



# LOCAL LAW 97

REDUCING GHG EMISSIONS FROM NYC BUILDINGS  
OCTOBER 2024

**NYC**<sup>TM</sup>  
Buildings



# BUILDING SUSTAINABILITY IN NYC: EARLY LAWS

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**LL 84/09**

Energy  
Benchmarking

**LL 85/09**

NYC Energy  
Conservation Code

**LL 87/09**

Audits & Retro-  
commissioning

**LL 88/09**

Lighting Upgrades &  
Sub-metering

**LL 33/18**

Energy Grades

# THE CLIMATE MOBILIZATION ACT of 2019

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LL 92 of 2019

Green or solar roof requirements for certain buildings

LL 93 of 2019

Posting green roofs info on DOB website

LL 94 of 2019

Green or solar roof requirements for certain buildings

LL 95 of 2019

Building energy efficiency grade amendments

LL 96 of 2019

Sustainable energy loan program

LL 97 of 2019

Reductions in greenhouse gas emissions

LL 98 of 2019

Large wind turbines

LL 99 of 2019

Assessment of the replacement of gas-fired power plants

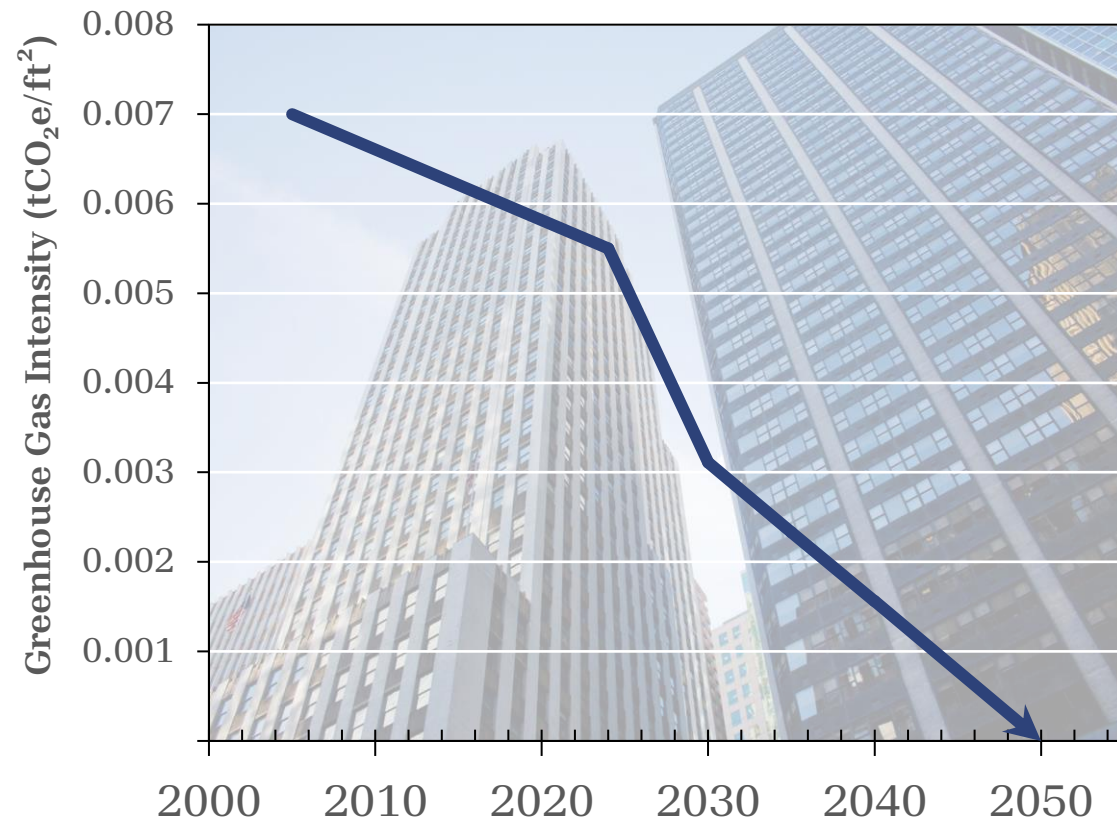
LL 100 of 2019

Paper carryout bag reduction fee

# THE CLIMATE MOBILIZATION ACT of 2019

- **Buildings** account for about **two-thirds** of **GHG** emissions in **NYC**
- NYC's **Climate Mobilization Act**, including Local Law 97 of 2019 dramatically reduces emissions in NYC
- Aligns with the NY State **Climate Leadership and Community Protection Act (CLCPA)**, and federal and international climate agendas
- Aligns with NYC's goal of achieving **zero emissions by 2050**
- Building Performance Standards (**BPS**) across the U.S. driving markets

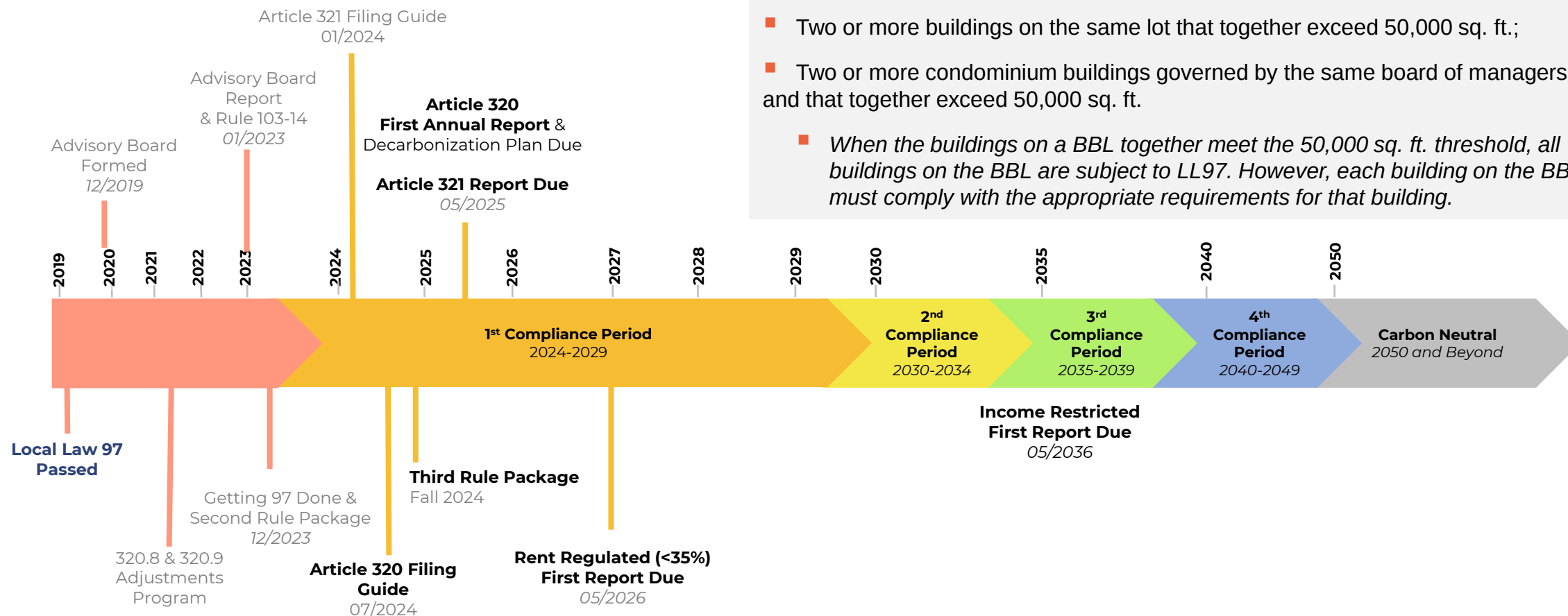
## GHG Reduction Trajectory



# LOCAL LAW 97 TIMELINE

## LL97 covers:

- Buildings that exceed 25,000 sq. ft.; accounts for different building uses
- Two or more buildings on the same lot that together exceed 50,000 sq. ft.;
- Two or more condominium buildings governed by the same board of managers and that together exceed 50,000 sq. ft.
- *When the buildings on a BBL together meet the 50,000 sq. ft. threshold, all buildings on the BBL are subject to LL97. However, each building on the BBL must comply with the appropriate requirements for that building.*



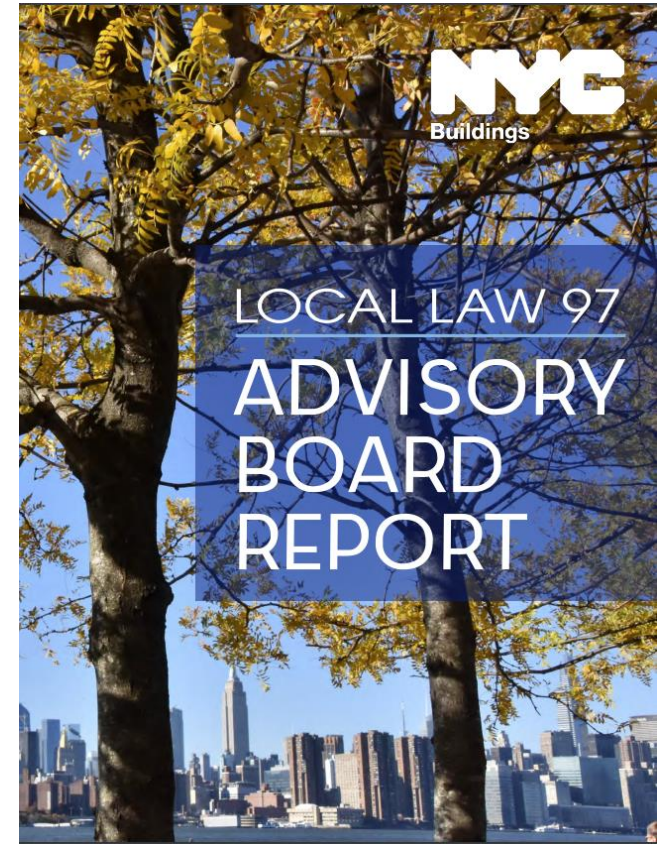


# LL97- ADVISORY BOARD

- Work began in November 2019 when the Board was appointed
- 18 appointed members (City Council and Mayoral appointees, plus MOCEJ appointee, DOB Chair, and Speaker's designee)
- Seven Working Groups (over 120 participants)

|                       |                      |
|-----------------------|----------------------|
| Multifamily Buildings | Commercial Buildings |
| Carbon Accounting     | Energy Grid          |
| Communications        | Economic Impact      |
| Hospitals             |                      |

- 363 Meetings, including 19 Advisory Board meetings
- Advisory Board report published in Dec. 2022
  - 30 Recommendations Proposed
  - Several recommendations already implemented; not all recommendations will move forward



# LOCAL LAW 97 COMPLIANCE BUCKETS

| Annual Emissions Limits<br>(\$ 320)<br>34,000 buildings                                                                                                                                                                                              | Lower Cost One-Time Compliance<br>(\$ 321)<br>10,500 buildings                                                                               | Portfolio-Wide Reduction<br>3,500 buildings                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Private sector, non-rent regulated accommodations*                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>Rent-regulated accommodations (&gt;35% rent reg)</li> <li>Houses of worship</li> </ul>                | <ul style="list-style-type: none"> <li>City buildings</li> <li>NYCHA</li> </ul>                                                                   |
| <p>Buildings must reduce emissions by retrofitting to promote energy efficiency. Reduce energy waste and demand, electrify equipment, and improve building operations and maintenance practices.</p> <p>Can purchase certain RECs and/or offsets</p> | <p>Meet all applicable measures from a list of Prescriptive Energy Conservation Measures or comply with the 2030 annual emissions limit.</p> | <p>DCAS buildings must reduce emissions by 40% by 2025 and 50% by 2030. NYCHA buildings must reduce emissions by 40% by 2030 and 80% by 2050.</p> |
| <p>Compliance begins in <b>2024</b>. Penalties begin in <b>2025</b>. Cap becomes more stringent in <b>2030</b>, etc. Two-year delay for &lt;35% rent reg (~4,000 buildings). Ten-year delay for income restricted (~3,500 buildings).</p>            | <p>Implement prescriptive measures or meet 2030 limits in 2024 and submit one-time report by <b>2025</b>.</p>                                | <p>DCAS to meet portfolio-wide caps starting in <b>2025</b>, NYCHA starting in <b>2030</b>.</p>                                                   |

\*Adjustments available for hospitals, nonprofits, buildings with legal/physical constraints/financial hardship.

