User Guide

LL97 Deductions & Alternatives

Updated for CY25

NYC Buildings

Version 3, 04/15/2026

LL97 Deductions & Alternatives User Guide

This guide describes the **LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report** submission process:

- Navigating the BEAM report submission portal and initiating a new report.
- Uploading supporting documents and verifying the Registered Design Professional (RDP) attestation.
- Completing and submitting the report.

Note: This guide assumes the user has **already created an account** and completed all necessary steps in **DOB NOW and ENERGY STAR Portfolio Manager (ESPM)**. If you have not yet done so, please follow the steps in the DOB NOW User Guide and ESPM User Guide.

Covered buildings as defined by Article 320 (Single building > 25,000 GSF; Multiple buildings, either on the same tax lot or governed by the same board of managers, which are in aggregate > 50,000 GSF (even if individual buildings are < 25,000 GSF)) may apply the deductions and alternatives for calculating annual building emissions found in 1 RCNY §103-14.17.

ALERT – Confirm Compliance Pathway for CY25

- Check the 2026 Covered Buildings List to verify your data and submit a CBL Dispute, if necessary.
- See 3/27/2026 DOB Webinar Series: Navigating the 2026 CBL for LL97

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

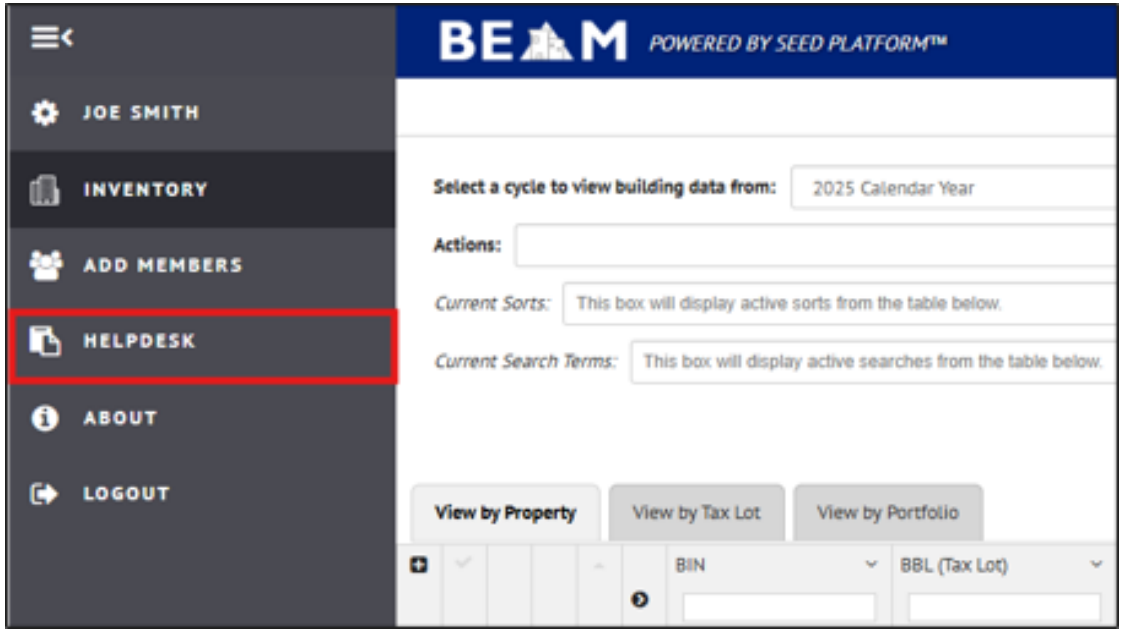
VIII. Combined Heat and Power

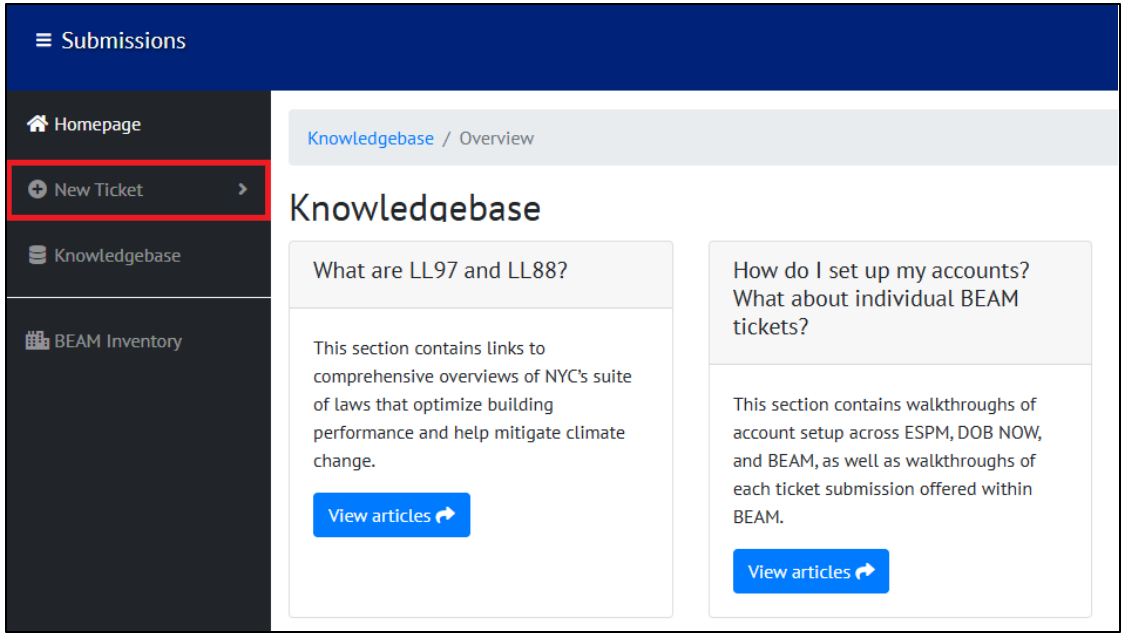
IX. Biofuels and Alternative Fuels

LL97 Deductions & Alternatives for User Guide

- Log in to your BEAM account at nyc.beam-portal.org.
- From the left sidebar, navigate to **Helpdesk**, then click **+ New Ticket.**

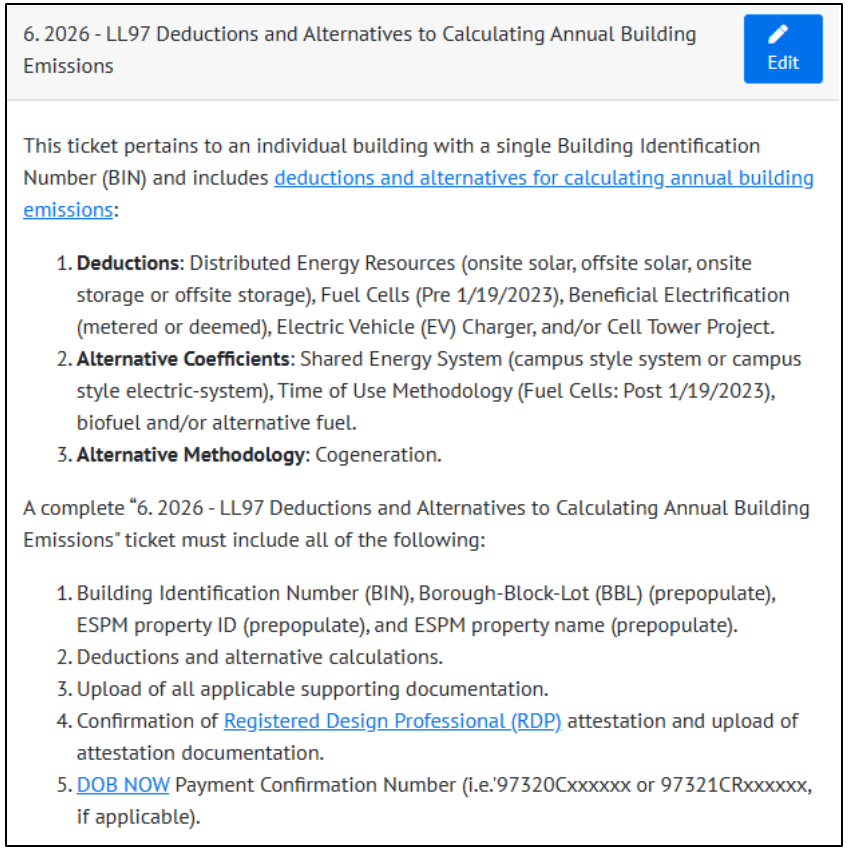
NOTE: Prior to submitting a LL97 Deductions and Alternatives Report, please first submit ticket 04. LL97 Building Emissions Limit & RDP Attestation, ticket 05. LL97 Compliance Report (Article 321), or ticket 15. - Aggregate Emissions and Emissions Limit Attestation.





LL97 Deductions & Alternatives for User Guide

- Select either **6. LL97 Deductions and Alternatives (Individual Buildings)** or **6a. LL97 Deductions and Alternatives (Multiple Buildings)**



6. 2026 - LL97 Deductions and Alternatives to Calculating Annual Building Emissions

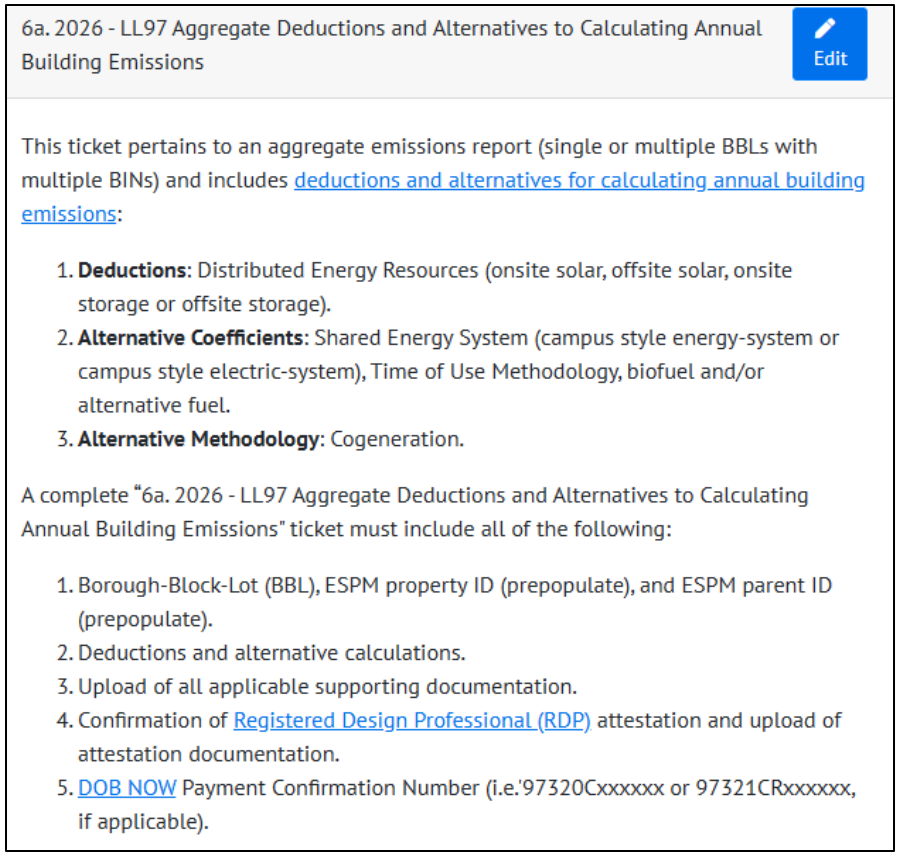
Edit

This ticket pertains to an individual building with a single Building Identification Number (BIN) and includes deductions and alternatives for calculating annual building emissions:

1. **Deductions**: Distributed Energy Resources (onsite solar, offsite solar, onsite storage or offsite storage), Fuel Cells (Pre 1/19/2023), Beneficial Electrification (metered or deemed), Electric Vehicle (EV) Charger, and/or Cell Tower Project.
2. **Alternative Coefficients**: Shared Energy System (campus style system or campus style electric-system), Time of Use Methodology (Fuel Cells: Post 1/19/2023), biofuel and/or alternative fuel.
3. **Alternative Methodology**: Cogeneration.

A complete "6. 2026 - LL97 Deductions and Alternatives to Calculating Annual Building Emissions" ticket must include all of the following:

1. Building Identification Number (BIN), Borough-Block-Lot (BBL) (prepopulate), ESPM property ID (prepopulate), and ESPM property name (prepopulate).
2. Deductions and alternative calculations.
3. Upload of all applicable supporting documentation.
4. Confirmation of Registered Design Professional (RDP) attestation and upload of attestation documentation.
5. DOB NOW Payment Confirmation Number (i.e.'97320Cxxxxxx or 97321CRxxxxxx, if applicable).



6a. 2026 - LL97 Aggregate Deductions and Alternatives to Calculating Annual Building Emissions

Edit

This ticket pertains to an aggregate emissions report (single or multiple BBLs with multiple BINs) and includes deductions and alternatives for calculating annual building emissions:

1. **Deductions**: Distributed Energy Resources (onsite solar, offsite solar, onsite storage or offsite storage).
2. **Alternative Coefficients**: Shared Energy System (campus style energy-system or campus style electric-system), Time of Use Methodology, biofuel and/or alternative fuel.
3. **Alternative Methodology**: Cogeneration.

A complete "6a. 2026 - LL97 Aggregate Deductions and Alternatives to Calculating Annual Building Emissions" ticket must include all of the following:

1. Borough-Block-Lot (BBL), ESPM property ID (prepopulate), and ESPM parent ID (prepopulate).
2. Deductions and alternative calculations.
3. Upload of all applicable supporting documentation.
4. Confirmation of Registered Design Professional (RDP) attestation and upload of attestation documentation.
5. DOB NOW Payment Confirmation Number (i.e.'97320Cxxxxxx or 97321CRxxxxxx, if applicable).

