NEW YORK CITY DEPARTMENT OF BUILDINGS

NOTICE OF ADOPTION OF RULE

NOTICE IS HEREBY GIVEN, pursuant to the authority vested in the Commissioner of Buildings by Section 643 of the New York City Charter and in accordance with Section 1043 of the Charter, that the Department of Buildings hereby adopts Section 103-14 of Chapter 100 of Title 1 of the Rules of the City of New York, regarding procedures for reporting on and complying with annual greenhouse gas emissions for certain buildings.

This rule was published in the City Record on October 11, 2022, and a public hearing thereon was held on November 14, 2022.

Dated: 12/7/22
New York, New York

/s/
Kazimir Vilenchik, P.E.
Acting Commissioner

Statement of Basis and Purpose of Rule

The Department of Buildings ("DOB" or "Department") is adding a new rule 103-14 to implement Section 28-320 Chapter 3 or Title 28 of the New York City Administrative Code by establishing the procedures for reporting on complying with annual greenhouse gas (GHG) emissions limits for buildings.

Background and Overview of Rule

Local Law No. 97 of 2019 ("Local Law No. 97" or the "Law") was enacted on May 19, 2019, and took effect on November 15, 2019. Local Law No. 97 amended Chapter 3 of Title 28 of the Administrative Code of the City of New York ("Administrative Code") by adding a new Article 320 to establish GHG emissions limits for certain buildings in New York City. Local Law No.147 of 2019, which was enacted on July 27, 2019, and also took effect on November 15, 2019, amended certain provisions of Article 320.

Local Law No. 97, as amended by Local Law No. 147, requires owners of a "covered building," as such term is defined in Article 320, to report to the Department, beginning in 2025, whether their covered building complied with applicable GHG emissions limits for the prior year. If the covered building was not in compliance with the applicable GHG emissions limit, the owner must also report the amount by which the covered building's emissions exceeded such limit. Owners must include in their report additional information as specified in the rules of the Department.

New York City's buildings play an important role in achieving the City and State's decarbonization goals. Buildings account for a significant portion of greenhouse gas emissions in New York City. Local Law No. 97 will require many of the City's largest buildings to reduce their GHG emissions to meet their emissions limits. This will require covered building owners to implement measures to decarbonize their buildings, including through retrofits and increasing operational efficiency.

This rule addresses compliance with the Law, including the following:

- explains how to report emissions for multiple buildings on one tax lot, or on more than one tax lot if the buildings share energy service;
- outlines compliance requirements for owners of new buildings, buildings that have changed ownership, buildings that are undergoing full demolition, and buildings that have changed property type, for the purposes of reporting to the Department;
- establishes the building emission limits, or emission factors, for different property types for 2024 to 2029, 2030 to 2034, 2035 to 2039, and 2040 to 2049, and for 2050 and beyond;
- provides the formula for calculating a building's annual GHG emissions limit;
- sets forth the GHG coefficients for energy sources not specified in Article 320, including on-site combustion or consumption of fuels;
- provides the methodology for establishing a GHG coefficient for utility electricity based on time of use;

- provides the methodology for establishing a GHG coefficient for campus-style electric systems and other campus-style energy systems;

- provides the methodology for establishing a GHG coefficient for certain distributed energy resources;

- explains how to calculate a building's annual GHG emissions and how to determine a building's gross floor area for the purpose of reporting to the Department;

- establishes that deductions from reported emissions for renewable energy credits (RECs), pursuant to Section 28-320.3.6 of the Administrative Code, are limited to emissions attributed to the consumption of utility supplied electricity; and

- establishes deductions from reported emissions for certain clean distributed energy resources.

Rulemaking to Date and Other City Action to Reduce GHG

This rule is only one aspect of the City's efforts to further its environmental goals. The information below, while not necessary for promulgation of the rule, provides context for how the rule fits within the City's broader environmental agenda, and describes other actions the City has taken and will take to reduce GHG emissions.

The City is committed to achieving the greenhouse gas emissions limits established in Local Law No. 97. By 2030, the Law is expected to reduce carbon dioxide and carbon dioxide equivalents by approximately 6 million tons if owners comply. Many buildings are expected to make energy efficiency improvements that offer cost savings. The work that some owners will need to undertake to comply with Local Law No. 97 may also support employment growth for industries involved in performing building upgrades.

The collective benefits of the Law make compliance critical. To support compliance, the City has conducted outreach and education and will continue to do so. This includes conducting presentations with various stakeholder groups and offering free technical assistance through the NYC Accelerator. The NYC Accelerator provides resources, training, and one-on-one expert guidance to help building owners and industry professionals improve energy efficiency and reduce carbon emissions from buildings in New York City.

Given the importance of reducing carbon emissions, Local Law No. 97 provides for the assessment of penalties for noncompliance. The Law also provides for potential penalty reduction for building owners who demonstrate good faith efforts or are facing other mitigating circumstances. An owner's demonstration of good faith efforts or other mitigating factors will be considered when determining the penalty.

As noted above, the City has already taken action to reduce GHG emissions. In late 2019, DOB convened the Climate Advisory Board, which is required by the Law, and which includes members appointed by the Mayor and the Speaker of the City Council. The Advisory Board is tasked with providing the Department with advice as the City works to implement Local Law No. 97. Advisory Board members include architects, engineers, property owners, representatives from the business sector and public utilities, environmental justice advocates, and tenant advocates.

To further engage stakeholders, the Department has also taken the initiative to establish Climate Working Groups to help develop best practices for building owners to facilitate compliance with Local Law No. 97. The Department has also engaged both State and Federal policymakers and experts in the Working Group efforts.

To date, the Advisory Board and Working Groups have met over 300 times with over 100 diverse stakeholders. The Advisory Board's recommendations are still being developed and, as required by Local Law No. 97, will be shared in a report to the Mayor and the City Council by January 1, 2023.

