LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report User Guide

Local Law 97 How-To Guides

NYC Buildings

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

- Making a payment and obtaining a DOB NOW Payment Confirmation Number.

- Navigating the BEAM report submission portal and initiating a new report.

- Providing basic information, applying relevant deductions and alternatives.

- 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**. If you have not 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.

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
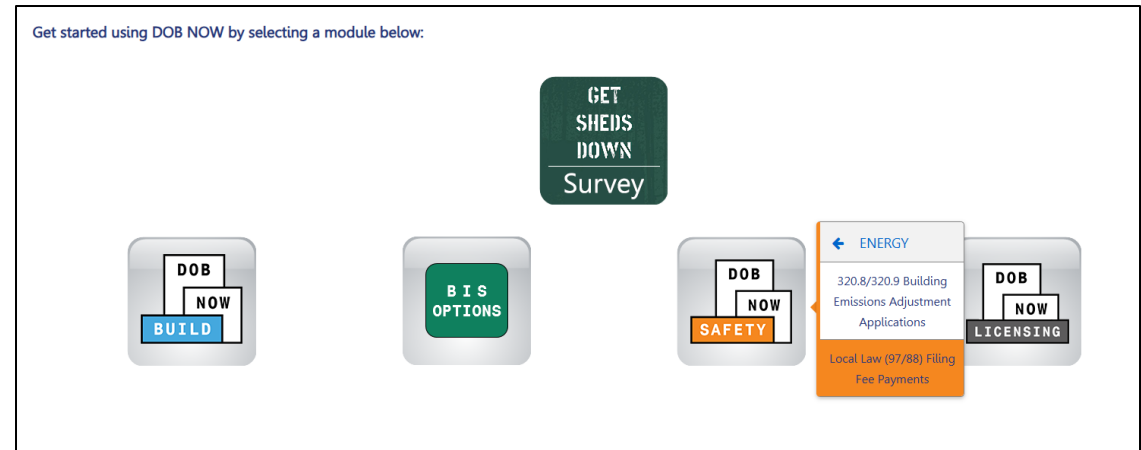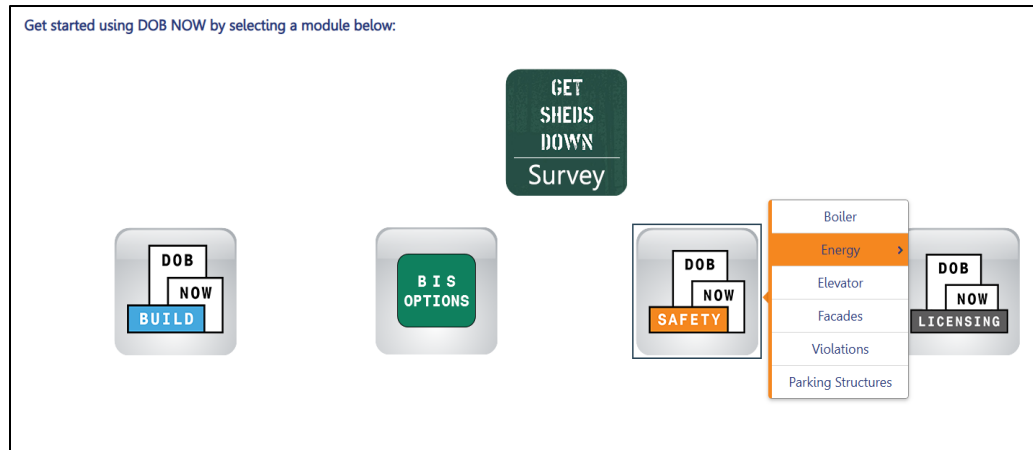   A. Energy
    B. Electricity

VIII. Combined Heat and Power

IX. Biofuels and Alternative Fuels

DOB NOW Filing Fees for Local Law 97

- Navigate to the DOB Now login page at nyc.gov/dobnow, enter your NYC.ID email address in the Email field, and select **Login**. If you need to create an NYC.ID account, select **Create Account** or visit the DOBNOW User Guide for step-by-step instructions.

- After logging into DOB NOW, you will be greeted with the Welcome page displays. Hover over **DOB NOW: Safety** and click **Energy**.

- From the Energy sub-menu, select **Local Law 97/88 Filing Fee Payments**.