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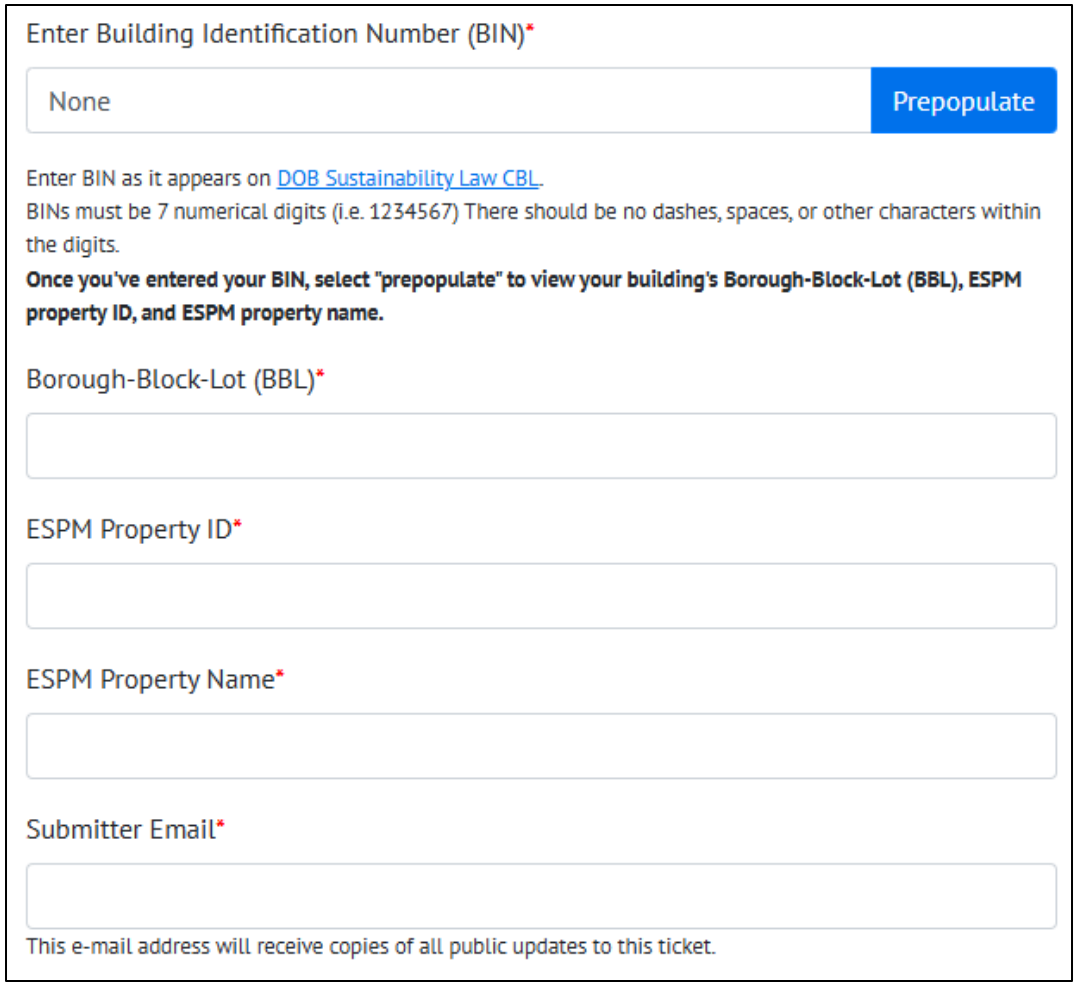
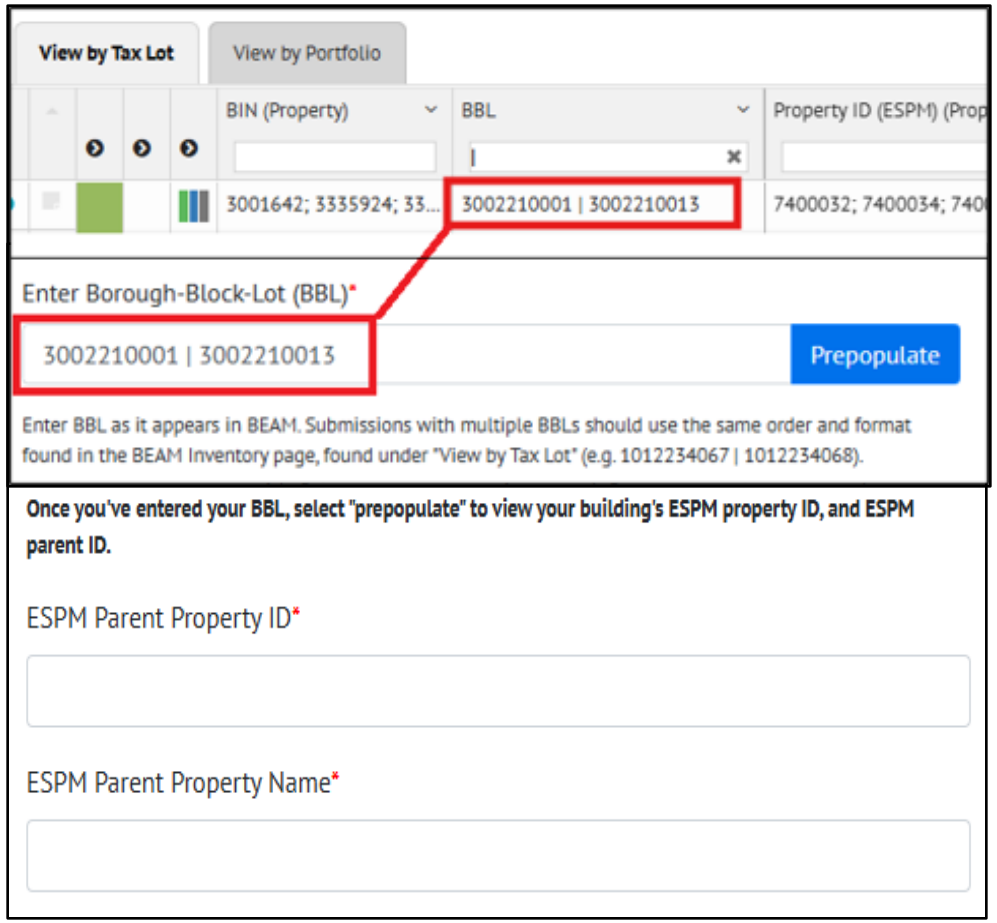
- If you selected Ticket 6 for individual buildings enter the **Building Identification Number (BIN)** as it appears on the DOB Sustainability Laws CBL.
- Once entered, press "Prepopulate". This will automatically fill in your **Borough-Block-Lot (BBL), ESPM Property ID,** and your **ESPM Property Name.**
  - You are attesting to the CY25 data associated with the ESPM Property ID entered into this report. If an incorrect ESPM Property appears in your report after clicking "Prepopulate" please email BEAM_LL97@buildings.nyc.gov.
- Enter the **Submitter Email**. This email address with receive copies of all public updates to this ticket.
  - **The email address must match one of the following email addresses entered in DOB NOW** (building owner, owner's representative, or service provider).



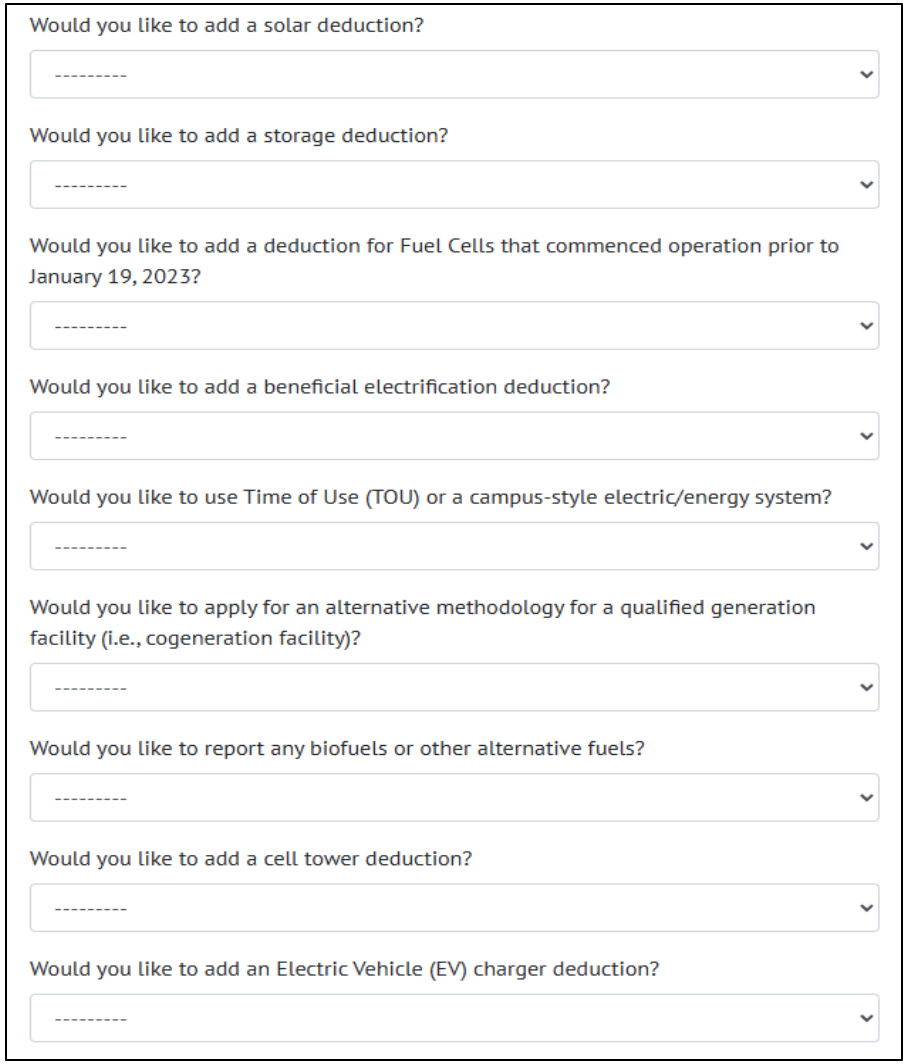
LL97 Deductions & Alternatives for User Guide

- If you selected Ticket 6a for multiple buildings enter the **Borough-Block-Lot (BBL)** as it appears on the DOB Sustainability Laws CBL or the exact string of BBLs for your campus on the BEAM tax lot.
  - The inputted BBL(s) must be identical to the campus you are attesting to in the tax lot view.
- Once entered, press "Prepopulate". This will automatically fill in your **ESPM Parent Property ID,** and your **ESPM Parent Property Name.**
  - You are attesting to the CY25 data associated with the ESPM Property ID entered into this report. If an incorrect ESPM Property appears in your report after clicking "Prepopulate" please email BEAM_LL97@buildings.nyc.gov.
- Enter the **Submitter Email**. This email address with receive copies of all public updates to this ticket.
  - **The email address must match one of the following email addresses entered in DOB NOW** (building owner, owner's representative, or service provider).



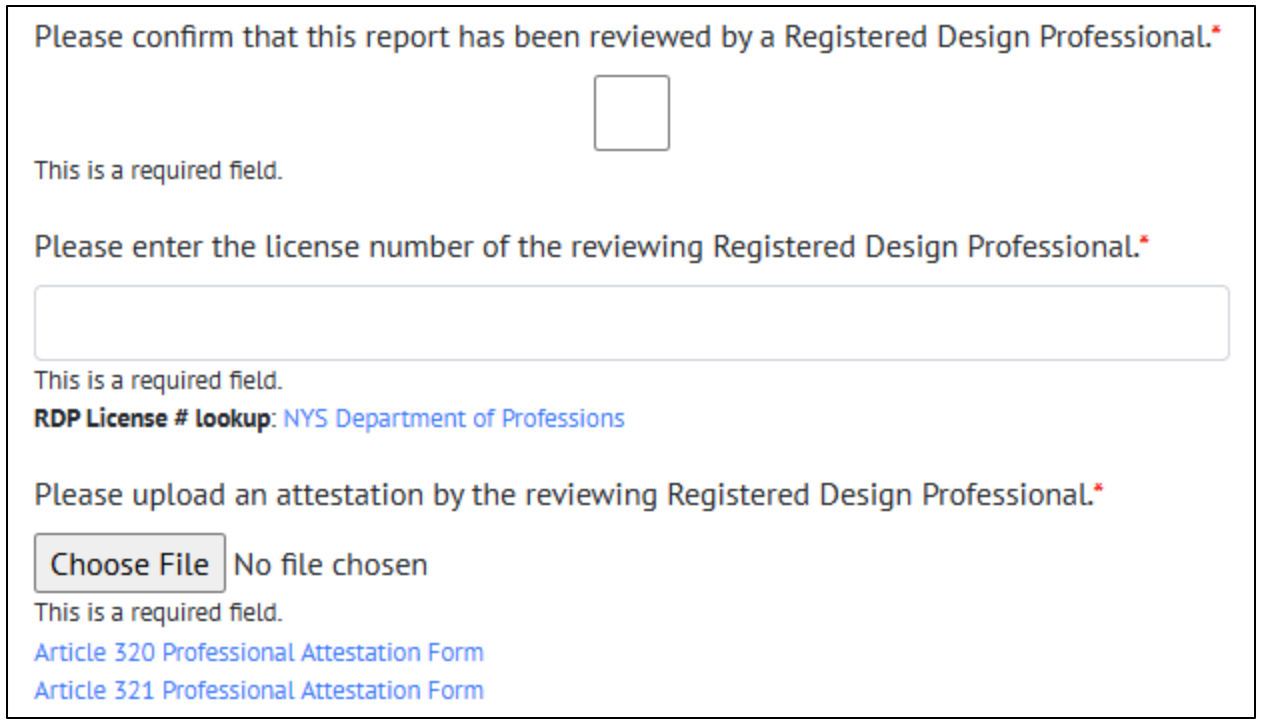
LL97 Deductions & Alternatives for User Guide

- You will then be asked to provide the following information.
- Please leave all fields that are not applicable to your buildings **BLANK**.



LL97 Deductions & Alternatives for User Guide

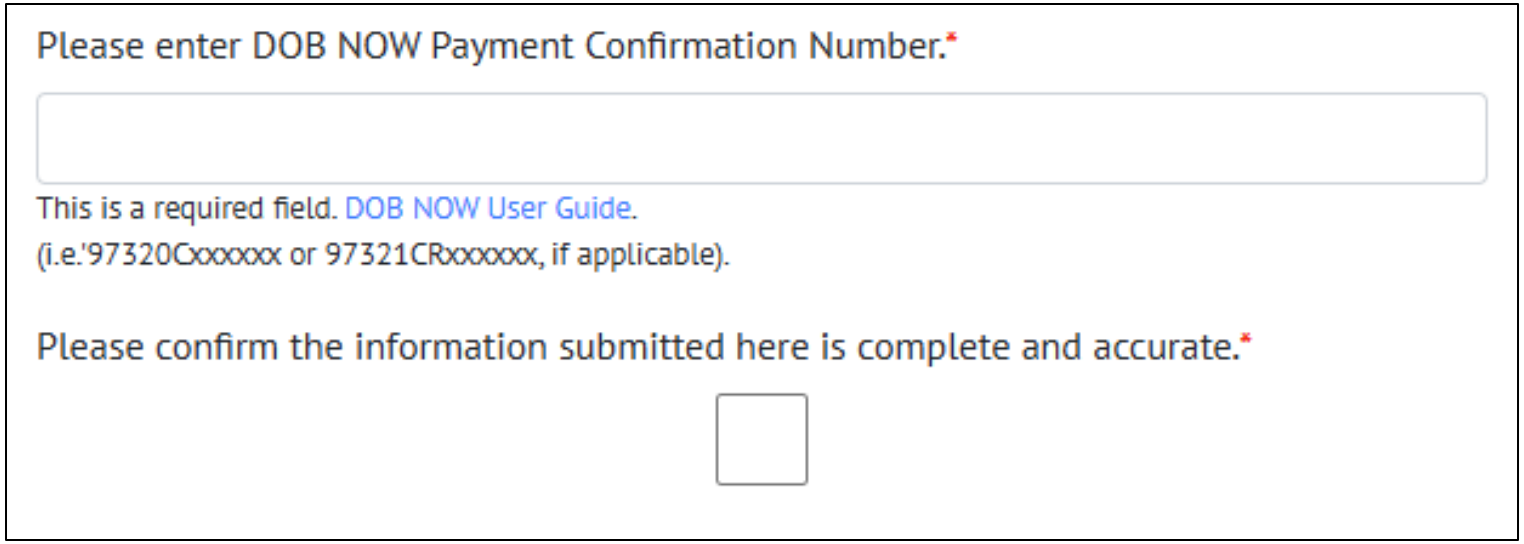
- Confirm that the report has been reviewed by an RDP by checking the box below.
- Enter the license information of the reviewing RDP, and upload the completed LL97 Article 320 or Article 321 Attestation form signed by both the RDP and building owner.