# ARTICLE 320 COMPLIANCE PATHWAYS

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If a LL97 covered building is not one of **certain types of affordable housing** or a **house of worship** then it cannot follow Article 321 and must follow one of the Article 320 compliance pathways. The five possible pathways for a stand-alone building on a CBL are as follows:

- **Non-covered building**
- **Exception**
- **2026 Rent Regulated  $\leq$  35% pathway**
- **2035 Income Restricted extension pathway**
- **Article 320 typical pathway**

For guidance on which pathway to choose in cases where more than one pathway applies, refer to the CBL FAQ.



# ARTICLE 320 COMPLIANCE PATHWAYS

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## ■ 2026 Rent Regulated $\leq$ 35% pathway

- Buildings with at least one dwelling unit, but not more than 35% of all units, that are rent regulated
- Initial annual report would use 2026 benchmarking data and be due by May 1, 2027
- *An Article 321 building can become a 2026 pathway building if its percentage of rent-regulated units falls from above 35% to 35% or below*

## ■ 2035 Income Restricted extension pathway

- Mitchell-Lama buildings that are not also subject to Article 321 or the 2026 pathway
- Buildings (not also subject to Article 321 or the 2026 pathway) with at least one income-restricted unit
- Initial annual report would use 2035 benchmarking data and be due by May 1, 2036
- *Buildings that fall out of the 2035 pathway will become subject to annual reports beginning with the first full calendar year following the status change*

# BUILDING-LEVEL COMPLIANCE

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Submission of reports and issuance of penalties takes place at the level of an individual building (or **BIN**, Building Information Number), even though the identifying information in the CBLs is at the level of the tax lot (or **BBL**, Borough-Block-Lot).

- Eligibility for adjustments and exceptions applies to individual buildings, not to entire lots.
- **Building-level compliance**, based on building-level emissions calculation, is required even when a combined report is submitted for two or more Article 320 buildings on a single lot, or adjacent lots owned by the same owner. Aggregated emissions calculation in a combined report is allowed only when all buildings in the combined report share energy systems. All existing buildings in NYC should have a BIN – this can be verified in DCP’s Geographic Online Address Translator (“GOAT”) online database.
- If a BIN does not have an address range associated with it, it cannot be used for DOB filings. In these cases, a House Number application must be submitted to the borough Topographical Bureau, and the Topo approval forwarded to DCP (process can take several months).

# MULTIPLE BUILDINGS ON ONE LOT

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Each building on a lot follows a compliance pathway that may be different from the other buildings' pathways; Article 320 buildings may co-exist with Article 321 buildings and City buildings. LL97 compliance pathways for multiple buildings on one lot are the same as those described in Section II of the Guide, with some additional possibilities:

- **Non-covered**
- **Exception**
- **2026 Rent Regulated  $\leq$  35% pathway**
- **2035 Income Restricted extension pathway**
- **Article 320 typical pathway**
- **Article 321 (Performance-based pathway, Prescriptive pathway)**
- **Combined reports**

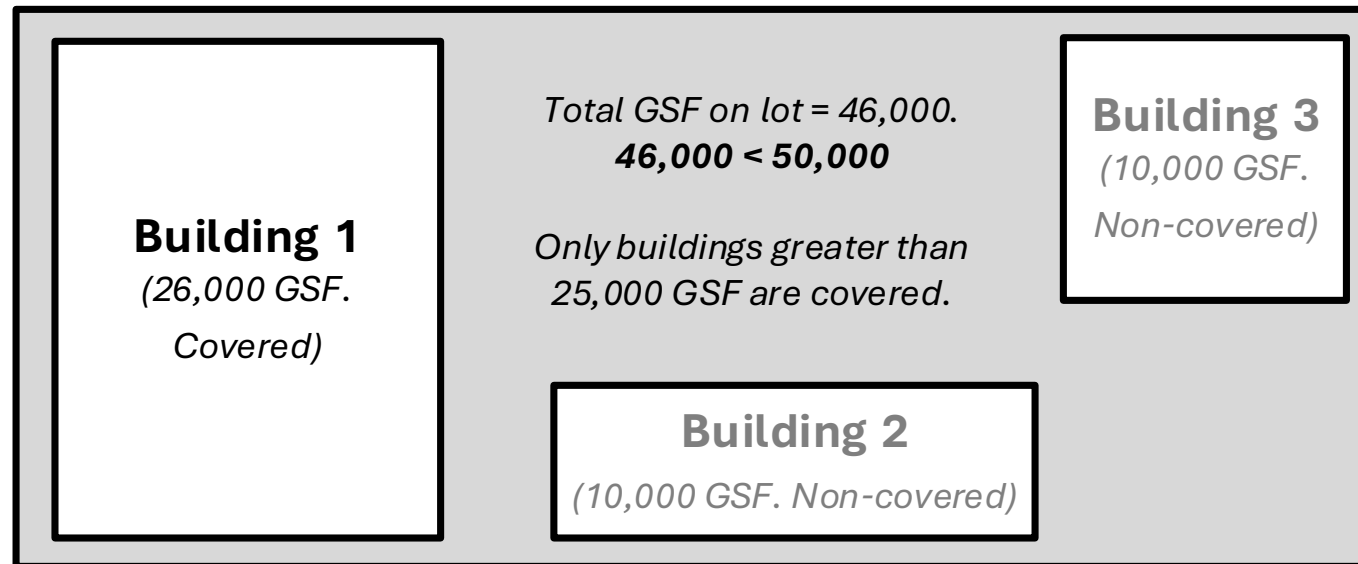


# MULTIPLE BUILDINGS ON ONE LOT

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## Non-covered

- If one building on a lot is larger than 25,000 GSF, then the entire lot will be pulled onto the CBL even when the aggregate GSF is less than or equal to 50,000 (the threshold at which every building on the lot must comply with LL97). In this case, the other buildings on the lot could be considered non-covered.

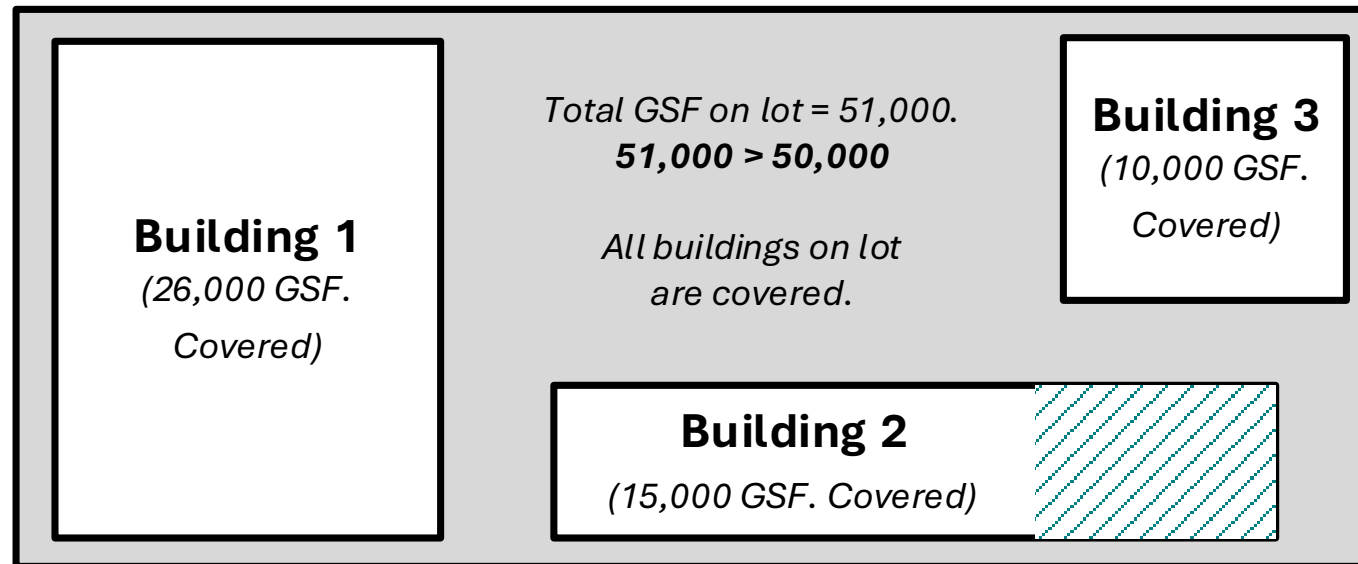


# MULTIPLE BUILDINGS ON ONE LOT

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## Covered

- If the aggregate GSF increases above 50,000 (due to enlargements, extensions, additional structures), all buildings on the lot would then be considered covered buildings.



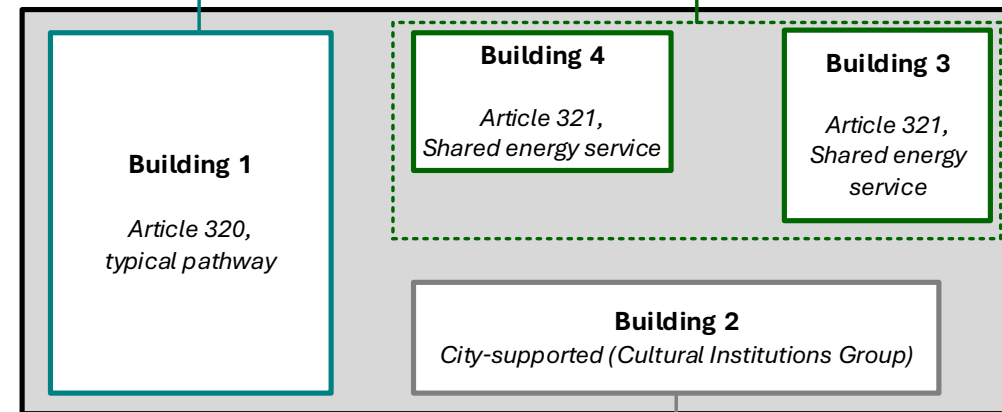
# MULTIPLE BUILDINGS ON ONE LOT

## Combined reports

- A **combined report** may be submitted for two or more buildings on a single lot, or adjacent lots **provided**
  - all buildings in the combined report are owned by the **same building owner**, and
  - follow the **same compliance pathway**.
- Each building in a combined report must demonstrate building-level compliance based on building-level emissions calculations. However, if two or more buildings in the combined report **share energy service**, they may demonstrate aggregate compliance based on **aggregate emissions calculations**.