DOB NOW Filing Fees for Local Law 97

Select **"+ Local Law 97 Payment"**

DOB NOW Filing Fees for Local Law 97

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

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

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

DOB NOW Filing Fees for Local Law 97

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

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

DOB NOW Filing Fees for Local Law 97

- Select **Article 320** to indicate your compliance pathway. Compliance requirements can be confirmed on the LL97 Covered Buildings List.

- Select **Yes** when asked whether you will be filing a compliance report in the LL97 Reporting Portal and select **2024** as your Report Year.

Transaction Information*

Which article under Local Law 97 applies to your building?* (This information can be found on the LL97 Covered Buildings list.)

● Article 320   ○ Article 321

Will you be filing a compliance report in the LL97 Reporting Portal?*   ● Yes ○ No

Report Year*

2024 ▼

DOB NOW Filing Fees for Local Law 97

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

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

DOB NOW Filing Fees for Local Law 97

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

DOB NOW Filing Fees for Local Law 97

- The property information will then be listed in a grid under the Search & Add button and can be removed by selecting the trash icon. If selections are changed in the Transaction Information section after an address has been added, the system will remove the address, and it will need to be re-entered.

- Select **Yes** to confirm the BIN(s) has either a single owner or the property is a co-op or condo. Enter any **Related Payment Confirmation Number** (any payment that has already been processed in DOB NOW: *Safety* for the same property).

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

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

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

Separate each by a comma ","

💾 Save   🛒 Proceed to Pay $ 615

DOB NOW Filing Fees for Local Law 97

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

Payment Confirmation

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

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

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

[Pay Now] [Cancel]

DOB NOW Filing Fees for Local Law 97

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

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

DOB NOW SAFETY

Local Law 97 Fee Payments

Receipt Details

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

BINs

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

Notification

Payment has been processed.

Payment Confirmation Number: 97ADJ7FC2000002239

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

OK

DOB NOW Filing Fees for Local Law 97

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

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

Share ESPM benchmarking data with BEAM

Articles 320 & 321 Compliance Reports **require annual energy use data be uploaded from Energy Star Portfolio Manager (ESPM) into BEAM**. This process includes:

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

Covered buildings subject to LL84 benchmarking will have already been recording energy consumption via ESPM since 2013. Buildings that are covered under LL97 but not covered under LL84 will need to start using ESPM. Detailed information about how to use ESPM can be found in the ESPM User Guide.