The Department is also educating building owners about their obligations under Local Law No. 97 and will continue to work to educate building owners leading up to 2050. The Department has created a dedicated website (https://www1.nyc.gov/site/sustainablebuildings/index.page) to provide information to building owners and the public about the requirements of Local Law No. 97 and has established a dedicated email address (GHGEmissions@buildings.nyc.gov) to field inquiries from building owners.

The Department has previously promulgated rules that are required by the Law to be in place before 2023. This includes a rule relating to the process to allow the owners of not-for-profit hospitals and healthcare facilities to apply to the Department for adjustments to their applicable emissions limits.

The Department's rule will provide building owners with further guidance as they prepare for the Law's first compliance period starting in 2024.

The Department's authority for these rules is found in sections 643 and 1043(a) of the New York City Charter and Article 320 of Chapter 3 of Title 28 of the New York City Administrative Code.

New material is underlined.
[Deleted material is in brackets.]

"Shall" and "must" denote mandatory requirements and may be used interchangeably in the rules of the Department, unless otherwise specified or unless the context clearly indicates otherwise.

Subchapter C of chapter 100 of Title 1 of the Rules of the City of New York is amended by adding a new section 103-14 to read as follows:

§103-14 Requirements for Reporting Annual Greenhouse Gas (GHG) Emissions for Covered Buildings.

(a) Definitions. Terms defined in Article 320 of Title 28 of the Administrative Code have the same meanings in this section. For the purposes of this section, the following terms have the following meanings:

Campus energy resource. A campus energy resource is any form of energy that is generated by a central plant energy system and distributed to multiple buildings in a campus setting. A campus energy resource may include but is not limited to electricity, chilled water, condenser

water, steam, high temperature hot water, medium temperature hot water, and low temperature hot water.

Emissions factor. An emissions factor is the building emissions intensity limit for an occupancy group or property type as determined in accordance with section 28-320.3 of the Administrative Code.

Energy service. Energy service is the delivery of energy from the energy supply or energy distribution system to or throughout a building, including any equipment used for such delivery. Two or more buildings may share energy service. Two or more buildings share energy service if such buildings share a meter or other point of connection to the energy supply or energy distribution system.

Gross floor area. Gross floor area is the total area in square feet of all floors and spaces in a covered building, as measured between the exterior surfaces of the enclosing fixed walls. Gross floor area includes vent shafts, elevator shafts, flues, pipe shafts, vertical ducts, stairwells, light wells, basement space, mechanical/electrical rooms, and interior parking. Gross floor area does not include unroofed courtyards or unroofed light wells. For atria, gross floor area only includes the area of atrium floors. For the purposes of calculating gross floor area in tenant spaces, interior demising walls should be measured to the centerline of the wall.

Location based marginal price. A location based marginal price (LBMP) is the value, expressed in dollars per megawatt hour (MWh), of a particular type of fuel for a particular hour on the day preceding the day of use, as published by the New York Independent System Operator (NYISO) for Zone J.

Marginal fuel. The marginal fuel is natural gas or fuel oil, whichever has the lower marginal fuel spot price on a particular day and time.

Marginal fuel spot price. The marginal fuel spot price on a given day and time is the price of natural gas or fuel oil, expressed in dollars per Million British thermal units (MMBtu), for the day preceding the day of use, as determined as follows utilizing spot prices published by the United States Energy Information Administration:

Marginal Fuel Spot Price for Natural Gas							
Calendar Day	Mon*	Tue*	Wed*	Thu*	Fri*	Sat	Sun
Marginal Fuel Spot Price publication date for calendar day hours *before* 10 AM EST	Fri Spot Price	Fri Spot Price	Mon Spot Price	Tues Spot Price	Wed Spot Price	Thu Spot Price	Fri Spot Price
Marginal Fuel Spot Price publication date for hours beginning at 10 AM EST or after	Fri Spot Price	Mon Spot Price	Tue Spot Price	Wed Spot Price	Thu Spot Price	Fri Spot Price	Fri Spot Price

Marginal Fuel Spot Price for Fuel Oil							
Calendar Day	Mon*	Tue*	Wed*	Thu*	Fri*	Sat	Sun
Marginal Fuel Spot Price publication date.	Fri Spot Price	Mon Spot Price	Tue Spot Price	Wed Spot Price	Thu Spot Price	Fri Spot Price	Fri Spot Price

*For calendar days following a holiday, the marginal fuel spot price shall be determined utilizing the most recently published spot price.

Plant input energy. Plant input energy is energy, such as electricity, fossil fuel, district steam, hot water, and chilled water, that is purchased from a public utility or commercial energy provider and is used to generate energy in a central plant in a campus-style energy system.

Variable operating and maintenance cost. The variable operating and maintenance cost (VOM) is the total cost incurred by operating a generator, excluding fuel costs. For reporting purposes, VOM shall be $3.00 per megawatt hour (MWh).

(b) Reporting. By May 1, 2025, and by May 1 of every year thereafter, a building emissions report for the previous calendar year required to be submitted to the Department by the owner of a covered building must be submitted in accordance with the requirements of this section.

(1) Reporting tool. Energy use and emissions information for a covered building must be submitted in a form and manner as determined by the Department. Owners must maintain all documentation and information used in preparing the

building emissions report for a minimum of six (6) years. Such documentation and information shall be submitted to the Department upon request.

(2) *Condominium buildings*. Building emissions for a covered building held in the condominium form of ownership must be submitted in a single report that includes the emissions for all condominium units in such building. Such report shall be submitted to the Department by the board of managers of such covered building.

(3) *Multiple buildings that do not share energy service*. Where two or more covered buildings (i) are on the same tax lot, and (ii) do not share energy service, the owner must submit individual and separate building emissions calculations for each covered building on the tax lot.

