

**DOB WEBINAR SERIES – SESSION 4:
LL97 ARTICLE 320 REPORTING
PROCESS
March 11th, 2025**

presented by
DOB Sustainability Bureau

NYC
Buildings

Presenters

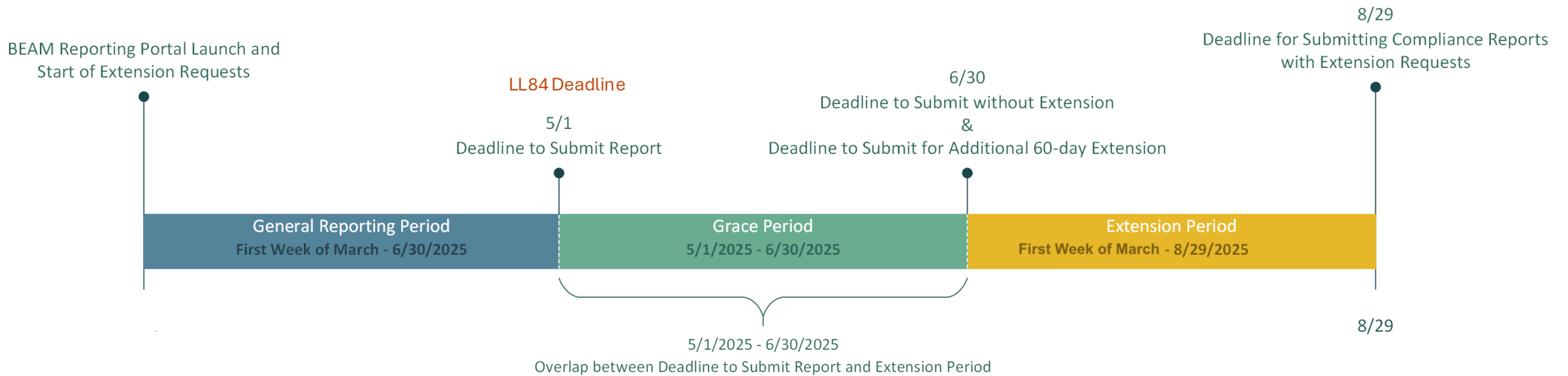
- Emily Hoffman, Director, Office of Building Energy and Emissions Performance (OBEEP)
- Thomas Carpenito, Project Manager, Sustainability Enforcement, OBEEP
- Jean Kim, Deputy Director, Building Energy and Emissions Audits, OBEEP
- Mauton Whenu, Senior Building Energy and Emissions Auditor, OBEEP
- Anthony Thompson, Energy Specialist, Bureau of Sustainability

Timeline

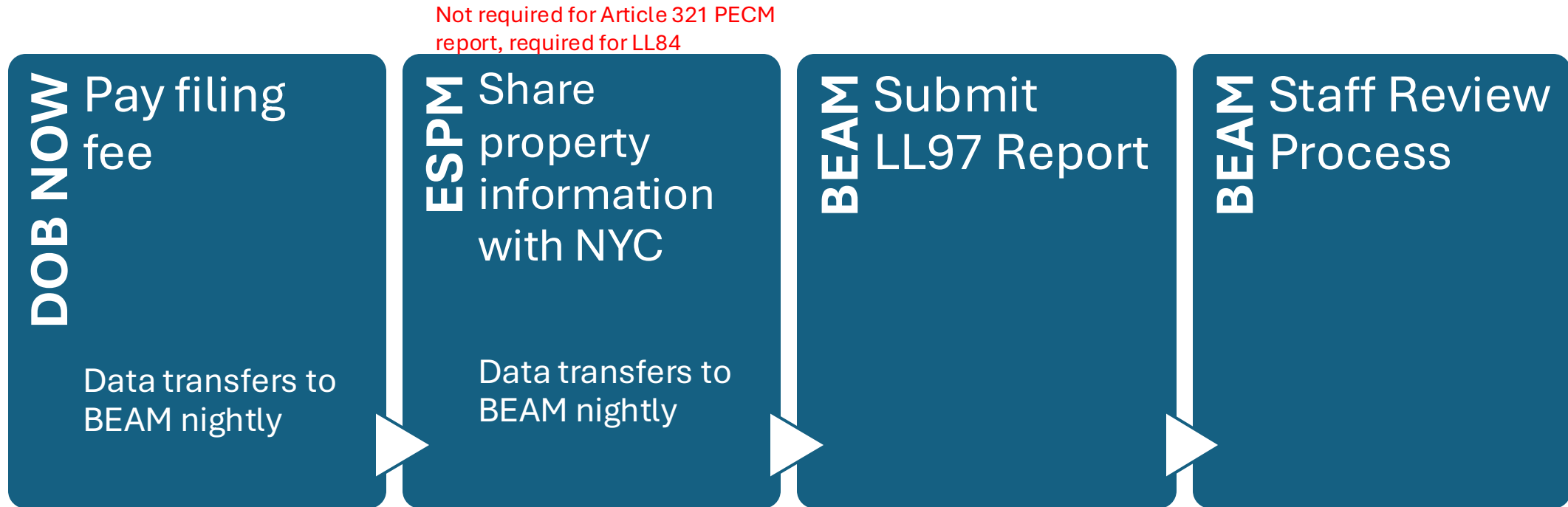
LL97 TIMELINE

For Filing Extensions and Submitting Compliance Reports

Grace periods & extensions apply to LL88



Local Law 97 Reporting Process



The following three email addresses entered in DOB NOW will serve as the **only** email addresses to view building profile in the Building Energy Analysis Manager (BEAM).

- Owner
- Owner Representative
- Service Provider (RDP/RCxA) - *optional if owner's rep is also service provider*

DOB NOW Filing Fees

Article 320 & Article 321

Critical Information for DOB NOW: Safety



The **Owner, Owners Representative, and Service Provider** (RDP/RCxA) email addresses **must be** provided in the DOB NOW Filing Fee process.

- These email addresses are the only way to access your building profile in BEAM.
- While you may be able to create a BEAM account without submitting a DOB NOW filing fee, applicable building information will **not** be present in your building profile.
- The BEAM account must be created using one of the three email addresses identified in the LL97 DOB NOW Fee portal associated with the BIN/BBL.

Email addresses entered in DOB NOW will serve as the **only** email addresses to view building profile in BEAM.

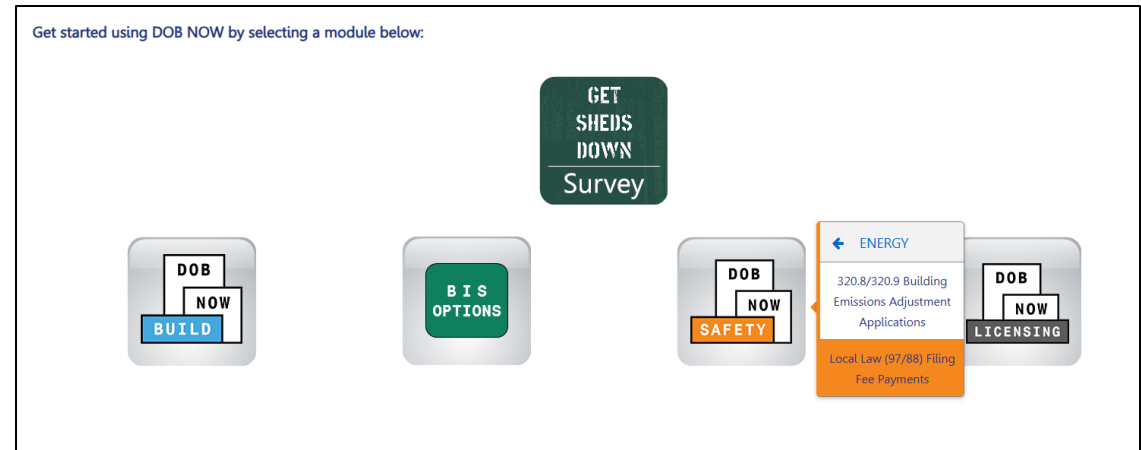
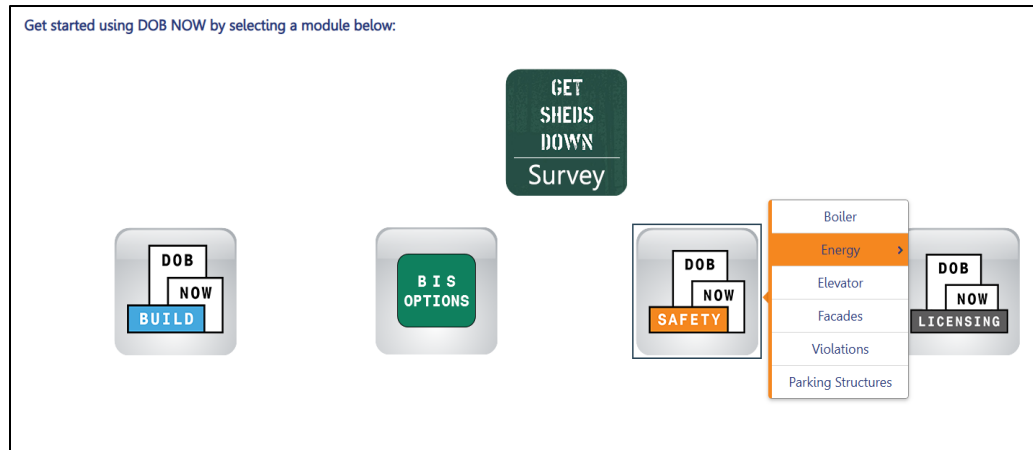
- Owner
- Owner Representative
- Service Provider (RDP/RCxA)

DOB NOW Filing Fee Payment information and submitted emails are transferred to BEAM on a nightly basis. It is not possible to complete a BEAM report in one day.

DOB NOW Filing Fees for Local Law 97



- Navigate to the DOB Now login page at nyc.gov/dobnow, enter your NYC.ID email address in the Email field, and select **Login**. If you need to create an NYC.ID account, select **Create Account** or visit the [DOBNOW](#) for step-by-step instructions.
- After logging into DOB NOW, you will be greeted with the Welcome page displays. Hover over **DOB NOW: Safety** and click **Energy**.
- From the Energy sub-menu, select **Local Law 97/88 Filing Fee Payments**.



DOB NOW Filing Fees for Local Law 97



Select "+ Local Law 97 Payment"

The screenshot shows the NYC Department of Buildings Local Law Payments interface. At the top, there is a header with the 'DOB NOW SAFETY' logo and the text 'NYC Department of Buildings Local Law Payments'. Below the header, there are two buttons: '+ Local Law 97 Payment' (highlighted with a red box) and '+ Local Law 88 Payment'. Underneath these buttons are two tabs: 'Local Law 97 Fee Payments' and 'Local Law 88 Fee Payments'. The 'Local Law 97 Fee Payments' tab is active, showing a table with the following data:

View...	Actions	Transaction Number	Transaction Status	Payment Status
	Select Action: <input type="button" value="v"/>	LL97000001041	Pre-filing	Due

DOB NOW Filing Fees for Local Law 97



In the **Stakeholders** section, select your role: **Owner** or **Owner's Representative**. The information of the logged in user will auto-populate in the selected section. **Owner** information is required.

- To change the name or address, select **Manage/Associate Licenses** from the person icon in the top right corner of the screen.
- If the logged in user is an Owner's Representative, enter the email address associated with the NYC.ID account of the owner on the Owner Information tab. The grayed-out fields will auto-populate from the DOB NOW profile associated with the NYC.ID account.

NOTE: To submit a compliance report in BEAM, you must first pay your filing fee and create an account in BEAM using **one of the following emails provided here: Owner, Owner's Representative, or Service Provider (RDP/RCxA)**. Only these emails will allow you to access your building profile in BEAM. You **must** add all three email addresses by clicking either the Owner information or the Owner's Representative tabs.

DOB NOW Filing Fees for Local Law 97



Under **Owner Information**, select the **Owner Type**.

- The following owner types are fee exempt: Non-profit organization, NYC Agency, NYCHA/HHC Owned and Operated, Other Government Owned and Operated, School Construction Authority.
- Fee-exempt owners are exempt from payment but still must complete these payment steps to get the Payment Confirmation Number to be entered in the Reporting Portal.
- If a fee exempt owner type is selected, the NYC Department of Finance Property Information must indicate that the Tentative or Final Assessment Roll assessed value is zero. Go to nyc.gov/nycproperty to print proof of exemption and upload it in the Reporting Portal with your report.

The screenshot shows a web form titled "Stakeholders*" with a right-pointing arrow. Below the title is the question "Are you an:" followed by two radio button options: "Owner" (which is selected and highlighted with a red box) and "Owner's Representative (also provide Owner Information)". Below this are two tabs: "Owner Information*" (active) and "Owner's Representative". The "Owner Information*" section contains several input fields: "Email*" (with placeholder "Please enter email address"), "Owner Type*" (a dropdown menu with "Select Type:" and a downward arrow, highlighted with a red box), "Service Provider (RDP/RCxA) email address", "First Name", "Middle Initial", "Last Name", "Business Name*", "Business Address*", "City*", "State*", "Zip Code*", and "Business Telephone".

DOB NOW Filing Fees for Local Law 97



- Select **Article 320** to indicate your compliance pathway. Compliance requirements can be confirmed on the [LL97 Covered Buildings List](#).
- Select **Yes** when asked whether you will be filing a compliance report in the LL97 Reporting Portal and select **2024** as your Report Year.

A screenshot of a web form titled "Transaction Information*" with a checkmark and arrow icon in the top right corner. The form contains the following fields:

- A question: "Which article under Local Law 97 applies to your building?*" with a note "(This information can be found on the LL97 Covered Buildings list.)". Below this are two radio button options: "Article 320" (which is selected) and "Article 321".
- A question: "Will you be filing a compliance report in the LL97 Reporting Portal?*" with two radio button options: "Yes" (which is selected) and "No".
- A "Report Year*" dropdown menu with "2024" selected.

DOB NOW Filing Fees for Local Law 97



- Select **Annual building emissions report (28-320.7: RCNY 103-14(B))** and **select all deductions or alternatives** that apply for your property.

Article 320 Information*

What type of Article 320 compliance report will you be filing in the LL97 Reporting Portal?*

Annual building emissions report (28-320.3.7; RCNY 103-14(b))

Good Faith Efforts report (RCNY 103-14(i)(2))

Unexpected or Unforeseeable Event (RCNY 103-14(i)(1))

Select all that apply to the Article 320*

<input type="checkbox"/> Shares Energy Service (RCNY 103-14 (b)(4))	<input type="checkbox"/> Time of Use Methodology (RCNY 103-14 (d)(3)(iii))
<input type="checkbox"/> Beneficial Electrification (RCNY 103-14 (d)(3)(vii))	<input type="checkbox"/> Qualified generation facilities (RCNY 103-14 (d)(3)(vi)(e))
<input type="checkbox"/> Distributed Energy Resources (i.e., solar, storage, fuel cell) (RCNY 103-14 (d)(3)(vi); RCNY 103-14(e)(2))	<input type="checkbox"/> None

DOB NOW Filing Fees for Local Law 97



Save your information by clicking the Save button. In the Property Information section, enter the Borough, Block and Lot and click Search & Add.

Property Information* ▼

Select the BIN(s) for which you are filing a single LL88 report.

Borough, Block, Lot

Borough* ▼

Block*

Lot*

Q Search & Add

DOB NOW Filing Fees for Local Law 97



- In the **Building Identification Number** pop-up window, check the box(es) by the BIN(s) for this payment then select **Select & Add**.