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

BE🏚M

- On the BEAM Platform at nyc.beam-portal.org, from the left sidebar, navigate to **Helpdesk.** Then again from the left sidebar, click **New Ticket.**
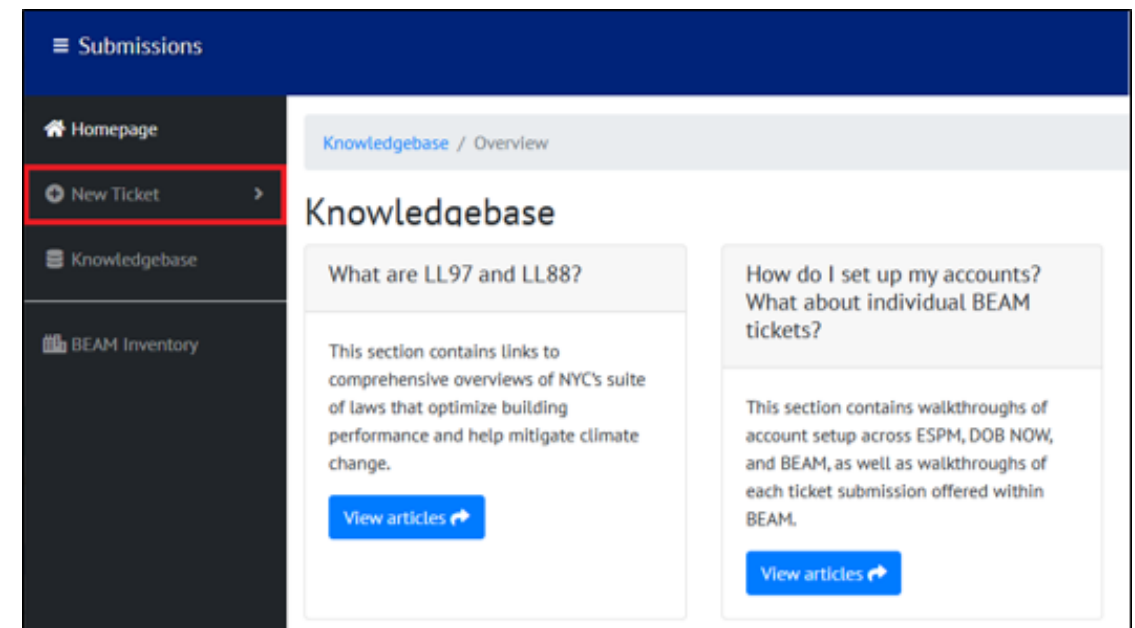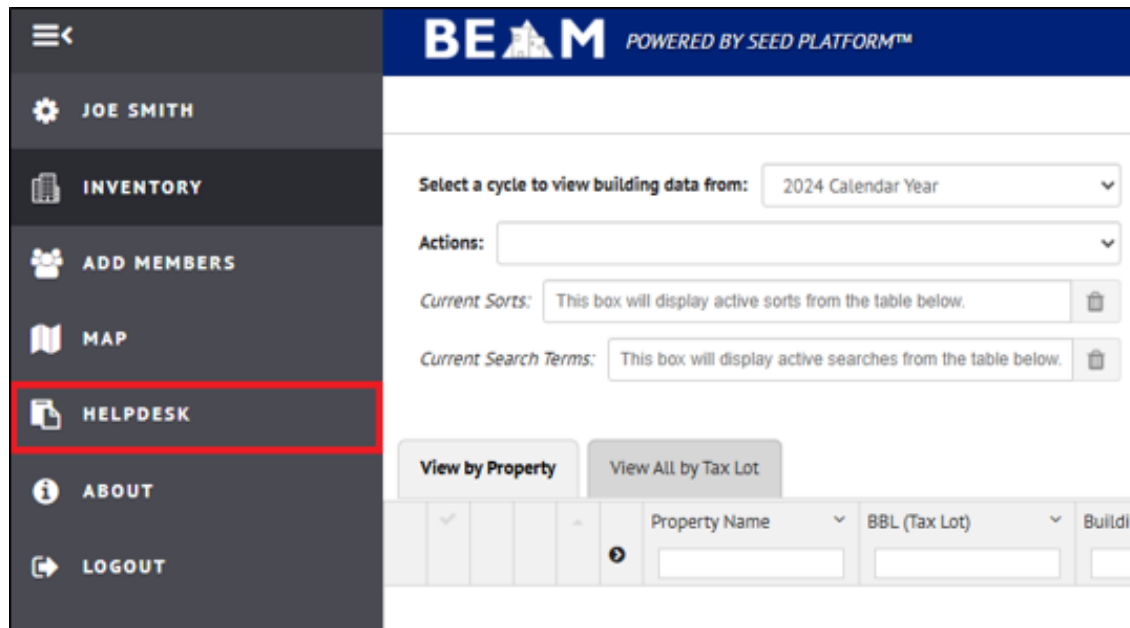
- Select Submit a **06. LL97 Deductions and Alternatives to Calculating Annual Building Emissions (Article 320 and Article 321)**

Submit a 06. LL97 Deductions and Alternatives to Calculating Annual Building Emissions (Article 320 and Article 321)

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), and/or Beneficial Electrification (metered or deemed).
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 bulk fuel.
3. **Alternative Methodology**: Cogeneration.

A complete "LL97 Deductions & Alternatives to Calculating Annual Building Emissions (Article 320 & Article 321)" ticket must include all of the following:

1. Building address, Borough-Block-Lot (BBL) and Building Identification Number (BIN).
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).

- On the Create Ticket page, enter **Submitter Email.** This email address with receive copies of all public updates to this ticket. **The email address must match one of the following:** one of the email addressees entered in DOB NOW (building owner, owner representative, or service provider).

Submitter Email*

This e-mail address will receive copies of all public updates to this ticket.

- Enter **Borough-Block-Lot (BBL), Building Address** and **Building Identification Number (BIN).**

Enter Borough-Block-Lot (BBL)*

Enter BBL as it appears on LL97 CBL.

BBLs must be 10 numerical digits, including any leading zeros for the block and lot (i.e. 10122340678). There should be no dashes, spaces, or other characters within the digits.

