

AIR POLLUTION CONTROL COMMISSION PUBLIC HEARING



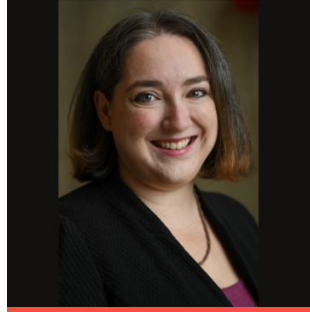
January 25, 2023

This public hearing will include opportunity for public comment. During public comment periods, members of the public may submit any comments or questions by “raising their hand” or by typing in the chat box.

AIR POLLUTION CONTROL COMMISSION



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CITY OF BOSTON STAFF



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Public Hearing



Building Emissions Reduction and Disclosure Ordinance (BERDO) *Phase 2B Regulations and Policies*



Regulations Process

Updated Approach



Phase 1

- ***Adopted in March 2022***
- *Reporting and data verification requirements*

Phase 2

Phase 2a

- ***Adopted in December 2022***
- *Review Board*
- *Blended emissions standards*
- *Designating tenant as owner*
- *Change of ownership*
- *Other clarifying regulations*

Phase 2b

- *Renewable energy purchases*
- *Emissions factors*

Phase 3

- *Hardship compliance plans*
- *Individual compliance schedules*
- *Portfolio compliance*
- *Equitable Emissions Investment Fund regulations*
- *Additional regulations as needed to implement and enforce the ordinance*



Emissions Factors

Key features from the previous draft regulations

Emissions Factors (Part 1)

Fuels and Grid Electricity

By April 1st of each year, the Commission shall update all relevant Emissions Factors. Building Owners shall use these Emission Factors for calculating compliance with the Emissions Standards.



Emission Factors for natural gas, propane, fuel oil, diesel oil, and kerosene, and any other fuels not otherwise specified shall be the most recent emissions factors reported by **ENERGY STAR Portfolio Manager**.



Emissions Factors for **electricity from the grid** shall be based on real data published by ISO New England, NEPOOL, any other relevant governmental sources for the compliance year, and any other relevant factors.

- i. In the event that the Environment Department's annual electric grid Emissions Factor is higher than the projected emissions factor, **the projected emissions factor** shall be used for calculating compliance.*
- ii. In the event that the Environment Department fails to adopt an annual electric grid Emissions Factor by April 1st, the lower of (i) the previous year's Emissions Factor or (ii) the Environment Department's projected Emissions Factor, shall be used for compliance.*

Emissions Factors (Part 2)

District Energy Systems



Emissions Factors for **District Energy Systems** and co-generation plants shall be calculated using an **efficiency methodology** defined in policies and procedures issued by the Commission.

- i. Emissions Factors from District Energy Systems must be third-party verified.*
- ii. If a District Energy System operator fails to provide its Emissions Factors by April 1st, the most recent verified emissions factor shall be used for compliance. If no verified emissions factor exists, the Emissions Factors reported by ENERGY STAR Portfolio Manager shall be used for compliance.*



Owner's of **Campus District Energy Systems** may either:

- i. Use the efficiency methodology for District Energy Systems to determine their Emissions Factors or*
- ii. Apply the appropriate Emissions Factors to their central plant's fuel inputs and apportion the emissions across their connected buildings.*



Emissions Factors for **thermal energy generated from renewable electricity produced by qualified non-emitting sources** shall have an emissions factor of 0 kgCO₂e/MMBTU, provided that any renewable energy or RECs meet the requirements for renewable energy purchases.

Emissions Factors (Part 3)

Custom Emissions Factors and Time-of-Use



The Commission may adopt, via policies and procedures, emissions factors for fuels not referenced in the Regulations.

- i. Any Owner may petition the Commission to approve custom Emissions Factors to be applied to their Building(s), including for biogenic fuels and fuel cells.*



Subject to approval by the Environment Department, Owners with hourly-metered electric data or better may opt to use **time-of-use emissions rates**.