Building Identification Number

	BIN	Address	Borough
<input checked="" type="checkbox"/>	1028159	125 COLUMBUS AVENUE	MANHATTAN

Total Items: 1

1 / 1 Items Per Page 10 1 - 1 of 1 items

Select & Add 1 Cancel

DOB NOW Filing Fees for Local Law 97



- The property information will then be listed in a grid under the Search & Add button and can be removed by selecting the trash icon. If selections are changed in the Transaction Information section after an address has been added, the system will remove the address and it will need to be re-entered.
- Select **Yes** to confirm the BIN(s) has either a single owner or the property is a co-op or condo. Enter any **Related Payment Confirmation Number** (any payment that has already been processed in DOB NOW: *Safety* for the same property)

Action	BIN	Address	Borough	Block	Lot
	1028159	125 COLUMBUS AVENUE	MANHATTAN	1118	1

Is the selected BIN(s) associated with a single owner or is the property a co-op or condo?* Yes No

Related Payment Confirmation Number (any payment that has already been processed in DOB NOW: *Safety* for the same property).

Separate each by a comma ","

Step 6: Submit Payment

- For all non-fee-exempt buildings, the Proceed to Pay button will display the payment amount. Click **Proceed to Pay** and then **Pay Now**. A CityPay window will open in a new window/tab where payment is made by selecting the Check or Credit Card tab. See the [DOB NOW Payments CityPay Manual](#) for step-by-step instructions. for step-by-step instructions.

Payment Confirmation

Are you sure you want to make a payment of \$615.00?

eCheck payments can take up to 10 days to process. The transaction will not be complete until the payment is processed.

Please confirm that your pop-up blocker is turned off before clicking on the Pay Now button.

Pay Now Cancel

Submit and Pay



After a credit card/PayPal/Venmo or eCheck payment is submitted in City Pay, receipt details will be provided that show a receipt number. This is NOT the receipt number to be entered in the reporting portal.

Return to the DOB NOW window and for credit card/PayPal/Venmo payments you will see a notification with a **Payment Confirmation Number**. This is the number to be submitted in the Reporting Portal, and it will also be sent to you by email.

DOB
NOW
SAFETY

Local Law 97 Fee Payments

Receipt Details

Transaction Number: LL97000002239 Date Paid: 01/23/2025
Invoice Number: 10100287740 Total Amount Paid: \$306.00
Receipt Number: CPY301705351

BINs

BIN	Address	Borough	Block	Lot
1001199	45 JOHN STREET	MANHATTAN	78	7508

Notification

Payment has been processed.

Payment Confirmation Number: 97ADJ7FC2000002239

Enter this Confirmation Number in the Reporting Portal. An email notification has also been sent with this Confirmation Number.

OK

Submit and Pay



For payments by eCheck, the status of the transaction will change to **Pending Payment Verification**. The **Payment Confirmation Number** will be sent by email when the payment clears (up to 10 business days after it is submitted).

The **Payment Confirmation Number** can be viewed on your dashboard once the Transaction Status is Submitted. To view all transaction details, double click on the transaction number to open it. From the Actions column, you can delete any transaction in Pre-Filing status.

The screenshot shows the NYC Department of Buildings Local Law Payments dashboard. At the top, there is a header with the NYC Department of Buildings logo and the text 'Local Law Payments'. Below the header, there are two buttons: '+ Local Law 97 Payment' and '+ Local Law 88 Payment'. Underneath these buttons, there are two tabs: 'Local Law 97 Fee Payments' and 'Local Law 88 Fee Payments'. The main content area is a table with the following columns: View..., Actions, Transaction Number, Transaction Status, Payment Status, Payment Confirmation Number, Article, Amount Paid, Amount Due, and Owner. The 'Payment Confirmation Number' column is highlighted with a red box. The table contains one row of data with the following values: View..., Select Action: (dropdown), LL97000002239, Submitted, Paid, 97ADJ7FC2000002239, 20, \$300.00, \$0.00, and u unduru.

View...	Actions	Transaction Number	Transaction Status	Payment Status	Payment Confirmation Number	Article	Amount Paid	Amount Due	Owner
	Select Action: (dropdown)	LL97000002239	Submitted	Paid	97ADJ7FC2000002239	20	\$300.00	\$0.00	u unduru

Share ESPM benchmarking data with BEAM



Article 320 and Article 321 Compliance Reports require that annual energy use data be provided through Energy Star Portfolio Manager (ESPM). Please consult the [ESPM User Guide](#). This process includes:

- Benchmarking on ESPM, including account creation, adding properties, and uploading utility data.
- Sharing ESPM data with BEAM, including connecting with NYC DOB on ESPM and sharing your property to BEAM.

Covered buildings subject to LL84 benchmarking will have already been recording energy consumption via ESPM since 2013. Buildings that are covered under LL97 but not covered under LL84 will need to start using ESPM.

Once connected, you can view your property energy use data in BEAM by visiting the [Inventory](#) page and selecting the [View by Property](#) tab.

DEMO – Article 320

DEMO – Article 321

DEMO – Complex

I. DOB NOW – ESPM – BEAM

II. Solar Deduction

A. Off-Site

B. On-Site

III. Storage Deduction

A. Off-Site

B. On-Site

IV. Natural Gas-Powered Fuel Cells

A. Installed Pre-1/19/2023

B. Installed Post-1/19/2023

V. Beneficial Electrification

A. Beneficial Electrification Deemed Approach

B. Beneficial Electrification Metered Approach

C. Beneficial Electrification Banking Credits

VI. Time-Of-Use

VII. Campus-Style

A. Energy

B. Electricity

VIII. Combined Heat and Power

IX. Alternative Fuels

X. Biofuel Coefficient

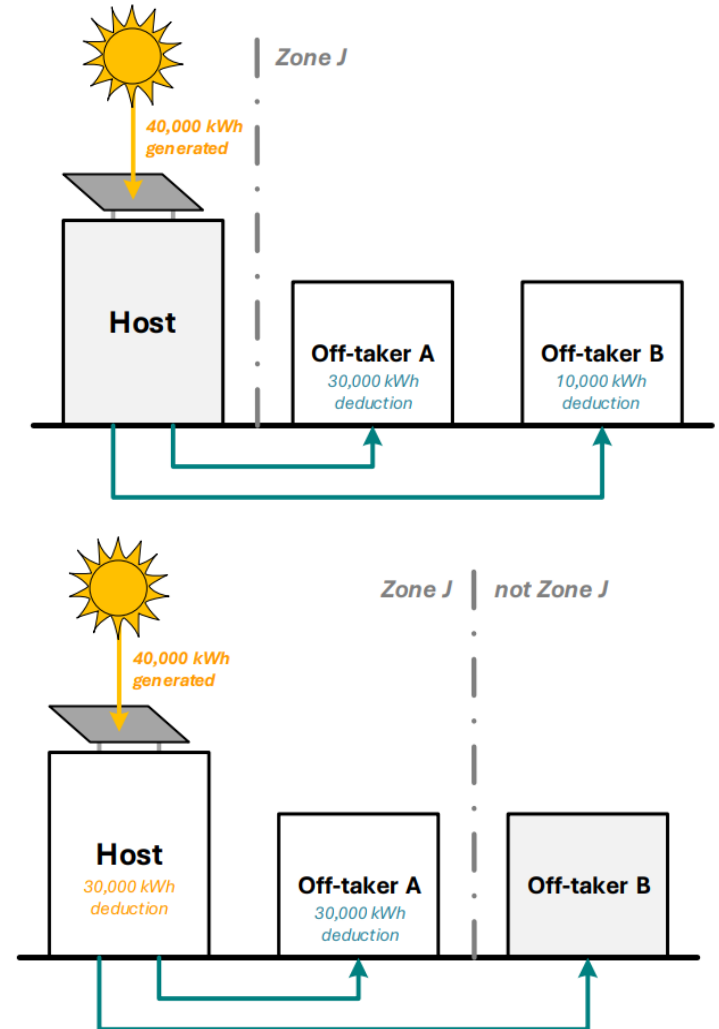
II. Solar Deduction: Background

To incentivize their installation of Clean Distributed Energy Resources (CDERs) in the first compliance period (CY2024-29):

- LL97 allows the electricity associated with **solar** and battery storage systems to be deducted from reported electricity use twice
 - once at the point of receipt (POR) and
 - once at the point of delivery (POD).
- The POR for the CDER can be referred to as the **Host**, while the POR for the CDER can be referred to as the **Off-taker**.

Although Host and Off-takers do not have to be LL97 covered buildings, nor are they required to be within NYC, only electricity delivered to Off-takers within Zone J are eligible to be counted towards deductions.

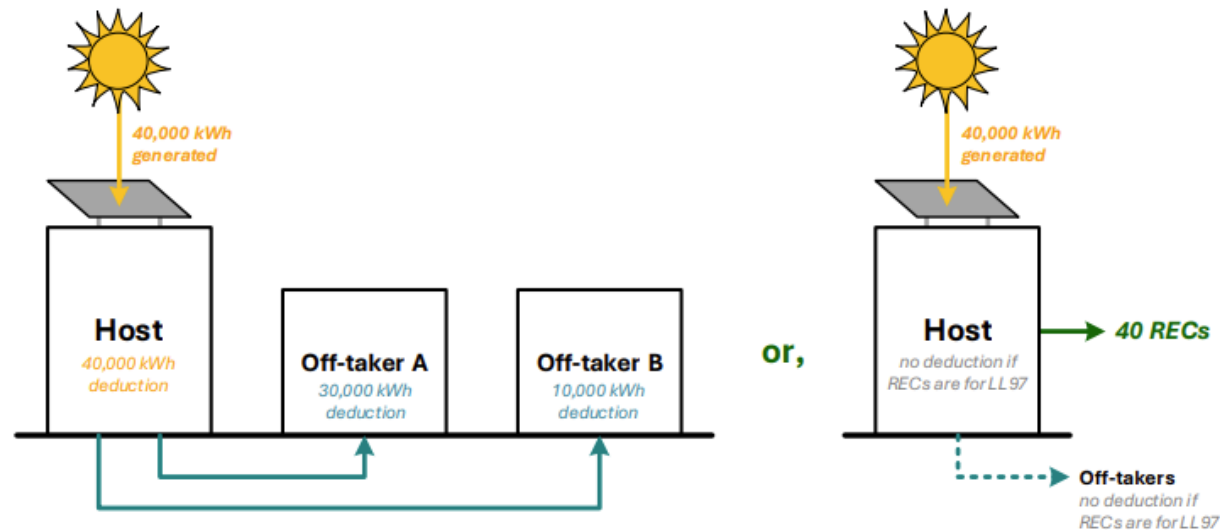
In addition, only buildings located within Zone J may take deductions as well. See the [Article 320 Info Guide](#) for more detailed information.



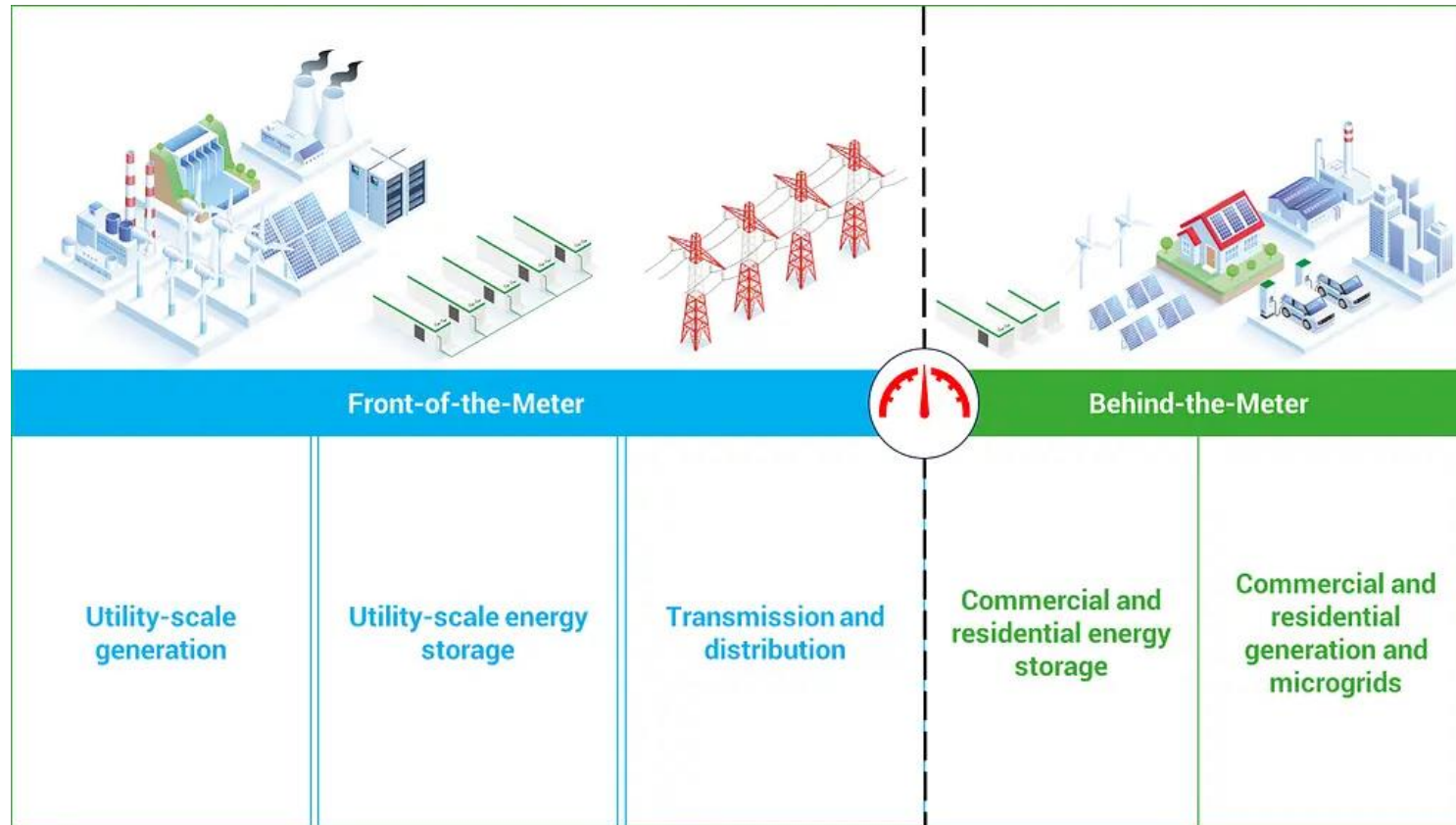
II. Solar Deduction: Background

The most straightforward solar deduction is calculated using the total electricity output of a solar array (that feeds into Zone J) in a given reporting year. This net output number, in kWh, can first be deducted from the Host's electricity consumption in their LL97 compliance report. Then, each Off-taker who receives that output can use an emissions coefficient of zero for the received solar-generated electricity, so that such electricity is effectively deducted from their emissions calculations.

An alternate type of solar deduction uses a Time-of-Use (TOU) approach, matching hourly solar production with corresponding hourly emissions coefficients. Guidance on this approach can be found on the following slides.



II. Solar Deduction: Background



II. Solar Deduction: Template



Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:

Reason for disaggregating data:

Key:

User Input
User Input or Output from Previous Tab
Result / BEAM Input
Calculated Value

Building Address:

BIN:

BBL:

Building Owner:

Templates filled out by:

Company:

Title with Company:

Date completed:

9/11

Template	RCNY 103-14 Formula	Tab Name	Select if Applicable
Solar Credit	----	Solar Credit	Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Applicable

Generate Templates

II. Solar Deduction: Template

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:

Reason for disaggregating data:

Key:

User Input
User Input or Output from Previous Tab
Result / BEAM Input
Calculated Value

Building Address:	
BIN:	
BBL:	
Building Owner:	
Templates filled out by:	
Company:	
Title with Company:	
Date completed:	

Template	RCNY 103-14 Formula	Tab Name	Select if Applicable
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Beneficial Electrification (Metered)	----	B.E. - Metered	Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
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Generate Templates

II. Solar Deduction: Template



Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:

Reason for disaggregating data:

Key:

User Input
User Input or Output from Previous Tab
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Calculated Value

Building Address:

BIN:

Building Owner:

Templates filled out by:

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Title with Company:

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1/11

Template	RCNY 103-14 Formula	Tab Name	Select if Applicable
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 - A. Off-Site**
 - B. On-Site
- III. Storage Deduction
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 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
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 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

II(A). Solar Deduction (Off-Site)

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when prompted to add a **solar deduction**.