(4) *Multiple buildings that share energy service*. For building emissions reports for calendar years 2024 - 2029, emissions for two or more covered buildings, regardless of whether such buildings are on the same tax lot, may be included in an aggregated building emissions calculation in a single building emissions report, provided all such covered buildings share energy service.

(5) *New buildings*. An owner of a new covered building for which a Certificate of Occupancy or a Temporary Certificate of Occupancy is issued on or after January 1, 2023, must begin reporting for such building for the first full calendar year following the year that such Certificate of Occupancy or Temporary Certificate of Occupancy is issued.

(6) *Buildings with change in ownership*. Notwithstanding any other provision of this section, for any covered building for which title is transferred to a new owner during a calendar year, such new owner is not required to submit a building emissions report for such building for such calendar year, provided the new owner is a subsequent *bona fide* purchaser of the covered building pursuant to Department rules.

(7) *Full demolition of a covered building*. An owner of a covered building for which a full demolition permit has been issued is not required to submit a building emissions report for the calendar year during which demolition work has commenced, provided that, no later than May 1 of the following year, the owner submits a written certification by a registered design professional that one or more energy-related systems within such building have been compromised and legal occupancy is not possible prior to January 1 of such following year.

(c) Occupancy groups and emissions factors. For purposes of reporting annual greenhouse gas emissions pursuant to subdivision (b) of this section, occupancy groups and emissions factors are to be identified in accordance with the provisions of this subdivision.

(1) For each covered building, the owner must submit the following information:

(i) Each occupancy group or property type within the building during the calendar year for which building emissions are reported; and

(ii) The total floor area of each such occupancy group or property type in such building.

(2) The occupancy group for each space in a covered building must be determined according to the property type in Energy Star Portfolio Manager that most accurately describes the use of such space during the year for which building emissions are reported. Such determination must be made by the registered design professional preparing the building emissions report.

(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 (EPSM) property types:

ESPM Property Type	2024 – 2029 Emissions Factor in tCO_2e 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
Distribution Center	0.00574
Enclosed Mall	0.01074
Financial Office	0.00846
Fitness Center/Health Club/Gym	0.00987
Food Sales	0.01181
Food Service	0.01181
Hospital (General Medical & Surgical)	0.02381
Hotel	0.00987
K-12 School	0.00675
Laboratory	0.02381
Library	0.00675
Lifestyle Center	0.00846
Mailing Center/Post Office	0.00426
Manufacturing/Industrial Plant	0.00758
Medical Office	0.01074
Movie Theater	0.01181
Multifamily Housing	0.00675

Museum	0.01181
Non-Refrigerated Warehouse	0.00426
Office	0.00758
Other - Education	0.00846
Other - Entertainment/Public Assembly	0.00987
Other - Lodging/Residential	0.00758
Other - Mall	0.01074
Other - Public Services	0.00758
Other - Recreation	0.00987
Other - Restaurant/Bar	0.02381
Other - Services	0.01074
Other - Specialty Hospital	0.02381
Other - Technology/Science	0.02381
Outpatient Rehabilitation/Physical Therapy	0.01181
Parking	0.00426
Performing Arts	0.00846
Personal Services (Health/Beauty, Dry Cleaning, etc.)	0.00574
Pre-school/Daycare	0.00675
Refrigerated Warehouse	0.00987
Repair Services (Vehicle, Shoe, Locksmith, etc.)	0.00426
Residence Hall/Dormitory	0.00758
Residential Care Facility	0.01138
Restaurant	0.01181
Retail Store	0.00758
Self-Storage Facility	0.00426
Senior Care Community	0.01138
Social/Meeting Hall	0.00987
Strip Mall	0.01181
Supermarket/Grocery Store	0.02381
Transportation Terminal/Station	0.00426
Urgent Care/Clinic/Other Outpatient	0.01181
Vocational School	0.00574
Wholesale Club/Supercenter	0.01138
Worship Facility	0.00574

(ii) For purposes of reporting for calendar years 2024 and 2025, an owner may utilize a building emissions intensity limit for an occupancy group set forth in section 28-320.3.1 of the Administrative Code, provided such building emissions intensity limit is greater than the emissions factor assigned pursuant to subparagraph (i) for the ESPM property type that most accurately describes the use of the building or space, as determined in accordance with paragraph (2) of this subdivision.

(iii) For the purposes of reporting for calendar years 2030 – 2034, the following emissions factors apply to the following Energy Star Portfolio Manager property types:

ESPM Property Type	2030 – 2034 Emissions Factor in tCO_2e per sf
Adult Education	0.003565528
Ambulatory Surgical Center	0.008980612
Automobile Dealership	0.002824097
Bank Branch	0.004036172
Bowling Alley	0.003103815
College/University	0.002099748
Convenience Store without Gas Station	0.003540032
Courthouse	0.001480533
Data Center	0.014791131
Distribution Center	0.000991600
Enclosed Mall	0.003983803
Financial Office	0.003697004
Fitness Center/Health Club/Gym	0.003946728
Food Sales	0.005208880
Food Service	0.007749414
Hospital (General Medical & Surgical)	0.007335204
Hotel	0.003850668
K-12 School	0.002230588
Laboratory	0.026029868
Library	0.002218412
Lifestyle Center	0.004705850
Mailing Center/Post Office	0.001980440
Manufacturing/Industrial Plant	0.001417030
Medical Office	0.002912778
Movie Theater	0.005395268
Multifamily Housing	0.003346640
Museum	0.005395800
Non-Refrigerated Warehouse	0.000883187
Office	0.002690852
Other - Education	0.002934006
Other - Entertainment/Public Assembly	0.002956738
Other - Lodging/Residential	0.001901982
Other - Mall	0.001928226
Other - Public Services	0.003808033
Other - Recreation	0.004479570
Other - Restaurant/Bar	0.008505075
Other - Services	0.001823381
Other - Specialty Hospital	0.006321819
Other - Technology/Science	0.010446456