Annual reports  
due every May 1<sup>st</sup>  
starting in 2025

One-time  
combined report  
due on May 1, 2025

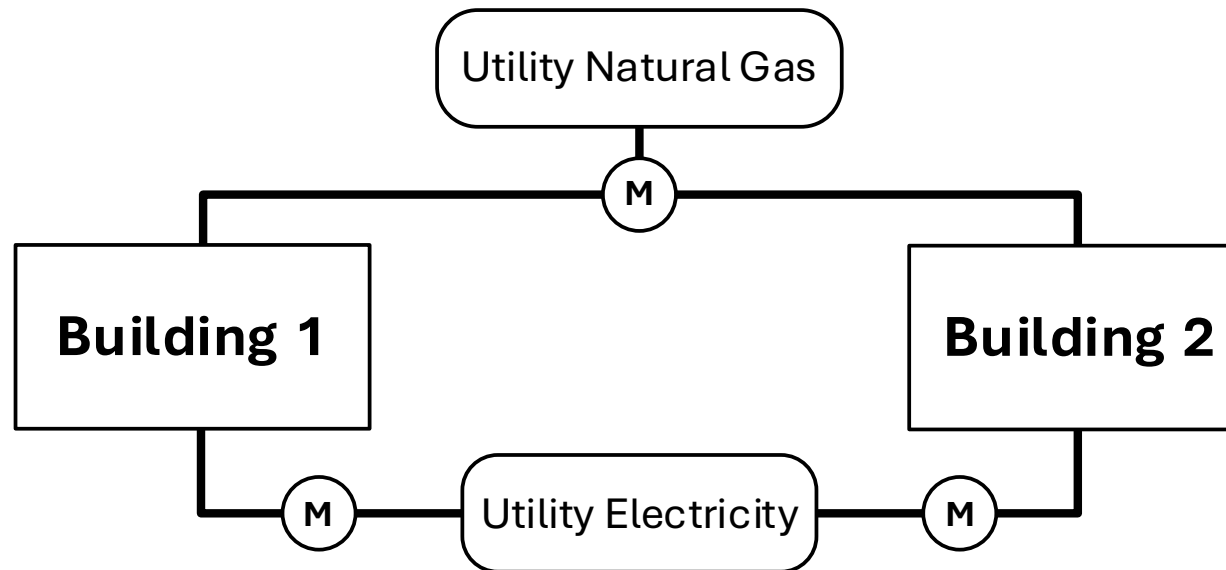




# SHARED ENERGY SERVICE

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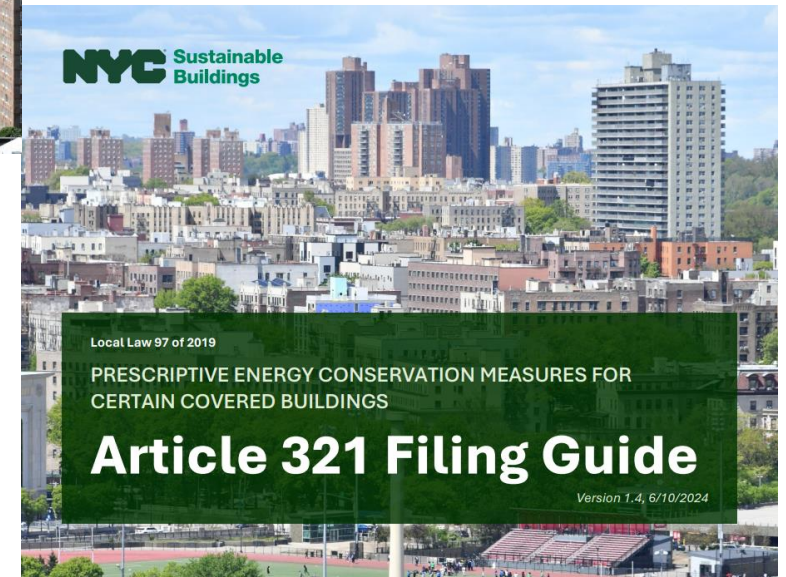
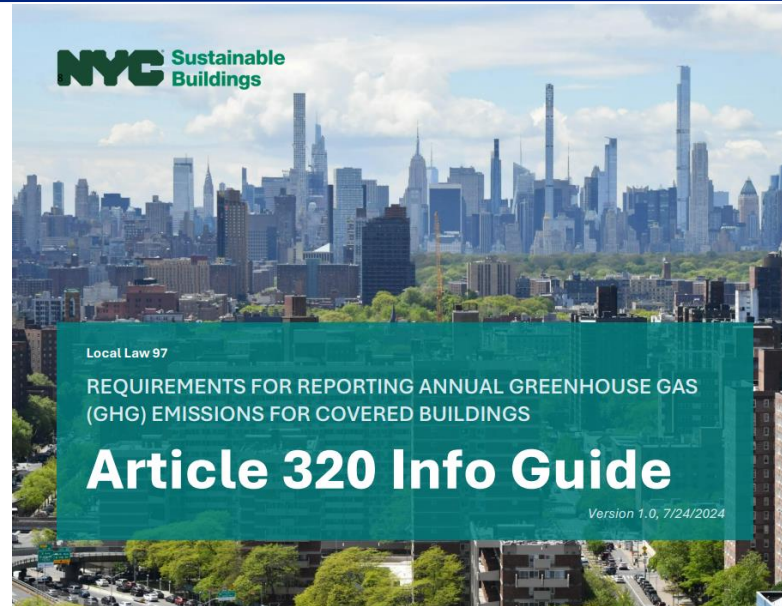
- When buildings share energy service, total consumption of every shared energy type must be mathematically apportioned among each building in the group. The methodology for apportioning energy use should be determined by an RDP and must be the same for all buildings within the group.
- Buildings are considered to share service if one energy type is shared while others are individually metered:



# LL97 COMPLIANCE RESOURCES

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- Article 320
  - Rule 103-14
  - [Article 320 Info Guide](#)
- Article 321
  - Rule 103-17
  - [Article 321 Filing Guide](#) and Templates



# LOCAL LAW 97: BUILDING GHG EMISSION LIMIT

- Each building has a **GHG limit** based on the property types of the spaces within the building.
  - *GHG Limit = Gross Floor Area X Emissions Factor*
- **RCNY 103-14** defined a *building emissions intensity limit in tCO<sub>2</sub>e/sf*
- Based on 62 Energy Star Portfolio Manager Property Types (ESPM Property Types)

(3) *Annual emission factors.* For purposes of reporting annual greenhouse gas emissions pursuant to this section, emissions factors shall be determined in accordance with this paragraph.

- (i) Except as provided in subparagraph (ii) of this paragraph, for the purposes of reporting for calendar years 2024 – 2029, the following emissions factors apply to the following Energy Star Portfolio Manager (ESPM) property types:

| ESPM Property Type                    | 2024 – 2029 Emissions Factor in tCO <sub>2</sub> e per sf |
|---------------------------------------|-----------------------------------------------------------|
| Adult Education                       | 0.00758                                                   |
| Ambulatory Surgical Center            | 0.01181                                                   |
| Automobile Dealership                 | 0.00675                                                   |
| Bank Branch                           | 0.00987                                                   |
| Bowling Alley                         | 0.00574                                                   |
| College/University                    | 0.00987                                                   |
| Convenience Store without Gas Station | 0.00675                                                   |
| Courthouse                            | 0.00426                                                   |
| Data Center                           | 0.02381                                                   |

# LOCAL LAW 97: GHG COEFFICIENTS FOR COMMON FUELS 2024-2029

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- GHG Emissions Coefficients for consumption of common fuel types are specified in :
  - Article 320.3.1.1 and 1 RCNY 103-14 (d)(3) – for 2024-2029 calendar years for common fuels
    - **Item 1: Utility electricity** = 0.000288962 tCO<sub>2</sub>e per kwh
    - **Item 2: Natural gas** = 0.00005311 tCO<sub>2</sub>e per kbtu
    - **Item 3: Fuel Oil #2** = 0.00007421 tCO<sub>2</sub>e per kbtu
    - **Item 4: Fuel Oil #4** = 0.00007529 tCO<sub>2</sub>e per kbtu
    - **Item 5: District steam** = 0.00004493 tCO<sub>2</sub>e per kbtu



# GHG EMISSION LIMIT vs. ANNUAL GHG EMISSIONS

- **GHG Emissions Limit** [in units of tCO<sub>2</sub>e]

of a Property with ESPM Property type A, B, and C =

Gross Floor Area of ESPM Property type A    x    Emissions Factor A +

Gross Floor Area of ESPM Property type B    x    Emissions Factor B +

Gross Floor Area of ESPM Property type C    x    Emissions Factor C

- **Annual GHG Emissions** [in units of tCO<sub>2</sub>e]

of a Property with Fuel type W, Y, and Z =

Annual Use of Fuel type W    x    Emissions Coefficient of the Fuel type W +

Annual Use of Fuel type Y    x    Emissions Coefficient of the Fuel type Y +

Annual Use of Fuel type Z    x    Emissions Coefficient of the Fuel type Z

- **Compliance with LL97 for the property is met when**

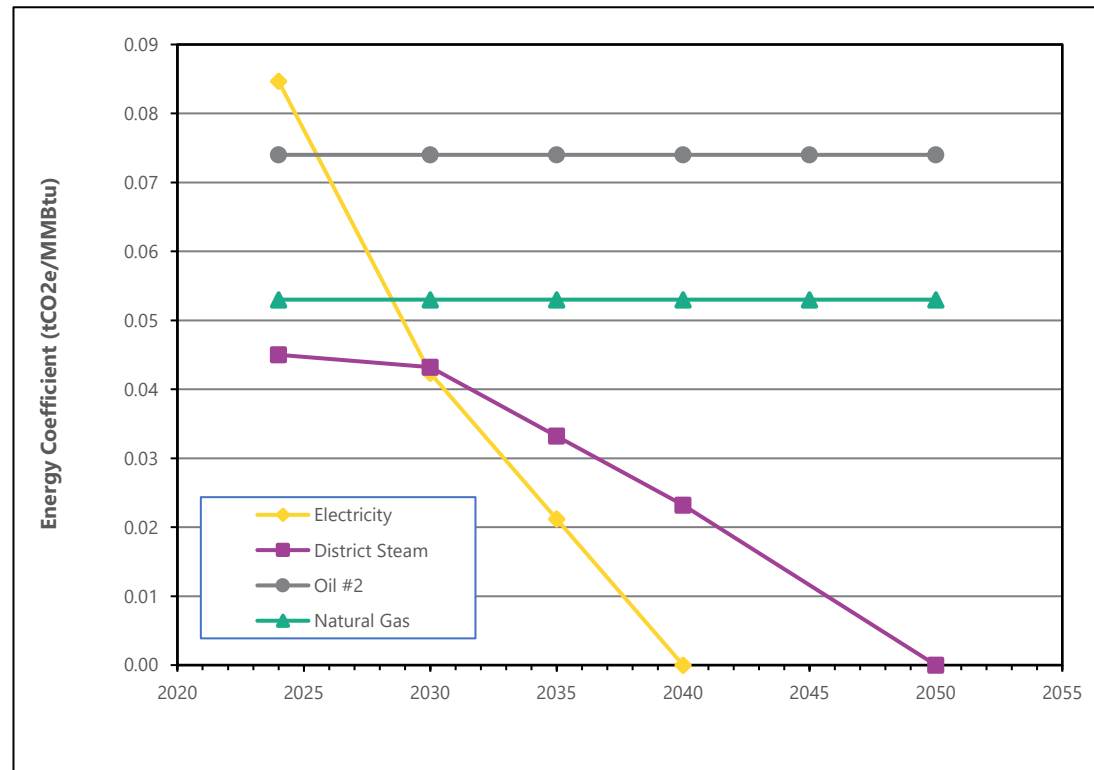
**GHG Emissions Limit ≥ Annual GHG Emissions**

