this application process which requires measurement and verification by a professional engineer.

Energy Star Scores determine Energy Efficiency Ratings which must be publicly displayed on building facades under Local Law 33.

Local Law 87 (LL87): Energy Audits (ASHRAE Level 2) and Retro-commissioning Study (RCx) to be completed every 10 years

- **Deadline:** December 31 of the applicable compliance year, determined by the last digit of the Borough-Block-Lot (BBL) number (i.e., "3" due in 2023)
- **Fees:** $3,000 for the first year of non-compliance with an additional $5,000 for every additional year after
- **Minimum building size:** 50K square feet
- **How NRG can help:** NRG can conduct a full audit and RCx studies to comply with all Energy Efficiency Report (EER) guidelines under LL87. In addition to maintaining compliance, these reports provide valuable insights into improving building efficiency and energy savings opportunities. Your audit will also help you begin tackling LL97 goals, with Scope 1 and 2 emissions reduction impacts highlighted for all recommended energy conservation measures.
- **Aim to start two years before your due date:** The EER process requires at least three site visits, with an observation during both heating and cooling seasons along with follow-up verification checks. All completed work needs to be verified by a registered design professional (RDP) or an approved agent ahead of filing. Work can begin up to four years ahead of the compliance deadline.

Local Law 97 (LL97): New law. Carbon emissions reduction limits with a city-wide goal of 40% GHG reduction by 2030 and 80% GHG reduction by 2050. Compliance begins January 1, 2024.

- Deadline:
  - Annual reporting every May 1 starting in 2025
- Fees:
  - Fee for failure to file a report: $0.50 per building square foot per month
  - Fee for exceeding emissions limit: $268 per metric ton over the building's established limit
- **Minimum building size:** 25K square feet
- **How NRG can help:** Our team can identify a building's target emission level and develop a roadmap to best achieve compliance, minimize financial exposure, and build a robust sustainability strategy. We are prepared to compile and submit annual emissions reporting.

These local laws are interconnected

Benchmarking LL84	Energy audits and retro commissioning LL87	Energy efficiency projects
• GHG's LL97 • Building letter grades LL33 • Energy score LL84	• Retro-commissioning checks • Building system tune-ups • Energy audit – potential projects	• Energy efficient lighting upgrade • Heating system upgrade • Window and envelope upgrade • Solar installs • Green roof installs

HOW DID WE GET HERE?

Climate change mitigation

Higher temperatures, more frequent and intense storms, and rising seas are among the effects of a changing climate that are pressuring NYC's adaptive capacity. To help protect the city from future climate-related stress, New York is taking significant actions to reverse the environmental damage caused in part by large amounts of carbon emissions. This action began in 2007 with PlaNYC – a sustainability policy framework delineating 127 initiatives across the city impacting housing and neighborhoods, parks and public spaces, transportation, energy, climate change, and more. These initiatives were created to strengthen NYC's economy, combat climate change, and enhance the quality of life for all New Yorkers.

PlaNYC has evolved into the creation of the Greener, Greater Building Plan (2009), One City Built to Last (2014), and the Climate Mobilization Act (CMA) (2019). NYC buildings account for over 70% of total emissions – surpassing even transportation emissions. The CMA consists of several laws aimed at reducing pollutants across the city, with special attention paid to improving the energy efficiency of both residential and commercial buildings. This groundbreaking legislation is designed to significantly reduce carbon emissions from buildings within the city and achieve carbon neutrality in alignment with the Paris Agreement.