- i. Owner's must provide Third-Party Verification of annual time-of-use emissions data and methodology and such data shall be public and subject to audit.*
- ii. If a time-of-use emissions rate is not approved, the grid electricity Emissions Factors adopted by the Environment Department shall be used.*



Renewable Electricity Purchases

Key features from the previous draft regulations



Renewable Electricity Purchases (Part 1)

Boston's Community Choice Electricity Program

Renewable Energy Certificates (RECs) procured on behalf of customers by the Boston municipal electricity aggregation program are eligible as a method of compliance.

For Energy purchased from the Boston municipal aggregation program that is not matched with 100% RECs, the appropriate Emissions factor adopted by the Commission shall apply to the portion of the Energy not matched with RECs.

STANDARD (DEFAULT) \$0.11161 / KWH 30% RENEWABLE ENERGY	OPTIONAL BASIC \$0.10771 / KWH 20% RENEWABLE ENERGY	OPTIONAL GREEN 100 \$0.13858 / KWH 100% RENEWABLE ENERGY
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Current products offered by Boston CCE (rates valid until December 2023)

Renewable Electricity Purchases (Part 2)

Renewable Energy Certificates (RECs)

Owners that utilize **unbundled or bundled RECs**, including local Power Purchase Agreements that generate MA Class I RECs pursuant to 225 CMR 14.05, as a method of compliance shall provide documentation demonstrating that the RECs comply with the conditions in Section 7-2.2(m)(b), provided, however, that, notwithstanding anything to the contrary in the Ordinance:

- i. RECs may be generated within the **12 months before the compliance period** or **within the compliance period** in which they are used, and*
- ii. Owners must demonstrate that RECs are retired within **6 months of the compliance period** in which they are used.*

Renewable Electricity Purchases (Part 3)

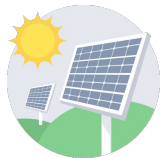
Power Purchase Agreements (PPAs)

Owners that **procure Electricity and bundled RECs through Power Purchase Agreements**, shall meet the following additional requirements:

- i.* The electricity was generated by **non-emitting renewable sources and meet the RPS Class I eligibility criteria** except for metering and location requirements.
- ii.* PPAs must be with electricity generators **connected to an electric grid in the jurisdiction of the North American Electric Reliability Corporation.**
- iii.* The electricity is from a project that **begins commercial operation after a PPA is executed** by or on behalf of the Owner of a covered Building.
 - i.* This timing requirement will not apply to Owners that join an existing eligible PPA that was executed by a different Owner in accordance with this provision.
 - ii.* Owners may request, based on extenuating circumstances, the Review Board to approve a PPA that does not meet this requirement.
- iv.* RECs must be generated 12 months before the compliance period or within the compliance period it is being used and be retired within 6 months of the end of the compliance period in which used.
- v.* PPAs that satisfy these criteria **may be used for compliance with the Ordinance for the length of the contract term**, including extensions to the original term, and for any quantity or price of Energy purchased from the original generating source(s) identified in the PPA.

Renewable Electricity Purchases (Part 4)

Local Renewable Generation



Electricity and associated generation credits, such as net-metering credits, are eligible as a compliance mechanism regardless of (i) who owns the electric generating system and (ii) whether or not the corresponding Renewable Energy Certificates are retired by or on behalf of the Owner, provided that one of the following conditions is met:

- i.** (a) The system is a **solar generating system**; (b) it is located in **Eversource's Eastern Massachusetts** territory; (c) the system began operation **prior to 2024**; (d) the Owner or tenant(s) of a covered Building first began to acquire electricity or generation credits from the solar generation system **prior to 2024**.
- ii.** (a) the Owner or tenant(s) of a covered Building acquires electricity or generation credits from a **non-emitting renewable electricity generating system**; and (b) the generating system is located in the **City of Boston**.

Electricity or generation credits acquired from non-emitting electricity generating systems shall be reported following any requirements in guidance documents.