Enter Building Address*

Enter address as it appears on NYC DOB BIS.
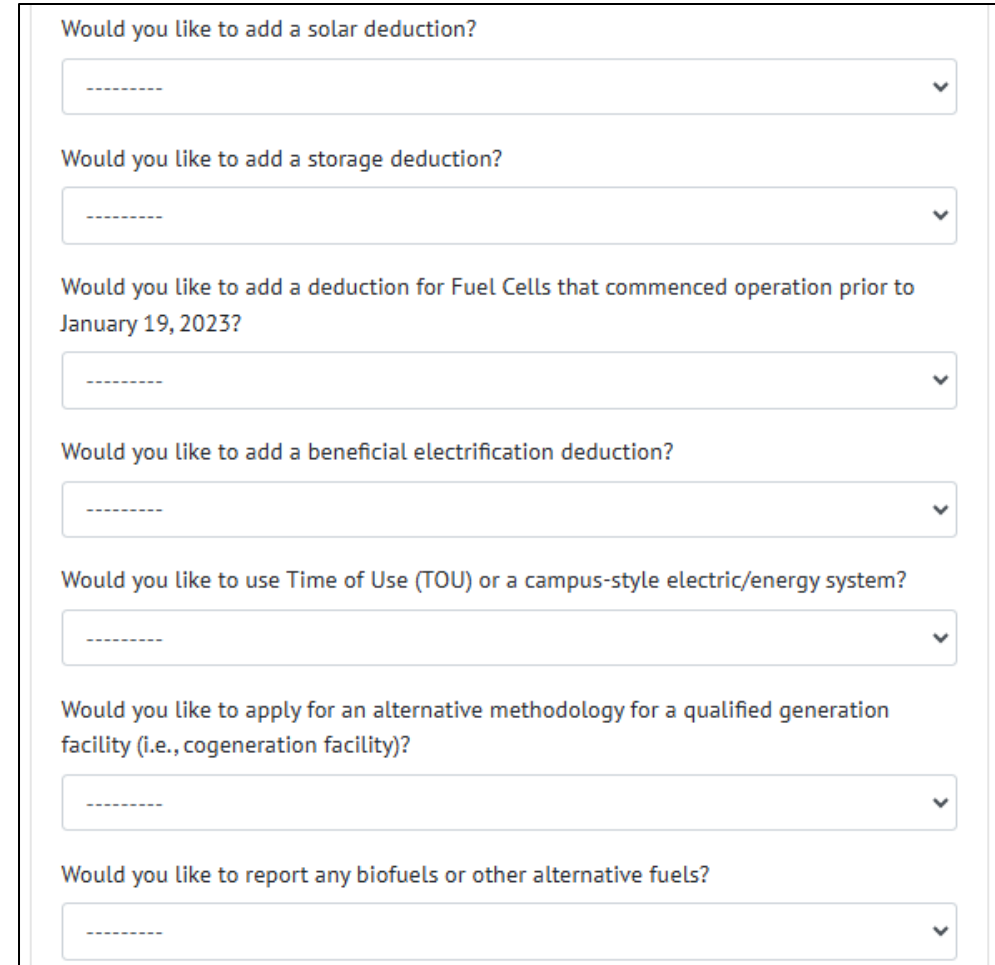
Enter Building Identification Number (BIN)*

Enter BIN as it appears on LL97 CBL.

BINs must be 7 numerical digits (i.e. 1234567) There should be no dashes, spaces, or other characters within the digits.

BE🏛M

- You will then be asked to answer the following deduction and alternatives information.

- Please leave **BLANK** all fields that are not applicable to your buildings.

The **next page** provides where in this guide to find information on all deductions and alternatives available in this ticket.

Would you like to add a solar deduction?

```
---------
```

Would you like to add a storage deduction?

```
---------
```

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

```
---------
```

Would you like to add a beneficial electrification deduction?

```
---------
```

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

```
---------
```

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

```
---------
```

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

```
---------
```

- Indicate 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.

Please confirm that this report has been reviewed by a Registered Design Professional.

Please enter the license number of the reviewing Registered Design Professional.*

This is a required field.
RDP License # lookup: NYS Department of Professions

Please upload an attestation by the reviewing Registered Design Professional.*

Choose File | No file chosen

This is a required field. DOB will provide attestation template.

BE🏠M

- Enter DOB Now **Payment Confirmation Number** (as referenced in page 14-15 of this guide).