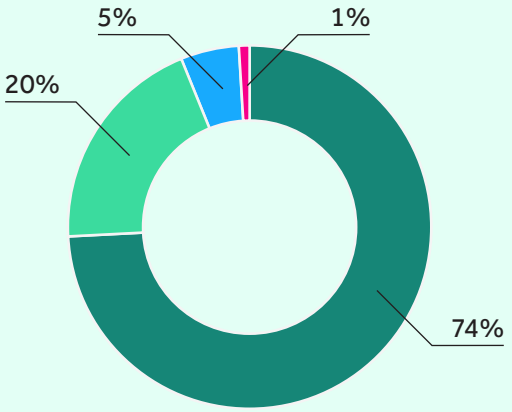
NYC climate goals and impact:

50K
NYC buildings
(60% of NYC's building area) will be impacted by the policies

20%
emission reduction
from large buildings by 2030

> 80%
emission reduction
from large buildings by 2050

Citywide GHG emissions by sector



Source: PlaNYC

50%
of NYC's total building emissions
will be accounted for by the policies

Climate roadmap to 2050

2007

PlaNYC – Plan to reduce citywide GHG emissions by 30% (from a 2005 baseline) by 2030

2009

NYC launches the Greener, Greater Building Plan to keep a public record of water and energy consumption of large existing buildings in NY – consists of four local laws LL84: Benchmarking, LL85: NYC energy code, **LL87: Building audit and retro-commissioning**, and LL88: Lighting upgrades and sub-metering

2013

LL87 Early compliance year and first benchmarking Energy Efficiency Report due based on BBL number

2019

Climate Mobilization Act passed – consists of five local laws. LL92 &94: Green Roofs; LL95: Building Energy Efficiency Grade; LL96: Property-Assessed Clean Energy; LL97 Building Emissions Mandate

2021

Carbon Trading Study and implementation plan due

2024

LL97 Compliance period begins.

Buildings must limit annual emissions to their cap for the 2024-2049 calendar years

2025

LL97 Initial Compliance Reports Due –

- May 1, 2025, detailing building emissions in the prior year and if the law's requirements were met
- June 2025 - NYC emissions must be 40% below the 2005 baseline

2030

New compliance period begins – must be 50% below the 2005 baseline

2040

New compliance period begins

2050

Carbon emissions must be 80% below the 2005 baseline

LOCAL LAW 97 COMPLIANCE STARTS NOW

Who will LL97 impact?

While local laws have been affecting building owners for years, LL97 is imminent and far-reaching. In 2025, New York City will begin assessing buildings based on their energy consumption from the prior year. Local Law 97 is aimed at the city's one million buildings responsible for nearly 50% of its carbon emissions from heating, cooling, and lighting from energy sources that burn fossil fuels. The threshold for how much a building needs to reduce will become stricter as we approach NYC's 2050 goal of net-zero carbon emissions. The Local Law 97 compliance period starts in 2024, and many aspects of the law will phase in over time.

Need-to-knows for building owners

Local Law 97:

- Sets carbon caps for buildings over 25,000 square feet
- Starts in 2024 and drives toward net-zero emissions by 2050
- Compliance limits are based on occupancy group: multi-family building, commercial property, or hotel
- Many buildings are significantly above emissions limits and will require retrofits or alternative energy for compliance
- Includes large fines for exceeding carbon caps and/or not reporting

Exemptions

City owned buildings, classified religious places of worship, nonprofit hospitals and healthcare facilities, and residential buildings with a certain rent-regulated threshold may be exempt.

Instead of complying with carbon emissions caps, exempt buildings will have to commit to carbon emission reductions.

DETERMINING YOUR BUILDING'S EMISSIONS

Immediate action is needed

Emissions reduction targets are aligned with the Paris Climate Agreement and are part of the city's path to 1.5° Celsius. A roadmap has been established to meet NYC's climate goals that assign limits to a building's emissions according to their occupancy type. Carbon caps on a building's emissions will become more stringent over a series of compliance periods through 2049. In 2050, all buildings will have to meet upwards of 80% carbon emissions reduction requirements. A building's emissions are estimated based on how much energy source fuels the building consumes.

Energy usage: The energy required from fossil fuels like oil, coal, and natural gas and renewable sources like solar and wind to power homes, businesses, and industries.

Carbon emissions: Carbon is a primary source of greenhouse gases, which are linked to global warming. Carbon dioxide (CO_2) emissions are predominantly generated as by-products of energy production and utilization. CO_2 is one of several GHGs your building emits from using sources that burn fossil fuels.