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Policies and procedures

Key features from the previous draft

Phase 2b Policies and Procedures Highlights

- **Emissions Factors**
 - *Emissions factor methodologies will be reviewed at least every five years by the Commission.*
- **Grid Emissions Factors**
 - *When developing an annual grid emissions factor, the Environment Department shall consider, but need not be limited to:*
 - Electricity imported into and exported out of the ISO New England grid.
 - Corrections to the allocation of emissions from District Energy Systems that send electricity to the ISO New England grid and thermal products to Boston buildings, to avoid duplication of emissions within BERDO Emissions Factors accounting.
 - *Initial projected grid emissions factors are in [Appendix A](#).*
 - These initial projections will be reviewed by the Commission before the 2030 compliance period and may be updated by the Commission based on available data and projections.
 - Projected emissions factors will be reviewed by the Commission at least every five years thereafter and may be updated at the discretion of the Commission.
- **District Energy Systems**
 - *Policies describe efficiency methodology to calculate annual Emissions Factors for District Energy Systems.*
 - *District Energy System annual Emissions Factors must be verified by a third-party prior to submission to the Environment Department.*
- **Time-of-Use Electricity Emissions Factors**
 - *Policies provide instructions on how to opt into TOU and to calculate a TOU emissions factor.*
- **Local Renewable Energy**
 - *In the event that an interconnection request for an on-site renewable energy system was filed in a timely manner but significantly delayed due to no fault of the Owner or anyone working for the Owner, the Owner may appeal to the Review Board to use estimated renewable energy generation for compliance.*

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Second Public Comment Period and Revisions to Phase 2b regulations

Phase 2b Second Public Comment Period

Public comment period ran from December 16, 2022 through January 18, 2023



We received 16 distinct comment letters:

- Joint letter from Alternatives for Community & Environment (ACE), Mothers Out Front (MOF), Sierra Club Massachusetts, Clean Water Action (CWA), and Boston Climate Action Network (BCAN)
- A Better City
- Boston Clean Energy Coalition
- Bloom Energy
- Conference of Boston Teaching Hospitals
- Codman Square NDC & Fairmont Indigo Community Development Collaborative, (Codman Square NDC, Dorchester Bay CDC, and Southwest Boston CDC) (updated letter received 1/24/23)
- Foley Hoag
- Healthcare Without Harm
- Ictec
- Longwood Energy Collaborative
- Longwood Collective
- Martyn Roetter
- NAIOP MA
- Vergent Power Solutions
- Vicinity

Comments on Phase 2b regulations

Core common themes identified from comment letters

- **Fuels**

- Recommendation to specify that Renewable Natural Gas (RNG) should be assigned the same emissions factor as natural gas, until a better alternative is found.
- Recommendation for the APCC to consider or require a Life Cycle Analysis (LCA) for custom emissions factors.
- Recommendation to add RNG, hydrogen, and other blends as eligible for a custom emissions factor.
- Recommendation to add additional considerations to account for the role of distributed energy resources and energy storage in grid decarbonization.

- **Grid electricity**

- Request for specific dates and timeline in which projected grid emissions factors will be updated.

- **Time-of-use (TOU) emissions factors**

- General support for the use of TOU emissions factors, but request for more specific instructions and guidance on how to calculate and use TOU.

Comments on incentivizing early action, support for decarbonization for affordable housing, and resilience will be addressed in the Phase 3 regulations process.

- **District Energy Systems**

- Recommendation to require that district energy systems share and disclose data relating to their emissions factors to their customers.
- Requests to allow an exception / alternative method for Kendall Square plant that assigns all emissions to Electricity.

- **Power Purchase Agreements (PPAs)**

- Request to clarify that PPAs that comply with BERDO requirements at the time of signing will continue to be eligible for compliance with BERDO despite future regulatory changes and/or changes to the MA Class I criteria.

- **Local Renewable Energy Generation**

- Support to allow local renewable energy generation to count towards BERDO compliance
- Concerns with potential impacts of “double counting” RECs generated from local renewable energy generation (e.g., solar panels financed through the SMART program).

Revised Contents of Regulations

Phase 2b topics are marked in red.



- I. Introduction
- II. References
- III. Definitions
- IV. Reporting Process
- V. Ownership Changes and Designations
- VI. Special Conditions
- VII. Third-Party Data Verification
- VIII. Emissions Factors**
- IX. Emissions Standards
- X. Additional Compliance Mechanisms**
- XI. Preservation of Records
- XII. Disclosure of Records and Information
- XIII. Review Board
- XIV. Enforcement and Penalties
- Appendix A Building Use Classifications

Proposed Revisions to Phase 2b Regulations

Changes are marked in red

VIII. Emissions Factors

- **Fuel Emissions Factors**
 - Added hydrogen to list of possible custom emissions factors. Note: this list is not exhaustive and may include other fuels.
 - Added that entities that generate or deliver Energy may also petition the Commission to assign emissions factors to fuels.
 - Added that the Commission or the Environment Department shall develop guidance for reviewing petitions for custom emissions factors.