Penalty for Non-compliance: (Annual GHG Emissions – GHG Emissions Limit) tCO<sub>2</sub>e x \$268/ tCO<sub>2</sub>e

# LOCAL LAW 97: SAMPLE CALCULATION

| [Scenario] Multi-family/ Retail mixed-use Building of 30,000 sf                           |                     |                                                      |                       |                                           |
|-------------------------------------------------------------------------------------------|---------------------|------------------------------------------------------|-----------------------|-------------------------------------------|
| Annual Emissions                                                                          |                     |                                                      |                       |                                           |
|                                                                                           | Fuel type           | 2024-2029 Emissions Coefficient                      | 2024 Annual Fuel Use  | 2024 Annual Emission [tCO <sub>2</sub> e] |
|                                                                                           | Natural Gas         | 0.00005311 tCO <sub>2</sub> e/kBtu                   | 1,450,000 kBtu        | 77.0095                                   |
|                                                                                           | No. 2 Oil           | 0.00007421 tCO <sub>2</sub> e/kBtu                   | 900,000 kBtu          | 66.789                                    |
|                                                                                           | Utility Electricity | 0.000288962 tCO <sub>2</sub> e/kWh                   | 200,000 kWh           | 57.7924                                   |
|                                                                                           |                     |                                                      |                       | 202                                       |
| Emissions Limit                                                                           |                     |                                                      |                       |                                           |
|                                                                                           | ESPM Property type  | 2024 – 2029 Emissions Factor [tCO <sub>2</sub> e/sf] | Gross Floor Area [sf] | 2024 Emissions Limit [tCO <sub>2</sub> e] |
|                                                                                           | Multifamily Housing | 0.00675                                              | 24,000                | 162                                       |
|                                                                                           | Retail Store        | 0.00758                                              | 6,000                 | 45                                        |
|                                                                                           |                     |                                                      |                       | 207                                       |
| Compliant with LL97 for CY 2024 as 2024 Annual Emission is less than 2024 Emissions Limit |                     |                                                      |                       |                                           |
|                                                                                           |                     | 202 tCO <sub>2</sub> e < 207 tCO <sub>2</sub> e      |                       |                                           |

# EMISSIONS COEFFICIENTS OVER TIME

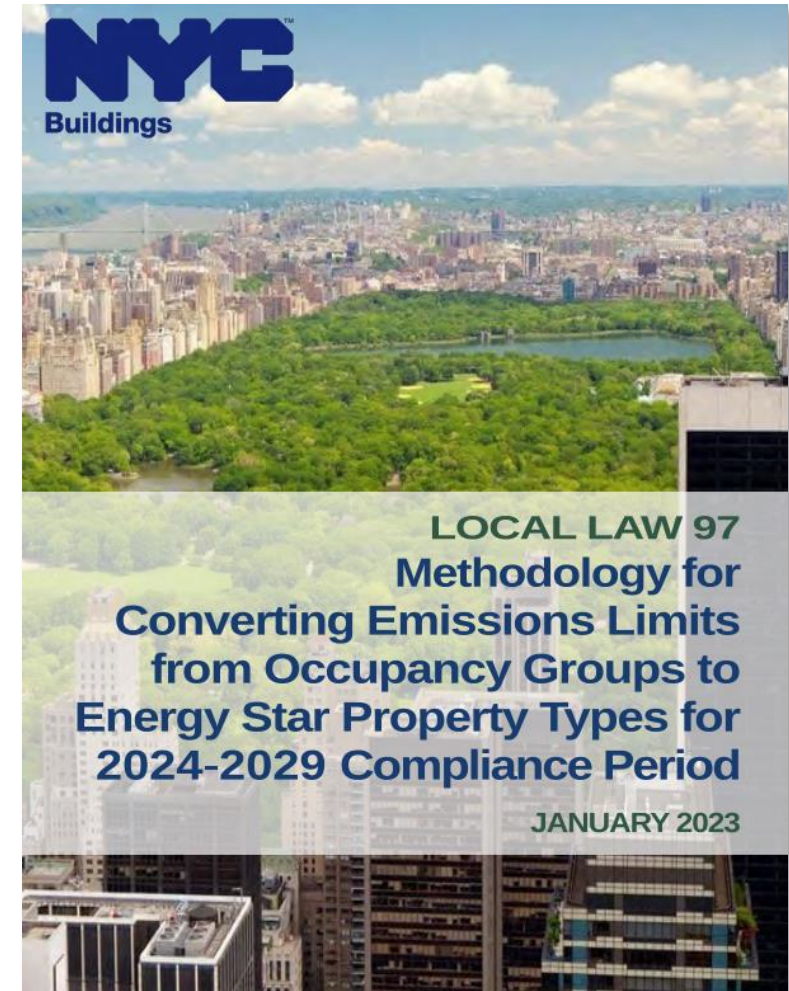


- Natural Gas and #2 Fuel Oil stay constant
- Electricity reduces over time
- District Steam reduces over time

# ESPM PROPERTY TYPES

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- **ESPM Property Types**
  - **LL97 Emissions Limits Based on Energy Star Portfolio Manager (ESPM) Property Types**
- Adjusted target to net zero by 2050 instead of 80% reduction
- Implemented in 1<sup>st</sup> major rule package





# GROSS FLOOR AREA

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**GSF** = Gross Square Feet, “total square footage as provided in Department of Finance records” that is used to determine whether a building is covered under LL97.

**GFA** = Gross Floor Area, as measured/verified by an RDP, that is used to determine a building’s emissions limit. In general, GFA will be greater than GSF.

LL97’s definition of GFA (1 RCNY §103-14) is virtually the same as the definition of “gross floor area” in the Benchmarking Rule (1 RCNY §103-06) and “floor area, gross” in ASHRAE publications.

- It includes all above- and below-grade square footage within the enclosing walls of a building, as measured to the exterior surface of any architectural features.
- Every ESPM property type on a floor will have its own aggregate GFA, and the boundary between property types should be taken at the centerline of the demising walls between them.

# GROSS FLOOR AREA

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When ancillary spaces (e.g., shafts, stairwells, corridors, and mechanical rooms) serve multiple property types, the GFA of the ancillary space should be assigned proportionally among the property types served.

One way to do this could be based on floor area; another way to do this could be to calculate the emissions limits for each space:

| ESPM Property Type<br>(served by ancillary space) | GFA<br>(sf) | Emissions<br>factor<br>(tCO2e/sf) | Emissions limit<br>(tCO2e) | Ancillary space allocation |                           |
|---------------------------------------------------|-------------|-----------------------------------|----------------------------|----------------------------|---------------------------|
|                                                   |             |                                   |                            | <i>Based on floor area</i> | <i>Based on emissions</i> |
| Food Service                                      | 1,000       | 0.01181                           | 11.81                      | 20%                        | 23%                       |
| Social/Meeting Hall                               | 4,000       | 0.00987                           | 39.48                      | 80%                        | 77%                       |

# DEDUCTIONS

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- There are times when an individual building's energy use actually has to increase so that regional-scale emissions can be lowered (e.g., EV charging stations). In such cases of public benefit, LL97 allows deductions from reported emissions.
- Some deductions (On-site energy storage, Beneficial Electrification) are taken against total emissions, and others (RECs, on-site solar) are taken against metered electricity use before it is converted into an emissions amount.
  - Deductions from on-site clean DERs ("CDERs") are described in 1 RCNY §103-14(e)(2).
  - RECs are addressed in the Rule and in the Department's RECs FAQ and RECs cost-benefit analysis, with possible future revisions as more LL97-eligible RECs become available.
  - Deductions such as RECs are taken against emissions resulting from electricity consumption *only*, and not against emissions resulting from the combustion of fossil fuels.

# BENEFICIAL ELECTRIFICATION

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## Reduce Emissions Penalties with High Efficiency Equipment

- Owners that replace fossil fuel equipment early with high-efficiency space conditioning or water heating equipment receive a credit to deduct actual building emissions for the first or second compliance period. *This helps motivate building owners to take proactive steps toward building electrification, no matter how incremental.*
- A negative coefficient (determined by the year of installation and operation) may be applied against a building's emissions that reduces penalties for buildings that convert to heat pumps:
  - Double the emissions reduction for owners taking action prior to 2027 (**-0.00130 tCO<sub>2</sub>e/kWh**)
  - 1x the emissions reduction for owners taking action between 2027-2029 (**-0.00065 tCO<sub>2</sub>e/kWh**)



# METERED ELECTRIC USE APPROACH

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- Measuring requirements:
  - Separately metered by utility; or
  - Separately sub-metered (revenue-grade) by owner; or
  - Connected to energy tracking software
- Documentation requirements:
  - Document hourly, monthly, and annual electricity consumption
  - Documentation may be requested by the Department
  - Owners to retain the records for a minimum of 6 years

# METERED ELECTRIC USE APPROACH

- Complex installations create a BE deduction based on measured energy consumption:
  - Individual (not aggregate) heating capacity of equipment **≥ 100 tons** (1,200,000 Btu/h), rated at an outside air temperature of 5°F
  - Test procedures **not listed** in the Rule table, e.g., Water Source Heat Pumps (WSHP), HP Chillers
  - Equipment eligible for the Deemed approach may also use Metered approach

| Equipment Type                                                          | Minimum Efficiency                                          | Test Procedure                                                                                                                           |
|-------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Service hot water heat pumps with max current 24A at 250 V              | NA                                                          | 10 CFR Part 430, Subpart B, Appendix E; or other test procedure approved by the Department.                                              |
| Service hot water heat pumps with Input capacity > 12kW and ≤ 50kW      | NA                                                          | AHRI 1300-2013; or ASHRAE 118.1-2012; or 10 CFR Part 431.106, Subpart G, Appendix E; or other test procedure approved by the Department. |
| Unitary heat pump equipment – air source only                           | > 1.5 COP @ 5°F outdoor dry bulb (maximum heating capacity) | AHRI 210/240-2023, or AHRI 340/360-2022, as applicable                                                                                   |
| Variable refrigerant flow (VRF) multi-split heat pump – air source only |                                                             | AHRI 1230-2021                                                                                                                           |
| Packaged terminal heat pumps                                            |                                                             | AHRI 310/380-2017                                                                                                                        |
| Single package vertical heat pumps                                      |                                                             | AHRI 310/380-2017, or AHRI 390-2021, as applicable                                                                                       |

Note: Equipment and systems not listed in the table that otherwise meet the definition of beneficial electrification shall have a coefficient of performance (COP) for the system equivalent to greater than 1.5 when the outdoor dry bulb temperature is 5°F or lower, where the COP of the system is calculated based on the energy required for all parts of the system to deliver the peak capacity.