LL97 Deductions & Alternatives for User Guide

- Enter the **DOB NOW Payment Confirmation Number** (as referenced in Slide 15) and confirm that all submitted information is complete and accurate.

- Click **Submit Ticket** to submit your **LL97 Deductions and Alternatives to Calculating Annual Building Emissions (Article 320 and Article 321)** ticket.



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. Biofuels and Alternative Fuels

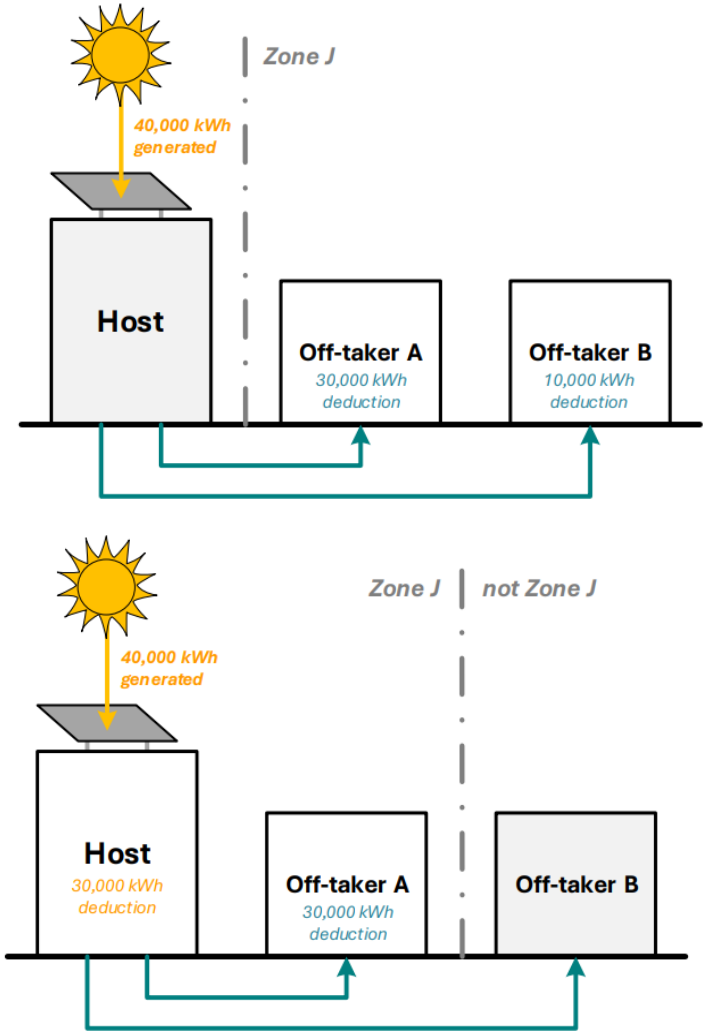
II. Solar Deduction: Background

To incentivize the 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 potentially be deducted from reported electricity use twice:
  - Once at the point of receipt (POR)
  - 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 Hosts 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**.

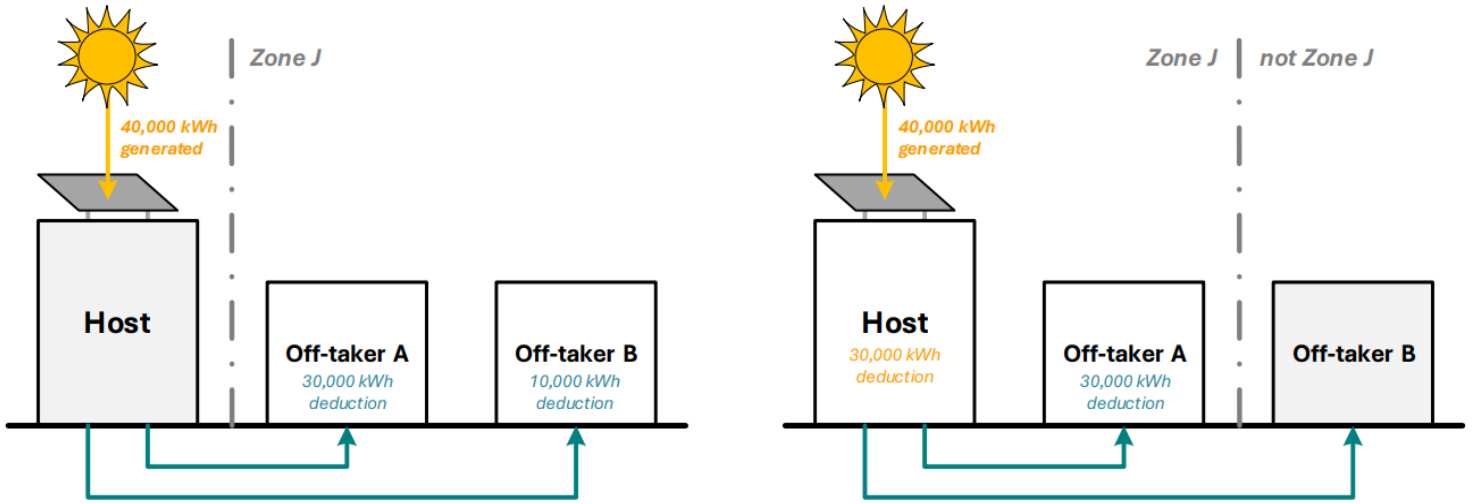
See the Article 320 Info Guide for more detailed information.



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 slides 90-96 of this guide.



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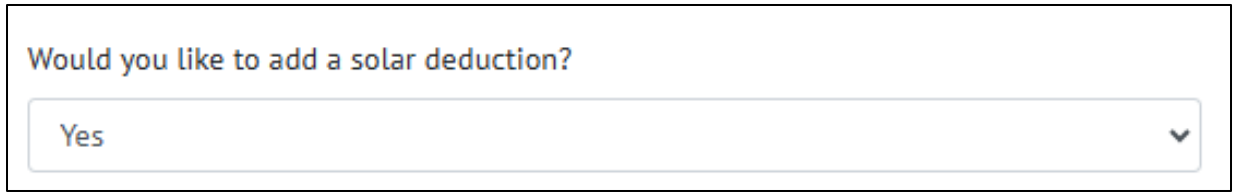
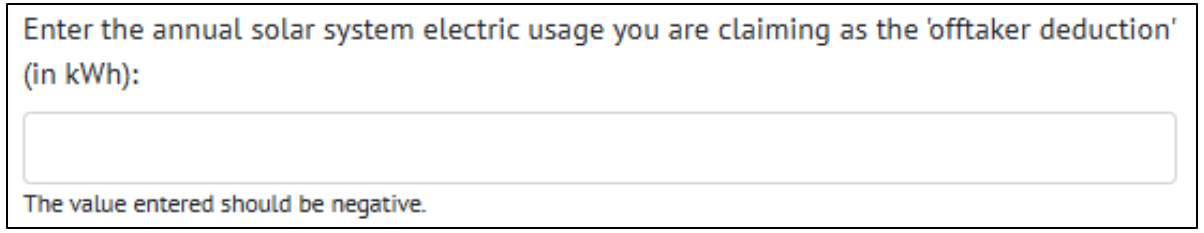
II(A). Solar Deduction (Off-Site)

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



- 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.
- Using the template shown on the following slides, calculate the electricity consumption associated with the solar system you are claiming as a deduction in kWh.



II. Solar Deduction: Template

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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:	

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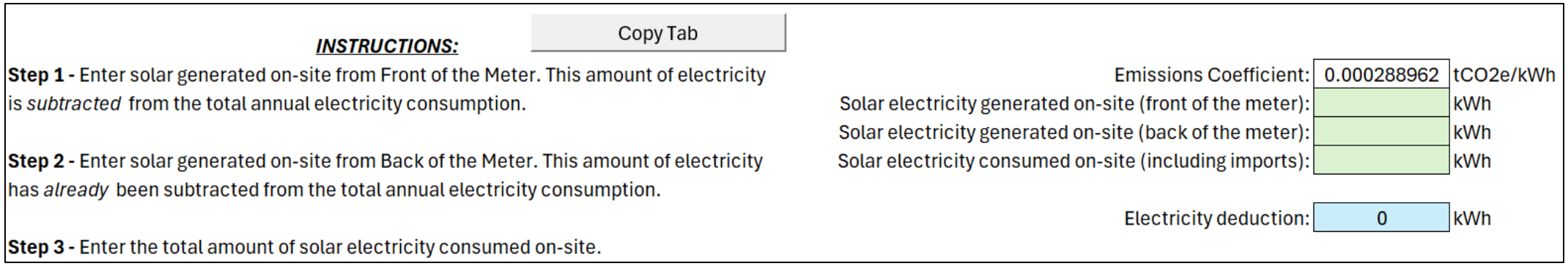
Template	RCNY 103-14 Forumla	Tab Name	Select if Applicable
Solar Credit	----	Solar Credit	**Applicable**
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	**Applicable**
Total Emissions Spread - Onsite	103-14.17	14.17 TES	**Applicable**
Natural Gas Fuel Cells	103-14.12	14.12 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(A). Solar Deduction (Off-Site): 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 **Behind 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.



INSTRUCTIONS:

Copy Tab

Step 1 - Enter solar generated on-site from Front of the Meter. This amount of electricity is *subtracted* from the total annual electricity consumption.

Step 2 - Enter solar generated on-site from Back of the Meter. This amount of electricity has *already* been subtracted from the total annual electricity consumption.

Step 3 - Enter the total amount of solar electricity consumed on-site.

Emissions Coefficient:	0.000288962	tCO2e/kWh
Solar electricity generated on-site (front of the meter):		kWh
Solar electricity generated on-site (back of the meter):		kWh
Solar electricity consumed on-site (including imports):		kWh
Electricity deduction:	0	kWh

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

- Input your solar system electric usage you are claiming (in kWh).

TEMPLATE

Emissions Coefficient:	0.000288962	tCO2e/kWh
Solar electricity generated on-site (front of the meter):		kWh
Solar electricity generated on-site (back of the meter):		kWh
Solar electricity consumed on-site (including imports):	30,000	kWh
Electricity deduction:	30,000	kWh

BEAM REPORT

Would you like to add a solar deduction?

Yes

Enter the annual solar system electric usage you are claiming (in kWh):

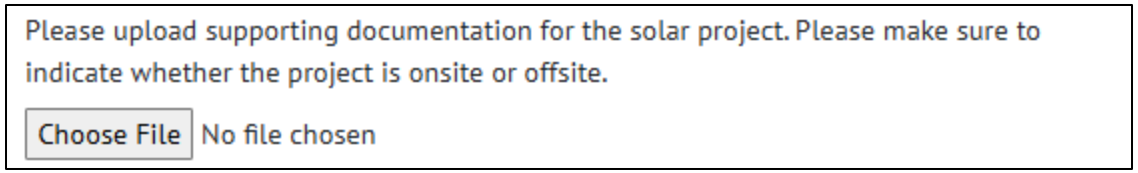
-30000

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 LL97-eligible RECs were created.**
   - If the Host chooses to register the generated solar kWh as LL97-eligible RECs (which currently only include Tier 4 RECs), there can be neither a Host deduction nor an Off-taker deduction.



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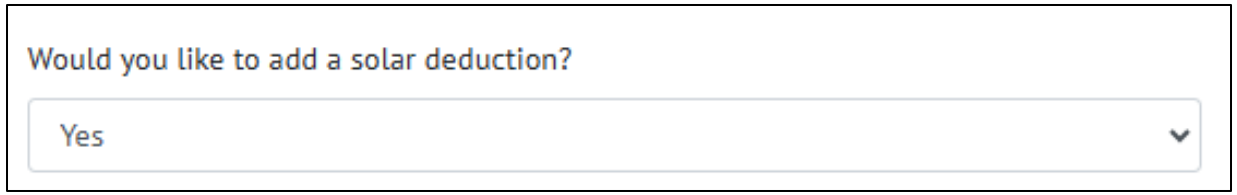
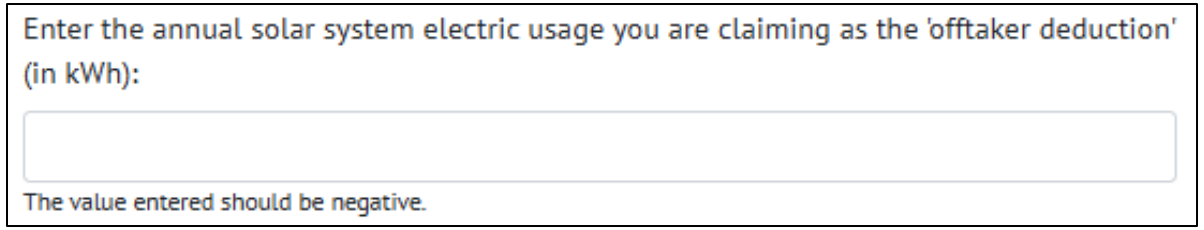
II(A). Solar Deduction (Off-Site)

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



- Using the template shown on the following slides, calculate the electricity consumption associated with the solar system you are claiming as a deduction in kWh.



II. Solar Deduction: Template

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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:	

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Template	RCNY 103-14 Forumla	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**
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Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	**Applicable**
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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(B). Solar Deduction (On-Site): Template

- See an example below of properties that may use the template.