Carbon emissions intensity is the amount of CO_2 emissions produced per unit of energy generated or consumed. It is a measure of how clean our electricity is - how many grams of CO_2 are released to produce a kWh of electricity.

A carbon emissions factor is based on the source of energy, not including electricity, that your building is using (i.e. coal, fuel oil, or natural gas). This is calculated through benchmarking submissions established through Local Law 84. The quantity of each energy source used by your building is multiplied by the carbon emissions factor.

Total emission per square foot = carbon emissions intensity.

Building's square footage
(250,000 sq. ft.)
X
Carbon limit factor
(6.75 kg of CO_2e per sq. ft.)
=
Total carbon emitted
(1,687,500 kg CO_2e per year)

WHAT IF MY BUILDING DOES NOT COMPLY?

Know, follow, and understand the timelines

The CMA is an incremental strategy for reducing carbon emissions by setting progressive, cyclical goals leading up to 2050. All buildings are required by law to produce a certified energy report by May 1 of each year.

Failure to comply will result in fines

Penalties are annual and can be severe (seven figures in some cases). Roughly 20% of NYC's buildings will see some penalty by 2025 and nearly 80% are projected to experience penalties by 2030 when the threshold changes. Violations can double and, in some cases, triple in a short period. Use this online calculator to estimate the impacts of any applicable carbon penalty for your building.

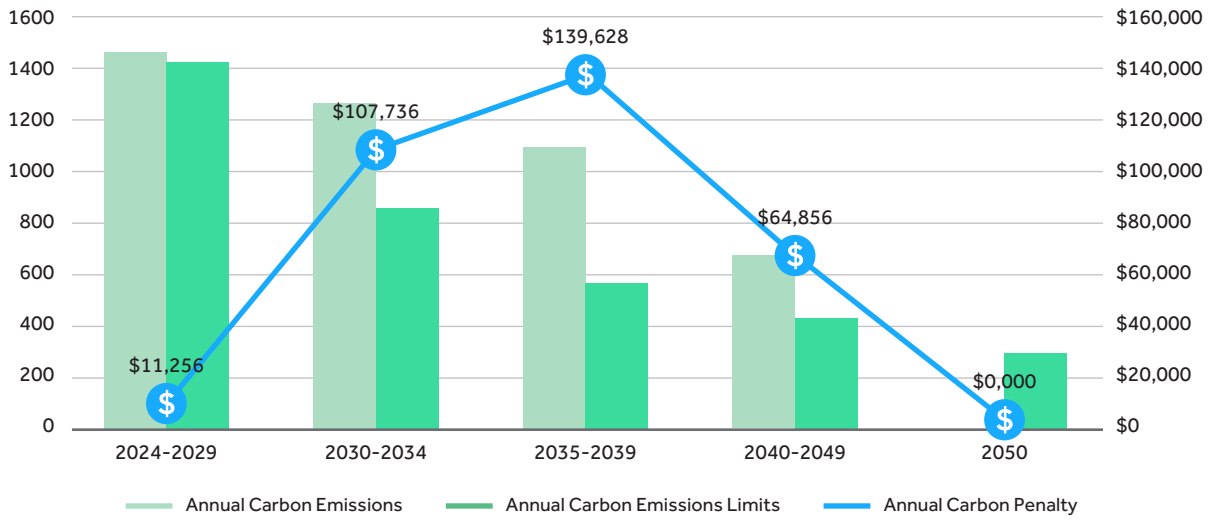
Three types of violations for non-compliance

1. Failure to file when the report is due. $0.50 per square foot
2. Exceed limits set by your building's occupancy group. $268 per metric ton (based on square feet)
3. Falsifying documents. $500,000 violation and misdemeanor

Options to comply

1. Lower carbon emissions directly through energy efficiency projects and by switching to lower-carbon fuels.
2. Deduct 10% of the yearly emissions cap through carbon offsets, which represent one metric ton of reduced or avoided carbon dioxide equivalent emissions. Independent, qualified third-party verification is mandatory for carbon offsets.
3. Offset up to 100% of your electricity emissions (excluding gas, oil, etc.) with Renewable Energy Credits (RECs). The purchased RECs should originate from energy generated within NYC's Zone J or from energy directly integrated into the city. For instance, NYS Tier 4 RECs from projects like CHPE and Clean Path will meet LL97 requirements because their output will be directly integrated into NYC.