Would you like to add a solar deduction?

Yes

- Confirm that the offsite solar project feeds into [Zone J](#) (New York City). Only electricity that is delivered to Off-takers located within Zone J may be counted towards deductions.
- Enter the electricity consumption associated with the solar system you are claiming as a deduction in kWh.

Enter the annual solar system electric usage you are claiming as the 'oftaker deduction' (in kWh):

The value entered should be negative.

II(A). Solar Deduction (Off-Site)

- Upload supporting documentation for the offsite solar project following this [template](#), including:
 - 1. Annual metered data for consumed solar electricity (kWh/yr)**
 - Whether the solar array is part of a Power Purchase Agreement (“PPA”), which is when the array is owned by a third party rather than by the building owner, does not affect how Host and Off-taker deductions are assigned.
 - 2. BINs of Host**
 - When solar-generated electricity is exported to the grid, there can be no Off-taker deductions, only a Host deduction.
 - 3. Confirmation that no RECs were created.**
 - If the Host chooses to register the generated solar kWh as RECs, there can be neither a Host deduction nor an Off-taker deduction.

Please upload supporting documentation for the solar project. Please make sure to indicate whether the project is onsite or offsite.

No file chosen

II. Solar Deduction: Template

Solar electricity produced on-site as a Host is considered emissions-free electricity

- If the electricity is produced **Front of the Meter**, then this amount should be **subtracted** from total metered electricity consumption
- If the electricity is produced **Back of the Meter**, then this amount has **already been subtracted** from the total metered electricity consumption

Solar electricity consumed on-site, from electricity produced as either the Host or as an off-taker, is also considered emissions-free electricity

<u>INSTRUCTIONS:</u>	Copy Tab
Step 1 - Enter solar generated on-site from Front of the Meter. This amount of electricity is <i>subtracted</i> from the total annual electricity consumption.	Emissions Coefficient: <input type="text" value="0.000288962"/> tCO ₂ e/kWh
Step 2 - Enter solar generated on-site from Back of the Meter. This amount of electricity has <i>already</i> been subtracted from the total annual electricity consumption.	Solar electricity generated on-site (front of the meter): <input type="text" value=""/>
	Solar electricity generated on-site (back of the meter): <input type="text" value=""/>
	Solar electricity consumed on-site (including imports): <input type="text" value=""/>
Step 3 - Enter the total amount of solar electricity consumed on-site.	Electricity deduction: <input type="text" value="0"/> kWh

II. Solar Deduction: Template

1. Would you like to add a solar deduction?

Yes

Enter the annual solar system electric usage you are claiming as the 'total deduction' (in kWh):

0

The value entered should be negative.

Please upload supporting documentation for the solar project. Please make sure to indicate whether the project is onsite or offsite.

No file chosen

This is a required field. **DOB will provide templates.**

Documentation that should be submitted to the Department in support of **Host solar deductions** will include:

- Peak system capacity (kW)
- Annual metered data for generated solar electricity (kWh/yr)
- Description of grid interconnection if applicable, including participation in Net Metering or Value Stack (see below)
- BINs of Off-takers and electricity sent to each one, if applicable
- Confirmation that no RECs were created

Documentation that should be submitted to the Department in support of **Off-taker solar deductions** will include:

- Annual metered data for consumed solar electricity (kWh/yr)
- BIN of Host
- Confirmation that no RECs were created

II. Solar Deduction: Template

Emissions Coefficient:	<input type="text" value="0.000288962"/>	tCO2e/kWh
Solar electricity generated on-site (front of the meter):	<input type="text"/>	kWh
Solar electricity generated on-site (back of the meter):	<input type="text"/>	kWh
Solar electricity consumed on-site (including imports):	<input type="text" value="30,000"/>	kWh
Electricity deduction:	<input type="text" value="30,000"/>	kWh

1. Would you like to add a solar deduction?

Yes

Enter the annual solar system electric usage you are claiming as the 'total deduction' (in kWh):

The value entered should be negative.

Please upload supporting documentation for the solar project. Please make sure to indicate whether the project is onsite or offsite.

No file chosen

This is a required field. **DOB will provide templates.**

Documentation that should be submitted to the Department in support of **Host solar deductions** will include:

- Peak system capacity (kW)
- Annual metered data for generated solar electricity (kWh/yr)
- Description of grid interconnection if applicable, including participation in Net Metering or Value Stack (see below)
- BINs of Off-takers and electricity sent to each one, if applicable
- Confirmation that no RECs were created

Documentation that should be submitted to the Department in support of **Off-taker solar deductions** will include:

- Annual metered data for consumed solar electricity (kWh/yr)
- BIN of Host
- Confirmation that no RECs were created

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- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

II(B). Solar Deduction (On-Site)

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when prompted to add a **solar deduction**.

Would you like to add a solar deduction?

Yes

- Enter the electricity production by the solar system you are claiming as a deduction in kWh.

Enter the annual solar system electric usage you are claiming as the 'host deduction' (in kWh):

The value entered should be negative.

II(B). Solar Deduction (On-Site)

- Upload supporting documentation for the onsite solar project, including:
 1. **Peak system capacity (kW)**
 2. **Annual metered data for generated solar electricity (kWh/yr).**
 - Host deductions may still be taken when a solar array is front-of-the-meter (“FTM”).
 - Whether the solar array is part of a Power Purchase Agreement (“PPA”), which is when the array is owned by a third party rather than by the building owner, does not affect how Host and Off-taker deductions are assigned.
 - Free-standing solar arrays that are not on a building rooftop (e.g. solar canopies over an open parking lot) may have their Host deductions assigned to an adjacent building that is under the same owner, even if that building is on a different lot.
 3. **Description of grid interconnection if applicable, including participation in Net Metering or Value Stack**
 - If a solar array participates in the NYS Value of Distributed Energy Resources (“VDER”) program, or “Value Stack”, then evidence of this should be submitted with the LL97 deduction claim. If a building has a solar array that is small enough to use Net Metering, then there is a Host deduction but no Off-taker deduction.
 4. **BINs of Off-takers and electricity sent to each one, if applicable.**
 - When solar-generated electricity is exported to the grid, there can be no Off-taker deductions, only a Host deduction.
 5. **Confirmation that no RECs were created.**
 - If the Host chooses to register the generated solar kWh as RECs, there can be neither a Host deduction nor an Off-taker deduction.

Please upload supporting documentation for the solar project. Please make sure to indicate whether the project is onsite or offsite.

Choose File No file chosen

II. Solar Deduction: Template

Emissions Coefficient: 0.000288962 tCO₂e/kWh

Solar electricity generated on-site (front of the meter): 50,000 kWh

Solar electricity generated on-site (back of the meter): kWh

Solar electricity consumed on-site (including imports): 50,000 kWh

Electricity deduction: 100,000 kWh

1. Would you like to add a solar deduction?

Yes

Enter the annual solar system electric usage you are claiming as the 'total deduction' (in kWh):

100,000

The value entered should be negative.

Please upload supporting documentation for the solar project. Please make sure to indicate whether the project is onsite or offsite.

Choose File No file chosen

This is a required field. **DOB will provide templates.**

Documentation that should be submitted to the Department in support of **Host solar deductions** will include:

- Peak system capacity (kW)
- Annual metered data for generated solar electricity (kWh/yr)
- Description of grid interconnection if applicable, including participation in Net Metering or Value Stack (see below)
- BINs of Off-takers and electricity sent to each one, if applicable
- Confirmation that no RECs were created

Documentation that should be submitted to the Department in support of **Off-taker solar deductions** will include:

- Annual metered data for consumed solar electricity (kWh/yr)
- BIN of Host
- Confirmation that no RECs were created

II. Solar Deduction: Template

50,000 kWh of electricity produced on-site

Front of the Meter

Electricity exported to the grid

Emissions Coefficient:	0.000288962	tCO ₂ e/kWh
Solar electricity generated on-site (front of the meter):	50,000	kWh
Solar electricity generated on-site (back of the meter):		kWh
Solar electricity consumed on-site (including imports):	0	kWh

Electricity deduction: 50,000 kWh

25,000 kWh of electricity produced on-site

Back of the Meter

Electricity consumed on-site

Emissions Coefficient:	0.000288962	tCO ₂ e/kWh
Solar electricity generated on-site (front of the meter):		kWh
Solar electricity generated on-site (back of the meter):	25,000	kWh
Solar electricity consumed on-site (including imports):	25,000	kWh

Electricity deduction: 25,000 kWh

I. DOB NOW – ESPM – BEAM

II. Solar Deduction

A. Off-Site

B. On-Site

III. Storage Deduction

A. Off-Site

B. On-Site

IV. Natural Gas-Powered Fuel Cells

A. Installed Pre-1/19/2023

B. Installed Post-1/19/2023

V. Beneficial Electrification

A. Beneficial Electrification Deemed Approach

B. Beneficial Electrification Metered Approach

C. Beneficial Electrification Banking Credits

VI. Time-Of-Use

VII. Campus-Style

A. Energy

B. Electricity

VIII. Combined Heat and Power

IX. Alternative Fuels

X. Biofuel Coefficient

III. Energy Storage Deduction: Background

Similar to solar, Energy Storage systems are able to claim credit as both the **Host** and the **Off-Taker**

- When Hosting an energy storage system **and** consuming the stored energy, the credit for Storage systems is **doubled**

Credit for On-Site storage systems may be calculated using one of two methods:

1. Total Emissions Spread (TES)
2. Time of Use (TOU)

Covered buildings that are consuming stored electricity from an energy storage system that is located Off-Site may use the TOU methodology. Alternative methodology for Off-Site storage systems based on daily average consumption is forthcoming from the DOB.

III. Energy Storage Deduction: Background

Time of Use: TOU can be used by either Host or Off-taker(s) of energy storage if

- **hourly data** for charging and discharging activity is available

Advantages of TOU include:

- providing larger emissions deductions if batteries are set up to charge during off-peak hours and discharge during peak hours;
- accounting for the fact that batteries have periods of inactivity where they are not being charged / discharged

Please see Time of Use section for more detail

III. Energy Storage Deduction: Background

Under the *TES* methodology, the size of the possible emissions deduction for on-site energy storage systems (where the Host is the only Off-taker) is determined using [Equation 103-14.17](#) from 1 RCNY §103-14:

$$ESS = CAP * TES * Eff$$

Where:

- ESS* = The GHG deduction from the energy storage system, in tCO₂e
- CAP* = The rated capacity of the system, in kWh
- TES* = A constant that is published by the Department for the year preceding the reporting year (see below)
- Eff* = Round-trip efficiency (also known as “RTE” or “η”), defined as 85% for CY2024-29

The Department calculates the *TES* constant every January by using the highest and the lowest hourly emissions coefficients (as taken from the published TOU template) from each of the 365 days of the previous calendar year:

$$TES_n = \sum_1^{365} (HM_n^{max} - HM_n^{min})$$

Where:

- HM_n^{max} = The average of the two highest hourly emissions coefficients (do not need to be consecutive) for each day of the previous year, in tCO₂e/kWh. The Department reserves the right to determine a non-zero minimum value for this variable.
- HM_n^{min} = The average of the two lowest emissions hours (do not need to be consecutive) for each day of the previous year, in tCO₂e/kWh.

Equation 103-14.17 assumes that a storage system is 100% active for all 8,760 hours of the calendar year, which is a valid assumption for on-site storage. Off-site storage may need modified calculations, which will be addressed in future Rulemaking and guidance.

III. Energy Storage Deduction: Background

Min:	0.000000015
Weighted Avg:	0.000281721
Max:	0.000857226

Time Stamp	Hour of the Year	Day of Year	Day of Year	Month	Day of Month	Hour of Day	Hourly Emissions (tCO ₂ e/kWh)	HM ₁ ^{max}	HM ₂ ^{max}	HM ₁ ^{min}	HM ₂ ^{min}
1/1/2024 0:00	1	1	1	1	1	1	0.000060159	0.00037269	0.000286109	0.00000664	0.00001037
1/1/2024 1:00	2	1		1	1	2	0.000024788				
1/1/2024 2:00	3	1		1	1	3	0.000014346				
1/1/2024 6:00	7	1		1	1	7	0.000063231				
1/1/2024 7:00	8	1		1	1	8	0.000039131				
1/1/2024 12:00	13	1		1	1	13	0.000090523				
1/1/2024 13:00	14	1		1	1	14	0.000090828				
1/1/2024 14:00	15	1		1	1	15	0.000105302				
1/1/2024 15:00	16	1		1	1	16	0.000148965				
1/1/2024 16:00	17	1		1	1	17	0.000246396				
1/1/2024 17:00	18	1		1	1	18	0.000372695				
1/1/2024 18:00	19	1		1	1	19	0.000286109				
1/1/2024 19:00	20	1		1	1	20	0.000224280				
1/1/2024 20:00	21	1		1	1	21	0.000184476				
1/1/2024 21:00	22	1		1	1	22	0.000154551				
1/1/2024 22:00	23	1		1	1	23	0.000111998				
1/1/2024 23:00	24	1		1	1	24	0.000095398				

III. Energy Storage Deduction: Background

Min:	0.000226440	0.000207532	0.000224285	0.000000015	0.000003273	0.000001969	-
Avg:	0.000492253	0.000463161	0.000477707	0.000097804	0.000105454	0.000101629	0.000376078
Max:	0.000857226	0.000623114	0.000736669	0.000615642	0.000615694	0.000615668	0.000587805
	Sum:						0.137268362

Day of Year	Month	Day of Month	HM ₁ ^{max}	HM ₂ ^{max}	HM _n ^{max}	HM ₁ ^{min}	HM ₂ ^{min}	HM _n ^{min}	(HM _n ^{max} - HM _n ^{min})
1	1	1	0.000372695	0.000286109	0.000329402	0.000006636	0.000010366	0.000008501	0.000320901
2	1	2	0.000431538	0.000322677	0.000377107	0.000016101	0.000029718	0.000022909	0.000354198
3	1	3	0.000281930	0.000281930	0.000281930	0.000010290	0.000015081	0.000012686	0.000269244
7	1	7	0.000526933	0.000473396	0.000500165	0.000154676	0.000158989	0.000156832	0.000343333
8	1	8	0.000579808	0.000579793	0.000579800	0.000106161	0.000121602	0.000113882	0.000465919
13	1	13	0.000281930	0.000281930	0.000281930	0.000281930	0.000281930	0.000281930	-
14	1	14	0.000281930	0.000281930	0.000281930	0.000000598	0.000005250	0.000002924	0.000279006
15	1	15	0.000487604	0.000415564	0.000451584	0.000004177	0.000004667	0.000004422	0.000447162
16	1	16	0.000857226	0.000616113	0.000736669	0.000183151	0.000187510	0.000185330	0.000551339
17	1	17	0.000583796	0.000583786	0.000583791	0.000424965	0.000428974	0.000426970	0.000156822
18	1	18	0.000583319	0.000583309	0.000583314	0.000337925	0.000341322	0.000339623	0.000243691
19	1	19	0.000400819	0.000384540	0.000392680	0.000024090	0.000032393	0.000028242	0.000364438
20	1	20	0.000453903	0.000435746	0.000444824	0.000068912	0.000072723	0.000070817	0.000374007
21	1	21	0.000349870	0.000336560	0.000343215	0.000025236	0.000025565	0.000025400	0.000317815
22	1	22	0.000582674	0.000582623	0.000582648	0.000581417	0.000581472	0.000581444	0.000001204
23	1	23	0.000581364	0.000581133	0.000581248	0.000372241	0.000409718	0.000390979	0.000190269
24	1	24	0.000580167	0.000580144	0.000580155	0.000288049	0.000292748	0.000290398	0.000289757
25	1	25	0.000480415	0.000460291	0.000470353	0.000063775	0.000063777	0.000063776	0.000406577
26	1	26	0.000290622	0.000286436	0.000288529	0.000002244	0.000026104	0.000014174	0.000274355
27	1	27	0.000295157	0.000287396	0.000291276	0.000022145	0.000028970	0.000025557	0.000265719
28	1	28	0.000360630	0.000359007	0.000359818	0.000077224	0.000078682	0.000077953	0.000281865
29	1	29	0.000579728	0.000460125	0.000519926	0.000064912	0.000068531	0.000066721	0.000453205
30	1	30	0.000579442	0.000579405	0.000579423	0.000191601	0.000203020	0.000197310	0.000382113
31	1	31	0.000578505	0.000578185	0.000578345	0.000265411	0.000267175	0.000266293	0.000312052

- I. DOB NOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site**
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

III(B). On-site Energy Storage Deduction

Unlike solar, there is no direct subtraction option for storage –the Host cannot simply subtract the supplied charging electricity from its total electricity consumption, and the Off-taker cannot simply exclude the received discharged electricity from their total electricity consumption.