The Commission may adopt, via policies and procedures, Emissions Factors to be applied to fuels not referenced in the Regulations.

- (i) Any Owner or entity that generates or delivers Energy with fuels or Energy sources without Emissions Factors covered by Regulations, policies, or procedures may petition the Commission to approve custom Emissions Factors to be applied to ~~their~~ Building(s). Such custom Emissions Factors may include, but are not limited to, biogenic fuels, hydrogen, and fuel cells.
- (ii) The Commission or Environment Department shall develop guidance for reviewing petitions for custom Emissions Factors.

Proposed Revisions to Phase 2b Regulations

Changes are marked in red

VIII. Additional Compliance Mechanisms

- **Renewable Energy Certificates (RECs)**
 - *Added clarification about interplay between regulations and the Ordinance.*

- **Power Purchase Agreements**
 - *Adeed clarifying language.*

a. Renewable Energy Certificates

[...]

- (a) Renewable Energy Certificates may be generated within the twelve (12) months before the compliance period or within the compliance period in which they are used, and
- (b) Owners must demonstrate that Renewable Energy Certificates are retired within six (6) months of the compliance period in which they are used.

This provision supersedes Sections 7-2.2(m)(b)(iii) and (iv).

[...]

c. Power Purchase Agreements

[...]

- (a) Power Purchase Agreements are for electricity generated by non-emitting renewable sources that meet the RPS Class I eligibility criteria outlined in 225 CMR 14.05, as **those criteria** may be amended from time to time, provided, however, that any requirements for metering and location in 225 CMR 14.05 are not applicable.

Revisions to Phase 2b Policies and Procedures

Phase 2b topics are marked in red.

1. INTRODUCTION
2. DEFAULT ENERGY USE VALUES
3. THIRD-PARTY VERIFICATION
4. SPECIAL CONDITIONS
5. **EMISSIONS FACTORS**
6. CALCULATING BUILDING EMISSIONS
7. BLENDED EMISSIONS STANDARDS
8. **ADDITIONAL COMPLIANCE MECHANISMS**
9. REVIEW BOARD POLICIES

Proposed Revisions to Phase 2b Policies and Procedures

Changes are marked in red

5. Emissions Factors

- **Grid Emissions Factors**
 - Added clarification that any new projections shall be published at least two years prior to use.
 - For example, updated projections published prior to January 1, 2028 would be used for the 2030-2034 compliance period.

- **Time of Use Emissions Factors**
 - Simplified language for clarity.

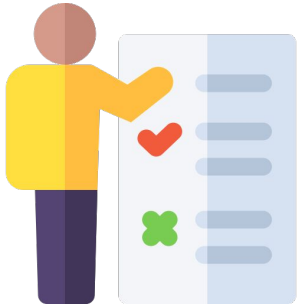
The Environment Department shall publish projected electric grid Emissions Factors through 2050. Initial projections are included in Appendix A [...].

- Any new projections shall be published at least two years prior to use.
- Projections shall be based on ISO-New England, NEPOOL, and federal datasets, state decarbonization and electricity generation policies, and other factors determined relevant by the Environment Department.

[...]

After matching each interval with grid intensity, the verifier shall ~~sum the total to~~ calculate one custom CO₂e electric emissions factor. All verified records shall be preserved pursuant to Section XI in the Regulations.

Potential Next Steps



Should the Commission vote to approve the proposed regulations, the Environment Department would work to:

- Develop guidance for reviewing petitions for custom emissions factors.*
- Determine if additional guidance is necessary for time-of-use emissions factors.*

Commission Q&A

BERDO Phase 2B Regulations & Policies

Commissioners may discuss and ask staff questions.



Public Q&A

BERDO Phase 2B Regulations & Policies

Members of the public may submit any comments or questions by “raising their hand” or typing in the chat box.



The background of the slide is a dark blue aerial wireframe map of a city, showing the outlines of buildings, streets, and parks. The lines are white and light blue, creating a technical, architectural feel.