Electricity produced on-site (Front of the Meter): 50,000 kWh
Electricity exported to the Grid: 0 kWh

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):	0	kWh
Electricity deduction:	50,000	kWh

Electricity produced on-site (Behind the Meter): 25,000 kWh
Electricity consumed on-site: 25,000 kWh

Emissions Coefficient:	0.000288962	tCO2e/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

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

- Input the annual solar system electric usage you are claiming as a deduction (in kWh).

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

BEAM REPORT

Would you like to add a solar deduction?

Yes

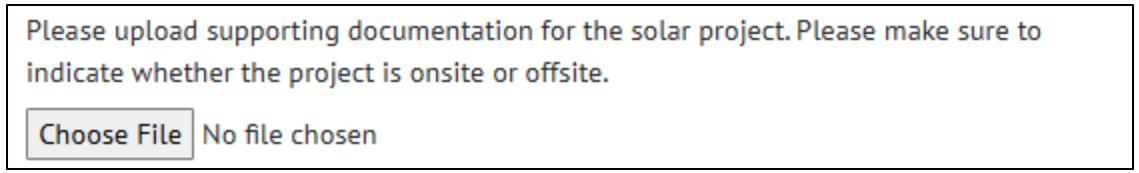
Enter the annual solar system electric usage you are claiming (in kWh):

-100000

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 LL97-eligible RECs were created.**
     - If the Host chooses to register the generated solar kWh as LL97-eligible RECs (which currently only include Tier 4 RECs), there can be neither a Host deduction nor an Off-taker deduction.



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. Biofuels and Alternative Fuels

III. Energy Storage Deduction: Background

Like solar, Energy Storage systems can 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

See the Time of Use (TOU) section on slides 88-94 of this guide for more information.

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.

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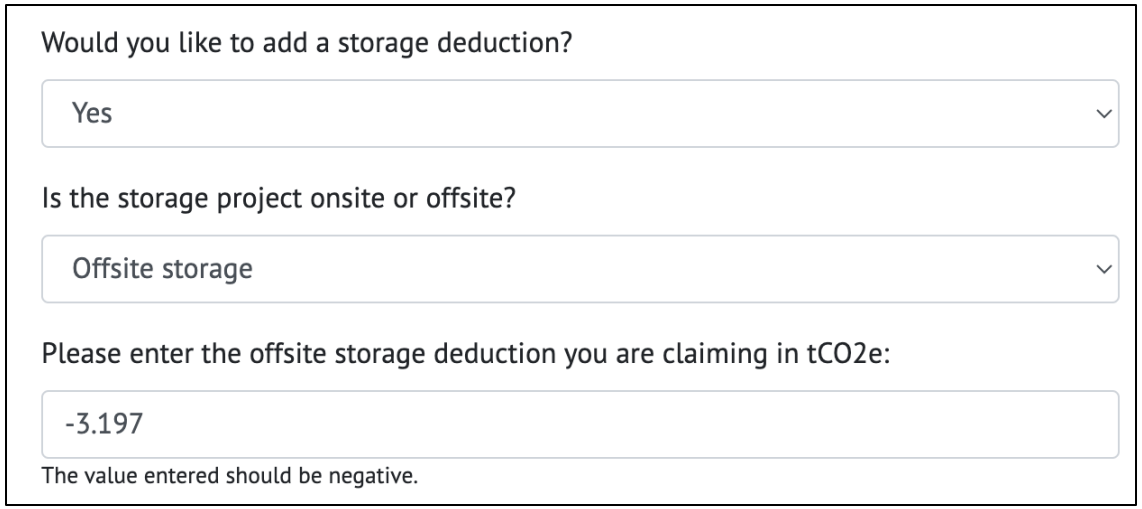
III(A). Off-site Energy Storage Deduction

- 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**.
- Using the template shown on the following slides, calculate the offsite storage deduction you are claiming in tCO2e.



III(A). Off-site Energy Storage Deduction: Template

BEAM

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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 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	**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

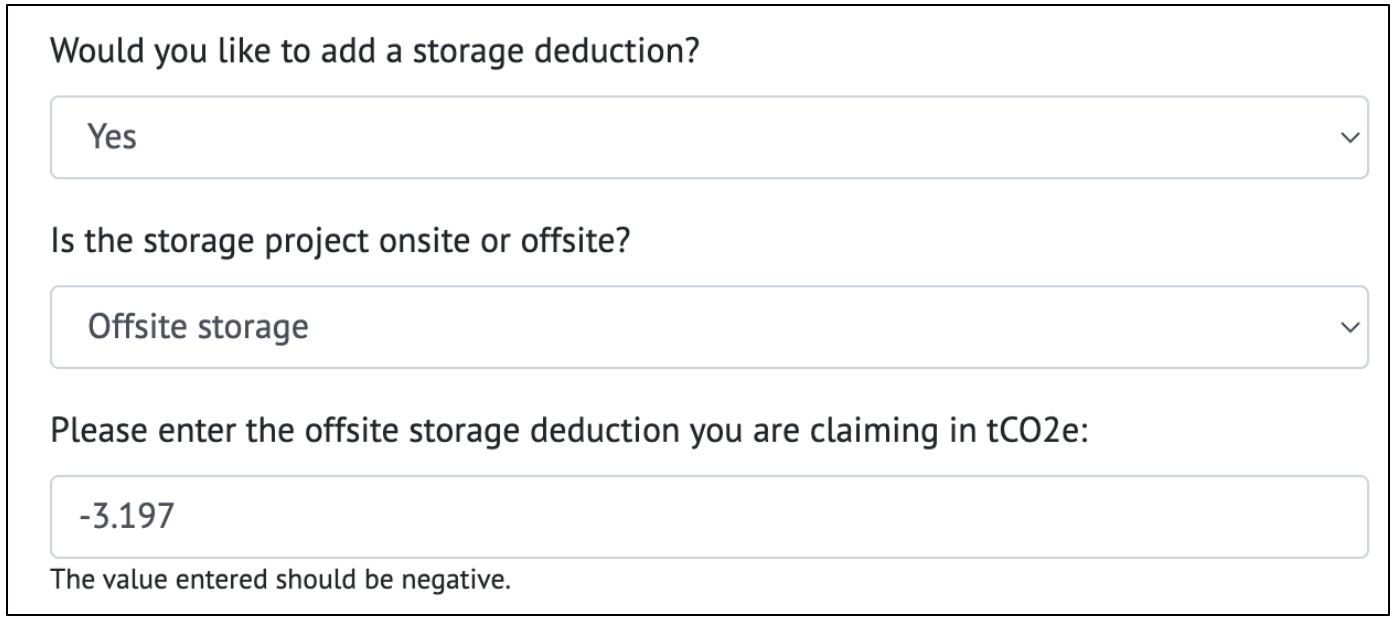
III(A). Off-site Energy Storage Deduction: Template

- 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

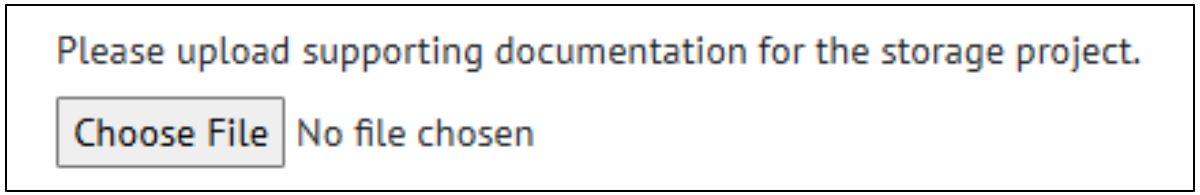
III(A). Off-site Energy Storage Deduction

- Input the calculated off-site storage deduction you are claiming in tCO2e.



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



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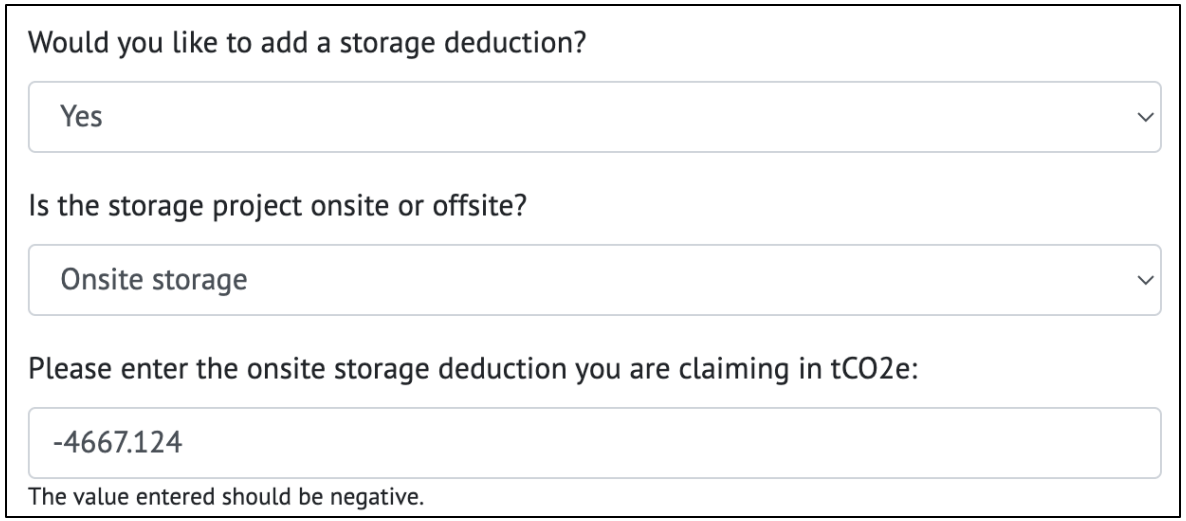
IX. Biofuels and Alternative Fuels

III(B). On-site Energy Storage Deduction

- 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**.
- Using the template on the following slides calculate the onsite storage deduction you are claiming in tCO2e.



III(B). On-site Energy Storage Deduction: Template

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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 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	**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: Template

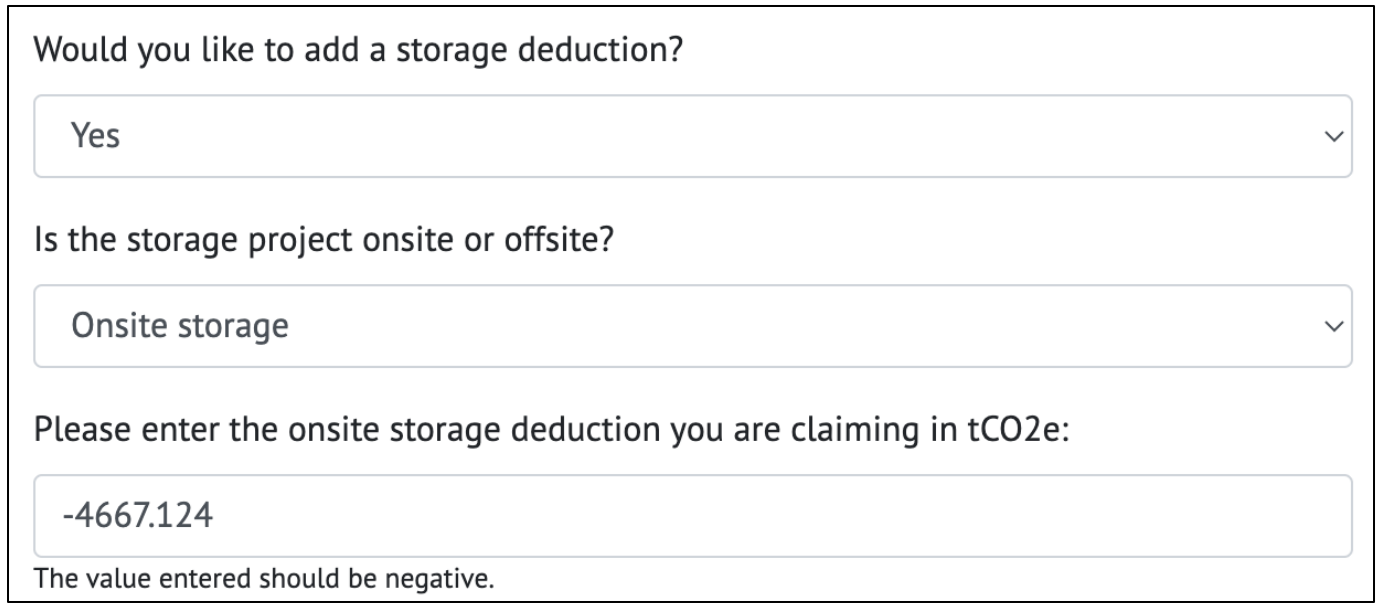
BEAM

- 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

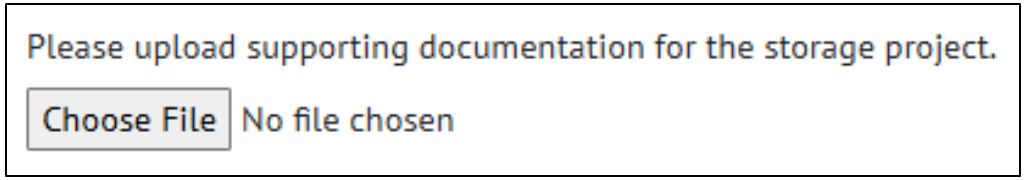
III(B). On-site Energy Storage Deduction

- Input the calculated onsite storage deduction you are claiming in tCO2e.



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 (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



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VIII. Combined Heat and Power
IX. Biofuels and Alternative Fuels

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.

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:

$$FCEM = (FCNG \times NGC) - (FCEL \times MGC)$$ (Equation 103-14.12)

Where:

FCEM = the annual natural gas-powered fuel cell differential emissions in tCO_2e.

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 tCO_2e per kBtu.

MGC = the annual average marginal grid coefficient per Table 103-14.1.

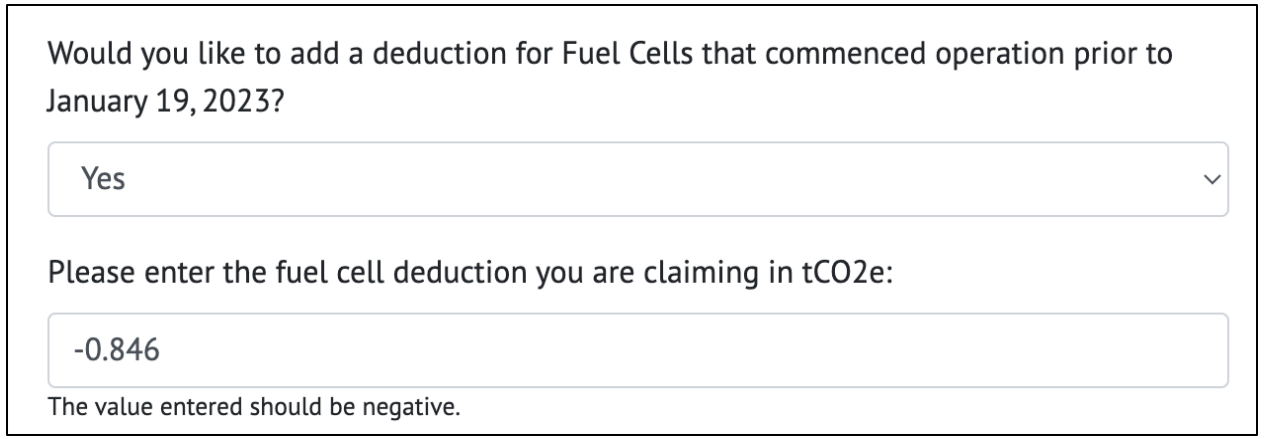
FCEL = the annual electricity generated by the natural gas-powered fuel cell, in kWh.