*Hosts of energy storage can either follow the Time-Of-Use methodology [link to TOU guide] or use the Total Emissions Spread (“TES”) methodology to capture deductions from energy storage. **This section describes how to submit an off-site energy storage deduction following the TES methodology.***

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when prompted if you would you like to add a storage deduction?
- Select **Onsite Storage**

Would you like to add a storage deduction?

Yes

Is the storage project onsite or offsite?

Onsite storage

III(B). On-site Energy Storage Deduction

- Using the [template](#) calculate the deduction you are claiming in tCO₂e

Please enter the onsite storage deduction you are claiming in tCO₂e:

The value entered should be negative.

III(B). On-site Energy Storage Deduction

- Upload supporting documentation for the off-site energy storage deduction, including:
 1. **Storage system capacity (KWh)**
 2. **Metered data for battery electricity discharged, in kWh/year**
 3. **Description of grid interconnection if applicable, including participation in the "Value Stack"**
 - If a solar array participates in the NYS Value of Distributed Energy Resources program, aka “the Value Stack”, then evidence of this should be submitted together with the LL97 deduction claim.
 4. **BINs of Off-takers if applicable, along with electricity sent to each one**

Please upload supporting documentation for the storage project.

Choose File No file chosen

III(B). On-site Energy Storage Deduction



<u>Template</u>	<u>RCNY 103-14 Formula</u>	<u>Tab Name</u>	1/11 <u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

III(B). On-site Energy Storage Deduction

- Enter the rated capacity (kWh) of the energy storage system

Name	Variable	Value	Units	Equation
Production from On-Site storage system - if applicable				
Rated capacity of energy storage system	CAP	20,000	kWh	System dependant
Average Daily Discharge (kWh)	CAP	20,000	kWh/day	CAP
Roundtrip efficiency	RTE	85%	-	Constant
Total emissions spread	TES	0.13727	tCO2e/kWh/day	$TES_n = \sum_1^{365} (HM_n^{max} - HM_n^{min})$
GHG Emissions deduction	ESS	-2,333.56	tCO2e	ESS = CAP * TES * RTE
Summary				
Total GHG Emissions deduction	ESS	-4,667.12	tCO2e/yr	ESS = CAP * TES * RTE

III(B). On-site Energy Storage Deduction

2. Would you like to add a storage deduction?

Yes

Is the storage project onsite or offsite?

Onsite storage

Please enter the storage deduction you are claiming in tCO₂e:

-4,667.124

Please upload supporting documentation for the storage project.

Choose File No file chosen

- I. DOB NOW – ESPM – BEAM
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 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site**
 - B. On-Site
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 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

III(A). Off-site Energy Storage Deduction

Unlike solar, there is no direct subtraction option for storage –the Host cannot simply subtract the supplied charging electricity from its total electricity consumption, and the Off-taker cannot simply exclude the received discharged electricity from their total electricity consumption.

*Hosts of energy storage can either follow the Time-Of-Use methodology section or use the Total Emissions Spread (“TES”) methodology to capture deductions from energy storage. **This section describes how to submit an off-site energy storage deduction following the TES methodology.***

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when prompted if you would you like to add a storage deduction?
- Select **Offsite storage**

Would you like to add a storage deduction?
<input type="text" value="Yes"/>
Is the storage project onsite or offsite?
<input type="text" value="Offsite storage"/>

III(A). Off-site Energy Storage Deduction

- Using the [template](#) calculate the deduction you are claiming in tCO2e

Please enter the offsite storage deduction you are claiming in tCO2e:

The value entered should be negative.

III(A). Off-site Energy Storage Deduction

- Upload supporting documentation for the off-site energy storage deduction, including:
 1. **Metered data for battery electricity consumed, in kWh/yr**
 2. **BINs of Host**

Please upload supporting documentation for the storage project.

No file chosen

III(A). Off-site Energy Storage Deduction

1/11

<u>Template</u>	<u>RCNY 103-14 Formula</u>	<u>Tab Name</u>	<u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

III(A). Off-site Energy Storage Deduction

- Enter total amount of electricity consumed by the covered building from an **off-site** storage system

Name	Variable	Value	Units	Equation
Consumption from Off-Site storage system - if applicable				
Total Electricity consumed from off-site storage	CON	10,000	kWh/yr	System dependant
Average Daily Consumption (kWh)	CON_daily	27	kWh/day	$CON_daily = CON / 365$
Roundtrip efficiency	RTE	85%	-	Constant
Total emissions spread	TES	0.13727	tCO2e/kWh/day	$TES_n = \sum_1^{365} (HM_n^{max} - HM_n^{min})$
Summary				
Total GHG Emissions deduction	ESS	-3.20	tCO2e/yr	$ESS = CAP * TES * RTE$

III(A). Off-site Energy Storage Deduction

- Enter total amount of electricity consumed by the covered building from an **off-site** storage system

2. Would you like to add a storage deduction?

Yes

Is the storage project onsite or offsite?

Offsite storage

Please enter the storage deduction you are claiming in tCO₂e:

-3.197

Please upload supporting documentation for the storage project.

Choose File No file chosen

- I. DOB NOW – ESPM – BEAM
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 - A. Off-Site
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- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
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 - A. Installed Pre-1/19/2023**
 - B. Installed Post-1/19/2023
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 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

IV(A). Natural Gas-Powered Fuel Cells (Installed Pre-1/19/2023)

In reporting annual building emissions, an owner of a covered building that utilizes natural gas-powered fuel cells that commenced operation prior to January 19, 2023 may account for the differential emissions to be added to their annual building emissions.

An owner of a covered building must submit to the Department documentation of the natural gas consumed annually by the fuel cell, and the electricity generated by the natural gas-powered fuel cell annually during the calendar year for which emissions are being reported. Records for natural gas consumed and electricity generated by the fuel cell must be made available to the Department upon request.

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when asked whether you would like to add a coefficient change on the annual building emissions.
- Select **Fuel Cell (Pre 1/19/2023)** when prompted to select the type of coefficient change.

Would you like to add a deduction for Fuel Cells that commenced operation prior to January 19, 2023?

Yes

IV(A). Natural Gas-Powered Fuel Cells (Installed Pre-1/19/2023)

- Using the [template](#), calculate the annual natural gas-powered fuel cell deduction in tCO₂e
- Upload the [template](#) used to calculate your fuel cell deduction.

Please enter the fuel cell deduction you are claiming in tCO₂e:

The value entered should be negative.

Please upload supporting documentation for the fuel cell.

No file chosen

IV(A). Natural Gas-Powered Fuel Cells (Installed Pre-1/19/2023)

The differential emissions shall be calculated as follows for the calendar year being reported:

$$FCEM = (FCNG \times NGC) - (FCEL \times MGC) \quad (\text{Equation 103-14.12})$$

Table 103-14.1

Where:

- FCEM = the annual natural gas-powered fuel cell differential emissions in tCO₂e.
- FCNG = the annual natural gas consumed by the natural gas-powered fuel cell, in kBtu.
- NGC = the natural gas coefficient per this paragraph in units of tCO₂e per kBtu.
- MGC = the annual average marginal grid coefficient per Table 103-14.1.
- FCEL = the annual electricity generated by the natural gas-powered fuel cell, in kWh.

Year	MGC (tCO ₂ e/kWh)
2024	0.000247038
2025	0.000237178
2026	0.000191739
2027	0.000167898
2028	0.000129971
2029	0.000113712

IV(A). Natural Gas-Powered Fuel Cells (Installed Pre-1/19/2023)



<u>Template</u>	<u>RCNY 103-14 Forumla</u>	<u>Tab Name</u>	1/11 <u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

IV(A). Natural Gas-Powered Fuel Cells (Installed Pre-1/19/2023)



- Enter year of operation (CY2024)
- Enter total natural gas consumed by the fuel cell for the given year (kBtu)
- Enter total electricity generated by the fuel cell for the given year (kWh)

Year

Definition	Variable	Value	Units
Annual natural gas consumed by the natural gas-powered fuel cell	FCNG	100,353	kBtu
Annual electricity generated by the natural gas-powered fuel cell	FCEL	25,000	kWh
Natural gas coefficient	NGC	0.00005311	tCO2e/kBtu
Annual average marginal grid coefficient per Table 103-14.1	MGC	0.000247	tCO2e/kWh
Annual Natural gas-powered fuel cell differential emissions	FCEM	-0.846	tCO2e

103-14.12

Table 103-14.1

Year	MGC
2024	0.000247 tCO2e/kWh
2025	0.000237 tCO2e/kWh
2026	0.000192 tCO2e/kWh
2027	0.000168 tCO2e/kWh
2028	0.000123 tCO2e/kWh
2029	0.000114 tCO2e/kWh

IV(A). Natural Gas-Powered Fuel Cells (Installed Pre-1/19/2023)

3. Would you like to add a deduction for Fuel Cells that commenced operation prior to January 19, 2023?

Yes

Please enter the fuel cell deduction you are claiming in tCO₂e:

-0.846

The value entered should be negative.

Please upload supporting documentation for the fuel cell.

Choose File No file chosen

- I. DOB NOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023**
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

IV(B). Natural Gas-Powered Fuel Cells (Installed Post-1/19/2023)

Differential emissions from natural gas-powered fuel cells that commenced operation on or after January 19, 2023, are determined using Time of Use (TOU) to account for the operation of distributed energy resources.

- In your LL97 Deduction and Alternatives to Calculating Annual Building Emissions ticket, select **Yes** when asked whether you would like to use Time of Use (TOU) or a campus-style electric/energy system.

Would you like to use Time of Use (TOU) or a campus-style electric/energy system?

Yes



IV(B). Natural Gas-Powered Fuel Cells (Installed Post-1/19/2023)

- Using the [template](#), enter the Time of Use (TOU) coefficient in tCO₂e per kWh.

Please enter the Time of Use (TOU) coefficient in tCO₂e per kWh:

For more information about Time of Use methodology, please [visit this page](#).

IV(B). Natural Gas-Powered Fuel Cells (Installed Post-1/19/2023)

- Upload the following supporting documents:
 - TOU spreadsheet used to calculate your TOU coefficient
 - Hourly utility data reported from the utility.

Please upload supporting documentation for the Time of Use (TOU) coefficient change.

No file chosen

DOB will provide templates.

- I. DOB NOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023

V. Beneficial Electrification

- A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
 - VII. Campus-Style
 - A. Energy
 - B. Electricity
 - VIII. Combined Heat and Power
 - IX. Alternative Fuels
 - X. Biofuel Coefficient

V. Beneficial Electrification: Background

Beneficial Electrification - or the use of high efficiency electrical equipment to replace direct fossil fuel use or very low efficiency electric equipment - is a key strategy in the push to decarbonize buildings.

To incentivize installation, an owner may use the Beneficial Electrification coefficient in calculating GHG emissions resulting from the use of qualifying electric equipment. The annual electricity use for beneficial electrification shall be determined based on either a Metered Electric Use or Deemed Electric Use approach. GHG emission savings accrued from beneficial electrification may be banked for future use for the covered building in which the qualifying equipment was installed.

- Beneficial Electrification deduction can only be generated during the initial compliance period (CY2024-29).
- Beneficial Electrification deduction is taken against a building's total energy use, not just its electricity use.

V. Beneficial Electrification: Background

- Minimum equipment efficiencies required to qualify as BE are listed under the definition in 1 RCNY §103-14(a), along with corresponding test procedures
- Equipment not explicitly listed can still qualify as BE if such equipment has better than a 1.5 Coefficient of Performance (“COP”) at an outdoor dry bulb temperature of 5°F or below
 - Heat pumps are generally tested at a range of temperatures that may not include 5°F exactly, so any test result at $\leq 5^\circ\text{F}$ showing at least a 1.5 COP (as reported by the manufacturer) is acceptable
- Generally, equipment will need to use heat pump technology to qualify for BE. As noted in 1 RCNY §103-14(d)(4)(iii)(d), documentation must be submitted to the Department showing the installation date of any equipment used to calculate the BE deduction
- For installations requiring a work permit, such documentation can consist of the Letter of Completion (“LOC”) for the associated job filing and the Certificate of Compliance (“CoC”) for each piece of equipment.
 - For installations not requiring a work permit, such documentation can consist of paid itemized invoices, timestamped photographs, etc. The date of the CoC or the photograph counts as the date of installation.

- I. DOB NOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

A. Beneficial Electrification Deemed Approach

- B. Beneficial Electrification Metered Approach
- C. Beneficial Electrification Banking Credits

V(A). Beneficial Electrification Deemed Approach: Background

Deemed is a term that comes from energy contracts, where it describes an estimated rate that is used in the absence of fixed rate agreements. For LL97 BE purposes, the deemed electric use methodology produces a rigorous estimate of energy use, based on equipment capacity and average user demand, that precludes the need for separately metering equipment.

The **Deemed Electric Use approach is for individual equipment whose capacity is under 100 tons, or 1,200,000 btu/h** and where equipment meets the requirements of the minimum efficiencies and test procedures listed in [1 RCNY §103-14\(a\)](#). If your equipment's capacity is over 100 tons, or not explicitly cited in the table linked above, you must use the Metered Electric Use. Guidance on this approach can be found in the metered approach section.

When prompted to select whether the beneficial electrification project's annual electricity use will be determined based on a metered approach or deemed approach, select **Deemed Approach**. You may also select **Both metered and deemed approach**.

Would you like to add a beneficial electrification deduction?

Yes

Please select whether the beneficial electrification project's annual electricity use will be determined based on a metered approach or deemed approach.

Deemed Approach

For more information, please visit the [reporting requirements documentation](#).

V(A). Beneficial Electrification Deemed Approach

Use the [template](#) calculate your Beneficial Electrification Adjustment.

You must use tab **14.14** for air-source heat pumps (ASHPs) and **tab 14.15, 16** for heat pump water heaters (HPWHs).

- Enter the **total quantity** of deemed heat pump systems installed besides the **Quantity** field.
- In the table, enter the **number of like units, capacity at 5F (kBtu), Date of Installation, Building Type, Vintage/Space Type**, and if applicable, **System**. The table will then auto-populate the Beneficial Electrification credit for each system.
- Your total **Beneficial Electrification Adjustment** will populate in the blue cell in tCO₂e.

V(A). Beneficial Electrification Deemed Approach

- Enter the **Beneficial Electrification Adjustment** you are claiming as a deduction in tCO₂e. If you are claiming a Beneficial Electrification adjustment for both ASHPs and HPWHs, sum the Total Beneficial Electrification Adjustment from both types of projects.

Please enter the beneficial electrification deduction you are claiming in tCO₂e:

The value entered should be negative.