Commission Motion & Vote

BERDO Phase 2B Regulations & Policies

Parking Freeze Permit Applications

South Boston Permit Modification Application

*9 W Broadway & 141 Dorchester Ave (Court Square Press Building) -
APCC367693*



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Commission Q&A

9 W Broadway - APCC367693

Public Q&A

9 W Broadway - APCC367693

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Commission Motion & Vote

9 W Broadway - APCC367693



An aerial, wireframe-style illustration of a cityscape, rendered in a dark blue color. The buildings are represented by white outlines, creating a complex, geometric pattern of shapes and lines. The perspective is from a high angle, looking down on the city.

**Continued to an
upcoming hearing**

CONTINUED TO AN UPCOMING HEARING

Continued: Application for a Modified East Boston Parking Freeze Permit from VHB on behalf of Cargo Ventures LLC for 575 park and fly spaces. This permit is to relocate spaces from a surface lot at 320 McClellan Highway to a new parking garage at 440 McClellan Highway. Modification of the permit would have no effect on the East Boston parking freeze bank.

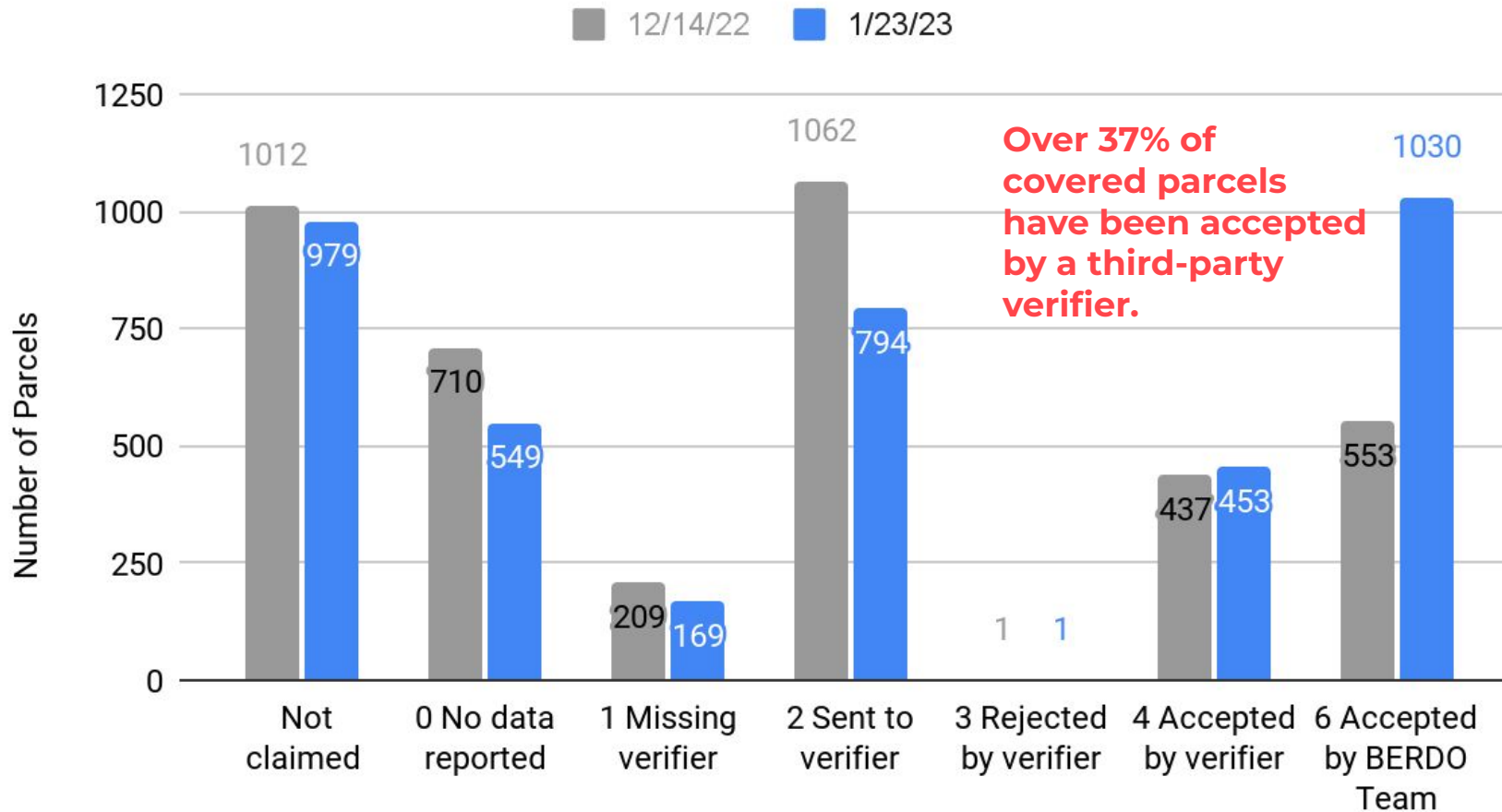
Continued: Application for a Modified East Boston Parking Freeze Permit from VHB on behalf of Cargo Ventures LLC for 127 park and fly spaces. This permit is to relocate spaces from a surface lot at 380 McClellan Highway to a new parking garage at 440 McClellan Highway. Modification of the permit would have no effect on the East Boston parking freeze bank.