Multifamily building emissions vs. penalty example



This represents a hypothetical ~210,000 square foot multifamily residential building that is slowly decreasing its emissions until it goes fully electric by 2050 (the goal year for a carbon-free grid). Since the code for the local law does not stipulate the emissions after 2034, emissions numbers for 2035-2049 were estimated using the Building Exchange Tool.

There is still a lot of work to do

The good news is many buildings in NYC will be compliant for the approaching May 1, 2025 reporting deadline. However, this doesn't mean you should postpone your building's compliance. Emissions thresholds drop significantly for the 2030 deadline and will require more major changes to avoid hefty fines for non-compliance. Preparing your building to meet compliance thresholds takes time so making progress ahead of your due date is key. Depending on your building's unique needs, an energy audit can take up to two seasons to complete, and that's not even accounting for making the necessary upgrades.

HOW TO REDUCE YOUR BUILDING'S CARBON EMISSIONS

Know your building's energy source

Steam, electricity, and natural gas are the most common energy sources used in commercial and residential buildings. Most commercial buildings have their own heating and cooling systems and many buildings run on multiple fuels. They use electricity to power lights, refrigerators, and electronic devices and fossil fuels like oil, natural gas, or propane to power furnaces, boilers, and water heaters.

Compliance involves finding ways to reduce energy consumption by targeting the most carbon-intensive fuels powering your building. Fuel oil is the most carbon-intensive of the energy sources, but to hit compliance targets, all sources need to become more energy efficient.

The importance of an energy audit

As part of LL87, your building, if it met the Covered Buildings list, was required to complete an ASHRAE Level II energy audit. Leveraging the content of this report is a good place to start.

Your audit should have included:

1. A holistic view of the type of energy conservation measures that would be appropriate for your building
2. A full energy and cost savings analysis along with any other alterations deemed necessary
3. A preliminary roadmap for how to achieve your CMA goals

The second part of LL87 is the retro-commissioning report. Again, a review of this report will help you determine the status of your building's existing equipment and how to improve its operational efficiency.

Compliance may seem complicated, but our team is here to help.

LL97 Checklist:

No.	Action Plan	✓
1.	**Determine your building's energy usage and carbon emissions** Calculate your building's baseline carbon emissions using the emissions calculator and analyze it against current energy consumption to determine your building usage and areas for improvement.	
2.	**Hire a professional** It is crucial to hire a qualified engineer or certified architect to accurately measure and verify the dimensions of the entire structure. Outdated building records in the Portfolio Manager platform may contain erroneous information, potentially leading to increased penalties under Local Law 97. Rectifying historical undercounting of square footage can help avoid fines during the initial compliance period (2024-2029) and provide additional time to improve energy efficiency before the stricter period (2030-2034) begins.	
3.	**Be diligent with compliance** This is not a one-and-done initiative. Continue monitoring your building's energy consumption and efficiency measures to ensure that you stay in compliance with local law reporting and milestones.	
4.	**Create an energy efficiency strategy** Develop a roadmap for reducing your building's carbon footprint that aligns with Local Law 97 milestones. Local Law 84 plays an important role in assessing your building's energy efficiency. The annual benchmarking report submitted in May provides the necessary property and energy data. This information determines your efficiency letter grade (under Local Law 95) and official carbon footprint (under Local Law 97). Accurate entry of water, energy, and structural details into the Portfolio Manager benchmarking platform is key. Verifying your building's square footage is a simple but significant step to ensure data accuracy.	
5.	**Account for every square foot** Start by evaluating the building envelope and various energy systems. Conduct a thorough energy audit, considering boilers, internal controls, hallway lights, thermostats, and other components. Then examine all the spaces within the building. All spaces within the building, regardless of control, need to be considered. Leave no aspect unexplored during this assessment. Local Law 97 imposes different emission limits depending on the space.	