Outpatient Rehabilitation/Physical Therapy	0.006018323
Parking	0.000214421
Performing Arts	0.002472539
Personal Services (Health/Beauty, Dry Cleaning, etc.)	0.004843037
Pre-school/Daycare	0.002362874
Refrigerated Warehouse	0.002852131
Repair Services (Vehicle, Shoe, Locksmith, etc.)	0.002210699
Residence Hall/Dormitory	0.002464089
Residential Care Facility	0.004893124
Restaurant	0.004038374
Retail Store	0.002104490
Self-Storage Facility	0.000611830
Senior Care Community	0.004410123
Social/Meeting Hall	0.003833108
Strip Mall	0.001361842
Supermarket/Grocery Store	0.006755190
Transportation Terminal/Station	0.000571669
Urgent Care/Clinic/Other Outpatient	0.005772375
Vocational School	0.004613122
Wholesale Club/Supercenter	0.004264962
Worship Facility	0.001230602

(iv) For the purposes of reporting for calendar years 2035 – 2039, the following emissions factors apply to the following Energy Star Portfolio Manager property types:

ESPM Property Type	2035 – 2039 Emissions Factor in tCO_2e per sf
Adult Education	0.002674146
Ambulatory Surgical Center	0.006735459
Automobile Dealership	0.002118072
Bank Branch	0.003027129
Bowling Alley	0.002327861
College/University	0.001236322
Convenience Store without Gas Station	0.002655024
Courthouse	0.001110400
Data Center	0.011093348
Distribution Center	0.000549637
Enclosed Mall	0.002987852
Financial Office	0.002772753
Fitness Center/Health Club/Gym	0.002960046
Food Sales	0.003906660
Food Service	0.005812060

Hospital (General Medical & Surgical)	0.004654044
Hotel	0.002640017
K-12 School	0.001488109
Laboratory	0.019522401
Library	0.001663809
Lifestyle Center	0.003529387
Mailing Center/Post Office	0.001485330
Manufacturing/Industrial Plant	0.000975993
Medical Office	0.001683565
Movie Theater	0.004046451
Multifamily Housing	0.002692183
Museum	0.004046850
Non-Refrigerated Warehouse	0.000568051
Office	0.001652340
Other - Education	0.001867699
Other - Entertainment/Public Assembly	0.002250122
Other - Lodging/Residential	0.001329089
Other - Mall	0.001006426
Other - Public Services	0.002856025
Other - Recreation	0.003359678
Other - Restaurant/Bar	0.006378806
Other - Services	0.001367536
Other - Specialty Hospital	0.004741365
Other - Technology/Science	0.007834842
Outpatient Rehabilitation/Physical Therapy	0.004513742
Parking	0.000104943
Performing Arts	0.001399345
Personal Services (Health/Beauty, Dry Cleaning, etc.)	0.003632278
Pre-school/Daycare	0.001772155
Refrigerated Warehouse	0.002139098
Repair Services (Vehicle, Shoe, Locksmith, etc.)	0.001658024
Residence Hall/Dormitory	0.001332459
Residential Care Facility	0.004027812
Restaurant	0.003028780
Retail Store	0.001216050
Self-Storage Facility	0.000404901
Senior Care Community	0.003336443
Social/Meeting Hall	0.002874831
Strip Mall	0.000600493
Supermarket/Grocery Store	0.004256103
Transportation Terminal/Station	0.000428752
Urgent Care/Clinic/Other Outpatient	0.004329281
Vocational School	0.003459842
Wholesale Club/Supercenter	0.003198721

Worship Facility	0.000866921

(v) For the purposes of reporting for calendar years 2040 – 2049, the following emissions factors apply to the following Energy Star Portfolio Manager property types:

ESPM Property Type	2040 – 2049 Emissions Factor in tCO_2e per sf
Adult Education	0.001782764
Ambulatory Surgical Center	0.004490306
Automobile Dealership	0.001412048
Bank Branch	0.002018086
Bowling Alley	0.001551907
College/University	0.000180818
Convenience Store without Gas Station	0.001770016
Courthouse	0.000740266
Data Center	0.007395565
Distribution Center	0.000123568
Enclosed Mall	0.001991901
Financial Office	0.001848502
Fitness Center/Health Club/Gym	0.001973364
Food Sales	0.002604440
Food Service	0.003874707
Hospital (General Medical & Surgical)	0.002997851
Hotel	0.001465772
K-12 School	0.000809607
Laboratory	0.013014934
Library	0.001109206
Lifestyle Center	0.002352925
Mailing Center/Post Office	0.000990220
Manufacturing/Industrial Plant	0.000508346
Medical Office	0.000407851
Movie Theater	0.002697634
Multifamily Housing	0.002052731
Museum	0.002697900
Non-Refrigerated Warehouse	0.000163152
Office	0.000581893
Other - Education	0.000839571
Other - Entertainment/Public Assembly	0.001355610
Other - Lodging/Residential	0.000762093
Other - Mall	0.000067983
Other - Public Services	0.001904017
Other - Recreation	0.002239785
Other - Restaurant/Bar	0.004252537
Other - Services	0.000911691

Other - Specialty Hospital	0.003160910
Other - Technology/Science	0.005223228
Outpatient Rehabilitation/Physical Therapy	0.003009161
Parking	0
Performing Arts	0
Personal Services (Health/Beauty, Dry Cleaning, etc.)	0.002421519
Pre-school/Daycare	0.001181437
Refrigerated Warehouse	0.001426066
Repair Services (Vehicle, Shoe, Locksmith, etc.)	0.001105349
Residence Hall/Dormitory	0.000528616
Residential Care Facility	0.002272629
Restaurant	0.002019187
Retail Store	0.000176040
Self-Storage Facility	0.000132282
Senior Care Community	0.002277912
Social/Meeting Hall	0.001916554
Strip Mall	0.000038512
Supermarket/Grocery Store	0.002030027
Transportation Terminal/Station	0.000285834
Urgent Care/Clinic/Other Outpatient	0.002886187
Vocational School	0.002306561
Wholesale Club/Supercenter	0.002132481
Worship Facility	0.000549306

(vi) For purposes of reporting for calendar years 2050 or later, an emissions factor of 0.00 applies to all Energy Star Portfolio Manager property types.