Public Meeting

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Update on BERDO Implementation

BERDO Reporting Progress as of 1/23



- **Not Claimed** - Building owner has not initiated reporting in our platform
- **No data reported** - Building owner has 'claimed' building in our system but hasn't fully reported data
- **Missing verifier** - Data has been reported but needs to be sent to a third-party verifier
- **Sent to verifier** - Awaiting review by third-party verifier
- **Rejected by verifier** - Verifier has identified issues with report that Owner needs to update
- **Accepted by verifier** - Verifier has completed review and data is under review by BERDO team
- **Accepted by BERDO Team** - Data quality checks have been completed and reporting is approved

Extensions for extenuating circumstances

- **1032 properties requested additional extensions for these reasons:**
 - *Third-party verifier secured but verifier is unable to complete work by 12/15*
 - *In the process of finding a third-party verifier*
 - *Experienced challenges in obtaining utility data in time for verification*
 - *Experienced extenuating staffing challenges that delayed reporting*
 - *Waiting on on the BERDO team currently or in the past*
 - *Started reporting but need more time to complete reporting and hire a third party verifier*
- *Our goal this year is to get everyone to report accurately and verify their data so owners can begin planning for compliance with the 2025 emissions standards.*
- *Extensions have been granted until March 1.*

Data Disclosure

30-day notice to building owners is required for disclosure.

- *Plan to issue notice after March 1 extended deadline*
- *Full 2022 data disclosure will be published after notice.*

Compliance Data

- *Published initial compliance data in December.*
- *Will update compliance data soon with mapping component that will update in real time.*

BERDO Review Board



Community Based Organization Applications due Friday 2/24

- *Extended deadline to give CBOs more time to apply. Will be open concurrently with nomination form.*
- *CBOs need to apply to qualify as nominating CBOs*
- [Online application form](#)

Will be opening all individual nominations in the next few weeks.

- *Nominations from CBOs (need to fill 6 seats)*
- *Open nominations from anyone (need to fill 2 seats)*
- *1 seat for City Council*

2023 Reporting



Reporting due May 15 2023

- *Calendar year 2022 energy data*
- *Third party verification only required for buildings that did not report in 2022*

2023 Guidance

- *New covered building list*
- *New reporting platform and database*
 - *Will look very similar to 2022 reporting*
- *We will issue update reporting guidance in 2023 How to Report Guide*

Commission Q&A

Commissioners may discuss and ask staff questions.

Revocation of Downtown Parking Freeze Exemption Certification

34 Cooper Street - APCC453797



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Commission Q&A

34 Cooper Street - APCC453797

Commission Motion & Vote

34 Cooper Street - APCC453797

Revocation of South Boston Parking Freeze Permit

9 West Broadway - APCC367693



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Commission Q&A

9 West Broadway - APCC367693

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Commission Motion & Vote

9 West Broadway - APCC367693

Acceptance of the Meeting Minutes



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Commission Motion & Vote

Acceptance of the December 14, 2022 Meeting Minutes

Adjourn

Thank you for your participation!