GETTING THE MOST OUT OF EVERY KILOWATT

Find the right solution for your building

Our energy efficiency services help you better understand how you are consuming energy with strategic recommendations for conservation measures and ways to increase overall operational efficiency.

Every kilowatt provides an opportunity to accomplish something new to move your building forward. With a holistic view of your energy utilization and with a new analytical approach to energy spending, you'll learn how to distribute energy across your building in the most efficient way.

Our comprehensive energy audit gives you a holistic look at energy usage by utilizing our vast subject matter expertise from all our in-house solutions including sustainability impacts, resiliency planning, renewable energy procurement, and more. Our solutions are multi-faceted and are designed to help your business accomplish its goals.

We take a 360° approach to understand your energy usage

- **Benchmark reporting**

  Year-over-year tracking of utility data to compare against industry averages of similar buildings.

- **Energy audit (ASHRAE level II)**

  A Preliminary Energy Analysis (PEA) provides a remote desktop analysis of customer utility and operational data to discover anomalies and prioritize focus areas during the onsite audit. Once onsite, an assessment of a building's energy equipment and systems helps identify potential energy conservation measures (ECMs) along with a detailed estimate of cost and payback, energy savings, and overall strategy impacts.

- **Retro-commissioning**

  This process identifies any deficient building sub-systems and controls or performance anomalies and provides recommendations and guidance to bring them back to designed performance levels.

- **Execution services**

  This project management process identifies ECMs to optimize overall energy performance. Services include but are not limited to RFP management, project oversight, compliance management, utility incentive/rebate applications, and measurement and verification (M&V).

Benefits your business will receive

1. We work with you one-on-one to understand your needs
2. Identify opportunities for energy reduction and cost savings
3. Offer recommendations for addressing compliance issues
4. Help you understand your building systems
5. Draft long-term efficiency and sustainability strategies
6. Connect you with qualified contractors to make improvements
7. Train your building staff so your building runs efficiently for years to come
8. Support you every step of the way, even after project completion

Energy efficiency tips

1. **Conduct an energy audit**

   Identify, assess, and analyze your building energy consumption to increase efficiency.

2. **Upgrade to energy efficient equipment**

   Replace older appliances and equipment that are not energy efficient. While this may cost money initially, it will save money over time.

3. **Seal and insulate**

   Be sure your building is weatherized by installing efficient windows, doors, and ductwork. This will ensure your building is airtight and well-insulated.

4. **Make lighting upgrades**

   Use energy-efficient light bulbs.

5. **Convert heating systems**

   Switch gas heating systems to electric heat pumps. This type of project can be expensive but becomes more cost-effective compared to the longer-term cost of maintaining and replacing an existing system to the end of its useful life.

6. **Go green**

   Use renewable sources of energy like solar panels.

GET STARTED TODAY

Local expertise

Our team has been serving NYC for decades with an extensive multi-family and commercial real estate portfolio powered by NRG. We live and work here. We know your pain points and how to help you prepare for the evolution of the NYC energy landscape.

Working with us

Meeting the requirements of Local Law 97 requires a comprehensive plan but you don't have to do it alone. Building owners and managers should gather a reliable team to navigate the complex law. As the implementation date nears, it's crucial to review building data and consult with experts. Every unit of electricity and heat consumption matters.

Direct Energy is part of NRG Energy, Inc., a Fortune 500 company and one of the nation's largest electric and gas retailers operating across North America. Working with us gives you access to an energy supplier with experience, flexible energy plans, innovative energy services, and superior customer service.

FURTHER READING

Laws and notable organizations in New York

Official Local Laws

Urban Green Council

NYC Accelerator

Building Energy Exchange

NYSERDA

Con Edison

NRG expertise

Decarbonization Report

Learning the language of sustainability planning and climate reporting

NRG Year In Review 2023

Setting realistic energy goals in your sustainability plan

Understanding carbon offsets

Why businesses need to consider energy from the start in their energy plans

For more information on how your building can prepare for Local Law 97, please contact your NYC Account Executive at NRG today.