# EQUIPMENT NOT LISTED IN THE TABLE

- Such equipment may not use the Deemed electric use approach and must instead use the Metered electric use approach.
- Per the [Article 320 Info Guide](#), this includes equipment following test procedures:
  - ISO 13256-1 & 13256-2
  - AHRI 365, 470, 550/590, 840, 870, 1160, 1360
  - CSA C368.1

| Test procedure reference in BE table                   | Exclusions                                                                                                                                                                                                       | Test procedure for excluded equipment                                                              |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <a href="#">10 CFR Part 430, Subpart B, Appendix E</a> | n/a                                                                                                                                                                                                              | n/a                                                                                                |
| <a href="#">AHRI 1300-2013</a>                         | "...heat pumps or water heaters covered in...ISO Standard 13256-1 & 2...AHRI Standard 1160 or...AHRI Standard 870 [or] Air-Cooled or Water-Cooled Heat Reclaim Condensers covered in...AHRI Standard 550/590..." | ISO 13256-1 & 13256-2 <i>(to be replaced by AHRI 600)</i><br>AHRI 1160<br>AHRI 870<br>AHRI 550/590 |

# DEEMED ELECTRIC USE APPROACH

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- Deemed approach is a methodology to estimate electricity consumption based on:
  - Equipment capacity
  - Average user demand, based on building type
  - Year of installation
- Only certain sizes and types of equipment qualify:
  - Air-source heat pumps or heat pump water heaters listed in the Rule table - meeting the test procedures and minimum efficiencies, AND
  - Individual (not aggregate) equipment heating capacity **< 100 tons** (1,200,000 Btu/h) - heating capacity rated at outdoor air temp of 5°F
- Precludes the need for separately metering equipment



# DOCUMENTATION OF INSTALLATION

- For equipment requiring a work permit,
  - Provide **Letter of Completion** (“LOC”) for the equipment along with the associated DOB job filing number
  - Certificate of Compliance ("CoC")
- For equipment not requiring a work permit,
  - Provide paid itemized invoices and time-stamped photographs
- The date of the CoC or the photograph counts as the date of installation

| NYC Buildings                             |                  |          |           |                   |          |                           |                 |
|-------------------------------------------|------------------|----------|-----------|-------------------|----------|---------------------------|-----------------|
| CERTIFICATE OF COMPLIANCE                 |                  |          |           |                   |          |                           |                 |
| Address: 110 MAPLE PARKWAY, STATEN ISLAND |                  |          |           |                   |          | Issued On: 04/09/2019     |                 |
| BIN:5027624                               | Item             | Location | Equipment | Manufacturer Name | Capacity | Certificate # for Listing | Number of Items |
| Ventilation Systems                       | VENT             | LOBBY    | 61        | PAYNE             | 61       | ESHS00854 65              | 1               |
|                                           | Item Description |          | VENT      |                   |          |                           |                 |
| Ventilation Systems                       | VENT             | LOBBY    | 61        | PAYNE             | 61       | ESHS00854 65              | 1               |
|                                           | Item Description |          | VENT      |                   |          |                           |                 |
| Ventilation Systems                       | VENT             | LOBBY    | 61        | PAYNE             | 61       | ESHS00854 65              | 1               |
|                                           | Item Description |          | VENT      |                   |          |                           |                 |
|                                           |                  |          |           |                   |          |                           |                 |

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# BANKING GHG Savings ACCRUED FROM BE

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- If the GHG savings derived from BE are not needed for LL97 compliance during the calendar year in which it was generated, it can be banked for future use.
  - The final year that banked BE savings can be used varies between 2034-2036 based on the date of equipment installation
- Banked BE savings are subject to limitations on use:
  - A year's banked BE savings are allowed to be applied to a single future year report, i.e., a year's BE savings cannot be divided to be used for more than one future year.
  - Excess BE savings left after applying to a year's report are not to be carried over to future years use.
  - Multiple years of banked BE savings are not to be combined, i.e., only one year of banked BE savings may be used in any given future reporting year.

# BANKING GHG Savings ACCRUED FROM BE (table)

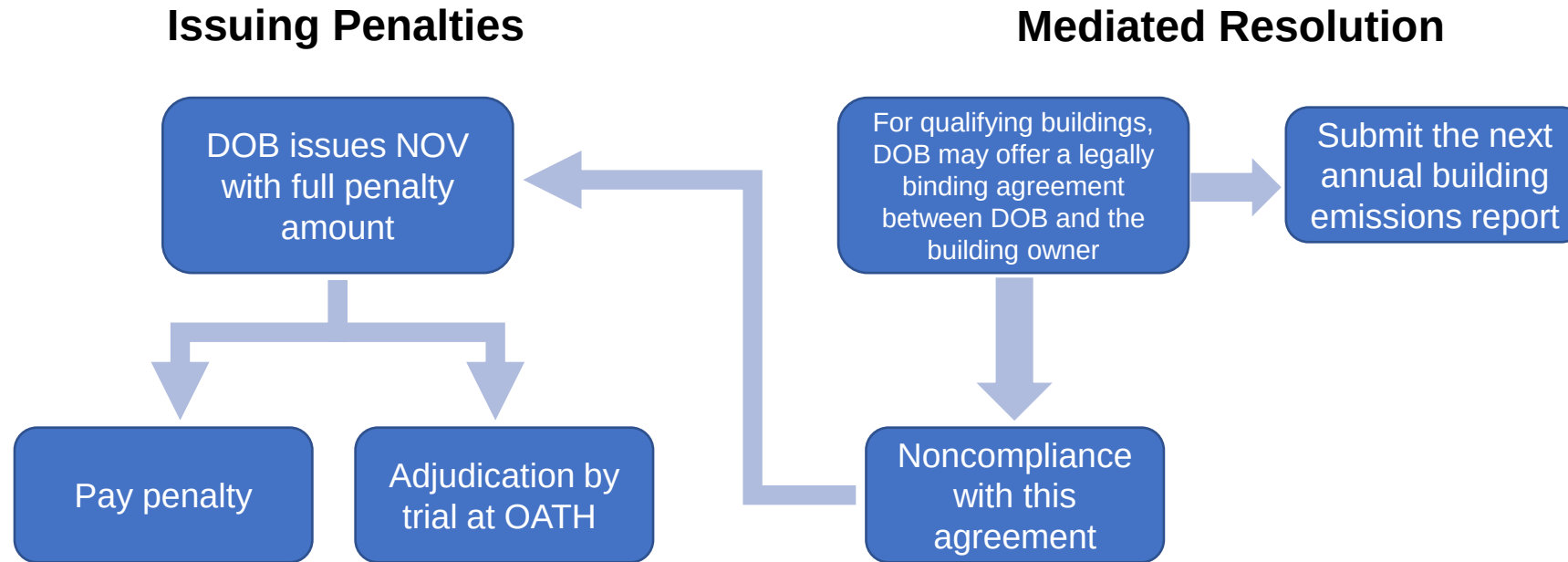
- Remember that the BE GHG savings is twice as large for equipment installed and operating prior to 2027 (darker hatch in the chart below)
- 2029 is the final year in which the BE GHG savings can be generated

|                                                                                      |                    | year in which Beneficial Electrification savings can be applied |      |      |      |      |      |              |  |  |  |      |      |               |
|--------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------|------|------|------|------|------|--------------|--|--|--|------|------|---------------|
|                                                                                      |                    | 2024                                                            | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 to 2034 |  |  |  | 2035 | 2036 |               |
| year in which<br>qualifying<br>equipment is<br>first installed<br>and<br>operational | 2024 or<br>earlier |                                                                 |      |      |      |      |      |              |  |  |  |      |      | ← any 6 years |
|                                                                                      | 2025               |                                                                 |      |      |      |      |      |              |  |  |  |      |      | ← any 5 years |
|                                                                                      | 2026               |                                                                 |      |      |      |      |      |              |  |  |  |      |      | ← any 4 years |
|                                                                                      | 2027               |                                                                 |      |      |      |      |      |              |  |  |  |      |      | ← any 3 years |
|                                                                                      | 2028               |                                                                 |      |      |      |      |      |              |  |  |  |      |      | ← any 2 years |
|                                                                                      | 2029               |                                                                 |      |      |      |      |      |              |  |  |  |      |      | ← any 1 year  |

# ARTICLE 320 ENFORCEMENT FRAMEWORK

---

If a building is over the annual emissions limit:



- Penalties will be adjudicated at OATH with a DOB enforcement attorney
- If a building owner does not comply with the terms of the mediated resolution, DOB can issue back penalties



# ARTICLE 320 PENALTIES AND GOOD FAITH EFFORTS

Properties have two main compliance responsibilities

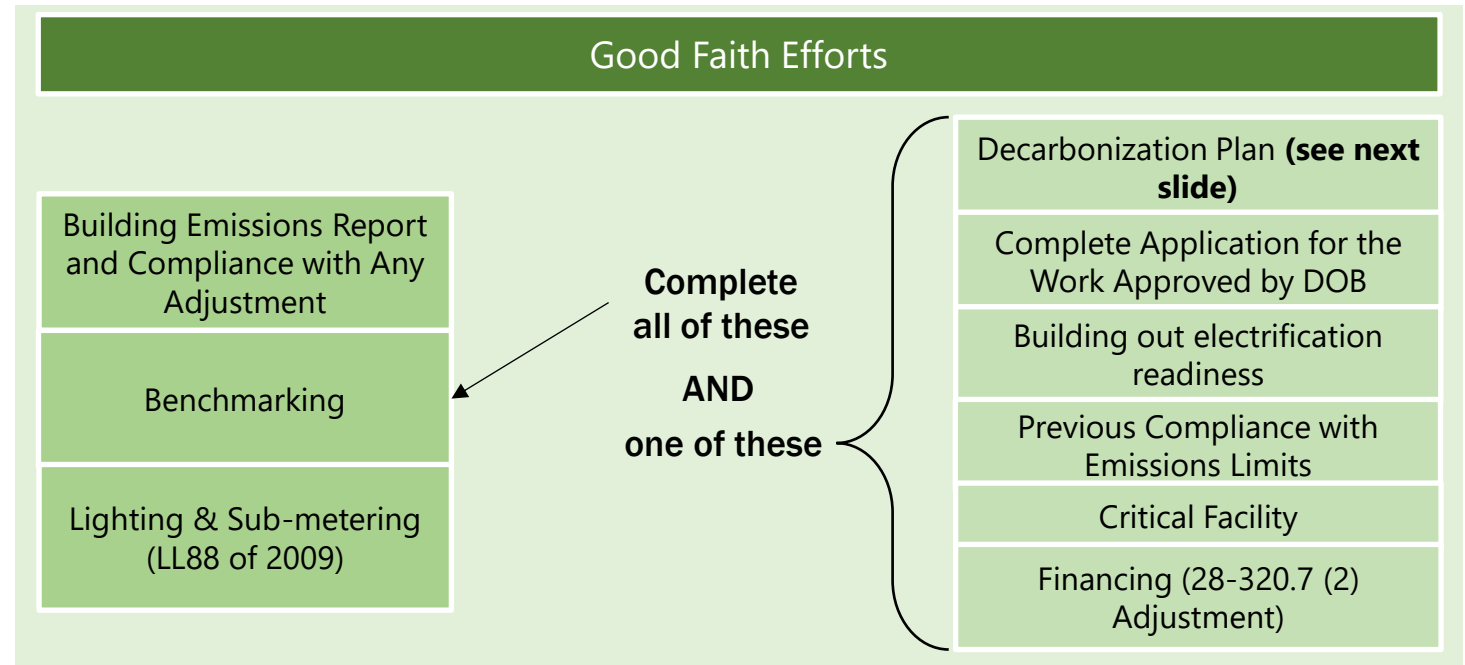
**Submit building emissions report**  
**Meet emissions limits**

$Penalty = (Floor\ Area \times \$0.50) / month$

$Penalty = ((Emissions - Limit) \times \$268) / yr$

Penalty mitigation opportunities\*  
(2024-2029)

Unexpected or Unforeseeable Event



\*Adjustments available for hospitals, nonprofits, landmarks and buildings with special circumstances or financial hardship.