- Click **Submit Ticket** to submit your LL97 Deductions & Alternatives for Calculating Annual Building Emissions Report.

Please enter DOB NOW Payment Confirmation Number.*

This is a required field. **DOB NOW** payment guidance is forthcoming.
(i.e. 97320Sxxxxxx or 97320Cxxxxxx).

Submit 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

BE&M

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.
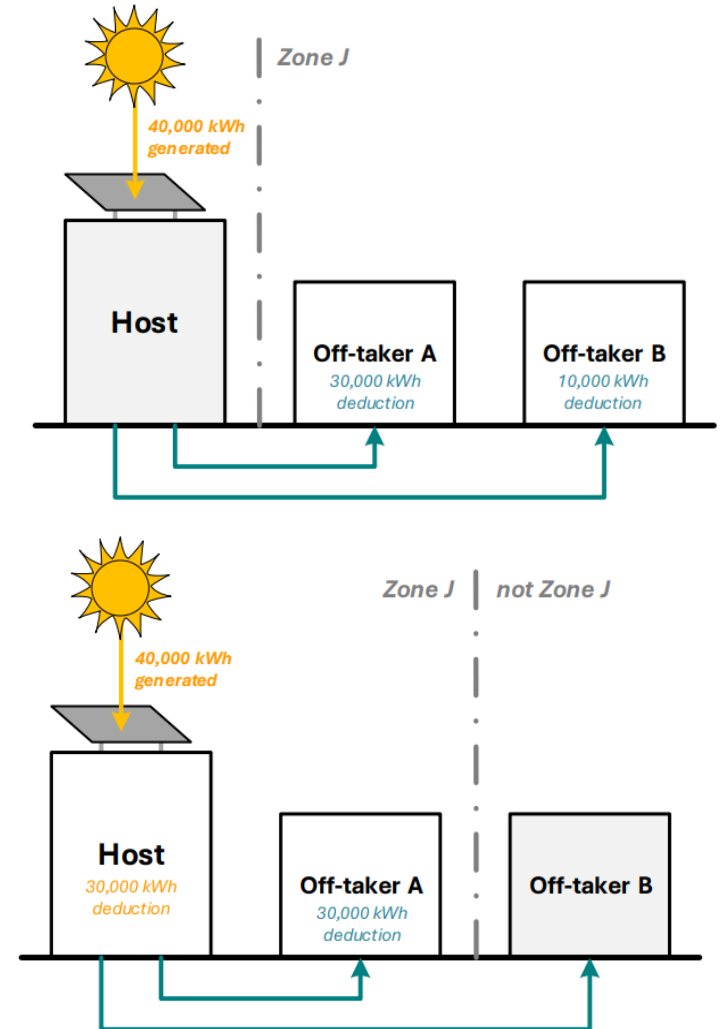
The most straightforward **solar deduction** is calculated using the total electricity output of a solar array (that feeds into Zone J) in a given reporting year. This net output number, in kWh, can first be deducted from the Host's electricity consumption in their LL97 compliance report. Then, each 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 pages 88-94 of this guide.
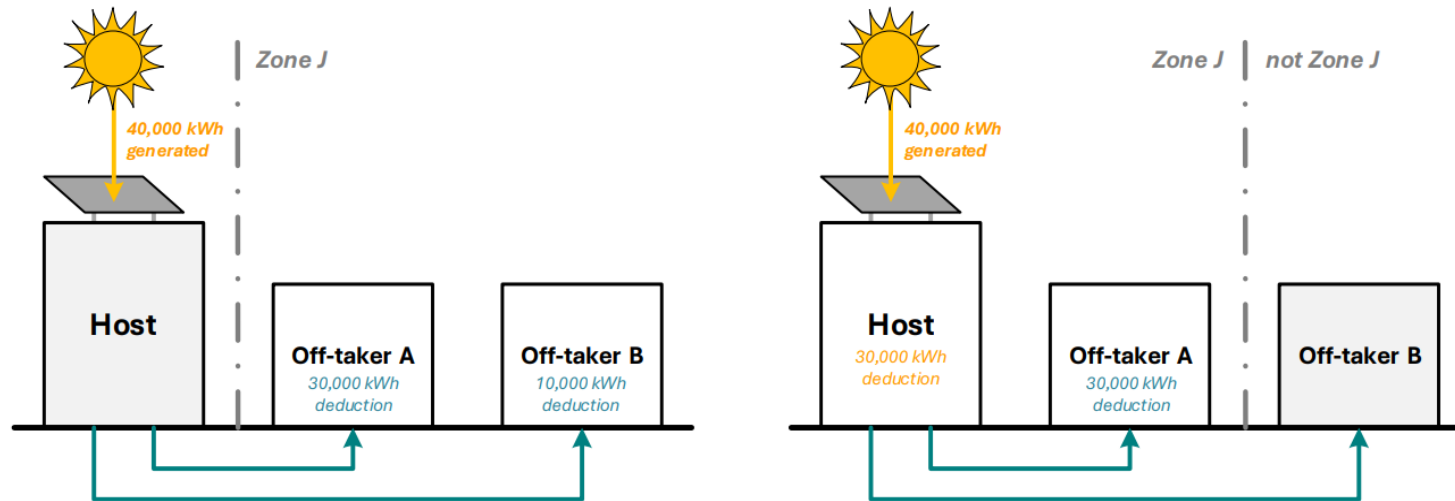
I. DOBNOW – ESPM – BEAM
II. Solar Deduction