*(d) Calculations***.** An annual building emissions report submitted pursuant to subdivision (b) of this section must be prepared using the calculation methodologies set forth in this subdivision.

(1) Gross floor area. The owner must calculate and report the gross floor area of a covered building, and the floor area of each occupancy group or property type in a covered building. The floor area of each occupancy group or property type reported must add up to the covered building's gross floor area.

(2) Building emissions limits.

(*i*) *Buildings with a single occupancy group.* The building emissions limit for a covered building with a single occupancy group or property type must be calculated as the gross floor area multiplied by the emissions factor for the building's occupancy group or property type.

(*ii*) *Buildings with multiple occupancy groups*. The building emissions limit for a covered building with multiple occupancy groups or property types must be calculated as the sum of the emissions factor for each occupancy group or

property type multiplied by the floor area of each occupancy group or property type in the covered building:

$$B = \sum l_k \cdot s_k \qquad \text{(Equation 103-14.1)}$$

Where:

B = the total building emissions limit for a covered building with multiple occupancy groups.

l_k = the emissions factor of each given occupancy group or property type, *k*, as specified in Article 320 or in this rule, in tCO_2e per square foot.

s_k = the total floor area in square feet of each property type or occupancy group, *k*, in a covered building.

(3) Greenhouse gas coefficients of energy consumption. Greenhouse gas coefficients for energy consumption shall be determined in accordance with this paragraph (3):

(i) Greenhouse gas coefficients for certain fuels combusted or consumed on premises for calendar years 2024 - 2034. For building emissions reports for calendar years 2024 - 2034, the GHG coefficients for fuel types combusted or consumed on premises provided in section 28-320.3.1.1 of the Administrative Code apply, except as provided in this subparagraph (i) or in subparagraph (ii) of this paragraph, provided that for any fuel type with a biogenic blend, the owner may propose an alternate coefficient pursuant to clause c of this subparagraph.

a. For the following fuel types combusted or consumed on premises, greenhouse gas emissions must be calculated as generating the following amounts of tCO_2e per kBtu:

Fuel	**Emissions Coefficient** (tCO_2e per kBtu)
Butane	0.00006502
Butylene	0.00006897
Diesel	0.00007421
Distillate Fuel Oil No. 1	0.00007350
Ethane	0.00005985
Ethylene	0.00006621
Gasoline	0.00007047
Isobutane	0.00006519
Isobutylene	0.00006911
Kerosene	0.00007769
Naphtha (<401 deg F)	0.00006827
Other Oil (>401 deg F)	0.00007647

Pentanes Plus	0.00007027
Propane	0.00006425
Propylene	0.00006802
Special Naphtha	0.00007259
Coke Oven Gas	0.00004689
Fuel Gas	0.00005925

b. Exceptions. Notwithstanding any other provision of this subparagraph, for building emissions reports for calendar years 2030 – 2034:

1. Number two (No. 2) fuel oil combusted on the premises of a covered building shall be calculated as 0.00007421 tCO_2e per kBtu.
2. Number four (No. 4) fuel oil combusted on the premises of a covered building shall be calculated as 0.00007529 tCO_2e per kBtu.

c. For any fuel type that is combusted or consumed on site, not listed in this subparagraph or section 28-320.3.1.1 of the Administrative Code and not prohibited by applicable rule or law, the owner must propose a carbon coefficient, in tCO_2e per kBtu, that serves the public interest of reducing GHG emissions, to be used for calculating greenhouse gas emissions for such fuel type. Such proposed coefficient and documentation supporting such proposed coefficient shall be provided to the Department, in a form and manner determined by the Department. Such proposed carbon coefficient is subject to approval by the Department, which may alternatively assign a different coefficient for such fuel type.

(ii) Greenhouse gas coefficients for utility energy consumption for calendar years 2030 through 2034. For building emissions reports for calendar years 2030 - 2034, the GHG coefficients for consumption of energy generated by a utility shall be determined in accordance with this subparagraph (ii).

a. Utility electricity consumed on the premises of a covered building that is delivered to the building via the electric grid shall be calculated as generating 0.000145 tCO_2e per kWh, provided, however that, at the owner's option, utility electricity may be calculated based on time of use, in accordance with subparagraph (iii) of this paragraph.

b. Natural gas delivered by a utility combusted or consumed on the premises of a covered building shall be calculated as generating 0.00005311 tCO_2e per kBtu.

c. District steam delivered by a utility and consumed on the premises of a covered building shall be calculated as 0.0000432 tCO_2e per kBtu.

(iii) Greenhouse gas coefficient for utility electricity based on time of use (TOU). Notwithstanding any other provision of this paragraph, an owner may elect to

calculate emissions generated by utility electricity based on time of use (TOU) in accordance with this subparagraph (iii).

a. Such an owner shall submit to the Department documentation of hourly consumption of all utility electricity consumed on the premises of the covered building during the calendar year for which emissions are being reported. Utility records must be made available to the Department upon request.

b. A TOU coefficient may be utilized to calculate emissions generated by utility electricity where:

1. Hourly utility electricity consumption for the covered building is separately metered by the utility; or,
2. Hourly utility electricity consumption for the covered building is separately metered or sub-metered by the owner in a manner that produces data on such hourly consumption for the year being reported.

c. Calculations.