# DECARBONIZATION PLAN

## ■ Progress checks on Decarb Plans

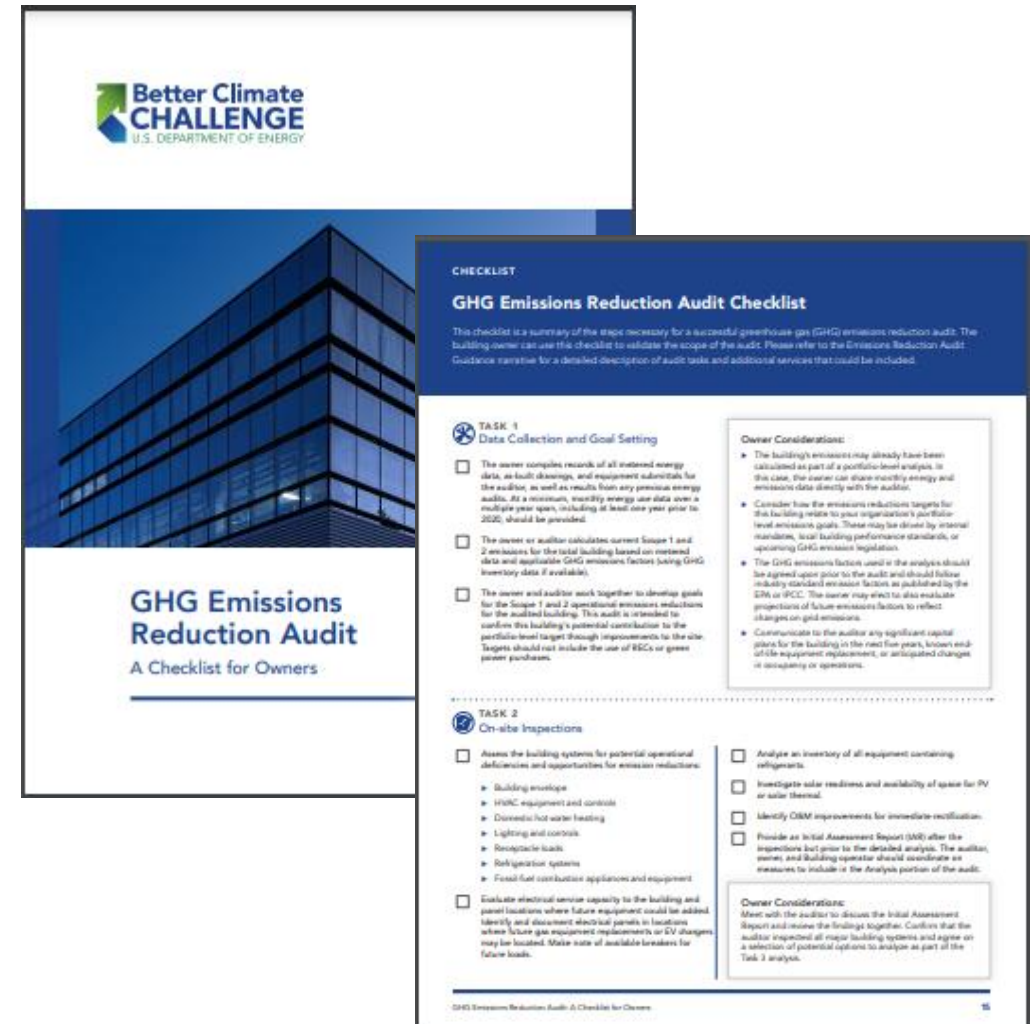
- Due May 1, 2027, to substantiate that the building has completed work to meet 2024-29 emissions limit
- Due May 1, 2028, to verify that there exist Department-approved work filings to meet 2030-34 emissions limit.
- Unachieved Decarb Plans >> Retroactive Penalties

## ■ Decarb Plans require

- Level 2 energy audit for buildings  $\geq 50,000$  sf, aligning with LL87.
- Level 1 energy audit for buildings  $< 50,000$  sf

## ■ GHG Emissions Reduction Audit

- Published by DOE to expand the energy audit described in ASHRAE 211 into a Decarb Audit
- Audit checklist and Scope of work Template available in DOE Better Buildings website



# THIRD MAJOR LL97 PROPOSED RULE PACKAGE

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- Offsets (LL97 Affordable Housing Reinvestment Fund)
- 320.7 Adjustments
  - External Constraints
  - Financial Constraints
- Biofuels
- Cogen
- Fees
- Equation Correction

# LOCAL LAW 97 OFFSETS REQUIREMENT

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**LL97 (§ 28-320.3.6.2) authorizes offsets for 10% of a building's annual emissions limit**, which must be:

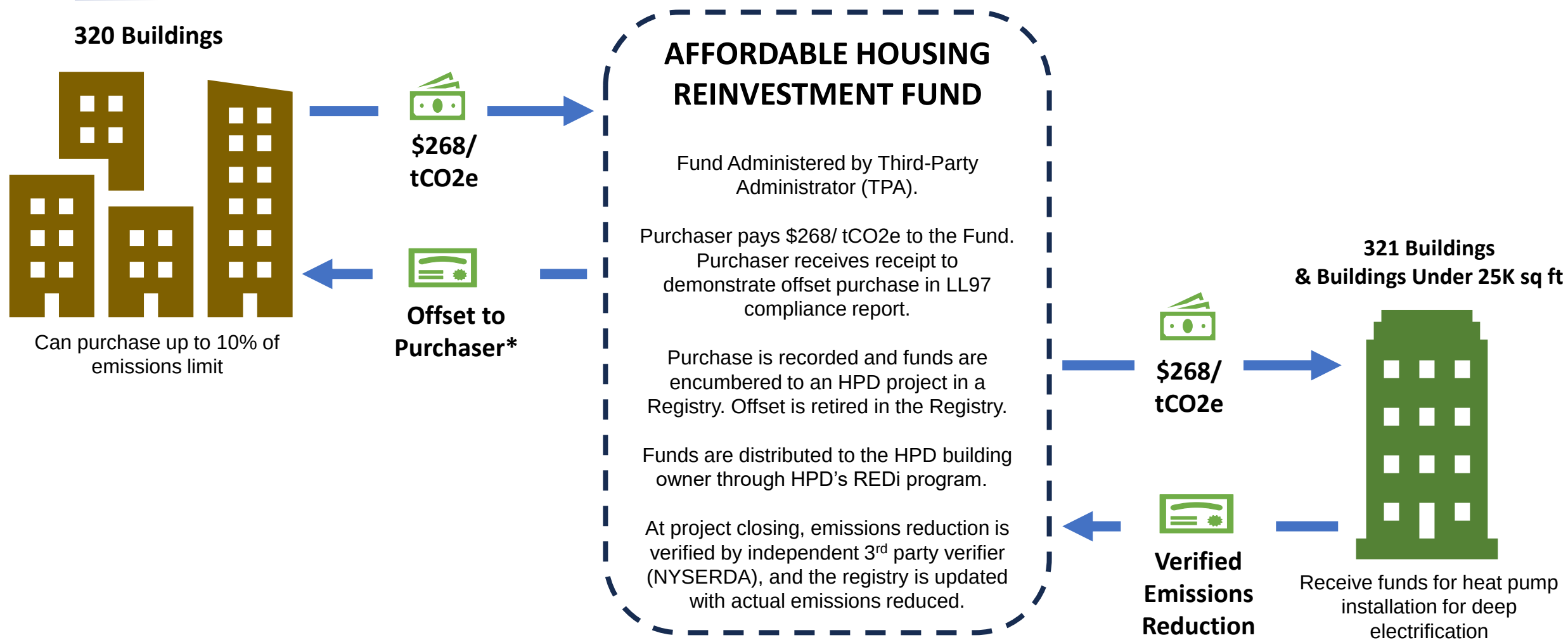
- Measured in metric tons of carbon dioxide equivalent
- Purchased, publicly registered, and retired
- Exhibit environmental integrity principles, including additionality (an offset project is not already required to reduce emissions by law)

Pursuant to the federal government's [May 2024 Joint Statement of Policy and new Principles for Responsible Participation in Voluntary Carbon Markets \(VCMs\)](#), the core integrity principles for offsets include the following:

1. **Real and quantifiable:** Offsets must represent genuine atmospheric impact that is replicable and determined by a credible, transparent methodology.
2. **Permanent:** Emission reductions or removals are permanent if they are not reversible; that is, the emissions can't be rereleased back into the atmosphere.
3. **Additional:** Activities that would have happened without such offset are business-as-usual and do not represent new emission reductions.
4. **Verifiable:** Activity design is validated, and results are verified, by a qualified, accredited, independent third party.
5. **Unique:** One credit can only correspond to 1 tCO<sub>2</sub>e emissions; as a result, it must be tracked, and it must be possible to enforce its ownership and to avoid double counting (usually done via a registry).
6. **Robust baselines:** Baselines for emissions reduction and removal activities are based on rigorous methodologies that avoid over-crediting.



# LL 97 OFFSET FUND MECHANICS



# FUNDING FLOWS THROUGH HPD'S REDi PROGRAM

REDi is a joint HPD-NYSERDA program that is a successor to HPD's highly successful Retrofit Electrification Pilot, which has allocated funding to "beneficially electrify" more than 1,300 households in HPD's preservation pipeline

- REDi projects are subject to significant oversight by HPD and NYSEERDA
- REDi funds supplement city dollars to meet the city's climate goals
- REDi has a huge pipeline of projects that are good candidates for electrification
- Adding Affordable Housing Fund dollars ensures HPD does not need to turn away low-income buildings where electrification provides multiple health, safety and climate benefits

## Resilient & Equitable Decarbonization Initiative (REDi)

[f](#)
[x](#)
[t](#)
[e](#)
[Share](#)  
[Print](#)



**Overview:** To reach New York City and New York State's ambitious climate targets and to reduce the barriers to decarbonizing affordable housing, HPD's REDi program provides funding to build capacity and scale up equitable decarbonization, beneficial electrification, and resiliency within the HPD development pipeline and as outlined in HPD's Design Guidelines. The REDi program is a long-term joint HPD-NYSERDA initiative that builds on HPD's highly successful Retrofit Electrification Pilot and other joint programs and is an innovative model for streamlining access to financial and technical assistance from New York State. REDi funding is secured directly through HPD, without requiring an application to NYSEERDA.

# AFFORDABLE HOUSING FUND OFFSETS: METHODOLOGY

---

Every offset purchased will fund one ton of GHG emissions offset by a retrofit project in HPD's REDI program that is electrifying heating and hot water.