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(A). Solar Deduction (Off-Site)

BE🏠M

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

> Would you like to add a solar deduction?
>
> Yes ⌄

- Confirm that the offsite solar project feeds into **Zone J** (New York City). Only electricity that is delivered to Off-takers located within Zone J may be counted towards deductions.

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

> Enter the annual solar system electric usage you are claiming as the 'offtaker deduction' (in kWh):
>
> [   ]
>
> The value entered should be negative.

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:	

9/11

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

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.	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
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.	Solar electricity consumed on-site (including imports):	kWh
	Electricity deduction:	0 kWh
Step 3 - Enter the total amount of solar electricity consumed on-site.		

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

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.

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

Choose File | No file chosen

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

BE∆M

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

> Would you like to add a solar deduction?
>
> | Yes | ⌄ |

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

> Enter the annual solar system electric usage you are claiming as the 'offtaker deduction' (in kWh):
>
> [   ]
>
> The value entered should be negative.

BE🏠M

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:	

9/11

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

BE🏠M

- 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

BE▲M

- 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.

> Please upload supporting documentation for the solar project. Please make sure to indicate whether the project is onsite or offsite.
>
> [Choose File] No file chosen

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

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.

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 pages 88-94 of this guide for more information.

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.

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(A). Off-site Energy Storage Deduction

BE🏠M

- 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 pages, calculate the offsite storage deduction you are claiming in tCO2e.

Would you like to add a storage deduction?

Yes ⌄

Is the storage project onsite or offsite?

Offsite storage ⌄

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

-3.197

The value entered should be negative.

BE▲M

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:	

1/11

Template	RCNY 103-14 Forumla	Tab Name	Select if Applicable
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	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

BE🏠M

- 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

BE🏠M

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

Would you like to add a storage deduction?

| Yes | ⌄ |

Is the storage project onsite or offsite?

| Offsite storage | ⌄ |

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

-3.197

The value entered should be negative.

III(A). Off-site Energy Storage Deduction

- Upload **supporting documentation** for the off-site energy storage deduction, including:

    1. Metered data for battery electricity consumed, in kWh/yr

    2. BINs of Host

Please upload supporting documentation for the storage project.

Choose File | No file chosen

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(B). On-site Energy Storage Deduction

BE🏠M

- 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 pages calculate the onsite storage deduction you are claiming in tCO2e.

Would you like to add a storage deduction?

Yes	⌄

Is the storage project onsite or offsite?

Onsite storage	⌄

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

-4667.124

The value entered should be negative.

BE🏠M

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:	

1/11

Template	RCNY 103-14 Forumla	Tab Name	Select if Applicable
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	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

BE🏠M

- 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

BE🏠M

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

Would you like to add a storage deduction?

Yes ⌄

Is the storage project onsite or offsite?

Onsite storage ⌄

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

-4667.124

The value entered should be negative.

- 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

Please upload supporting documentation for the storage project.

Choose File   No file chosen

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

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.

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

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

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

- 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 pages, calculate the fuel cell deduction in tCO2e

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

Yes

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

-0.846

The value entered should be negative.