- *Guidance on the **Banking Credits** approach can be found on the following slides.*

Would you like to bank the emissions savings from beneficial electrification for future use?

V(A). Beneficial Electrification Deemed Approach

- Upload supporting documentation for beneficial electrification including:
 - The [template](#) used to calculate your beneficial electrification deduction.
 - Documentation must be submitted to DOB showing the installation date of any equipment used to calculate the beneficial electrification deduction. Such documentation must show that the individual equipment has capacity of under 100 tons.
 - For installations requiring a work permit, such documentation can consist of the Letter of Completion (“LOC”) for the associated job filing and the Certificate of Compliance (“CoC”) for each piece of equipment.
 - For installations not requiring a work permit, such documentation can consist of paid itemized invoices, timestamped photographs, etc. The date of the CoC or the photograph counts as the date of installation.

Please upload supporting documentation for the beneficial electrification project.

No file chosen

This is a required field. DOB will provide templates.

1 RCNY §103-14(d)(4)(iii)(b) explains how to derive deemed annual electricity use for **air-source heat pumps (“ASHPs”)** and **heat pump water heaters (“HPWHs”)**. Certain terms in the equations point to guidance outside the Rule, as outlined below:

- **ASHPs** are addressed in [Equation 103-14.14](#).
 - **EFLH**, or **Equivalent full-load hours** for the year, may be taken from tables in the NYS Department of Public Service (“DPS”) [Technical Resource Manual](#) (“TRM”), Appendix G.
 - The TRM is updated every January 1st; a link to Appendix G in the 2023 edition of the TRM is [here](#). For CY2024 reporting, the TRM effective January 1st, 2025 will need to be used.
 - **Heating EFLH** should be used for BE calculations, as it is heating equipment that is under consideration.
 - Definitions for occupancy groups, including the thresholds between Large/Small and High-rise/Low-rise, are in TRM Appendix A (link to 2023 Appendix A [here](#)).

V(A). Beneficial Electrification Deemed Approach



1/11

Select if Applicable

<u>Template</u>	<u>RCNY 103-14 Forumla</u>	<u>Tab Name</u>	<u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

V(A). Beneficial Electrification Deemed Approach



- Step 1 - Enter total quantity of deemed heat pumps and number of like units.
 - *Systems with the same capacity and installation date, serving the same building, may be entered as one (1) system for quantity, and total number of units entered for '# Like Units'.
- Step 2 - Enter individual system capacities at 5F (kBtu).
- Step 3 - Enter dates of installation.
- Step 4 - Enter Building type, Vintage/Space Type, and System type, as applicable.

	Credit	
Before 2027	-0.00130	tCO ₂ e/kWh
2027 - 2029	-0.00065	tCO ₂ e/kWh

DEEMED APPROACH

Quantity:

Total Credit: tCO₂e/yr

Unit #	# Like Units	HC			Date of Installation (XX/XX/XXXX)	Building Type	Vintage/Space Type	System	AS_de	EFLH	Credit (tCO ₂ e/kWh)	Credit (tCO ₂ e)
		COP at 5°F	Capacity at 5°F (kBtu/h)	Annual Consumption (kWh)					Equiv. Full Load Hours (hrs)			
1							N/A					

V(A). Beneficial Electrification Deemed Approach



DEEMED APPROACH

Quantity:

Total Credit: tCO₂e/yr

HC

AS_de

EFLH

Unit #	# Like Units	COP at 5°F	Capacity at 5°F (kBtu/h)	Date of Installation (XX/XX/XXXX)	Building Type	Vintage/Space Type	System	Annual Consumption (kWh)	Equiv. Full Load Hours (hrs)	Credit (tCO ₂ e/kWh)	Credit (tCO ₂ e)
1	10	1.5	12	1/1/2021	Large.Commercial	Large.Office	CAV.econ	4,621	1984	-0.0013	-60.1
2	1	1.55	36	1/1/2019	Small.Commercial	Small.Office	N/A	2,935	420	-0.0013	-3.8
3	1	1.6	24	3/5/2022	Multi.Family.High.Rise	Pre.war.uninsulated.brick	N/A	4,598	987	-0.0013	-6.0
4	1	1.4	48	1/1/2016	Multi.Family.Low.Rise	From.1979.Through.2006	N/A	6,568	705	0	0.0

V(A). Beneficial Electrification Deemed Approach

4. Would you like to add a beneficial electrification deduction?

Yes

Please select whether the beneficial electrification project's annual electricity use will be determined based on a metered approach or deemed approach.

Deemed Approach

For more information, please visit the [reporting requirements documentation](#).

Please enter the beneficial electrification deduction you are claiming in tCO₂e:

-69.865

The value entered should be negative.

Would you like to bank the emissions savings from beneficial electrification for future use?

Yes / No

Please upload supporting documentation for the beneficial electrification project.

Choose File No file chosen

This is a required field. **DOB will provide templates.**

V(A). Beneficial Electrification Deemed Approach

HPWHs are addressed in [Equations 103-14.15 and 103-14.16](#).

- **GPD**, or **Gallons per day**, is taken from the TRM section on HPWHs (link to 2023 edition [here](#)).
- The TRM says that GPD shall be “as defined in the... Commercial Storage Tank Water Heater [section]”, where there is a table listing GPDs for various occupancies/building types (link to 2023 table [here](#)).
- Combining the TRM GPD table with the Peak Service Hot Water Load table under Equation 103-14.16 gives:

Occupancy / Building Type	GPD Rate	Peak Load Factor	Occupancy Metric
Assembly	7.02	0.31	per 1,000 square feet
Auto Repair	4.89	0.216	per 1,000 sf
Big Box Retail	3.43	0.151	per 1,000 sf
Community College	1.9	0.084	per person
Dormitory	17.2	0.759	per resident
Elementary School	0.5	0.022	per student
Fast Food Restaurant	500	22.07	per restaurant
Full-Service Restaurant	2500	110.4	per restaurant
Grocery	3.43	0.151	per 1,000 sf
High School, Middle School	1.9	0.084	per person
Hospital	54.42	2.403	per 1,000 sf
Hotel / Motel	45.52	2.01	per 1,000 sf
Office, Large / Small	1.1	0.049	per person
Light Industrial	4.89	0.216	per 1,000 sf
Multifamily High-Rise, Low-Rise	46	2.031	per dwelling unit
Refrigerated Warehouse	0.93	0.041	per 1,000 sf
Religious	7.02	0.31	per 1,000 sf
Retail, Large / Small	3.43	0.151	per 1,000 sf
University	0.5	0.022	per student
Warehouse	0.93	0.041	per 1,000 sf
Other	4.89	0.216	per 1,000 sf

V(A). Beneficial Electrification Deemed Approach

<u>Template</u>	<u>RCNY 103-14 Formula</u>	<u>Tab Name</u>	1/11 <u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

V(A). Beneficial Electrification Deemed Approach

- Step 1 - Enter total quantity of deemed water heaters and number of like units.
*Systems with the same capacity and installation date, serving the same building, may be entered as one (1) system for quantity, and total number of units entered for '# Like Units'.
- Step 2 - Enter individual system capacities (kBtu).
- Step 3 - Enter dates of installation.
- Step 4 - Enter building occupancy type and relevant occupancy metric.
*Metric is dependent on occupancy type (i.e., for PPL, enter total # of people).

V(A). Beneficial Electrification Deemed Approach



Quantity:

Total Credit: tCO₂e/yr

Unit #	# Like Units	Capacity (kBtu/h)	Date of Installation (XX/XX/XXXX)	Occupancy	Occupancy Metric	Metric	WH_de	GPD	CF	PL	Credit (tCO ₂ e/kWh)	Credit (tCO ₂ e)	
							Annual Consumption (kWh)	HW Consumption (gal/day)	HPWH Capacity Factor	Peak Load			
1	1	8	1/1/2023	Office	PPL	350	2,550	385	0.47	17	0.049	-0.00130	-3.3
2	1	12	1/1/2024	Multifamily	Dwelling Units	24	2,886	826	0.25	48.744	2.031	-0.00130	-3.8
3	2	16	1/1/2021	Retail	SF	60,000	2,922	206	1.00	9.06	0.151	-0.00130	-7.6

V(A). Beneficial Electrification Deemed Approach

4. Would you like to add a beneficial electrification deduction?

Yes

Please select whether the beneficial electrification project's annual electricity use will be determined based on a metered approach or deemed approach.

Deemed Approach

For more information, please visit the [reporting requirements documentation](#).

Please enter the beneficial electrification deduction you are claiming in tCO₂e:

-14.665

The value entered should be negative.

Would you like to bank the emissions savings from beneficial electrification for future use?

Yes / No

Please upload supporting documentation for the beneficial electrification project.

Choose File No file chosen

This is a required field. **DOB will provide templates.**

- I. DOBNOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach**
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

The **Metered Electric Use Approach** is for individual equipment whose capacity is over 100 tons, or 1,200,000 btu/h, as well as for equipment whose test procedures are not listed in [1 RCNY §103-14\(a\)](#) (e.g., water-source heat pumps, heat pump chillers). The Metered Electric Use methodology requires equipment to have its energy supply separately measured on an hourly, monthly, or annual basis using revenue-grade meters or energy tracking software. To qualify for this approach, the installation:

- must be separately metered by the utility; or
- must be separately metered or sub-metered by the owner in a manner that produces auditable data aligned with the reporting year; or
- must be capable of and configured to produce data that records the electricity supplied to the equipment over the course of the reporting year by means of hardware and software integrated with the equipment.

If your equipment's capacity is under 100 tons, you must use the Deemed Electric Use Approach. Guidance on this approach can be found on the following slides.

V(B). Beneficial Electrification Metered Approach

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when prompted to add a **Beneficial Electrification Deduction**.
- When prompted to select whether the beneficial electrification project's annual electricity use will be determined based on a metered approach or deemed approach, select **Metered Approach**. You may also select **Both metered and deemed approach**.

Would you like to add a beneficial electrification deduction?

Yes

Please select whether the beneficial electrification project's annual electricity use will be determined based on a metered approach or deemed approach.

Metered Approach

For more information, please visit the [reporting requirements documentation](#).

V(B). Beneficial Electrification Metered Approach

Use the [template](#) to calculate your Beneficial Electrification Adjustment.

- Enter the **total quantity** of metered heat pump systems installed besides the **Quantity** field. Systems on the same meter and installed on the same date may be entered as one system.
- In the table, enter the **Metered Consumption (kWh)**, **Peak Capacity (kBtu)**, and **Date of Installation**. The table will then auto-populate the Beneficial Electrification credit for each system.
- Your total **Beneficial Electrification Adjustment** will populate in the blue cell in tCO₂e.

V(B). Beneficial Electrification Metered Approach

- In BEAM, enter the **Beneficial Electrification Adjustment** you are claiming as a deduction in tCO₂e.

Please enter the beneficial electrification deduction you are claiming in tCO₂e:

The value entered should be negative.

- *Guidance on the **Banking Credits** approach can be found on the following slides.*

Would you like to bank the emissions savings from beneficial electrification for future use?

V(B). Beneficial Electrification Metered Approach

- Upload supporting documentation for beneficial electrification including:
 - The [template](#) used to calculate your beneficial electrification deduction.
 - Documentation must be submitted to the Department showing the installation date of any equipment used to calculate the beneficial electrification deduction. Such documentation must show that the individual equipment has capacity of over 100 tons, or that the equipment’s test procedures are not listed in the Rule (e.g., water-source heat pumps, heat pump chillers).
 - For installations requiring a work permit, such documentation can consist of the Letter of Completion (“LOC”) for the associated job filing and the Certificate of Compliance (“CoC”) for each piece of equipment.
 - For installations not requiring a work permit, such documentation can consist of paid itemized invoices, timestamped photographs, etc. The date of the CoC or the photograph counts as the date of installation.

Please upload supporting documentation for the beneficial electrification project.

No file chosen

This is a required field. DOB will provide templates.

V(B). Beneficial Electrification Metered Approach

<u>Template</u>	<u>RCNY 103-14 Formula</u>	<u>Tab Name</u>	1/11 <u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

V(B). Beneficial Electrification Metered Approach

- Step 1 - Enter total quantity of metered heat pumps.
 - *Systems on the same meter and installed on the same date may be entered as one (1) system.
- Step 2 - Enter heat pump capacity.
 - *When entering multiple systems on the same meter, enter aggregate heat pump capacity.
- Step 3 - Enter dates of installation.

V(B). Beneficial Electrification Metered Approach



METERED APPROACH

Quantity:

Total Credit: tCO2e/yr

Unit #	COP at 5°F	Metered Consumption (kWh)	Peak Capacity (kBtu)	Date of Installation (XX/XX/XXXX)	Credit (tCO2e/kWh)	Credit (tCO2e)
1	1.50	70,000	120.0	1/1/2022	-0.0013	-91.000
2	1.55	80,000	180.0	1/1/2021	-0.0013	-104.000
3	1.60	1,200,000	240.0	1/1/2023	-0.0013	-1,560.000

V(B). Beneficial Electrification Metered Approach

4. Would you like to add a beneficial electrification deduction?

Yes

Please select whether the beneficial electrification project's annual electricity use will be determined based on a metered approach or deemed approach.

Metered Approach

For more information, please visit the [reporting requirements documentation](#).

Please enter the beneficial electrification deduction you are claiming in tCO₂e:

-1755.000

The value entered should be negative.

Would you like to bank the emissions savings from beneficial electrification for future use?

Yes / No

Please upload supporting documentation for the beneficial electrification project.

Choose File No file chosen

This is a required field. **DOB will provide templates.**

- I. DOB NOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach

C. Beneficial Electrification Banking Credits

- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

V(C). Beneficial Electrification Banking Credits: Background



Owners who have qualifying equipment that is installed and remains in operation in the covered building, may apply GHG emissions savings or accrue savings for future use in reporting emissions for such building, provided that in any reporting year between 2024 and 2036 in which such covered building’s emissions are not below the emissions limit set forth in section 28-320.3 of the Administrative Code, any such savings must be applied.

Beneficial electrification savings from a calendar year may be applied in whole to reporting for that calendar year or in whole to another future calendar year but may not be combined with accrued savings from other years.

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

V(C). Beneficial Electrification Banking Credits

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when prompted to **bank the emissions savings from beneficial electrification for future use**.

Would you like to bank the emissions savings from beneficial electrification for future use?

Yes

- I. DOB NOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits

VI. Time-Of-Use

- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

VI. Time-Of-Use (TOU): Background

Time of Use (TOU) is an alternate approach for calculating electricity GHG coefficients in LL97 for **distributed energy resources**, by deriving hourly emissions coefficients for electricity based on the marginal emissions that are required to generate that electricity at that given hour of the year.

For TOU, the amount of electricity (that feeds into Zone J) generated by a solar array must be measured and recorded on an hourly basis so it can be subtracted from the Host building's hourly consumption. Each Off taker will need their own hourly records of the electricity received from such solar array.

TOU can be used by either Host or Off-taker(s) of energy storage if hourly data for charging and discharging activity is available.

- Select **Time of Use (TOU)** when prompted to select the type of approach.

Would you like to use Time of Use (TOU) or a campus-style electric/energy system?

Yes

VI. Time-Of-Use (TOU)

Using the [template](#), calculate the Time-Of-Use coefficient. For more information about Time of Use methodology, please [visit this page](#).

1. Please enter the updated **Time of Use (TOU) coefficient** in tCO₂e per kWh

Please enter the Time of Use (TOU) coefficient in tCO₂e per kWh:

For more information about Time of Use methodology, please [visit this page](#).

VI. Time-Of-Use (TOU)

- Upload supporting documentation for this Time-Of-Use including:
 - The [template](#) used to calculate your Time of Use (TOU) coefficient
 - Hourly utility data reported from the utility.

Please upload supporting documentation for the Time of Use (TOU) coefficient change.

No file chosen

DOB will provide templates.