Table 103-14.1

Year	MGC (tCO_2e/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)

- Select **Yes** when asked if you would like to add a deduction for Fuel Cells that commenced operation prior to January 19, 2024
- Using the template shown on the following slides, calculate the fuel cell deduction in tCO2e



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

BEAM

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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 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	**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): Template

- 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	2024

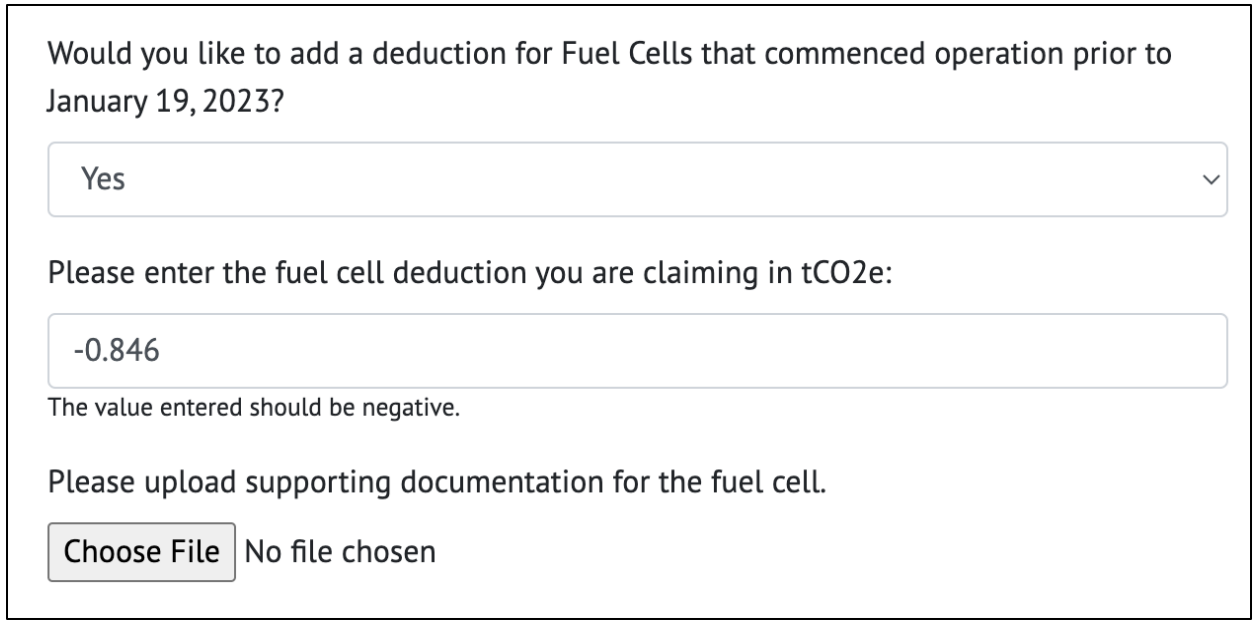
Definition	Variable	Value	Units	
Annual natural gas consumed by the natural gas-powered fuel cell	FCNG	100,353	kBtu	
Annual electricity generated by the natural gas-powered fuel cell	FCEL	25,000	kWh	
Natural gas coefficient	NGC	0.00005311	tCO2e/kBtu	
Annual average marginal grid coefficient per Table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

- Input the fuel cell deduction you are claiming in tCO2e
- Upload the template used to calculate your fuel cell deduction.



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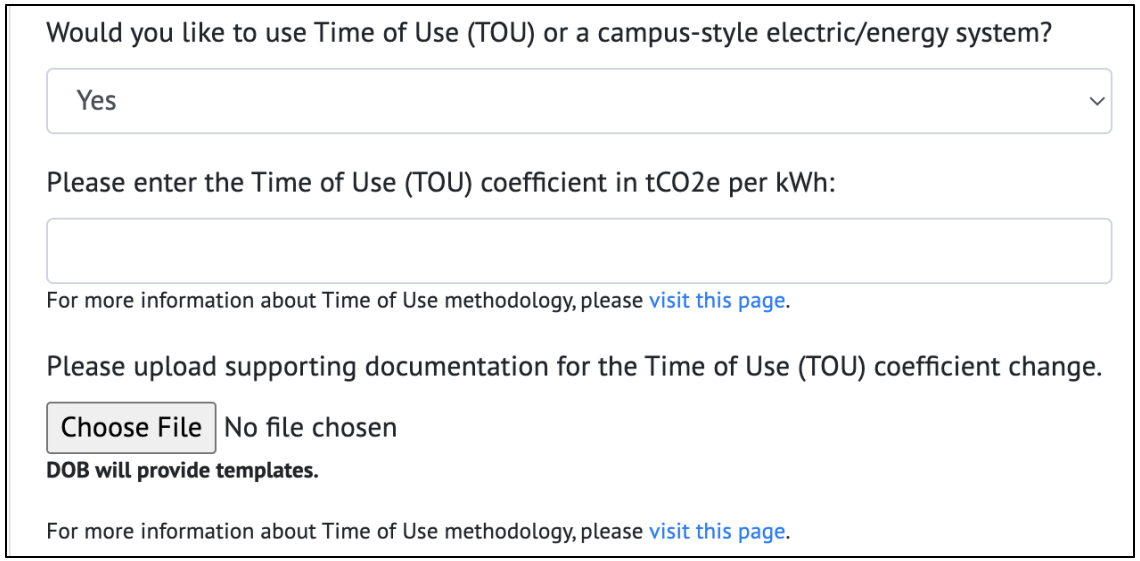
IV(B). Natural Gas-Powered Fuel Cells (Installed Post-1/19/2023)

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. For more information about Time of Use methodology, please visit this page.

- Select **Yes** when asked whether you would like to use campus-style electric system. Please see page #97-104 for compliance with campus-style electric systems.



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V. Beneficial Electrification

    A. Beneficial Electrification Deemed Approach
    B. Beneficial Electrification Metered Approach
    C. Beneficial Electrification Banking Credits
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VII. Campus-Style
    A. Energy
    B. Electricity
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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.

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 ≤ 5°F showing at least a 1.5 COP (as reported by the manufacturer) is acceptable

NOTE: This deduction is only available for individual buildings utilizing a Ticket #6.

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V(A). Beneficial Electrification Deemed Approach: Background

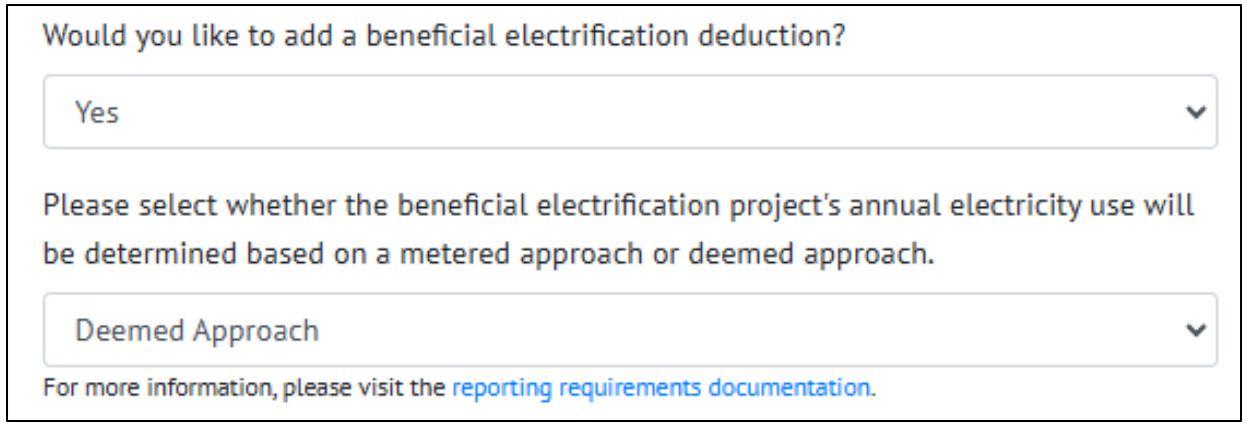
Deemed is a term that comes from energy contracts, where it describes an estimated rate that is used in the absence of fixed rate agreements. For LL97 BE purposes, the deemed electric use methodology produces a rigorous estimate of energy use, based on equipment capacity and average user demand, that 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 Report section of this guide on slides #79-84.

V(A). Beneficial Electrification Deemed Approach: Background

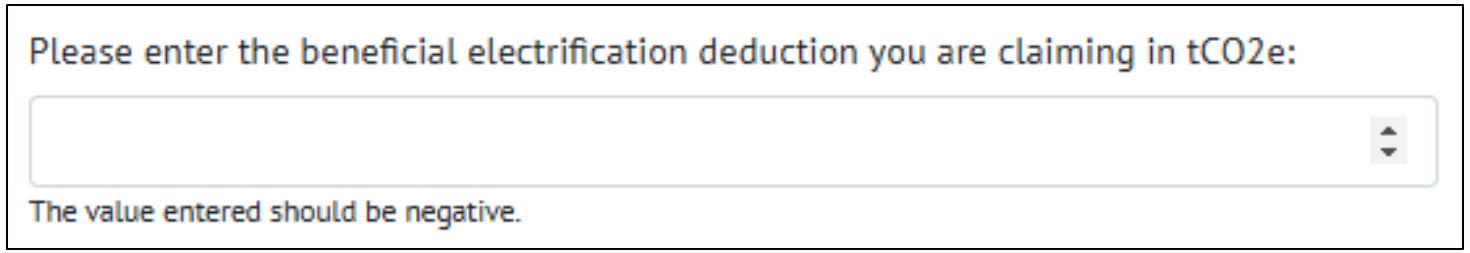
- Select **Yes** when asked if you would like to add a beneficial electrification deduction.

- 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 **Deemed Approach.**
  - You may also select **Both metered and deemed approach** and fill out the pertinent template tabs for each approach.



V(A). Beneficial Electrification Deemed Approach

- Use the template shown on the following slides to calculate your Beneficial Electrification Adjustment in tCO2e.
- **NOTE:** Template requirements shown in the following slides are different for air-source heat pumps (ASHPs) and for heat pump water heaters (HPWHs). You must use tab 14.14 for air-source heat pumps (ASHPs) and tab 14.15,16 for heat pump water heaters (HPWHs).



V(A). Beneficial Electrification Deemed Approach

Air-source heat pumps (ASHPs) Requirements

- 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: Template

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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 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	**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: Template

- You must use tab **14.14** for air-source heat pumps (ASHPs)
  - 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	tCO2e/kWh
2027 - 2029	-0.00065	tCO2e/kWh

DEEMED APPROACH

Quantity: 4

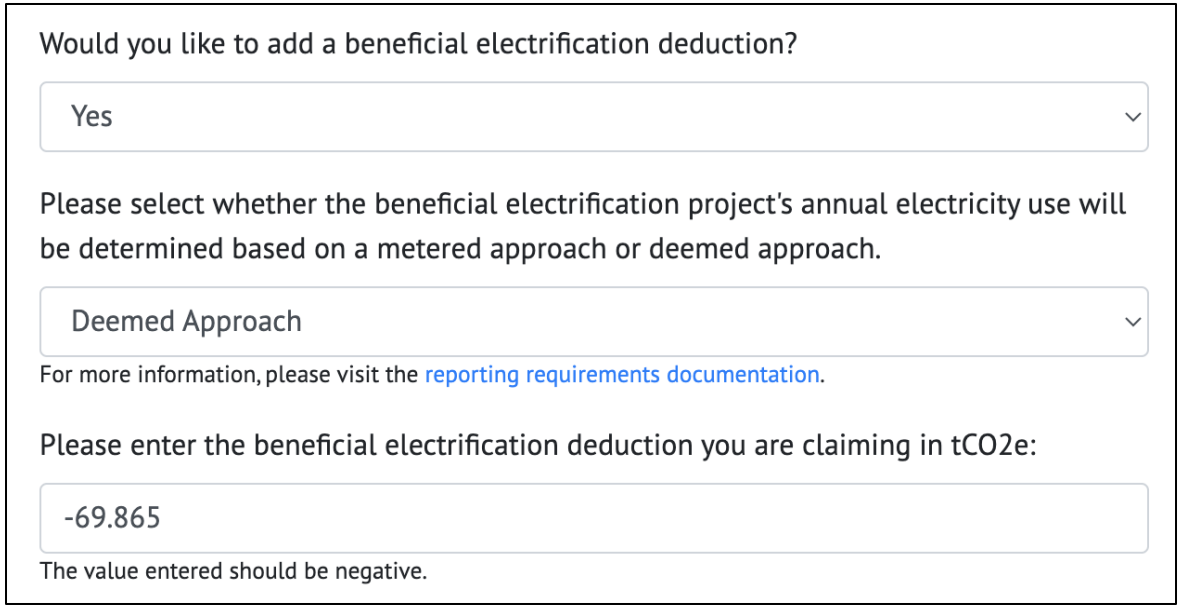
Total Credit: **-69.9** tCO2e/yr

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 (tCO2e/kWh)	Credit (tCO2e)
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

- Input your calculated Beneficial Electrification Adjustment in tCO2e.



Heat Pump Water Heaters (HPWHs) Requirements

- 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: Template

BEAM

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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 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	**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: Template

- You must use **tab 14.15,16** for heat pump water heaters (HPWHs).
  - 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).