BE▲M

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:	

1/11

Template	RCNY 103-14 Forumla	Tab Name	Select if Applicable
Solar Credit	----	Solar Credit	Not Applicable
Total Emissions Spread - Offsite	Article 320 Info Guide (pg. XX - XX)	14.17 TES	Not Applicable
Total Emissions Spread - Onsite	103-14.17	14.17 TES	Not Applicable
Natural Gas Fuel Cells	103-14.12	14.12 Natural Gas Fuel Cells	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

- 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

- Input the fuel cell deduction you are claiming in tCO2e

- Upload the <u>template</u> used to calculate your fuel cell deduction.

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

Yes

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

-0.846

The value entered should be negative.

Please upload supporting documentation for the fuel cell.

Choose File   No file chosen

I. 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

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.

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

Yes

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

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

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

Choose File | No file chosen

DOB will provide templates.

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

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

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

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

BE⌂M

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 pages #79-84.

BE🏠M

- 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.

Would you like to add a beneficial electrification deduction?

| Yes | ⌄ |

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

| Deemed Approach | ⌄ |

For more information, please visit the reporting requirements documentation.

- Use the template shown on the following pages to calculate your Beneficial Electrification Adjustment in tCO2e.

- **NOTE:** Template requirements shown in the following pages 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).

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

The value entered should be negative.

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).

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

BE▲M

- 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

BE🏠M

- Input your calculated Beneficial Electrification Adjustment in tCO2e.

Would you like to add a beneficial electrification deduction?

| Yes | ⌄ |

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

| Deemed Approach | ⌄ |

For more information, please visit the reporting requirements documentation.

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

| -69.865 |

The value entered should be negative.

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

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

- 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

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

- Input your calculated Beneficial Electrification Adjustment in tCO2e.

Would you like to add a beneficial electrification deduction?

Yes ⌄

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

Deemed Approach ⌄

For more information, please visit the reporting requirements documentation.

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

-14.665

The value entered should be negative.

BE🏠M

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

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

--------- ⌄

BE M

- 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.

Please upload supporting documentation for the beneficial electrification project.

Choose File | No file chosen
This is a required field. **DOB will provide templates.**

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

B. Beneficial Electrification Metered Approach

    C. Beneficial Electrification Banking Credits
VI. Time-Of-Use
VII. Campus-Style
    A. Energy
    B. Electricity
VIII. Combined Heat and Power
IX. Biofuels and Alternative Fuels

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 pages #64-77.

V(B). Beneficial Electrification Metered Approach

BE🏠M

- 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.

Would you like to add a beneficial electrification deduction?

Yes

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

Metered Approach

For more information, please visit the reporting requirements documentation.

NYC Buildings

LL97 Deductions & Alternatives for Calculating
Annual Building Emissions Report User Guide

82

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

BE🏠M

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

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

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

-1755

The value entered should be negative.

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

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

- 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.

Please upload supporting documentation for the beneficial electrification project.

| Choose File | No file chosen |

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

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

C. Beneficial Electrification Banking Credits

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

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

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

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

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

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

Yes ▾

I. 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

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**

BE▲M

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

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

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

Yes ⌄

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

0.000262125

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

BE🏛M

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

NYC Buildings

- 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

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

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

Yes ⌄

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

0.000262125

- 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.

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

Choose File | No file chosen

DOB will provide templates.

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

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

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.

Information found in [1 RCNY 103-14](https://)

(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.

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:

$$g_{cx} = \frac{\sum_n (m_n \cdot g_n)}{m_{cx}}$$

                        (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.

Information found in <u>1 RCNY 103-14</u>

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$_2$e 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$_2$e 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$_2$e per kBtu, for the campus energy resource, cx.

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:

$$g_{ce} = \frac{\sum_n (m_n \cdot g_n)}{m_{ce}}$$ (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.

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:

$$g_e = \frac{(m_{ue} \cdot g_{ue}) + (m_{ce} \cdot g_{ce})}{m_{ue} + m_{ce}}$$

(Equation 103-14.8)

Where:

g_e =   the GHG coefficient for electricity generated by a campus-style electric system on-site, in tCO$_2$e 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$_2$e 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).

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:

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

Where:

g_e	=	the GHG coefficient for electricity generated by a campus-style electric system on-site, in tCO$_2$e 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$_2$e 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$_2$e 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.

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).

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

Yes

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

1. Add the **natural gas consumption to be deducted**, in kBtu.

2. Add the **electricity consumption to be added**, in kWh.

3. Add the **reclaimed heat consumption to be added**, in kBtu.

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

_____

The value entered should be negative.