1. Until such time that hourly TOU electric emissions coefficients for New York City are published by a source approved by the Department, TOU coefficient values must be calculated for each hour of each day in the calendar year being reported, as follows:

$$TOUn = (HM_n - RAM_n) + g_{ue} \qquad \text{(Equation 103-14.2)}$$

Where:

TOU_n	=	the hourly time of use electricity coefficient in tCO_2e per kWh, for n, a given hour on a given day in the calendar year being reported.
HM_n	=	the hourly marginal emissions coefficient in tCO_2e per kWh (see Equation 103-14.3).
RAM_n	=	the hourly rolling average marginal emissions coefficient in tCO_2e per kWh (see Equation 103-14.6).
g_{ue}	=	the GHG coefficient for utility electricity for the calendar year being reported, in tCO_2e per kWh, as provided pursuant to Article 320 of Chapter 3 of Title 28 of the Administrative Code or this paragraph.

If $TOU_n < 0$, then $TOU_n = 0$.

2. The hourly marginal emissions coefficient must be calculated as follows:

$$HM_n = IHR_n \times \frac{1kBtu/kWh}{MMbtu/MWh} \times MF_n \qquad \text{(Equation 103-14.3)}$$

Where:

IHR_n = the implied heat rate in MMBtu per MWh, for *n* every hour of the calendar year, see Equation 103-14.4.

MF_n = the marginal fuel emissions coefficient, in tCO_2e per kBtu, for the fuel that is the marginal fuel for *n* during the calendar year being reported, provided pursuant to Article 320 of Chapter 3 of Title 28 of the Administrative Code or this paragraph.

3. The hourly implied heat rate must be calculated as follows:

$$IHR_n = \frac{LBMP_n - VOM}{RE_n + MSP_n} \quad \text{(Equation 103-14.4)}$$

Where:

$LBMP_n$ = hourly location based marginal price, in dollars per MWh, as defined in subdivision (a) of this section.

VOM = $3 per MWh (the variable operating and maintenance cost, as defined in subdivision (a) of this section.

RE_n = Regional greenhouse gas initiative (RGGI) emissions cost, in dollars per MMBtu (see Equation 103-14.5).

MSP_n = Hourly marginal fuel spot price, in dollars per MMBtu.

If IHR_n < 5 MMBtu/MWh for a given hour *n*, then IHR_n = 0 Btu per MWh for that hour *n*.

If IHR_n > 17 MMBtu/MWh for a given hour *n*, then IHR_n = 17 MMBtu per MWh for that hour *n*.

4. The RGGI emissions $cost_n$ must be calculated as follows:

$$RE_n = RA_n \times \frac{1.10231\ USton}{metric\ ton} \times g_n \times \frac{1000\ kBtu}{MMBtu} \quad \text{(Equation 103-14.5)}$$

Where:

RA_n = RGGI allowance cost, in dollar per US ton, of CO_2e, as published by RGGI.

g_n = Greenhouse gas coefficient for the marginal fuel at a given hour, in tCO_2e per kBtu.

5. The hourly rolling average marginal emissions must be calculated as follows:

$$RAM_n = \frac{\sum_{i=n-8759}^{n}(HM_i \times HLF_i)}{\sum_{i=n-8759}^{n} HLF_i}$$ (Equation 103-14.6)

Where:

HM_i = hourly marginal emissions coefficient, in tCO_2e per kWh (see Equation 103-14.3).

HLF_i = the hourly load forecast, which is the day-ahead load projection, published by the New York State Independent System Operator (NYISO) as the day-ahead zonal forecast for New York City, in MW.

(iv) Greenhouse gas coefficient for campus-style electric systems. The greenhouse gas coefficient for electricity generated by a campus-style electric system, where electricity consumed by any covered building served by such system is generated in whole or in part on the premises of the campus, must be calculated in accordance with this subparagraph (iv).

a. The GHG coefficient for electricity generated by the campus-style electric system, must be calculated as follows:

$$g_{ce} = \frac{\sum_n (m_n \cdot g_n)}{m_{ce}}$$ (Equation 103-14.7)

Where:

g_{ce} = the on-site campus generated electricity GHG coefficient in tCO_2e per kWh.

m_n = the plant input energy for each energy source consumed, n, in kBtu.

g_n = the GHG coefficient for each plant input energy source, n, in tCO_2e per kBtu as provided pursuant to Article 320 of Chapter 3 of Title 28 of the Administrative Code or this paragraph.

m_{ce} = the total electricity consumed by buildings and other campus loads from the campus-style electric system, in kWh, during the year being reported, excluding any electricity delivered into the utility grid.

b. Where a covered building consumes electricity generated by the campus-style electric system and also consumes utility electricity, the combined GHG coefficient for campus electricity must be calculated as follows:

$$g_e = \frac{(m_{ue} \cdot g_{ue}) + (m_{ce} \cdot g_{ce})}{m_{ue} + m_{ce}}$$ (Equation 103-14.8)

Where:

g_e = the GHG coefficient for electricity generated by a campus-style electric system on-site, in tCO_2e per kWh.

m_{ue} = the total electricity consumed by buildings and other campus loads from the utility grid, in kWh.

g_{ue} = the GHG coefficient for utility electricity, in tCO_2e per kWh, provided pursuant to Article 320 of Chapter 3 of Title 28 of the Administrative Code or this paragraph.

m_{ce} = the electricity consumed by buildings and other campus loads from the campus-style electric system, in kWh, excluding any electricity delivered into the utility grid.

g_{ce} = the on-site campus generated electricity GHG coefficient in tCO2e per kWh (see Equation 103-14.7).