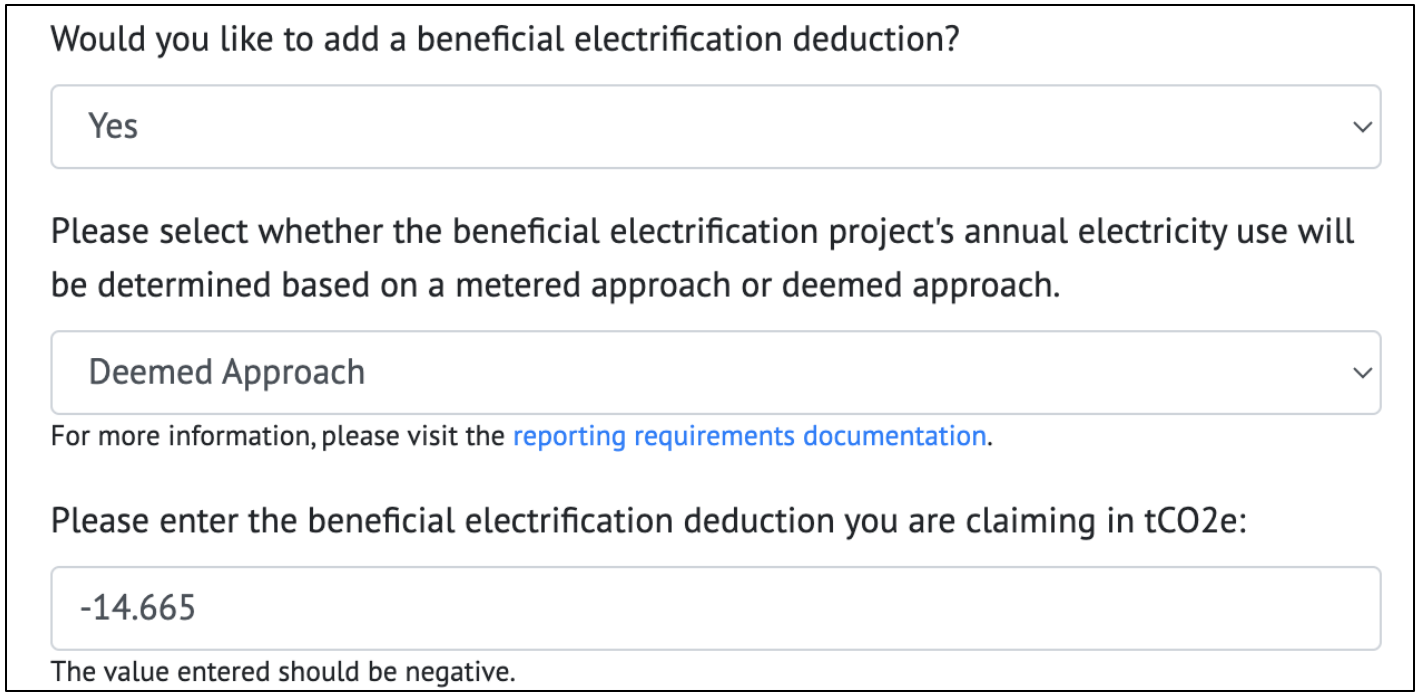
Quantity: 3

Total Credit: **-14.7** tCO2e/y

		C					WH_de	GPD	CF	PL			
Unit #	# Like Units	Capacity (kBtu/h)	Date of Installation (XX/XX/XXXX)	Occupancy	Occupancy Metric	Metric	Annual Consumption (kWh)	HW Consumption (gal/day)	HPWH Capacity Factor	Peak Load	Peak Load Factor	Credit (tCO2e/kWh)	Credit (tCO2e)
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

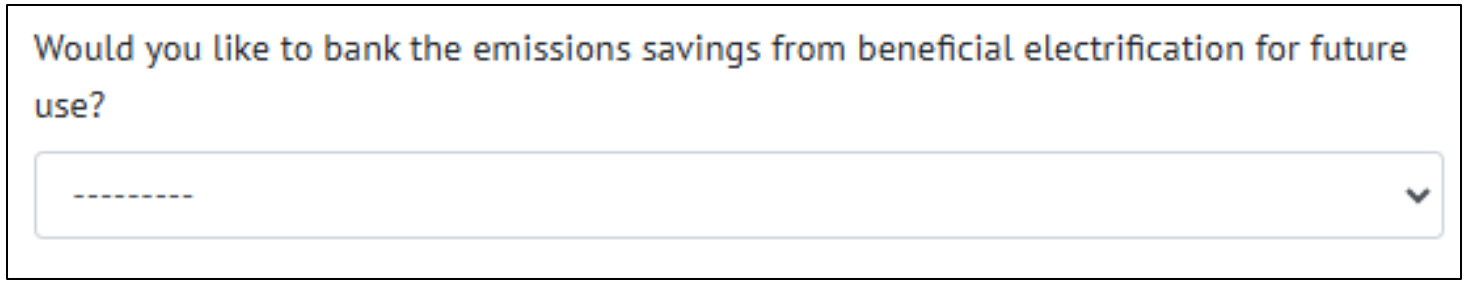
V(A). Beneficial Electrification Deemed Approach

- Input your calculated Beneficial Electrification Adjustment in tCO2e.



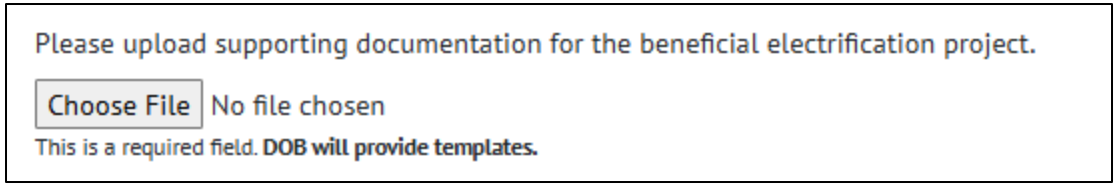
V(A). Beneficial Electrification Deemed Approach

- *Answer whether you would like to bank the emissions savings from beneficial electrification.*
  - *Guidance on the **Banking Credits** approach can be found on slides 86 and 87.*



V(A). Beneficial Electrification Deemed Approach

- Upload **supporting documentation** for beneficial electrification including:
  - The template used to calculate your beneficial electrification deduction.
  - 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.



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. Biofuels and Alternative Fuels

V(B). Beneficial Electrification Metered Approach: Background

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:

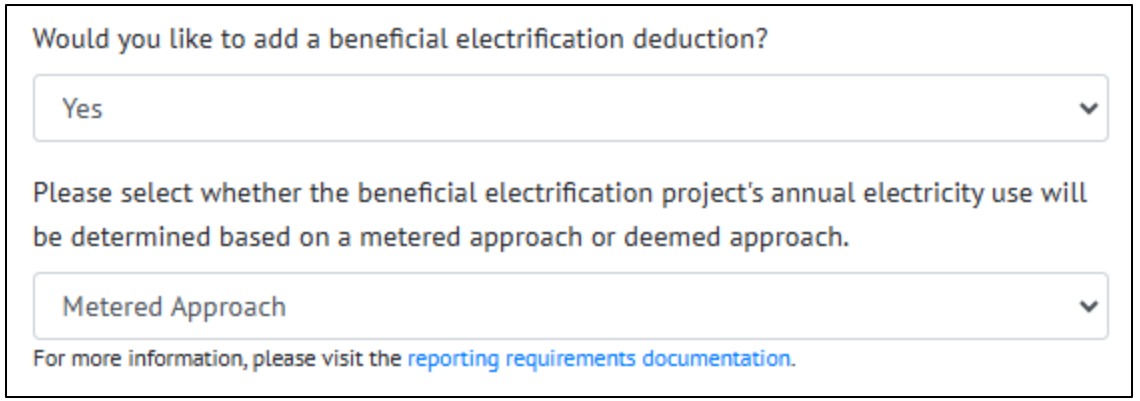
- must be separately metered by the utility; or
- must be separately metered or sub-metered by the owner in a manner that produces auditable data aligned with the reporting year; or
- must be capable of and configured to produce data that records the electricity supplied to the equipment over the course 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 slides #64-77.

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** and fill out the pertinent template tabs for each approach.



V(B). Beneficial Electrification Metered Approach: Template

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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 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	**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: Template

Use the template to calculate your Beneficial Electrification Adjustment.

- 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.

METERED APPROACH

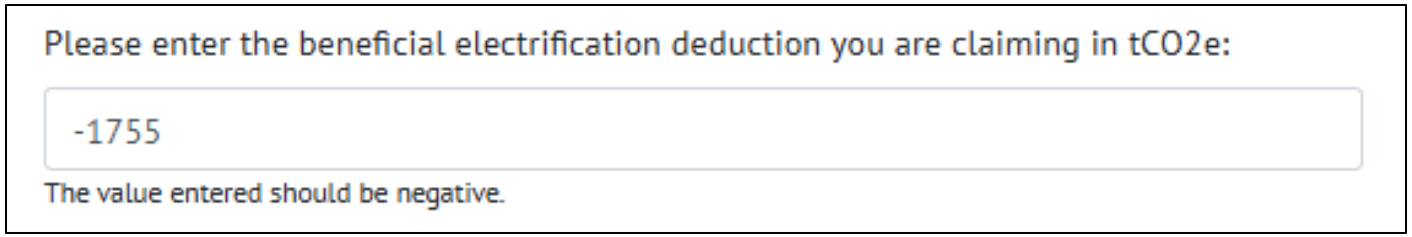
Quantity: 3

Total Credit: **-1,755.0** tCO2e/yr

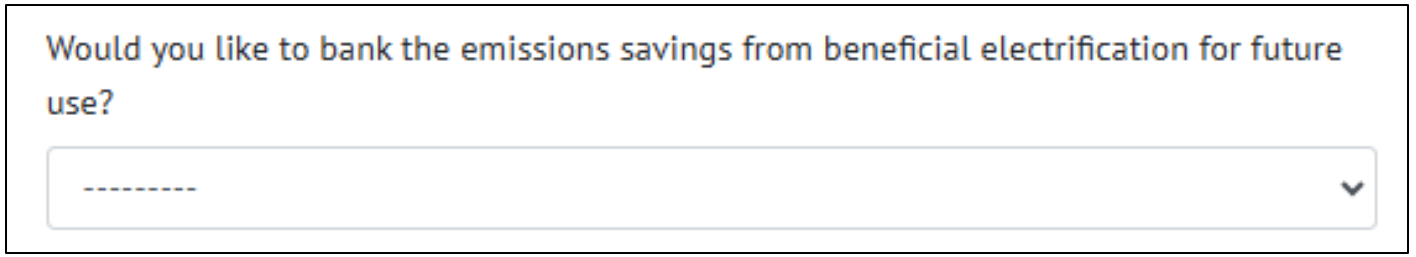
Unit #	COP at 5°F	Metered Consumption (kWh)	Peak Capacity (kBtu)	Date of Installation (XX/XX/XXXX)	Credit (tCO2e/kWh)	Credit (tCO2e)
1	1.50	70,000	120.0	1/1/2022	-0.0013	-91.000
2	1.55	80,000	180.0	1/1/2021	-0.0013	-104.000
3	1.60	1,200,000	240.0	1/1/2023	-0.0013	-1,560.000

V(B). Beneficial Electrification Metered Approach

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

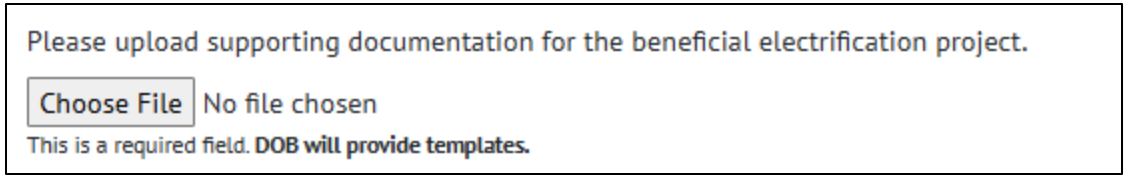


- *Guidance on the **Banking Credits** approach can be found in slides 86 and 87.*



V(B). Beneficial Electrification Metered Approach

- Upload **supporting documentation** for beneficial electrification including:
  - The template used to calculate your beneficial electrification deduction.
  - 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.

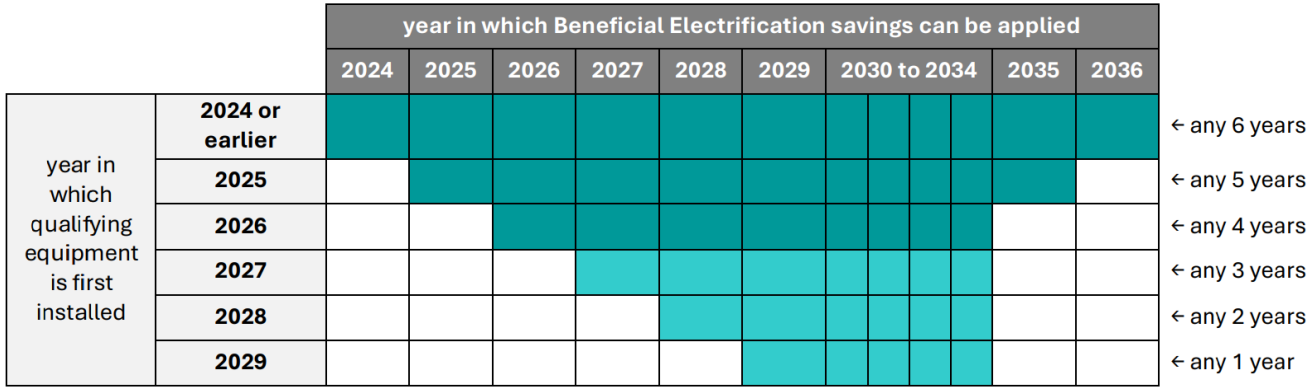


I. DOBNOW – ESPM – BEAM
II. Solar Deduction
    A. Off-Site
    B. On-Site
III. Storage Deduction
    A. Off-Site
    B. On-Site
IV. Natural Gas-Powered Fuel Cells
    A. Installed Pre-1/19/2023
    B. Installed Post-1/19/2023
V. Beneficial Electrification
    A. Beneficial Electrification Deemed Approach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

V(C). Beneficial Electrification Banking Credits: Background

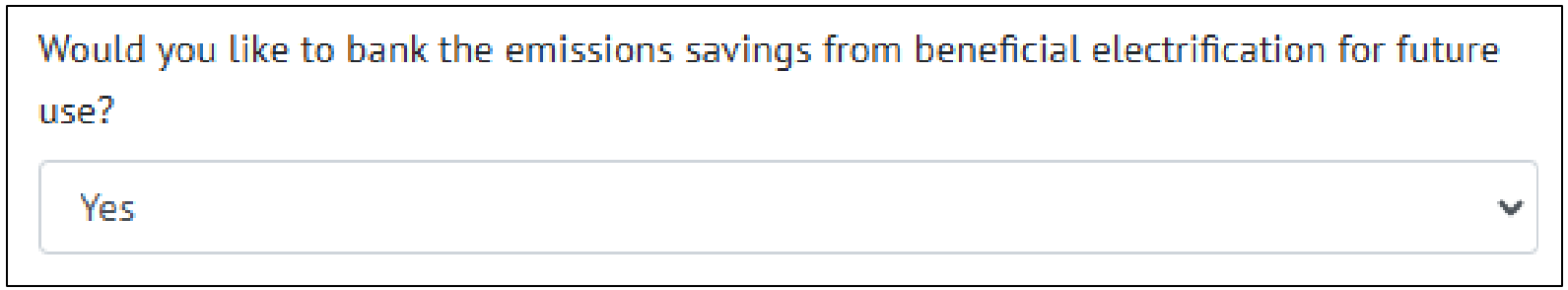
Owners who have qualifying equipment that is installed and remains in operation in the covered building, may apply GHG emissions savings or accrue savings for future use in reporting emissions for such building, provided that in any reporting year between 2024 and 2036 in which such covered building's 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.