For more information about Time of Use methodology, please [visit this page](#).

VI. Time-Of-Use (TOU)

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

Where:

- TOU_n = the hourly time of use electricity coefficient in tCO₂e 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 tCO₂e per kWh (see Equation 103-14.3).
- RAM_n = the hourly rolling average marginal emissions coefficient in tCO₂e per kWh (see Equation 103-14.6).
- g_{ue} = the GHG coefficient for utility electricity for the calendar year being reported, in tCO₂e 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:

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

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 tCO₂e 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.

VI. Time-Of-Use (TOU)

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:

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

Where:

- RA_n = RGGI allowance cost, in dollar per US ton, of CO₂e, as published by RGGI.
- g_n = Greenhouse gas coefficient for the marginal fuel at a given hour, in tCO₂e per kBtu.

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

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

Where:

- HM_i = hourly marginal emissions coefficient, in tCO₂e 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.

VI. Time-Of-Use (TOU)



Min:	1	1	1	1	1	3,690	\$14.38	\$14.88	\$1.03	\$11.35	\$14.56	Natural gas	\$1.03	0.000053110	\$0.87	-	-	-	27,798	47,928,669	0.000568633	0.000000015
Avg:	4,393	184	7	16	13	5,587	\$39.44	\$19.75	\$2.21	\$16.38	\$17.33	Natural gas	\$2.19	0.000053168	\$1.16	10.5	0.000560052	3.2	29,051	48,658,060	0.000597142	0.000262362
Max:	8,784	366	12	31	24	10,437	\$310.85	\$25.75	\$23.90	\$20.56	\$21.01	#2 fuel oil	\$18.21	0.000074210	\$1.51	17.0	0.001176129	9.4	29,724	49,343,836	0.000616511	0.000857226
	Sum:					49,072,478											28,518.9	255,187,115	427,412,399,151			

Calculation

0.000281721

Hour _n	Day of Year	Month	Day of Month	Hour of Day	HLF _i MW	LBMP _n \$/MWh	RA _n \$/tCO _{2e}	MSP _{ng} \$/MMBtu	MSP _{fo2} \$/MMBtu	MSP _{fo4} \$/MMBtu	Marginal Fuel Type	MSP _n \$/MMBtu	MF _n tCO _{2e} /kBtu	RE _n \$/MMBtu	IHR _n MMBtu/MWh	HM _n tCO _{2e} /kWh	HM _i * HLF _i	Σ(HM _i * HLF _i)	Σ(HLF _i)	RAM _n tCO _{2e} /kWh	TOU _n tCO _{2e} /kWh
1	1	1	1	1	4,636	\$25.17	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	7.1	0.000378463	1.75	29,105	47,928,669	0.000607266	0.000060159
2	1	1	1	2	4,530	\$23.10	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	6.5	0.000343126	1.55	29,107	47,928,892	0.000607300	0.000024788
3	1	1	1	3	4,393	\$22.49	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	6.3	0.000332713	1.46	29,109	47,929,150	0.000607329	0.000014346
4	1	1	1	4	4,281	\$22.04	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	6.1	0.000325031	1.39	29,110	47,929,388	0.000607357	0.000006636
5	1	1	1	5	4,228	\$22.26	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	6.2	0.000328787	1.39	29,112	47,929,608	0.000607383	0.000010366
6	1	1	1	6	4,272	\$23.75	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	6.7	0.000354223	1.51	29,113	47,929,826	0.000607409	0.000035775
7	1	1	1	7	4,373	\$25.36	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	7.2	0.000381707	1.67	29,115	47,930,100	0.000607437	0.000063231
8	1	1	1	8	4,449	\$23.95	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	6.7	0.000357637	1.59	29,116	47,930,443	0.000607468	0.000039131
9	1	1	1	9	4,524	\$25.43	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	7.2	0.000382902	1.73	29,118	47,930,826	0.000607496	0.000064368
10	1	1	1	10	4,630	\$25.63	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	7.3	0.000386316	1.79	29,120	47,931,218	0.000607527	0.000067751
11	1	1	1	11	4,740	\$26.87	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	7.7	0.000407484	1.93	29,121	47,931,621	0.000607560	0.000088886
12	1	1	1	12	4,852	\$27.02	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	7.7	0.000410045	1.99	29,123	47,932,046	0.000607595	0.000091412
13	1	1	1	13	4,929	\$26.97	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	7.7	0.000409191	2.02	29,125	47,932,503	0.000607630	0.000090523
14	1	1	1	14	4,958	\$26.99	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	7.7	0.000409533	2.03	29,127	47,932,986	0.000607666	0.000090828
15	1	1	1	15	5,010	\$27.84	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	8.0	0.000424043	2.12	29,129	47,933,449	0.000607703	0.000105302
16	1	1	1	16	5,048	\$30.40	\$14.88	\$2.24	\$17.46	\$18.08	Natural gas	\$2.24	0.000053111	\$0.87	8.8	0.000467745	2.36	29,131	47,933,894	0.000607741	0.000148965

VI. Time-Of-Use (TOU)

<u>Template</u>	<u>RCNY 103-14 Forumla</u>	<u>Tab Name</u>	1/11 <u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

VI. Time-Of-Use (TOU)

- Enter hourly metered grid electricity consumption

Min:	1	1/1/2024 0:00	1	1	1	1	0.000000015	-	-
Avg:	4,393	7/1/2024 12:00	184	7	16	13	0.000262362	-	-
Max:	8,784	12/31/2024 23:00	366	12	31	24	0.000857226	-	-
							Sum:	-	-
									0.00028896 tCO2e/kWh
									tCO2e annual

Calculation

Hour <i>n</i>	Eastern Date Hour	Day of Year	Month	Day of Month	Hour of Day	TOU _{<i>n</i>} tCO _{2e} /kWh	Grid Electricity kWh	Emissions tCO _{2e}
1	1/1/2024 0:00	1	1	1	1	0.000060159		0.000
2	1/1/2024 1:00	1	1	1	2	0.000024788		0.000
3	1/1/2024 2:00	1	1	1	3	0.000014346		0.000
4	1/1/2024 3:00	1	1	1	4	0.000006636		0.000
5	1/1/2024 4:00	1	1	1	5	0.000010366		0.000
6	1/1/2024 5:00	1	1	1	6	0.000035775		0.000
7	1/1/2024 6:00	1	1	1	7	0.000063231		0.000
8	1/1/2024 7:00	1	1	1	8	0.000039131		0.000
9	1/1/2024 8:00	1	1	1	9	0.000064368		0.000
10	1/1/2024 9:00	1	1	1	10	0.000067751		0.000
11	1/1/2024 10:00	1	1	1	11	0.000088886		0.000
12	1/1/2024 11:00	1	1	1	12	0.000091412		0.000
13	1/1/2024 12:00	1	1	1	13	0.000090523		0.000
14	1/1/2024 13:00	1	1	1	14	0.000090828		0.000
15	1/1/2024 14:00	1	1	1	15	0.000105302		0.000
16	1/1/2024 15:00	1	1	1	16	0.000148965		0.000
--								

VI. Time-Of-Use (TOU)

Calculation

Hour <i>n</i>	Eastern Date Hour	Day of Year	Month	Day of Month	Hour of Day	TOU _{<i>n</i>} tCO ₂ _e /kWh	Grid Electricity kWh	Emissions tCO ₂ _e
1	1/1/2024 0:00	1	1	1	1	0.000060159	401.0	0.024
2	1/1/2024 1:00	1	1	1	2	0.000024788	34.0	0.001
3	1/1/2024 2:00	1	1	1	3	0.000014346	373.4	0.005
4	1/1/2024 3:00	1	1	1	4	0.000006636	227.3	0.002
5	1/1/2024 4:00	1	1	1	5	0.000010366	155.9	0.002
6	1/1/2024 5:00	1	1	1	6	0.000035775	184.7	0.007
7	1/1/2024 6:00	1	1	1	7	0.000063231	403.0	0.025
8	1/1/2024 7:00	1	1	1	8	0.000039131	294.4	0.012
9	1/1/2024 8:00	1	1	1	9	0.000064368	417.5	0.027
10	1/1/2024 9:00	1	1	1	10	0.000067751	154.6	0.010
11	1/1/2024 10:00	1	1	1	11	0.000088886	189.2	0.017
12	1/1/2024 11:00	1	1	1	12	0.000091412	319.0	0.029
13	1/1/2024 12:00	1	1	1	13	0.000090523	164.1	0.015
14	1/1/2024 13:00	1	1	1	14	0.000090828	99.2	0.009
15	1/1/2024 14:00	1	1	1	15	0.000105302	378.2	0.040
16	1/1/2024 15:00	1	1	1	16	0.000148965	151.6	0.023
17	1/1/2024 16:00	1	1	1	17	0.000246396	169.2	0.042
18	1/1/2024 17:00	1	1	1	18	0.000372695	245.9	0.092
19	1/1/2024 18:00	1	1	1	19	0.000286109	115.8	0.033
20	1/1/2024 19:00	1	1	1	20	0.000224280	479.4	0.108
21	1/1/2024 20:00	1	1	1	21	0.000184476	105.0	0.019
22	1/1/2024 21:00	1	1	1	22	0.000154551	187.6	0.029
23	1/1/2024 22:00	1	1	1	23	0.000111998	252.1	0.028
24	1/1/2024 23:00	1	1	1	24	0.000095398	145.8	0.014
25	1/2/2024 0:00	2	1	2	1	0.000061065	341.1	0.021
26	1/2/2024 1:00	2	1	2	2	0.000044595	281.9	0.013
27	1/2/2024 2:00	2	1	2	3	0.000031580	143.4	0.005
28	1/2/2024 3:00	2	1	2	4	0.000016101	104.3	0.002
29	1/2/2024 4:00	2	1	2	5	0.000029718	243.0	0.007
30	1/2/2024 5:00	2	1	2	6	0.000055825	58.8	0.003
31	1/2/2024 6:00	2	1	2	7	0.000162964	428.2	0.070
32	1/2/2024 7:00	2	1	2	8	0.000266966	392.3	0.105
33	1/2/2024 8:00	2	1	2	9	0.000190970	118.2	0.023
34	1/2/2024 9:00	2	1	2	10	0.000141114	430.9	0.061
35	1/2/2024 10:00	2	1	2	11	0.000105563	198.7	0.021
36	1/2/2024 11:00	2	1	2	12	0.000100917	110.2	0.011

5. Would you like to use Time of Use (TOU) or a campus-style electric/energy system?

Yes

Please select the type of approach.

Time of Use (TOU) /

TOU electricity emissions coefficient:

0.000262125

Campus electric emissions disaggregated from this report (tCO₂e):

Campus energy emissions disaggregated from this report (tCO₂e):

- I. DOBNOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style**
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

VII. Campus-Style: Background

Campus-style systems are when a central plant, not managed by a utility company, produces electricity and/or energy for one or more buildings on the same lot or nearby lots.

- Along with academic campuses, hospital, religious, residential, and other types of campus-style property may also have this type of energy distribution system.

The fuel consumed by the central plant (either purchased from the public utility - such as electricity, natural gas, steam - or delivered in bulk, such as fuel oil) is called the plant *input* energy. **The campus energy resources are the *output* energy, or the energy types being generated by the campus-style system.**

To generate central plant energy outputs, energy inputs are combined in a different way than accounted for with the GHG coefficients published in LL97 (e.g., utility electricity and district steam). Because of this, **custom campus GHG coefficients must be determined for LL97 reporting purposes.**

The GHG coefficients for campus energy and electricity calculated in the respective templates will be impacted by whether a covered building(s) solely uses energy/electricity generated by the campus-style energy system **or** uses a mix of campus -style generated and public utility energy/electricity.

VII. Campus-Style: Background

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:

Yes

*Fill out 'Aggregated Report Description' tab

Reason for disaggregating data:

BINs have separate ownership and are filing separately

Key:

User Input
User Input or Output from Previous Tab
Result / BEAM Input
Calculated Value

Building Address:

BBL:

Building Owner:

Templates filled out by:

Company:

Title with Company:

Date completed:

Template

RCNY 103-14 Forumla

Tab Name

1/11

Select if Applicable

Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

VII. Campus-Style: Background

Reasons to disaggregate – Buildings on the same lot with shared energy services:

1. have different compliance paths (i.e., Article 320 and Article 321)
2. have different ownership and are submitting separately
3. have BIN-level metered data available
4. are exporting shared energy services to the grid or to other buildings not covered by this submission

AGGREGATED REPORT DESCRIPTION MUST BE FILLED OUT

Data may be disaggregated by:

1. Gross Floor Area (GFA)
2. Emissions Limit(s)
3. Available metered data

VII. Campus-Style: Background



Aggregated Report Description

Number of BINs in this aggregated report:

1

Number of BINs on lot not part of this aggregated report:

1

Aggregated: 75.0% 72.8%
 Disaggregated: 25.0% 27.2%

#	BIN #	GFA	Emissions Limit
Total	Total for BBL	100,000	735.00
1 thru 1	Total for all 1 aggregated BINs	75,000	535.0
2 thru 2	Total for all 1 disaggregated BINs	25,000	200.0
2	XXXXX	25,000	200.0

- I. DOBNOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy**
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

VII(A). Campus-Style Systems Energy

Campus energy resources, are 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, and high, medium, and low temperature hot water.

- Select **Yes** when prompted if you would like to use a campus-style energy system.
- Select the fuel type to adjust.

The screenshot shows a web form with two sections. The first section asks, "Would you like to use Time of Use (TOU) or a campus-style electric/energy system?" and has a dropdown menu with "Yes" selected. The second section asks, "Please select the fuel type to adjust for a campus energy system:" and has a dropdown menu with "Natural Gas (kBtu)" selected. The dropdown menu is open, showing the following options: "Natural Gas (kBtu)", "Fuel Oil", "District Steam (kBtu)", and "Electricity (kWh)".

VII(A). Campus-Style Systems Energy

- Using the [template](#), calculate the custom updated GHG coefficient for your campus energy.
 - On Tab "14.10.11 Campus-Style Energy," complete the instructions to fill in the template.

Please enter the fuel type coefficient for campus energy in tCO₂ per kBtu:

VII(A). Campus-Style Systems Energy

- Using the [template](#), calculate the fuel type coefficient for campus energy in tCO₂ per kBtu
- Upload the [template](#) used to calculate your fuel cell deduction.

Please enter the fuel type coefficient for campus energy in tCO₂ per kBtu:

Please upload supporting documentation for the Campus Energy coefficient change.

No file chosen

VII(A). Campus-Style Systems Energy

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

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

Where:

- g_{cx} = the campus-style energy system GHG coefficient, in tCO₂e 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 tCO₂e 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.

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:

$$g_x = \frac{(m_{ux} \cdot g_{ux}) + (m_{cx} \cdot g_{cx})}{m_{ux} + m_{cx}} \quad \text{(Equation 103-14.11)}$$

Where:

- g_x = the combined GHG coefficient, in tCO₂e 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 tCO₂e 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 tCO₂e per kBtu, for the campus energy resource, cx.

VII(A). Campus-Style Systems Energy

<u>Template</u>	<u>RCNY 103-14 Forumla</u>	<u>Tab Name</u>	1/11 <u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

VII(A). Campus-Style Systems Energy

- Step 1- Enter total number of campus-style energy systems in the first table. Select all applicable campus-style energy systems

0 m_cx + m_ux		
Campus-Style Energy Systems	Quantity	Total (kBtu)
Chilled Water		0
Condenser Water		0
Hot Water		0
Steam		0
Domestic Hot Water		0
Other		0

<u>m_cx or m_ux</u>		
Designation	Description	Total (kBtu)

VII(A). Campus-Style Systems Energy

Note: Campus-style energy systems with unique energy inputs should be entered as multiple systems.

Example 1: an electric chiller and a steam chiller would be entered as two (2) systems.