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

_____

The value entered should be positive.

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

_____

The value entered should be positive.

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

i)   The system operates at a **minimum annual average efficiency**, which at the time of this Guide is set at **55%**.
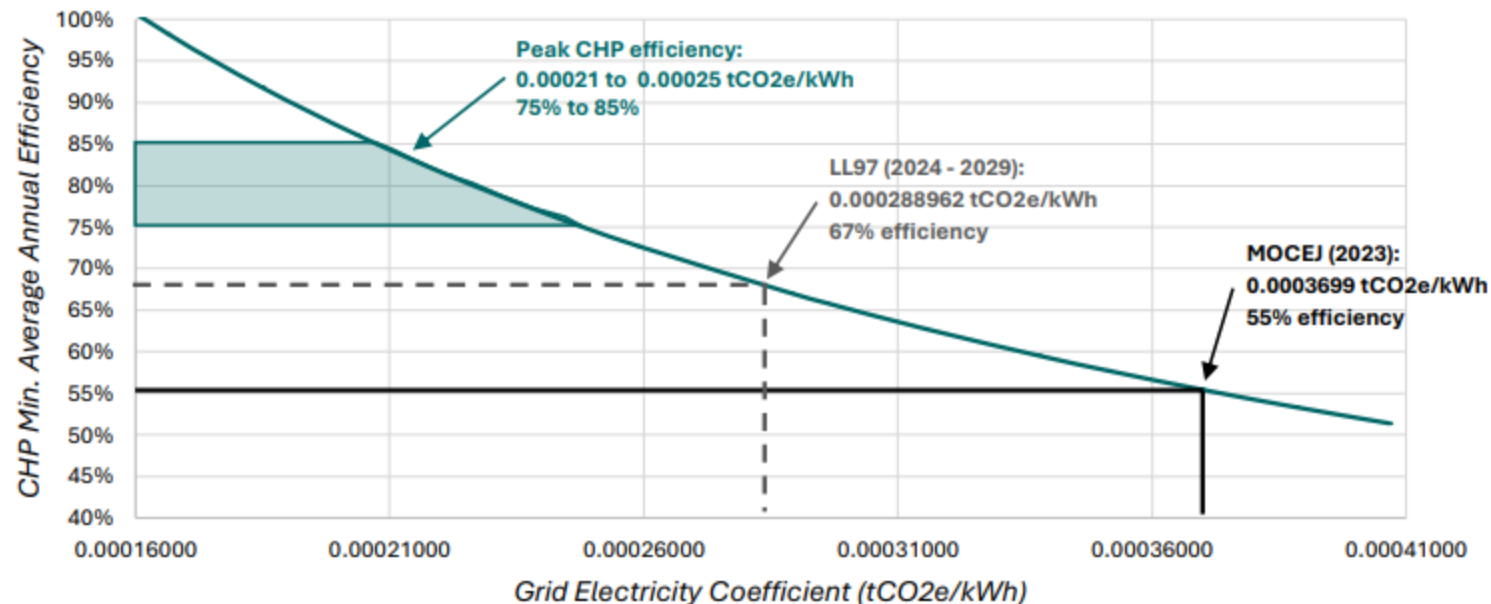
Minimum efficiency is not required for:
- CHP that is essential to power a "critical facility" as such term is defined in 1 RCNY §103-14; or
- CHP in areas identified by the Department and verified by the utility as having limited spare electrical capacity. At the time of this Guide, these areas are 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").

The formula for determining a CHP system's average annual efficiency is derived from the December 2008 *NYSERDA 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)

BE🏠M

"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)

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:	

1/11

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

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						

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**

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

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						

Qualified Generation Facility? **No**

Use Campus-style electricity generation tab

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

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.**

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

- The template used to natural gas consumption to be deducted, electricity consumption to be added, and reclaimed heat consumption to be added.

- **Equipment specifications** on NOx emission, metered electricity generation, and metered utilized heat.

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

Choose File | No file chosen

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

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

IX. 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 pages.

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

Article 320 Biofuels Guidance

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.

BE⌂M

- 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.

> Please share any documentation of fuel consumption for fuels not automatically provided by utility
>
> [Choose File] No file chosen
> This is a required field. **DOB will provide templates.**