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**.



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VI. Time-Of-Use

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

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.

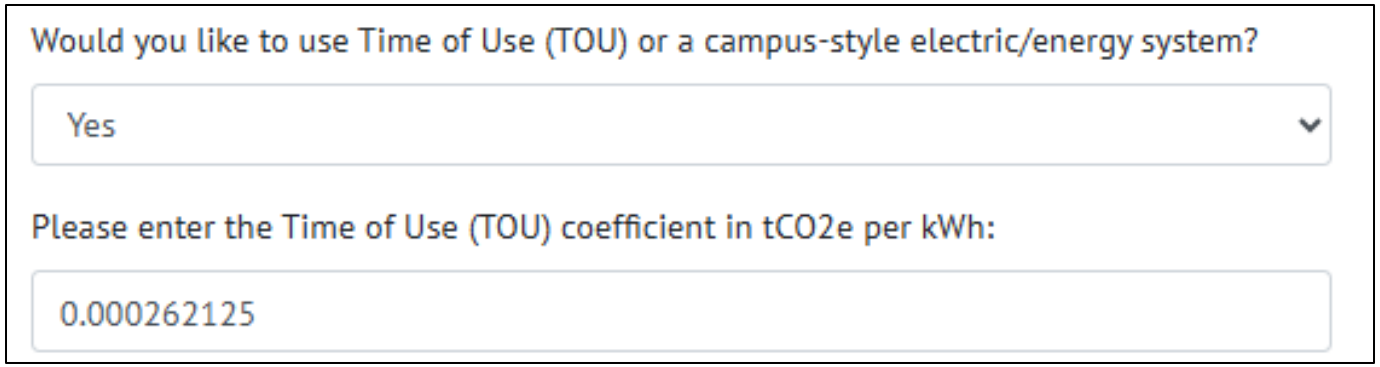
TOU can be used by either Host or Off-taker(s) of energy storage if hourly data for charging and discharging activity is available.

*Please consult Equations **103-14.2, 103-14.3, 103-14.4, and 103-14.5** found in 1 RCNY 103-14*

VI. Time-Of-Use (TOU)

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

- Using the template shown on the following slides, calculate the Time-Of-Use coefficient. For more information about Time of Use methodology, please visit this page.



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

Select 'Yes' if importing/exporting energy resource to/from building(s) not covered by this report:	No
Reason for disaggregating data:	BIN level metered data is available

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 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	**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): Template

- Enter hourly metered grid electricity consumption

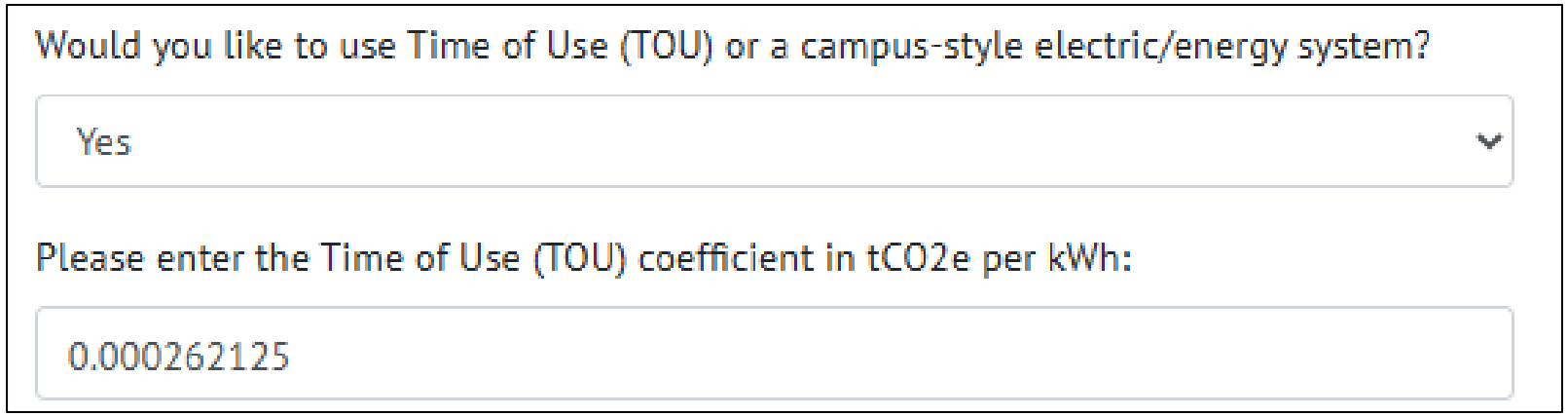
Min:	1	1/1/2024 0:00	1	1	1	1	0.000000015	-	-
Avg:	4,393	7/1/2024 12:00	184	7	16	13	0.000262362	-	-
Max:	8,784	12/31/2024 23:00	366	12	31	24	0.000857226	-	-
							Sum:	-	- tCO2e annual
									0.00028896 ***tCO2e/kWh***

Calculation

Hour n	*Eastern Date Hour*	*Day of Year*	*Month*	*Day of Month*	*Hour of Day*	*TOU_n $tCO2_e/kWh$*	*Grid Electricity kWh*	*Emissions $tCO2_e$*
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

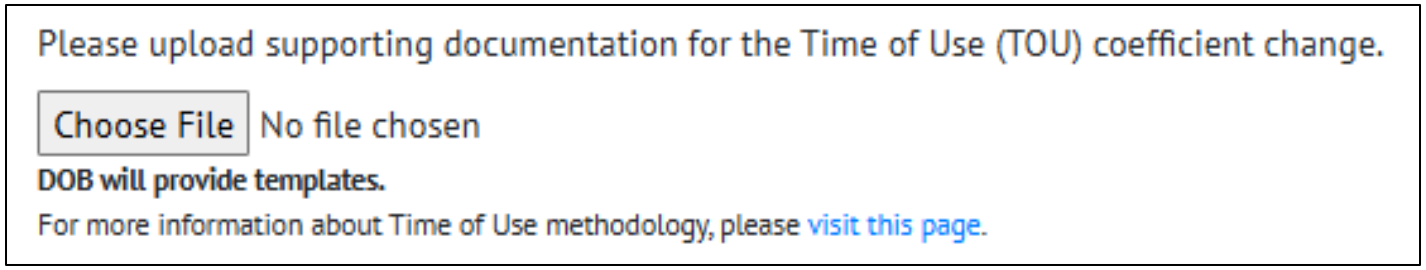
VI. Time-Of-Use (TOU)

- Input your calculated Time of Use (TOU) coefficient in tCO2e per kWh



VI. Time-Of-Use (TOU)

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



I. DOBNOW – ESPM – BEAM
II. Solar Deduction
    A. Off-Site
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VI. Time-Of-Use
VII. Campus-Style
    A. Energy
    B. Electricity
VIII. Combined Heat and Power
IX. Biofuels and Alternative Fuels

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.

Additional information on campus reporting will be released by the department.

VII. Campus-Style Energy Systems: Background

Information found in 1 RCNY 103-14

(v) *Greenhouse gas coefficients for certain campus-style energy systems.* Notwithstanding any other provision of this section, the GHG coefficient for energy generated by a campus-style energy system must be calculated in accordance with this subparagraph (v). Such energy may include district heating and cooling or other district energy.

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

VII. Campus-Style Energy Systems: Background

Information found in 1 RCNY 103-14

b. Calculations.

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

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

Where:

g_{cx}	=	the campus-style energy system GHG coefficient, in tCO_2e per kBtu, for the campus energy resource, cx.
m_n	=	the plant input energy consumed by each campus-style energy system used to generate the campus energy resource, n, in kBtu.
g_n	=	the GHG coefficient for each plant input energy source, n, in tCO_2e per kBtu.
m_{cx}	=	the total amount, in kBtu, of the campus energy resources, cx, consumed by all covered buildings served by the campus-style energy system.

VII. Campus-Style Energy Systems: Background

Information found in 1 RCNY 103-14

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

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

Where:

g_x	=	the combined GHG coefficient, in tCO_2e per kBtu, for a campus energy resource, x.
m_{ux}	=	the amount of the campus energy resource, ux, from the utility consumed by the covered building or campus, in kBtu.
g_{ux}	=	the applicable GHG coefficient for the campus energy resource, ux, as supplied by a utility, in tCO_2e per kBtu, as provided pursuant to Article 320 of Chapter 3 of Title 28 of the Administrative Code or this paragraph.
m_{cx}	=	the total amount, in kBtu, of the campus energy resource, cx, consumed by all covered buildings served by the campus-style energy system.
g_{cx}	=	the campus-style energy system GHG coefficient, in tCO_2e per kBtu, for the campus energy resource, cx.

VII. Campus-Style Electric Systems: Background

Information found in 1 RCNY 103-14

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

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

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

Where:

g_{ce}	=	the on-site campus generated electricity GHG coefficient in tCO_2e per kWh.
m_n	=	the plant input energy for each energy source consumed, n, in kBtu.
g_n	=	the GHG coefficient for each plant input energy source, n, in tCO_2e per kBtu as provided pursuant to Article 320 of Chapter 3 of Title 28 of the Administrative Code or this paragraph.
m_{ce}	=	the total electricity consumed by buildings and other campus loads from the campus-style electric system, in kWh, during the year being reported, 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.

VII. Campus-Style Electric Systems: Background

Information found in 1 RCNY 103-14

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

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

Where:

g_e	=	the GHG coefficient for electricity generated by a campus-style electric system on-site, in tCO_2e per kWh.
m_{ue}	=	the total electricity consumed by buildings and other campus loads from the utility grid, in kWh.
g_{ue}	=	the GHG coefficient for utility electricity, in tCO_2e per kWh, provided pursuant to Article 320 of Chapter 3 of Title 28 of the Administrative Code or this paragraph.
m_{ce}	=	the electricity consumed by buildings and other campus loads from the campus-style electric system, in kWh, 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).

VII. Campus-Style Electric Systems: Background

Information found in 1 RCNY 103-14

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

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

Where:

g_e	=	the GHG coefficient for electricity generated by a campus-style electric system on-site, in tCO_2e per kWh.
m_{ueh}	=	the hourly electricity consumed by buildings and other campus loads from the utility grid, in kWh.
g_{TOU}	=	the hourly TOU GHG coefficient, as calculated in accordance with subparagraph (iii) of this paragraph for the calendar year being reported, in tCO_2e 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 tCO_2e per kWh, see Equation 103-14.7.
m_{ue}	=	the total electricity consumed by buildings and other campus loads from the utility grid, in kWh, see Equation 103-14.8.

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    A. Energy
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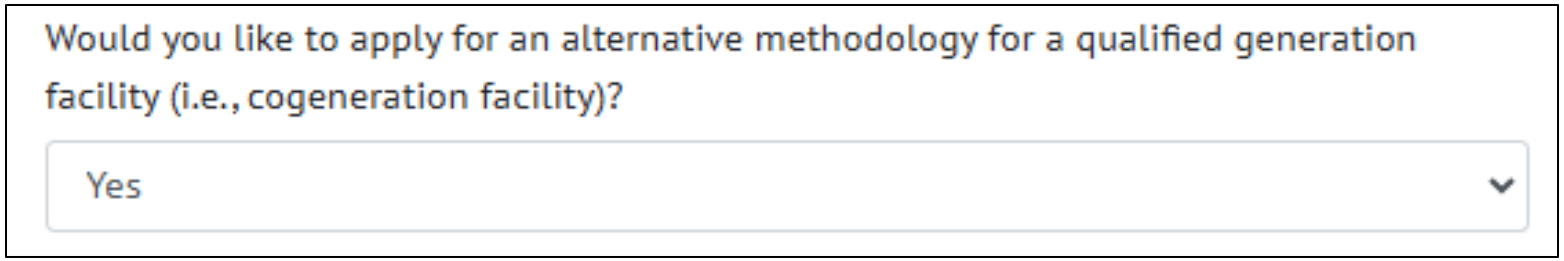
VIII. Combined Heat and Power

IX. Biofuels and Alternative Fuels

VIII. Combined Heat and Power

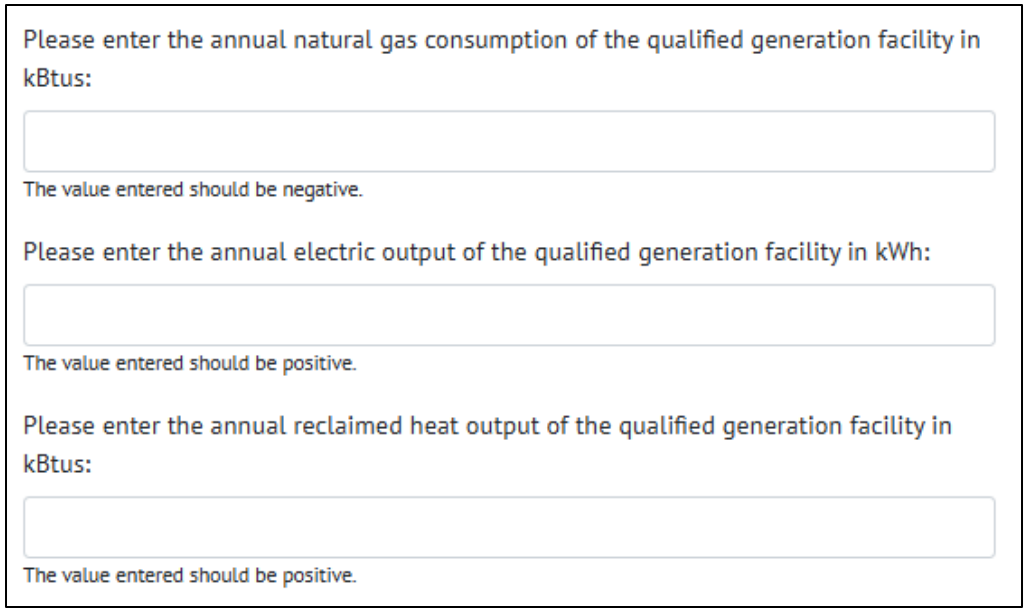
Select **Yes** when asked whether you would like to apply for an alternative methodology for a qualified generation facility (i.e., cogeneration facility).