Example 2: a fuel oil steam boiler and a natural gas hot water boiler would be entered as two (2) systems.

Example 3: a dual-fuel boiler would be entered as one (1) system

- Step 2 - Add a description for each system (i.e., absorption chiller). Enter total amount of energy resource generated.

			2	<i>m_{CX} + m_{UX}</i>
Campus-Style Energy Systems			Quantity	Total (kBtu)
103-14.11	Chilled Water		2	250,000
	Condenser Water			0
	Hot Water			0
	Steam			0
	Domestic Hot Water			0
	Other			0
			<i>m_{CX} or m_{UX}</i>	
Designation			Description	Total (kBtu)
103-14.10	Chilled Water - System #1		Electric Chiller	150,000
103-14.10	Chilled Water - System #2		Steam Chiller	100,000

VII(A). Campus-Style Systems Energy

- Step 3 - In table 3, enter all individual input energy sources for each energy system. Enter total input fuel consumed, and assign to each energy system.

Note: All energy inputs should be included.

Example 1: Electric and Steam Chillers [see below]

Example 2: Dual-fuel boiler

Energy inputs: No.2 fuel oil; natural gas; electricity (for pumps); etc.

Coefficient for Utility Electricity:

		<i>m_n</i>			<i>g_n</i>			6.7
Campus-Style Energy System Inputs								
	<i>Input Energy Source</i>	<i>Consumption</i>	<i>Units</i>	<i>Emissions</i>	<i>Units</i>	<i>Energy System</i>	<i>tCO2e</i>	
1	Utility Electricity 2024	6,250	kWh	0.000288962	tCO2e/kWh	Chilled Water - System #1	1.8	
2	District Steam 2024	110,000	kBtu	0.00004493	tCO2e/kBtu	Chilled Water - System #2	4.9	
3								

VII(A). Campus-Style Systems Energy

- Step 4 – Select method to disaggregate data.

Note: If disaggregating multiple campus energy systems using different methodology, then duplicate tab.

	Method	
Method for disaggregating campus-style electricity generation:	Emissions Limit	
Total Emissions Limit for the campus by BBL (tCO ₂ e/yr):	735	
Number of BINs not associated with this aggregated report:	1	
Emissions disaggregated from report:	-1.836	tCO ₂ e/yr

	BIN #	Emissions Limit tCO ₂ e/yr	tCO ₂ e/yr
1 thru 1	Total for all 1 aggregated BINs	535	4.912
2 thru 2	Total for all 1 disaggregated BINs	200	1.836
2	XXXXX	200.0	1.836

VII(A). Campus-Style Systems Energy

5. Would you like to use Time of Use (TOU) or a campus-style electric/energy system?

Yes

Please select the type of approach.

Campus Style Energy System

TOU electricity emissions coefficient:

Campus electric emissions disaggregated from this report (tCO₂e):

Campus energy emissions disaggregated from this report (tCO₂e):

-1.836

VII(A). Campus-Style Systems Energy

Disaggregating using metered data:

Step 2 - Add a description for each system (i.e., absorption chiller). Enter total amount of energy resource generated and consumed on-site.

		1	$m_{cx} + m_{ux}$	g_x					
Campus-Style Energy Systems	Quantity	Total (kBtu)	Net (tCO2e/kBtu)	Consumed On-Site (kBtu)	Total (tCO2e)	Exported (kBtu)	Consumed On-Site (tCO2e)	Exported (tCO2e)	
	Chilled Water	0							
	Condenser Water	0							
103-14.11	Hot Water	1	250,000	0.00005233	212,500	13.1	37,500	11.1	-2.0
	Steam	0							
	Domestic Hot Water	0							
	Other	0							

		m_{cx} or m_{ux}	g_{cx} or g_{ux}						
Designation	Description	Total (kBtu)	Total (tCO2e/kBtu)	Consumed On-Site (kBtu)	Total (tCO2e)	Exported (kBtu)	Consumed On-Site (tCO2e)	Exported (tCO2e)	
103-14.10	Hot Water - System #1	Dual Fuel Boiler	250,000	0.00005233	212,500	13.1	37,500	11.1	-2.0

VII(A). Campus-Style Systems Energy

- Step 3 - In table 3, enter all individual input energy sources for each energy system. Enter total input fuel consumed, and assign to each energy system.

Coefficient for Utility Electricity:

m_n *g_n* **13.1**

Campus-Style Energy System Inputs							
<i>Input Energy Source</i>	<i>Consumption</i>	<i>Units</i>	<i>Emissions</i>	<i>Units</i>	<i>Energy System</i>	<i>tCO2e</i>	
1	No. 2 Fuel Oil	50,000	kBtu	0.00007421	tCO2e/kBtu	Hot Water - System #1	3.7
2	Natural Gas	172,500	kBtu	0.00005311	tCO2e/kBtu	Hot Water - System #1	9.2
3	Utility Electricity 2024	733	kWh	0.000288962	tCO2e/kWh	Hot Water - System #1	0.2
4							
5							

VII(A). Campus-Style Systems Energy

- Step 3 – Select method of disaggregation.

	Method	
Method for disaggregating campus-style electricity generation:	Metered Consumption	
Total Metered Consumption for the campus by BBL (kBtu):	250,000	
Number of BINs not associated with this aggregated report:	1	
Emissions disaggregated from report:	-1.963	tCO2e/yr

	BIN #	Metered Consumption kBtu	tCO2e/yr
1 thru 1	Total for all 1 aggregated BINs	212,500	11.121
2 thru 2	Total for all 1 disaggregated BINs	37,500	1.963
2	XXXXX		0.000

VII(A). Campus-Style Systems Energy

5. Would you like to use Time of Use (TOU) or a campus-style electric/energy system?

Yes

Please select the type of approach.

Campus Style Energy System

TOU electricity emissions coefficient:

Campus electric emissions disaggregated from this report (tCO₂e):

Campus energy emissions disaggregated from this report (tCO₂e):

-1.963

- I. DOBNOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
- B. Electricity**
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient

VII(B). Campus-Style Systems Electricity

Electricity exported off-campus (e.g. to the grid) may be included under campus energy resources *only* when it has lower calculated emissions than grid electricity. Otherwise, the **GHG emissions coefficient for electricity produced and exported as a campus energy resource must be calculated using its own DOB template.**

NOTE: This section is specific to properties with central plants that produce electricity on-site for one or more buildings—but do not have cogeneration systems.

- Select **Yes** when prompted if you would like to use a campus-style energy system.

Would you like to use Time of Use (TOU) or a campus-style electric/energy system?

Yes

VII(B). Campus-Style Systems Electricity

- Using the [template](#), calculate the fuel type coefficient for campus electricity in tCO₂ per kWh
- Upload the [template](#) used to calculate your fuel cell deduction.

Please enter the updated coefficient for campus electricity in tCO₂e per kWh:

Please upload supporting documentation for the Campus Electricity coefficient change.

No file chosen

VII(B). Campus-Style Systems Electricity

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:

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

Where:

- g_e = the GHG coefficient for electricity generated by a campus-style electric system on-site, in tCO₂e 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 tCO₂e 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, including any electricity delivered into the utility grid, provided that such electricity delivered into the utility grid results in lower GHG emissions than grid purchased electricity.
- g_{ce} = the on-site campus generated electricity GHG coefficient in tCO₂e per kWh (see Equation 103-14.7).

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:

$$g_e = \frac{(\sum_h(m_{ueh} \cdot g_{TOUh})) + (m_{ce} \cdot g_{ce})}{m_{ue} + m_{ce}} \quad \text{(Equation 103-14.9)}$$

Where:

- g_e = the GHG coefficient for electricity generated by a campus-style electric system on-site, in tCO₂e per kWh.
- m_{ueh} = the hourly electricity consumed by buildings and other campus loads from the utility grid, in kWh.
- g_{TOUh} = the hourly TOU GHG coefficient, as calculated in accordance with subparagraph (iii) of this paragraph for the calendar year being reported, in tCO₂e per kWh.
- m_{ce} = the electricity consumed by buildings and other campus loads from the campus-style electric system, in kWh, including any electricity delivered into the utility grid, provided that such electricity delivered into the utility grid results in lower GHG emissions than grid purchased electricity, see Equation 103-14.7.
- g_{ce} = the on-site campus generated electricity GHG coefficient in tCO₂e 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.

VII(B). Campus-Style Systems Electricity

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

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

Where:

- g_{cx} = the campus-style energy system GHG coefficient, in tCO₂e 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 tCO₂e 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.

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:

$$g_x = \frac{(m_{ux} \cdot g_{ux}) + (m_{cx} \cdot g_{cx})}{m_{ux} + m_{cx}} \quad \text{(Equation 103-14.11)}$$

Where:

- g_x = the combined GHG coefficient, in tCO₂e 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 tCO₂e 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 tCO₂e per kBtu, for the campus energy resource, cx.

VII(B). Campus-Style Systems Electricity



1/11

Template

RCNY 103-14 Forumla

Tab Name

Select if Applicable

Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Not Applicable

Generate Templates

VII(B). Campus-Style Systems Electricity



Step 1 - Enter coefficient for electricity.

Step 2 - Enter amount of electricity generated onsite, and amount of electricity purchased from the grid.

Coefficient for Utility Electricity:

Total: **5.60**

<i>Electricity Source</i>	<i>Variable</i>	<i>kWh</i>	<i>Variable</i>	<i>tCO2e/kWh</i>	<i>tCO2e</i>
Electricity produced by Campus-Style Electric Systems	m_ce	9,000	g_ce	0.000590111	5.31
Electricity purchased from Grid Electric Systems (default)	m_ue	1,000	g_ue	0.000288962	0.29

<i>Electricity Coefficient</i>	<i>Variable</i>	<i>tCO2e/kWh</i>	<i>Equation</i>
On-site campus generated electricity GHG coefficient	g_ce	0.000590111	103-14.7
GHG coeff. for electricity generated by campus-style electric system on-site (default)	g_e	0.000559996	103-14.8

VII(B). Campus-Style Systems Electricity

Step 3 - Enter all input fuel systems to the campus-style electric system, and total amount of fuel consumed (kBtu).

m_n g_n 5.31				
Campus-Style Electric Systems Inputs				
	<i>Input Energy Source</i>	<i>kBtu</i>	<i>tCO2e/kBtu</i>	<i>tCO2e</i>
1	Natural Gas	100,000	0.00005311	5.31
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

VII(B). Campus-Style Systems Electricity



Step 4 - Enter method of attributing emissions associated with campus electric to BINs not covered by this report (i.e., based on building floor area).

Step 5 - Enter total for the BBL based on the above metric (i.e., total BBL floor area). Enter number of buildings on campus electricity system that are not part of this report.

Step 6 - Enter relevant value for BINs not associated with this report (i.e., BIN floor area).

	Method	
generation:	Emissions Limit	
Total Emissions Limit for the campus by BBL (tCO2e/yr):	735	
Number of BINs not associated with this aggregated report:	1	
Emissions disaggregated from report:	-1.524	tCO2e/yr

	BIN #	Emissions Limit tCO2e/yr	tCO2e/yr
1 thru 1	Total for all 1 aggregated BINs	535	4.076
2 thru 2	Total for all 1 disaggregated BINs	200	1.524
2	XXXXX	200.0	1.524

VII(B). Campus-Style Systems Electricity

5. Would you like to use Time of Use (TOU) or a campus-style electric/energy system?

Yes

Please select the type of approach.

Campus-Style Electric System /

TOU electricity emissions coefficient:

Campus electric emissions disaggregated from this report (tCO₂e):

-1.524

Campus energy emissions disaggregated from this report (tCO₂e):

- I. DOBNOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power**
- IX. Alternative Fuels
- X. Biofuel Coefficient

VIII. Combined Heat and Power

In your LL97 A Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when asked whether you would like to add a qualified generation facility (i.e., cogeneration facility).

Would you like to apply for an alternative methodology for a qualified generation facility (i.e., cogeneration facility)?

Yes

VIII. Combined Heat and Power

Using the [template](#), calculate the Combined Heat and Power plant outputs.

1. Add the **natural gas consumption to be deducted**, in kBtu.
2. Add the **electricity consumption to be added**, in kWh.
3. Add the **reclaimed heat consumption to be added**, in kBtu.

Please enter the annual natural gas consumption of the qualified generation facility in kBtus:

The value entered should be negative.

Please enter the annual electric output of the qualified generation facility in kWh:

The value entered should be positive.

Please enter the annual reclaimed heat output of the qualified generation facility in kBtus:

The value entered should be positive.

VIII. Combined Heat and Power

Upload supporting documentation for this Combined Heat and Power Plant including:

- The [template](#) used to natural gas consumption to be deducted, electricity consumption to be added, and reclaimed heat consumption to be added.
- **Equipment specifications** on NOx emission, metered electricity generation, and metered utilized heat.

If a qualified generation facility (i.e., cogeneration facility), please upload supporting documentation.

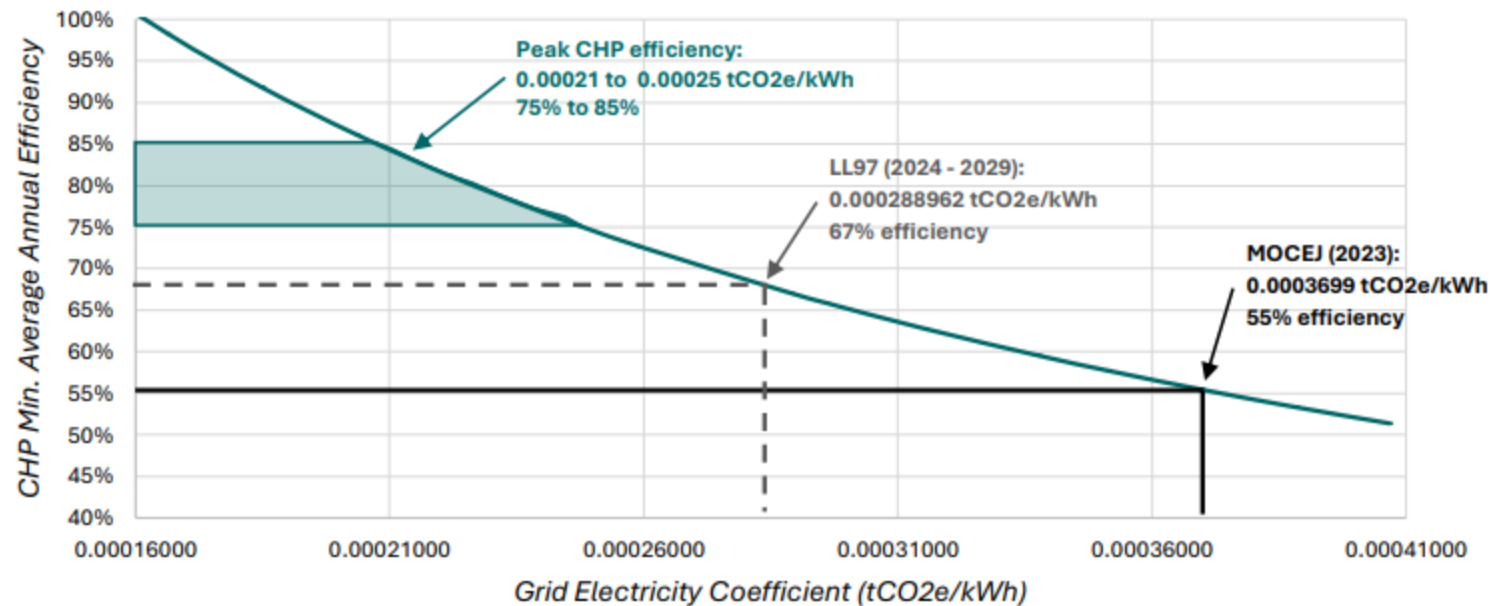
No file chosen

This is a required field. DOB will provide templates.