c. Where electricity consumed by any covered building on the campus is generated on the site of the campus, and the owner elects to calculate emissions from such electricity based on time of use (TOU), the GHG coefficient shall be calculated as follows:

$$g_e = \frac{\left(\sum_h (m_{ueh} \cdot g_{TOU})_h\right) + (m_{ce} \cdot g_{ce})}{m_{ue} + m_{ce}} \qquad \text{(Equation 103-14.9)}$$

Where:

g_e = the GHG coefficient for electricity generated by a campus-style electric system on-site, in tCO_2e per kWh.

m_{ueh} = the hourly electricity consumed by buildings and other campus loads from the utility grid, in kWh.

g_{TOU} = the hourly TOU GHG coefficient, as calculated in accordance with subparagraph (iii) of this paragraph for the calendar year being reporting, in tCO_2e per kWh.

m_{ce} = the electricity consumed by buildings and other campus loads from the campus-style electric system, in kWh, excluding any electricity delivered into the utility grid, see Equation 103-14.7.

g_{ce} = the on-site campus generated electricity GHG coefficient in tCO_2e per kWh, see Equation 103-14.7.

m_{ue} = the total electricity consumed by buildings and other campus loads from the utility grid, in kWh, see Equation 103-14.8.

(v) Greenhouse gas coefficients for certain campus-style energy systems. Notwithstanding any other provision of this section, the GHG coefficient for

energy generated by a campus-style energy system must be calculated in accordance with this subparagraph (v). Such energy may include district heating and cooling or other district energy.

a. The GHG coefficient for each type of campus energy resource that is generated by a system or equipment in a campus central plant and consumed by a covered building shall account for the plant input energy utilized by such plant to generate and deliver such campus energy resource. Such systems or equipment in a campus central plant may include, but need not be limited to, prime generators, such as boilers, chillers, and cooling towers; ancillary equipment, such as pumps and fans; and associated controls. Any energy generated by any such system or equipment that serves a single building shall not be included in the input energy for the campus-style energy system and shall be considered part of the energy use of the covered building it is serving. Any plant input energy recovered by the campus-style energy system from any other plant energy source on campus and included in the calculation of the emissions coefficient for such other central plant energy source may be assigned an emissions coefficient of zero for purposes of calculating the GHG coefficient for a campus energy resource generated by the campus-style energy system.

b. Calculations.

1. For each type of campus energy resource generated by the campus-style energy system, the GHG coefficient shall be calculated as follows:

$$g_{cx} = \frac{\sum_n (m_n \cdot g_n)}{m_{cx}} \qquad \text{(Equation 103-14.10)}$$

Where:

g_{cx} = the campus-style energy system GHG coefficient, in tCO_2e per kBtu, for the campus energy resource, cx.

m_n = the plant input energy consumed by each campus-style energy system used to generate the campus energy resource, n, in kBtu.

g_n = the GHG coefficient for each plant input energy source, n, in tCO_2e per kBtu.

m_{cx} = the total amount, in kBtu, of the campus energy resources, cx, consumed by all covered buildings served by the campus-style energy system.

2. Where, for each type of campus energy resource, a group of covered buildings consumes energy generated by the campus-style energy system and consumes energy generated by a utility, a combined GHG coefficient for such campus energy resource shall be calculated as follows:

$$g_x = \frac{(m_{ux} \cdot g_{ux}) + (m_{cx} \cdot g_{cx})}{m_{ux} + m_{cx}}$$ (Equation 103-14.10)

Where:

g_x = the combined GHG coefficient, in tCO_2e per kBtu, for a campus energy resource, x.

m_{ux} = the amount of the campus energy resource, ux, from the utility consumed by the covered building or campus, in kBtu.

g_{ux} = the applicable GHG coefficient for the campus energy resource, ux, as supplied by a utility, in tCO_2e per kBtu, as provided pursuant to Article 320 of Chapter 3 of Title 28 of the Administrative Code or this paragraph.

m_{cx} = the total amount, in kBtu, of the campus energy resource, cx, consumed by all covered buildings served by the campus-style energy system.

g_{cx} = the campus-style energy system GHG coefficient, in tCO_2e per kBtu, for the campus energy resource, cx.

(vi) GHG coefficients for distributed energy resources. Notwithstanding any other provision of this section, the GHG coefficient for the distributed energy resources described in this subparagraph may be determined as follows:

a. GHG coefficient for certain distributed energy resources. Except as provided in clause b or c of this subparagraph, the GHG coefficient for energy generated by distributed energy resources, such as microturbines, combined heat and power generation, and fuel cells, including natural gas-powered fuel cells, shall be determined in accordance with subparagraph (i) or (ii) of this paragraph, for the energy source used to generate the energy for such distributed energy resource and the calendar year being reported. Where an owner chooses to utilize a utility electricity GHG coefficient based on TOU to account for operation of distributed energy resources, such owner must use a TOU coefficient for all utility electricity consumption for their reporting.

b. Greenhouse gas coefficient for subscription to off-site solar energy generation.

1. The GHG coefficient for electricity generated by an off-site solar energy system purchased by the owner of a covered building is 0.0 tCO_2e per kWh, provided such energy sinks directly into the zone J load zone and the other requirements of this clause b are satisfied.

2. Such coefficient may be applied to the utility electricity consumption, in kWh, for the covered building in an amount that is no more than the amount of electricity from the off-site solar energy system, provided that the exports of such electricity are not also registered or retired as renewable energy credits claimed by any covered building for purposes of compliance with section 28-320.3 of the Administrative Code. Owners must submit documentation of the amount of solar electricity purchased by the owner to the Department with the building emissions report, or such information may be submitted by a utility on behalf of the owner. Where an owner opts to use a coefficient for electricity based on TOU, electricity generated by an off-site solar energy system must also be reported pursuant to subparagraph (iii).

c. GHG coefficient for energy storage. In reporting annual building emissions, an owner of a covered building that utilizes an energy storage system may account for on-site or off-site storage of energy, in accordance with this subparagraph. A GHG coefficient for electricity consumption based on TOU may be applied to the electricity consumed during hours that such energy storage system is charging and discharging, provided that such a TOU coefficient may only be utilized to calculate electricity consumption for an off-site energy storage system where the discharged electricity of such system sinks directly into Zone J.