## **Purchase Price:**

- Offset Purchase Cost: \$268/ ton

## **Offset Value:**

- Each HPD electrification project will offset ~ 3 to 5 tons of GHG emissions per dwelling unit per year, over 20-years depending on the baseline fuel type and apartment size
  - Calculations are based on assumptions vetted by NYSERDA and compared against other sources
  - Calculations are based on the incremental savings compared to a "business as usual" HPD scope
- Funding levels will be set according to the methodology above to ensure that funding is sized appropriately to emissions reductions:
  - Funding amounts will vary based on a building's base fuel type (e.g., oil vs. gas)
  - Funding amounts are scaled to unit size (number of bedrooms)

# 28-320.7 ADJUSTMENTS

---

- Adjustment to the emissions limit due to:
  - External Constraints (3 years)
    - A constraint imposed by **another provision of law**, or
    - A **physical condition** of the building
    - Need a description of the constraint and everything done to achieve compliance
  - Financial Constraints (1 year)
    - Qualifying standards for:
      - **Co-ops and condos, non-profits, affordable housing or no debt, and all other buildings**
    - **NYC annual tax lien list**
  - Requirements to apply for adjustments:
    - Proof the building has availed itself of incentives (Accelerator)
    - Proof the building has purchased the max amount of offsets & RECs



## 320.7 ADJUSTMENTS: FINANCIAL CONSTRAINTS

| Type of Building                                                                   | Standard                                                                                                 | Justification                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Condos / Co-ops</b>                                                             | Annual costs for owners have gone up an average of 5% above the rate of inflation over the prior 3 years | Reflects an increase considered significant and unlikely to be caused by routine increases in building expenses                                                                                                         |
| <b>Nonprofits</b>                                                                  | Negative revenue less expenses for the prior 2 years                                                     | Reflects language in LL97                                                                                                                                                                                               |
| Buildings with an affordable housing <b>regulatory agreement</b> or <b>no debt</b> | Income-expense ratio less than 1.05                                                                      | Ratio (1.05) has been used by HPD/HDC as an equivalent threshold to a debt service coverage ratio (DSCR) of 1.15 for these types of buildings                                                                           |
| <b>All other buildings</b>                                                         | Debt service coverage ratio less than 1.15                                                               | DSCR is the primary measure used by lenders and banks to determine if an entity can sustain its debt based on its cash flow, and a DSCR of 1.15 is commonly used to determine whether a building can qualify for a loan |

# BIOFUELS

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- Defines “biofuel”
  - Biofuel means biodiesel and renewable diesel
- Adds a carbon coefficient for biofuels, aligns with EPA Standard
  - 0.00007389 tCO<sub>2</sub>e per kBtu
  - Comparable to the coefficient to fuel oil
  - Streamlines coefficient for standard biofuels
- Preserves the ability for a building owner to propose a coefficient for any unique fuel type for DOB review

# LEGACY COGENERATION: ALTERNATIVE GHG COEFFICIENTS

---

- Alternative Methodology available for “qualifying generation systems”:
  - Three criteria:
    - Minimum operating efficiency – as efficient or better than current electric grid conditions
    - Maximum NOx limit – set to threshold of recent incentive programs
    - Existed prior to September 1, 2024
  - Additionally, specific exceptions for the following qualifying systems:
    - Cogen serving critical facilities (i.e. hospitals)
    - Cogen systems in areas designated by DOB with unreliable and/or inadequate grid generation capacity, as verified by Con Ed
- Result:
  - Allows coefficient for grid electricity and steam (system output) to be used in lieu of gas (system input)
  - Eliminates a burden for these systems only for as long as they are cleaner than the grid
  - Methodology phases out by 2030, based on renewables entering the grid

# FEE RULE

---

|                                                                                                                           |                |
|---------------------------------------------------------------------------------------------------------------------------|----------------|
| <u>Filing fee for reporting required upgrades to lighting systems and required installation of electrical sub-meters.</u> | <u>\$115</u>   |
| <u>Filing fee for annual building emissions reports</u>                                                                   |                |
| <u>•Simple Reports</u>                                                                                                    | <u>\$210</u>   |
| <u>•Complex Reports</u>                                                                                                   | <u>\$615</u>   |
| <u>•Extension</u>                                                                                                         | <u>\$60</u>    |
| <u>•Good Faith Efforts Report</u>                                                                                         | <u>\$950</u>   |
| <u>Annual Emission Limits Compliance Reports for Certain Buildings (Rent Regulated Accommodations)</u>                    |                |
| <u>•Compliance Report</u>                                                                                                 | <u>\$210</u>   |
| <u>•Mediated Resolution Reports</u>                                                                                       | <u>\$800</u>   |
| <u>Filing fee for application for adjustment to the annual building emissions limit pursuant to 28-320.7</u>              |                |
| <u>•External constraints</u>                                                                                              | <u>\$3,540</u> |
| <u>•Financial constraints 1</u>                                                                                           | <u>\$690</u>   |
| <u>•Financial constraints 2</u>                                                                                           | <u>\$300</u>   |



## LEGACY GENERATION: FORMULA FIX

---

- Correction to existing formula for on-site electric generating equipment
  - Allows systems to account for electricity sent back to grid
  - Electricity must be cleaner than grid to be accounted for in the owner's favor

# NEXT STEPS FOR IMPLEMENTATION

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## **Next Steps (before first compliance report is due 5/1/25)**

- Agency Rulemaking
  - Hearing November 7<sup>th</sup>
  - Consider testimony and publish final rules
- Update Guidance
  - Add updates to the Article 320 Information Guide based on rules
  - Publish new guidance on Offsets and 320.7 Adjustments
- Finish developing LL97 reporting portal
  - Publish brief on information needed for compliance report
  - Testing with stakeholders

# LL97 REPORTING PORTAL

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- Building Energy Analysis Manager (BEAM) Platform
  - Will receive all future compliance submissions:
    - Annual emissions reports (Article 320)
    - 320.7 Adjustment applications
    - Article 321 compliance reports
  - Access to data from:
    - EPA ESPM and
    - DOB NOW (Filing Fees and Payment of Penalties)
  - Automation of most calculations
  - Templates will be provided for certain deductions/credits
  - Allows for Owners/Owners Rep./Service Provider (RDP/RCxA) to:
    - Input reporting information, upload documentation, attest and submit compliance report
  - DOB Enforcement communications will happen through BEAM with penalty payments in DOB NOW

# Article 321 COMPLIANCE PATHWAYS

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There are two compliance pathway options under Article 321:

- The **Performance-based Pathway** report is certified by an RDP and shows that the building's calculated emissions for CY2024 were under the emissions limit for CY2030, using the 2030 emissions coefficients.
- The **Prescriptive Pathway** report is certified by a qualified retro-commissioning ("RCx") agent and demonstrates the completion (or non-applicability) of the 13 Prescriptive Energy Conservation Measures ("PECMs").

The one-time Article 321 compliance report is due by 5/1/2025, pending any deadline extensions granted by the Department. A building that loses its Article 321 eligibility may become subject to annual Article 320 reporting.

*NOTE: Multiple buildings on a single lot that are all subject to Article 321 and also share energy service may submit a combined report.*



# ARTICLE 321 COMPLIANCE

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- Prescriptive Energy Conservation Measures

- 9 PECMs require attestation
- 4 PECMs require detailed documentation of inspection

- Adjusting temperature set points for heat and hot water
- Repairing all heating system leaks
- Maintaining heating systems
- Installing individual temperature controls or insulated radiator enclosures with temperature controls
- Insulating all pipes for heating and/or hot water
- Insulating steam system condensate tank or water tank

- Installing indoor and outdoor heating system sensors and boiler controls
- Replacing or repairing all steam traps
- Installing or upgrading steam system master venting
- Upgrading lighting
- Weatherizing and air sealing
- Installing timers on exhaust fans
- Installing radiant barriers behind all radiators.

# Article 321 FILING GUIDE (PECM Matrix)

| Type of heating system | Article 321 Prescriptive Energy Conservation Measures ("PECMs") |              |                         |                                |                   |                       |                                 |              |                              |          |                   |                    |                  |
|------------------------|-----------------------------------------------------------------|--------------|-------------------------|--------------------------------|-------------------|-----------------------|---------------------------------|--------------|------------------------------|----------|-------------------|--------------------|------------------|
|                        | 1                                                               | 2            | 3                       | 4                              | 5                 | 6                     | 7                               | 8            | 9                            | 10       | 11                | 12                 | 13               |
|                        | Temp. set points                                                | Repair leaks | Heating system function | Radiator temperature controls* | Piping insulation | Water tank insulation | Indoor / outdoor temp. sensors* | Steam traps* | Master steam system venting* | Lighting | Building envelope | Exhaust fan timers | Radiant barriers |
| One-pipe steam         | ●                                                               | ●            | ●                       | ▼                              | ●                 | ●                     | ●                               |              | ●                            | ●        | ●                 | ●                  | ●                |
| Two-pipe steam         | ●                                                               | ●            | ●                       | ●                              | ●                 | ○                     | ●                               | ●            | ○                            | ●        | ●                 | ●                  | ●                |
| Hydronic               | ●                                                               | ●            | ●                       | ●                              | ●                 | ●                     | ●                               |              |                              | ●        | ●                 | ●                  | ●                |
| Forced air             | ●                                                               |              | ●                       |                                |                   |                       |                                 |              |                              | ●        | ●                 | ●                  |                  |
| Heat pump              | ●                                                               | ●            | ●                       |                                | ●                 |                       |                                 |              |                              | ●        | ●                 | ●                  |                  |
| Electric resistance    | ●                                                               |              | ●                       | ●                              |                   |                       |                                 |              |                              | ●        | ●                 | ●                  | ●                |

○ = Not applicable to vacuum pump systems

▼ = Owner to install where spaces are overheated

# Article 321 TEMPLATES

|    | A | B | C | D | E |
|----|---|---|---|---|---|
| 1  |   |   |   |   |   |
| 2  |   |   |   |   |   |
| 3  |   |   |   |   |   |
| 4  |   |   |   |   |   |
| 5  |   |   |   |   |   |
| 6  |   |   |   |   |   |
| 7  |   |   |   |   |   |
| 8  |   |   |   |   |   |
| 9  |   |   |   |   |   |
| 10 |   |   |   |   |   |
| 11 |   |   |   |   |   |
| 12 |   |   |   |   |   |
| 13 |   |   |   |   |   |
| 14 |   |   |   |   |   |
| 15 |   |   |   |   |   |
| 16 |   |   |   |   |   |
| 17 |   |   |   |   |   |
| 18 |   |   |   |   |   |
| 19 |   |   |   |   |   |
| 20 |   |   |   |   |   |
| 21 |   |   |   |   |   |
| 22 |   |   |   |   |   |
| 23 |   |   |   |   |   |

**Local Law 97**  
**ARTICLE 321 REPORTING**  
**Mandatory templates for PECMs #4, #7, #8, and #9**  
version 1.3, issued 5/31/2024

**Instructions**

1. Fill out 'Submittal Information' sheet of this workbook first.
2. Light green cells are for applicant data entry.
3. Light gray cells are pre-populated and locked.
4. Enter "N/A" or leave blank if a particular field does not apply.
5. Data validation errors (highlighted in red) must be corrected.
6. Submit this workbook to the Department.

**NOTE:**  
Each individual building (BIN) must submit its own template workbook. For multiple buildings on a single lot that share energy service (as defined in 1 RCNY §103-17), a single report may be uploaded to the portal containing separate workbooks for each building in the group.