VIII. Combined Heat and Power

The revised Rule allows favorable calculations for CHP systems meeting the definition of a “qualified generation facility”, meaning that a permit was issued by the Department prior to **September 1, 2024** and all of the following apply:

- i) The system operates at a **minimum annual average efficiency**, which at the time of this Guide is set at **55%**.



Minimum efficiency is not required for:

- 1) CHP that is essential to power a “critical facility” as such term is defined in 1 RCNY §103-14; or
 - 2) CHP in areas identified by the Department and verified by the utility as having limited spare electrical capacity. *At the time of this Guide, these areas are the ones served by the following Con Edison (“Con Ed”) substations:*
 - *Jamaica*
 - *Newtown/Glendale*
 - *Brownsville No. 1 and No. 2 (Brooklyn Queens Demand Management, “BQDM”)*
- ii) The system does not emit levels of nitrogen oxide (“**NOx**”) greater than or equal to 1.6 lbs/MWh.
- Allowable NOx levels increase to 4.4 lbs/MWh if the system’s interconnection application and/or Department of Environmental Protection (“DEP”) air permit application were accepted on or before January 1, 2017.
 - These numbers align with Con Ed’s standards for CHP systems that may be exempt from Standby Service rates, as published in the [tariff on file](#) with the NYS Public Service Commission (“PSC”).

VIII. Combined Heat and Power

The formula for determining a CHP system's average annual efficiency is derived from the December 2008 *NYSERDA CHP Systems Manual*, with minor corrections by the working group:

$$\eta_{chp,hhv} = \frac{\sum_{i=1}^{8760} Q_{useful,i} + 3,412 \cdot (\sum_{i=1}^{8760} kWh_{output,i} - \sum_{i=1}^{8760} kWh_{parasitic,i})}{HHV_{gas} \cdot \sum_{i=1}^{8760} gas_{input,i}}$$

Where:

- $\eta_{chp,hhv}$ = Average annual CHP efficiency
- $Q_{useful,i}$ = Useful heat recovery provided for hour i (Btu)
- $kWh_{output,i}$ = Generator power output provided for hour i (kWh)
- $kWh_{parasitic,i}$ = Parasitic power consumption for CHP system for hour i (kWh)
- $gas_{input,i}$ = Generator gas input for hour i (cu ft)
- HHV_{gas} = Higher heating value for natural gas supplied at site from utility bills, average of 12 months (Btu / cu ft)

“Useful heat recovery” is thermal energy that displaces fuel use in a boiler, furnace, chiller, desiccant wheel, or other system that serves a useful purpose such as heating, cooling, or dehumidification.

- Not all heat output from a prime mover can be assumed to be useful heat.
- Useful heat measurements will vary from hour to hour because thermal energy needs can vary based on time of day, time of year, or other factors.

“Parasitic power consumption” is electricity that would not be used if the CHP system was not present. This includes loads such as controls, pumps, fuel compressors, fans, and heat recovery / rejection.

- Parasitic power consumption can be the sum of several instruments or be derived from one-time power readings with component runtime information.
- Parasitic loads can be approximately 3%-10% of generation.
- Ideally, metering would be set up such that any measured generation is net of parasitic losses.

When multiple buildings are connected to a common CHP system, the buildings are considered to share energy service. Guidelines for whether such buildings’ LL97 compliance reports can be combined and their emissions / emissions limits aggregated are the same as those described in [Section III\(C\)](#) of this Guide.

VIII. Combined Heat and Power

Required documentation for any CHP system that uses the “qualified generation facility” methodology of [1 RCNY §103-14\(d\)\(3\)\(vi\)\(e\)](#) can include the following:

- a. Analysis verifying the system’s average annual efficiency, including measured data for:
 - Fuel input(s) to the CHP system;
 - Energy outputs of the CHP system;
 - Useful heat recovery, as described in item 3 above;
 - Parasitic power consumption, as described in item 4 above.

- b. Determination of a system’s NOx emissions, based on the manufacturer’s guarantee or via an approved measurement methodology (e.g. stack test).

- c. Data on equipment type, equipment quantity, peak capacity, peak electrical efficiency, date of installation, combustion process (e.g. dry low NOx, diffusion, flue gas recirculation), post-combustion controls (e.g. selective catalytic reduction), and building end uses.

A CHP system that does not count as a “qualified generation facility” may still use the TOU approach allowed for DERs, as outlined in [1 RCNY §103-14\(d\)\(3\)\(vi\)\(a\)](#).

VIII. Combined Heat and Power

<u>Template</u>	<u>RCNY 103-14 Formula</u>	<u>Tab Name</u>	1/11 <u>Select if Applicable</u>
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	Not Applicable
Beneficial Electrification (Deemed - Heat Pump)	103-14.14	14.14 B.E. - Deemed HP	Not Applicable
Beneficial Electrification (Deemed - Water Heater)	103-14.15, 16	14.15,16 B.E. - Deemed WH	Not Applicable
Beneficial Electrification (Metered)	----	B.E. - Metered	Not Applicable
Time of Use (TOU)	103-14.2, 3, 4, 5, 6	14.2 thru 14.6 TOU	Not Applicable
Campus-Style Electric	103-14.7, 8, 9	14.7,8,9 Campus-Style Electric	Not Applicable
Campus-Style Energy	103-14.10, 11	14.10,11 Campus-Style Energy	Not Applicable
Qualified Generation Facility (QGF)	Article 320 Info Guide (pg. 54 - 55)	Qualified Generation Facility	Applicable

Generate Templates

VIII. Combined Heat and Power

Step 1 - Enter all input energy sources and total annual consumption totals.

Coefficient for Utility Electricity:

Total Input Emissions: 5.3

CHP Plant Inputs			Emissions Based on Inputs		
<i>Input Energy Source</i>	<i>Consumption</i>	<i>Units</i>	<i>Emissions</i>	<i>Units</i>	<i>tCO2e</i>
1	Natural Gas	100,000 kBtu	0.00005311	tCO2e/kBtu	5.3
2					
3					
4					
5					
6					
7					
8					
9					
10					

VIII. Combined Heat and Power

Step 2 – Enter: Date of installation; NOx emissions; electricity generate; useful heat recovered; and parasitic electricity consumption.

CHP System Summary			
Definition	Variable	Value	Units
Date of Installation	Date	1/1/2012	(MM/DD/YYYY)
NOx Emissions	NOx	1.1	lbs/MWh
Generator power output - annual	kWh_output	8,792	kWh
Useful heat recovery provided - annual	Q_useful	30,000	kBtu
Parasitic power consumption for CHP system - annual	kWh_parasitic	-440	kWh
Average annual CHP efficiency	$\eta_{chp,hhv}$	58.5%	-
NOx Emissions Limit	NOx	4.4	lbs/MWh
Min. avg. annual efficiency of Qualified Generation Facility	$\eta_{chp,min}$	55%	-

**Enter as a negative value*

Qualified Generation Facility?

VIII. Combined Heat and Power

If compliant, emissions are based on energy outputs

Total Output Emissions: 3.8

CHP Plant Outputs			Emissions Based on Outputs		
<i>Output Energy Source</i>	<i>Production</i>	<i>Units</i>	<i>Emissions</i>	<i>Units</i>	<i>tCO2e</i>
Electricity	8,353	kWh	0.00028896	tCO2e/kWh	2.4
Reclaimed Heat Consumption	30,000	kBtu	0.00004493	tCO2e/kBtu	1.3

VIII. Combined Heat and Power

If non-compliant, emissions are based on energy inputs

Coefficient for Utility Electricity:

Total Input Emissions: 5.3

CHP Plant Inputs			Emissions Based on Inputs		
<i>Input Energy Source</i>	<i>Consumption</i>	<i>Units</i>	<i>Emissions</i>	<i>Units</i>	<i>tCO2e</i>
1 Natural Gas	100,000	kBtu	0.00005311	tCO2e/kBtu	5.3
2					
3					
4					
5					
6					
7					
8					
9					
10					

Qualified Generation Facility?

Use Campus-style electricity generation tab

Total Output Emissions: 5.3

CHP Plant Outputs			Emissions Based on Inputs		
<i>Output Energy Source</i>	<i>Production</i>	<i>Units</i>	<i>Emissions</i>	<i>Units</i>	<i>tCO2e</i>
Electricity	8,353	kWh	0.00063583	tCO2e/kWh	5.3
Reclaimed Heat Consumption	30,000	kBtu	0	tCO2e/kBtu	0.0

VIII. Combined Heat and Power

For a Qualified Generation Facility (QGF)

6. Would you like to apply for an alternative methodology for a qualified generation facility (i.e., cogeneration facility)?

Yes

Please enter the annual fuel consumption emissions of the qualified generation facility in tCO₂e:

-5.311

The value entered should be negative.

Please enter the annual emissions from the qualified generation facility disaggregated from this report in tCO₂e:

-0.940

The value entered should be negative.

Please enter the annual electric output of the qualified generation facility in kWh:

8,353

The value entered should be positive.

Please enter the annual reclaimed heat output of the qualified generation facility in kBtus:

30,000

The value entered should be positive.

If a qualified generation facility (i.e., cogeneration facility), please upload supporting documentation.

Choose File No file chosen

This is a required field. **DOB will provide templates.**

- I. DOBNOW – ESPM – BEAM
- II. Solar Deduction
 - A. Off-Site
 - B. On-Site
- III. Storage Deduction
 - A. Off-Site
 - B. On-Site
- IV. Natural Gas-Powered Fuel Cells
 - A. Installed Pre-1/19/2023
 - B. Installed Post-1/19/2023
- V. Beneficial Electrification
 - A. Beneficial Electrification Deemed Approach
 - B. Beneficial Electrification Metered Approach
 - C. Beneficial Electrification Banking Credits
- VI. Time-Of-Use
- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels**
- X. Biofuel Coefficient

IX. Alternative Fuels: Background

This section describes how to calculate and submitting total tCO₂e associated with alternative fuel consumption in a LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report.

For certain uncommon fuel types combusted or consumed on premises, greenhouse gas emissions must be calculated individually. **This guide is for alternative fuel types NOT included in [RCNY 103-14](#)** (butane, butylene, diesel, distillate fuel oil no. 1, ethane, ethylene, gasoline, isobutane, isobutylene, kerosene, naphtha (<401 deg F), other oil (>401 deg F), pentanes plus, propane, propylene, special naphtha, coke oven gas, fuel gas, and biofuel).

IX. Alternative Fuels

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when asked whether you would you like to report any biofuels or other alternative fuels.
- Select the fuel type being modified.

Would you like to report any biofuels or other alternative fuels?

Yes

Please select the fuel type that is being modified:

Fuel oil #2

Fuel oil #4

The image shows a screenshot of a web form. The first section is a dropdown menu with the question "Would you like to report any biofuels or other alternative fuels?" and the selected option "Yes". The second section is another dropdown menu with the question "Please select the fuel type that is being modified:". The dropdown is open, showing a list of options: "-----", "-----", "Fuel oil #2", and "Fuel oil #4". The "Fuel oil #2" option is highlighted in blue.

IX. Alternative Fuels

- Enter the emissions coefficient associated with the alternative fuel in tCO₂e per kBtu. Details on substantiating evidence is covered in the following slide Article 320 Biofuels Guidance is available [here](#).

Enter the biofuel or alternative fuel coefficient in tCO₂e per kBtu:

[Article 320 Biofuels Guidance](#)

IX. Alternative Fuels

- Upload supporting documentation for the alternative fuel emissions coefficient. For fuel types not listed in [RCNY 103-14](#), emissions coefficients can be proposed via a Construction Codes Determination ("CCD1") request to DOB.
 - Substantiating evidence can include established benchmarks (e.g., EPA's GHG Emissions Factors Hub). For example, a CCD1 for a hydrogen coefficient could describe the origin of the hydrogen (grey, black, brown, blue, green, pink, yellow) and how the hydrogen is consumed.
 - **If the Construction Code Determination Form (CCD1) was submitted via email but not yet approved, a copy of the submitted CCD1 must be uploaded in BEAM as supporting documentation and approval of the LL97 report will be contingent upon the CCD1 review.**

Please share any documentation of fuel consumption for fuels not automatically provided by utility

No file chosen

This is a required field. DOB will provide templates.

- I. DOBNOW – ESPM – BEAM
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- VII. Campus-Style
 - A. Energy
 - B. Electricity
- VIII. Combined Heat and Power
- IX. Alternative Fuels
- X. Biofuel Coefficient**

X. Biofuel Coefficient: Background

For Local Law 97 the default **biofuel emissions coefficient is 0.00007389 tCO₂e per kBtu**, aligning with the EPA standard. Building owners are still able to propose an emissions coefficient for any unique fuel type for DOB review.

Applicants that have made use of biofuels as an energy source may calculate Local Law 97 (“LL97”) emissions in three ways:

1. Use the default Biofuel coefficient in [1 RCNY §103-14](#);
2. Determine a semi-custom Biofuel coefficient using the charts the *Biofuels Info Guide*; or
3. Submit a Construction Codes Determination (“[CCD1](#)”) to the Department.

X. Biofuel Coefficient

- In your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report, select **Yes** when asked whether you would you like to report any biofuels or other alternative fuels.
- Select the fuel type being modified.

Would you like to report any biofuels or other alternative fuels?

Yes

Please select the fuel type that is being modified:

Fuel oil #2

Fuel oil #4

X. Biofuel Coefficient

- Enter the emissions coefficient associated with the alternative fuel in tCO₂e per kBtu. Details on substantiating evidence is covered in the following slide Article 320 Biofuels Guidance is available [here](#).

Enter the biofuel or alternative fuel coefficient in tCO₂e per kBtu:

[Article 320 Biofuels Guidance](#)

X. Biofuel Coefficient

- Upload supporting documentation for the biofuel emissions coefficients.
 - If you are using the default Biofuel coefficient in [1 RCNY §103-14](#) no documentation is needed.
 - If you calculated a biofuel emissions coefficient via a Construction Codes Determination ("CCD1") request to DOB, you must upload a copy of the approved CCD1 form.
 - If the [Construction Code Determination Form \(CCD1\)](#) was submitted via email but not yet approved, a copy of the submitted CCD1 must be uploaded in BEAM as supporting documentation and approval of the LL97 report will be contingent upon the CCD1 review.
 - If you calculated a semi-custom Biofuel coefficient using the charts in the [Biofuels Info Guide](#) please *upload all documentation found on page 13 of the [Biofuels Info Guide](#).*

Please share any documentation of fuel consumption for fuels not automatically provided by utility

No file chosen

This is a required field. DOB will provide templates.

Webinar Schedule

Webinar Date	BEAM (Ticket Name)
2/28/2025	Overview of LL97 Reporting Process
3/5/2025	Benchmarking Forum
3/7/2025	Article 321 Compliance Filing: Part 1 LL97 Compliance Report (Article 321)
3/11/2025	Article 320 Filing: Part 1 LL97 Building Emissions Limit & RDP Attestation (Article 320), LL97 Deductions and Alternatives to Calculating Annual Building Emissions (Article 320 and Article 321).
3/14/2025	Article 321 Compliance Filing: Part 2 LL97 Penalty Mitigation (Article 321), LL97 Covered Building List (CBL) Disputes.
3/18/2025	Article 320 Continued: Part 2 LL97 Penalty Mitigation (Good Faith Efforts), LL97 Covered Building List (CBL) Disputes.
3/20/2025	LL88 Lighting & Sub-Metering
3/25/2025	LL97 Application for §320.7 Adjustment
4/01/2025	Offsets

DOB Webinars

Questions and Inquiries?

Contact: BEAM_LL97@buildings.nyc.gov

An aerial, high-angle photograph of a dense urban landscape, likely New York City, showing a vast array of skyscrapers and buildings. The text "THANK YOU!" is superimposed in large, white, bold, sans-serif capital letters in the center of the image. The bottom portion of the image has a blue gradient overlay.

THANK YOU!

build safe | live safe

NYC
Buildings