1. An owner of a covered building with behind the meter energy storage that is using the utility electricity GHG coefficient as provided pursuant to Article 320 of Chapter 3 of the Administrative Code or subparagraphs (i) or (ii) of this paragraph for utility electricity consumption in lieu of TOU may account for such storage as provided by this subparagraph, provided that such storage must be separately metered or sub-metered and must be reported using the TOU coefficient methodology pursuant to subparagraph (iii).

2. An owner of a covered building that contracts with an off-site energy storage provider via subscription may report an equal portion of their electricity consumption, in kWh, as if it were supplied from an energy storage system on premises. Such owner shall calculate the carbon savings for that owner's share of the stored energy using the TOU coefficient methodology pursuant to subparagraph (iii) and submit such data to the Department in the building emissions report for the calendar year being reported.

(4) Annual building emissions. Annual building emissions for a covered building must be calculated in accordance with this paragraph (4).

(i) Calculation. Annual building emissions must be calculated as follows:

$$X = \Sigma_n m_n \cdot g_n$$ (Equation 103-14.11)

Where:

X	=	the total building emissions for a covered building, for the calendar year reported, in tCO_2e.
m_n	=	the energy consumed for each energy source or fuel type, n, in kBtu for the year reported.
g_n	=	the GHG carbon coefficient for the year reported for each energy source or fuel type, n, in tCO_2e per kBtu.

(ii) Energy consumption to be included. All energy consumed by a covered building, including fuels used for normal testing of emergency or stand-by power generators, must be included in the calculation of the annual building emissions for such covered building, provided, however:

a. Energy used for unidirectional charging of electric vehicles may be deducted where separately metered or sub-metered pursuant to guidance issued by the Department.

b. Energy consumed during a local state of emergency declared pursuant to section 24 of the NYS Executive Law or a state of emergency declared pursuant to sections 28 of the New York State Executive Law, where such state of emergency has an impact on building emissions, such as a state of emergency resulting from severe thunderstorms or flooding.

(e) Deductions from reported annual building emissions. Deductions from the total annual emissions for a covered building are authorized in accordance with this subdivision (e).

(1) Deductions from reported annual building emissions for Renewable Energy Credits (RECs). Deductions from reported annual building emissions for renewable energy credits may be made to annual building emission calculations as follows:

(i) Applicability of renewable energy credits (RECs). Renewable energy credits may only be deducted from the emissions attributed to consumption of utility supplied electricity in a covered building.

(ii) RECs generated by clean distributed energy resources on the premises of the covered building. Notwithstanding any other provision of this section, where an owner elects to register RECs generated by a clean distributed energy resource located on the premises of the covered building, the owner may not take an additional deduction for the energy generated by the clean distributed energy resource pursuant to paragraph (2) of this subdivision.

(2) *Deductions from reported annual building emissions for clean distributed energy resources*. A deduction for energy generated by a clean distributed energy resource located on the premises of a covered building is authorized in accordance with this paragraph.

(i) Deduction for solar electric generation. For calendar years 2024 to 2029, a deduction from emissions resulting from annual electricity consumption is allowed where electricity is generated by a solar energy system on the premises of the covered building, in accordance with this subparagraph.

a. Where electricity is generated by the solar energy systems, in front of the meter or behind the meter, and exported to the grid, an owner may deduct from the total utility electricity consumed by the covered building in the year being reported, an amount equal to the electricity exported, in kWh.

b. Where the greenhouse gas coefficient used to calculate emissions from electricity is calculated based on the TOU methodology pursuant to subparagraph (iii) of paragraph (3) of subdivision (d) of this section, such owner shall submit a record of hourly generation of on-site solar energy during the calendar year being reported.

(ii) Deduction for on-site energy storage system. For calendar years 2024 to 2029, a deduction from annual building emissions is allowed where energy is stored on the premises of the covered building as electricity, in accordance with this subparagraph. Such deduction may be calculated as follows:

$$ESS = CAP \cdot TES \cdot Eff$$ (Equation 103-14.12)

Where:

ESS	=	The amount of GHG emissions that may be deducted from the annual emissions resulting from electricity consumption in tCO_2e.
CAP	=	The rated capacity of the energy storage system in kWh.
TES		The total emissions spread, as determined by the Department, for the year preceding the reporting year.
Eff	=	Roundtrip efficiency, defined as 85% for calendar years 2024-2029.

(f) Adjustments. An adjustment to the annual building emissions limits for a covered building may be requested by an owner in accordance with Article 320 of Chapter 3 of the Administrative Code and this subdivision.

(*1*) Where an owner has been granted an adjustment to their building emissions limit pursuant to Section 28-320.8 of the Administrative Code for any calendar year between 2024 – 2029, or has been granted an extension of such an adjustment, the adjustment expires where the special circumstance justifying the adjustment no longer exists. The owner must certify that the special circumstance justifying an adjustment continues, as

part of any annual emissions report in which the adjustment is sought after it is initially granted.

(*2*) Where an owner has been granted an adjustment to their building emissions limit pursuant to section 28-320.9 of the Administrative Code for any calendar year between 2024 – 2034, the adjustment expires on January 1 of the calendar year following the date on which the building ceases being classified as a not-for-profit hospital, not-for-profit health center, or a not-for-profit HIP center.