**References**

- Article 321 (§28-321): [https://www.nyc.gov/assets/buildings/apps/pdf\\_viewer/viewer.html?file=2022GAP\\_Chapter3\\_MaintenanceWBwm.pdf&section=conscode\\_2022#page=41](https://www.nyc.gov/assets/buildings/apps/pdf_viewer/viewer.html?file=2022GAP_Chapter3_MaintenanceWBwm.pdf&section=conscode_2022#page=41)
- 1 RCNY §103-17: [https://www.nyc.gov/assets/buildings/rules/1\\_RCNY\\_103-17.pdf](https://www.nyc.gov/assets/buildings/rules/1_RCNY_103-17.pdf)
- Article 321 Filing Guide: [https://www.nyc.gov/assets/sustainablebuildings/downloads/pdfs/321\\_filing\\_guide.pdf](https://www.nyc.gov/assets/sustainablebuildings/downloads/pdfs/321_filing_guide.pdf)

**Instructions** | Submittal Information | 4. Radiator temp. controls | 7. Indoor-outdoor temp. sensors | 8. Steam traps - initial | 8a. Steam trap

|    | A | B | C | D | E |
|----|---|---|---|---|---|
| 1  |   |   |   |   |   |
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| 26 |   |   |   |   |   |
| 27 |   |   |   |   |   |
| 28 |   |   |   |   |   |
| 29 |   |   |   |   |   |
| 30 |   |   |   |   |   |

**Report information** (please review Instructions tab first)  
Date completed: 5/31/2024

**Building/Lot information**  
Borough: 1 - Manhattan  
Block: 873  
Lot: 41  
# of buildings on lot: 1  
BIN of this building: 1010101  
(data validation) good  
Street address: 138-144 East 18th Street  
New York, NY (Press Alt+Enter to go to next line)  
Zip Code (5 digits): 10003  
(data validation) good  
Facility type: Multifamily

Enter primary heating system type: Two-Pipe Steam Fill out PECMs 4, 7, 8, and 9.  
Enter secondary heating system type (if applicable): Electric Resistance Fill out PECM 4.

**Comments/notes (e.g. spaces or dwelling units that were not inspected) :**  
All spaces with radiators were inspected. (P)

**Instructions** | Submittal Information | 4. Radiator temp. controls | 7. Indoor-outdoor temp. sensors | 8. Steam traps

# HOUSES OF WORSHIP(HOWs)

- Definition:
  - “main use or dominant occupancy is classified as occupancy group A-3 religious house of worship”
  - Greater than 50% of the building is used as assembly space for religious purposes
- Confirming HOW
  - Described in the CBL FAQ
  - Requires an RDP to certify floor area measurements.

The screenshot shows the NYC Buildings website interface. At the top, there's a navigation bar with the NYC Buildings logo, a search bar, and links for 'Русский', 'Translate', and 'Text-Size'. Below the navigation bar, there are tabs for 'Property or Business Owner', 'Industry', 'Safety', and 'Codes'. The 'Codes' tab is selected. Under the 'Codes' tab, there are three buttons: 'NYC Codes', 'Code Notes', and 'Reference'. The main content area is titled 'Local Law 97 (LL97) Covered Buildings List (CBL) FAQs'. There are two buttons: 'Expand All' and 'Collapse All'. Below these buttons, there is a list of FAQs with expand/collapse icons. The first three FAQs are expanded, and the fourth, 'Houses of Worship', is collapsed. The text for the 'Houses of Worship' section is visible below the collapsed item.

311 Search all NYC.gov websites

NYC Buildings

Русский Translate Text-Size

Property or Business Owner Industry Safety Codes Search

NYC Codes Code Notes Reference

## Local Law 97 (LL97) Covered Buildings List (CBL) FAQs

Expand All Collapse All

Click a topic, or press the enter key on a topic, to reveal its answer.

- My building should not be subject to LL97 - how do I remove it from the CBL? +
- Why is my building's BBL listed on multiple LL97 CBLs? +
- How do I dispute my building's compliance pathway, as listed on one or more of the LL97 CBLs? +
- Houses of Worship -

LL97 defines "house of worship" as a building whose main use or dominant occupancy is classified as occupancy group A-3 religious house of worship. Such buildings are subject to Article 321 "CP3." DOB asks these building owners to self-identify as follows:

<https://www.nyc.gov/site/buildings/codes/ll97-cbl-faq.page>

# ARTICLE 321 PENALTY FRAMEWORK

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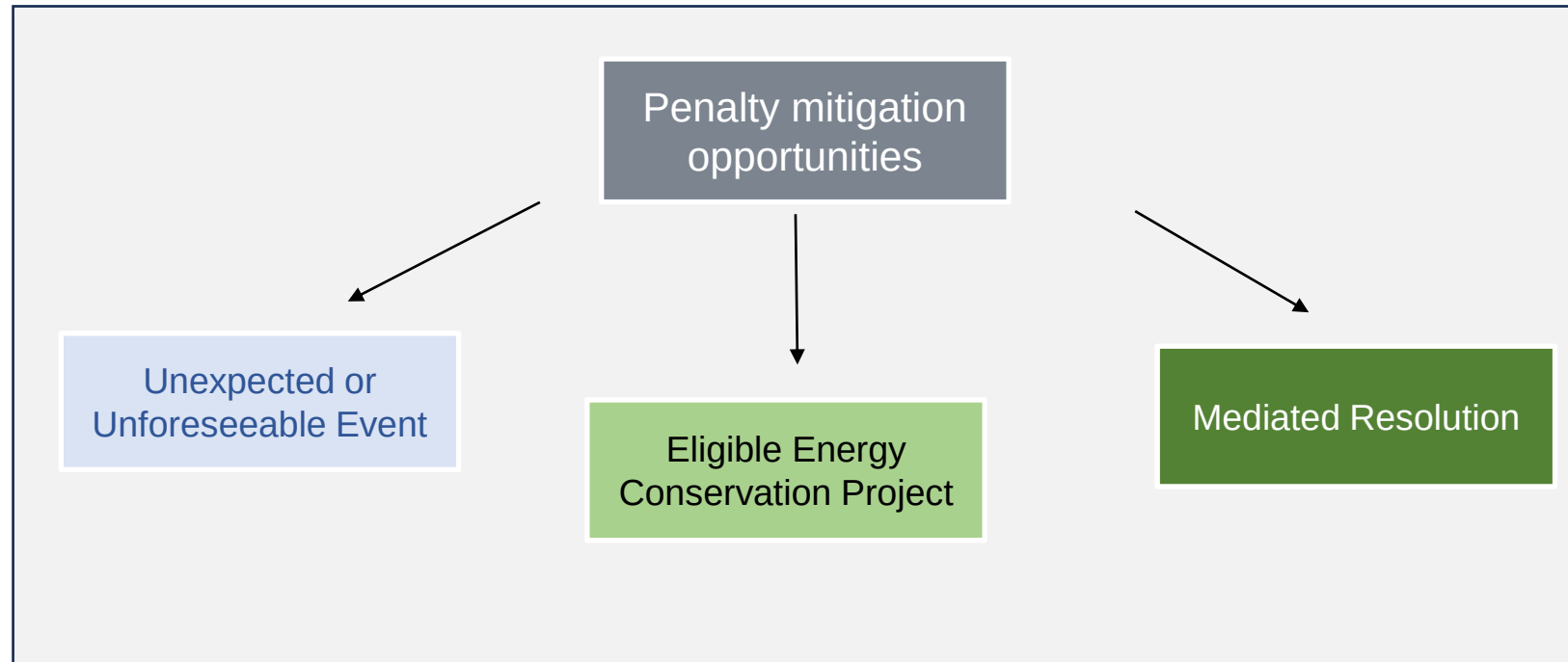
*Properties have two requirements*

**Submit required report**

*Penalty = \$10,000*

**Demonstrate compliance**

*Penalty = \$10,000*





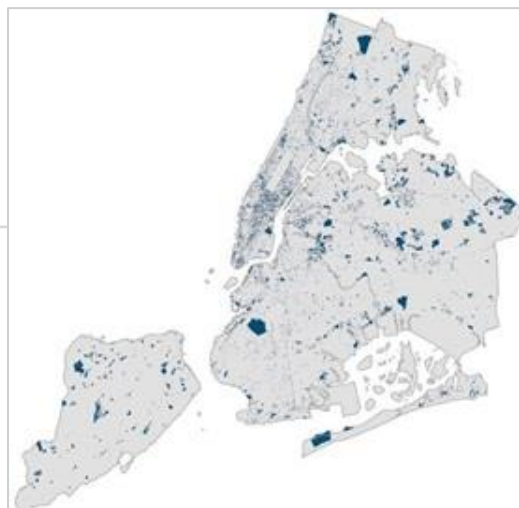
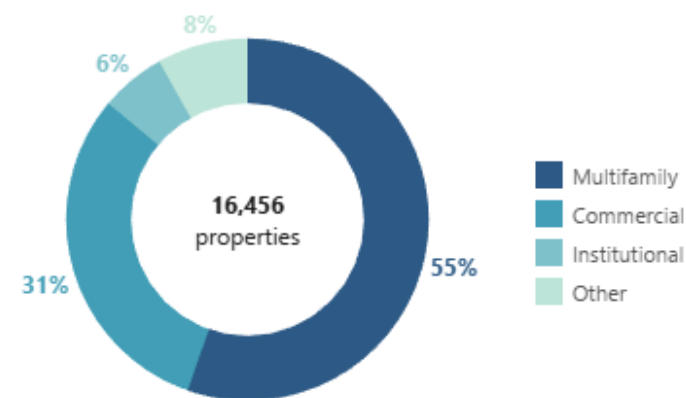
# Article 321 MEDIATED RESOLUTION

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This is an option for building owners who can demonstrate that they are making diligent efforts to comply with Article 321 but need additional time for completion. Required documentation includes:

1. Attestation that the building is out of compliance, showing either calculations (Performance-based Pathway) or status of each PECM (Prescriptive Pathway).
2. For CY2024, an **energy benchmarking report**. *NOTE: This applies even when an Article 321 covered building is not otherwise subject to Local Law 84 (“LL84”).*
3. A **work plan**, certified by a RDP or RCx agent, describing either:
  - a. How the building will comply with 2030 emissions limits by 2030, including proposed renovations and how such renovations will be financed; or
  - b. How the 13 PECMs will be completed by December 31, 2025, including which vendors are responsible.

# CITYWIDE COMPLIANCE SNAPSHOT (2022 data)



## 2024-2029 Compliance Period

Projected Compliance Rate

**89%**

Projected Median Penalty

**\$19,752**

Total projected penalties: **\$192.1M/year**

|                      |     |               |
|----------------------|-----|---------------|
| Commercial           | 503 | \$107.7M      |
| Multifamily          | 863 | \$39.4M       |
| Institutional        | 124 | \$37.6M       |
| Other                | 37  | \$7.5M        |
| Number of properties |     | Total Penalty |

## 2030-2034 Compliance Period

Projected Compliance Rate

**37%**

Projected Median Penalty

**\$22,867**

Total projected penalties: **\$619.8M/year**

|                      |       |               |
|----------------------|-------|---------------|
| Commercial           | 2,817 | \$239.4M      |
| Multifamily          | 5,347 | \$227.1M      |
| Institutional        | 559   | \$128.0M      |
| Other                | 121   | \$25.3M       |
| Number of properties |       | Total Penalty |





# QUESTIONS

**NYC**<sup>TM</sup>  
Buildings