VIII. Combined Heat and Power

Using the template shown on the following slides, calculate the Combined Heat and Power plant outputs.

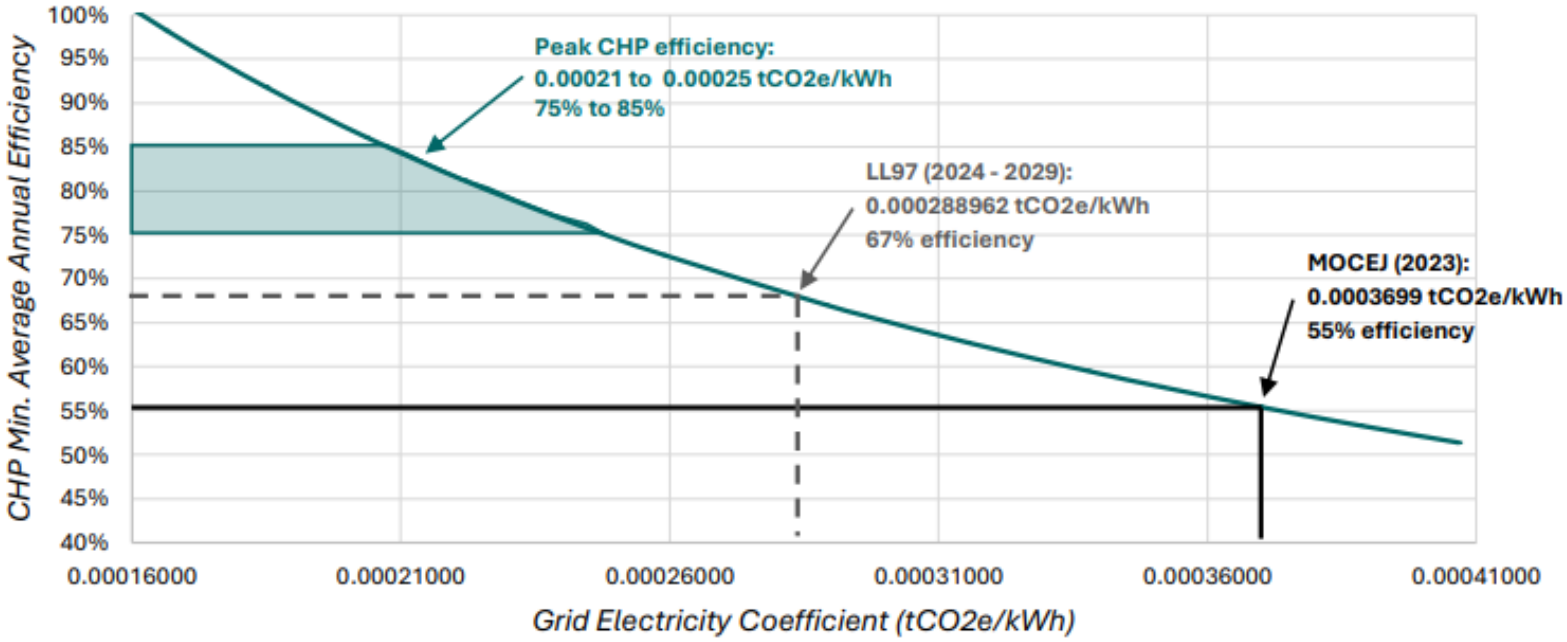
1. Add the **natural gas consumption to be deducted**, in kBtu.
2. Add the **electricity consumption to be added**, in kWh.
3. Add the **reclaimed heat consumption to be added**, in kBtu.



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%**.



VIII. Combined Heat and Power

Minimum efficiency is not required for:

- CHP that is essential to power a “critical facility” as such term is defined in 1 RCNY §103-14; or
- 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”)

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

1. 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:

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

Where:

$\eta_{chp,hhv}$	=	Average annual CHP efficiency
$Q_{\text{useful},i}$	=	Useful heat recovery provided for hour i (Btu)
$kWh_{\text{output},i}$	=	Generator power output provided for hour i (kWh)
$kWh_{\text{parasitic},i}$	=	Parasitic power consumption for CHP system for hour i (kWh)
$gas_{\text{input},i}$	=	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)

VIII. Combined Heat and Power

"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.

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: Template

Fill out the aggregated report description tab

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

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

Coefficient for Utility Electricity: Default

Total Input Emissions: 5.3

	CHP Plant Inputs			Emissions Based on Inputs		
	Input Energy Source	*Consumption*	*Units*	*Emissions*	*Units*	*tCO2e*
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: Template

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	η_chp,hhv	58.5%	-
NOx Emissions Limit	NOx	4.4	lbs/MWh
Min. avg. annual efficiency of Qualified Generation Facility	η_chp,min	55%	-

*Enter as a negative value

Qualified Generation Facility?	Yes

VIII. Combined Heat and Power: Template

If compliant, emissions are based on energy outputs

Total Output Emissions: 3.8

CHP Plant Outputs			Emissions Based on Outputs		
Output Energy Source	***Production***	***Units***	***Emissions***	***Units***	***tCO2e***
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: Template

If non-compliant, emissions are based on energy inputs

Coefficient for Utility Electricity: Default

Total Input Emissions: 5.3

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

Total Output Emissions: 5.3

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

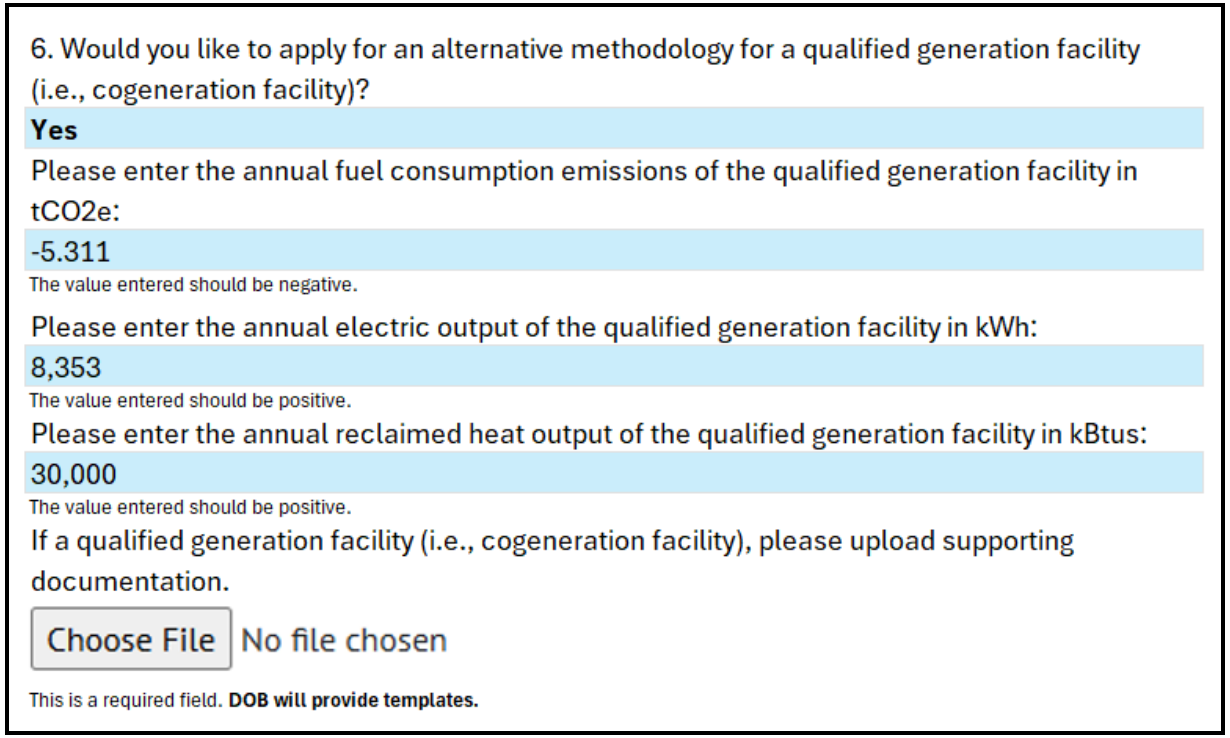
Qualified Generation Facility? **No**

Use Campus-style electricity generation tab

VIII. Combined Heat and Power

Input 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.


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 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.

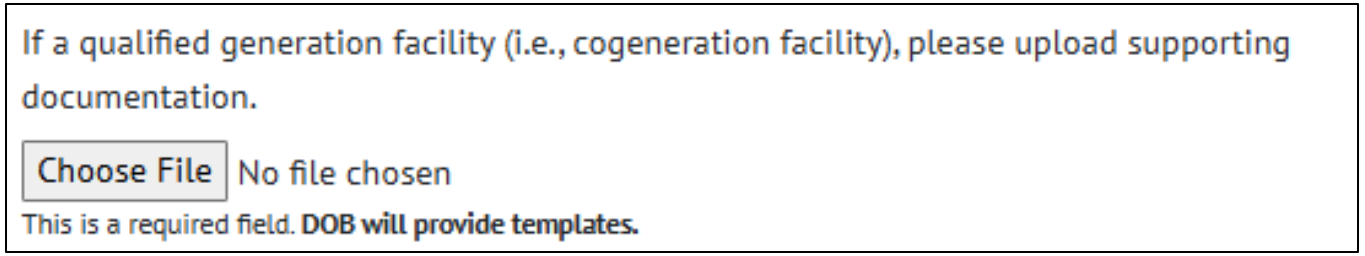
Choose File No file chosen

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

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.



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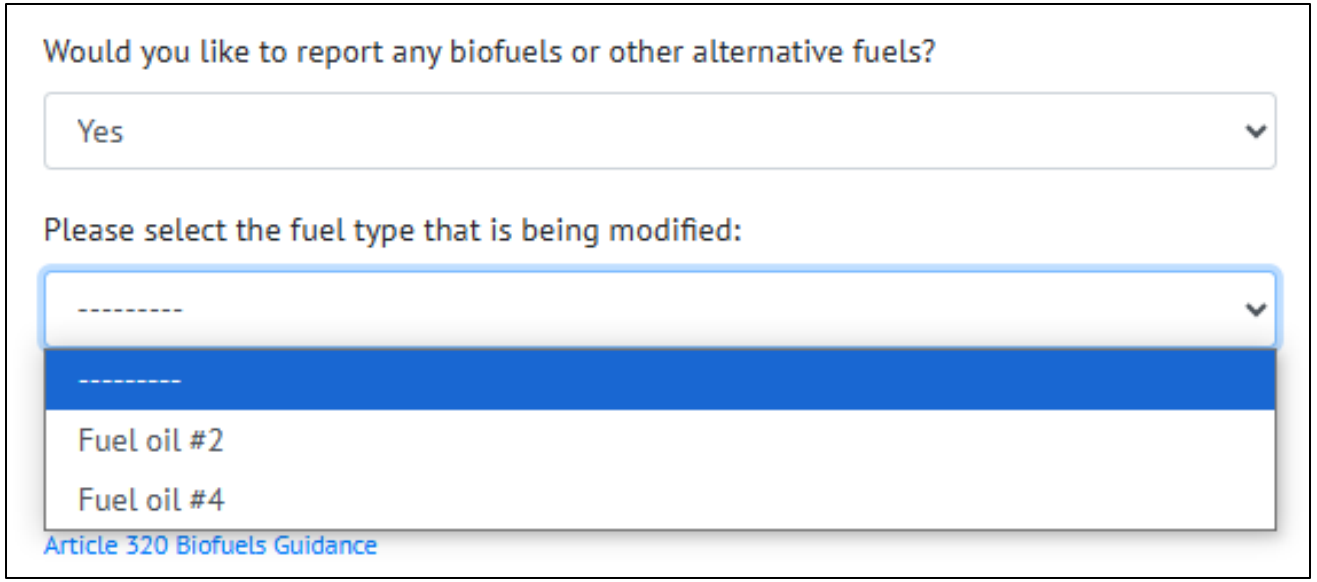
IX. Biofuels and Alternative Fuels

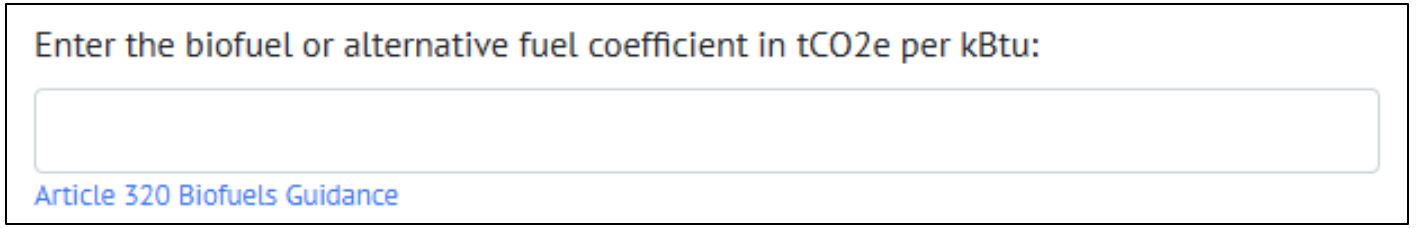
IX. Biofuels and Alternative Fuels

- Select **Yes** when asked whether you would you like to report any biofuels or other alternative fuels.
- Select the fuel type being modified.



IX. Biofuels and Alternative Fuels

- Enter the emissions coefficient associated with the biofuel or alternative fuel in tCO2e per kBtu. Details on substantiating evidence is covered in the following slides.



IX. Biofuels and Alternative Fuels

Coefficients are available in **RCNY 103-14** for 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.

Applicants that have made use of **biofuels** as an energy source may calculate LL97 emissions in three ways:

1. Use the default biofuel coefficient in 1 RCNY §103-14;
    - For Local Law 97, the default **biofuel emissions coefficient is 0.00007389 tCO2e per kBtu**, aligning with the EPA standard.
2. Determine a semi-custom biofuel coefficient using the charts in the Biofuels Info Guide; or
3. Submit a Construction Codes Determination ("CCD1") to the DOB.

Applicants that have made use of **alternative fuels** may calculate LL97 emissions by:

1. Submitting a Construction Codes Determination ("CCD1") to the DOB.

IX. Biofuels and Alternative Fuels

- Upload the appropriate **supporting documentation** for the biofuel or alternative fuel emissions coefficients depending on which method you used.
  - If you are using the default biofuel coefficient in 1 RCNY §103-14, no supporting documentation is needed.
  - If you calculated a semi-custom biofuel coefficient, upload **all required documentation** found on page 13 of the Biofuels Info Guide.
  - If you calculated a biofuel or alternative fuel emissions coefficient via a Construction Codes Determination ("CCD1") request to DOB, you must upload a copy of the **approved CCD1 form**.
    - **Note:** 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.