

BERDO 2.0 REGULATIONS - PHASE 2 WORKING SESSION #2

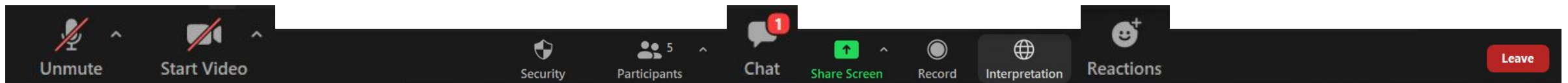
September 14, 2022



WELCOME



- Your microphones are turned off to start. You will need to unmute to speak. Joining via phone? Press ***6** to unmute.
- You can use non-verbal feedback options. Raise your hand or leave a message in the chat box if you would like to contribute to the discussion. If you called into the meeting, use ***9** to raise your hand.
 - When speaking, please make sure to introduce yourself.



AGENDA

- **Grid Emissions Factors (20 min)**
- **Renewable Energy Purchases (Discussion: 50 min)**
 - Renewable Energy Certificates (10 min)
 - Power Purchase Agreements (20 min)
 - Solar and SMART Program (20 min)
- **Fossil Fuel Emissions Factors (5 min)**
- **Next Steps (5 min)**

Community priorities identified during the BERDO 2.0 Ordinance process

We heard that residents want carbon reduction in Boston that:



*Improves
air quality
for residents*



*Reduces renter
energy bills*



*Does not contribute
to displacement*



*Improves
heating + cooling
in homes*



*Creates jobs for
residents*



*Is good for the
environment*



Grid Emissions Factors

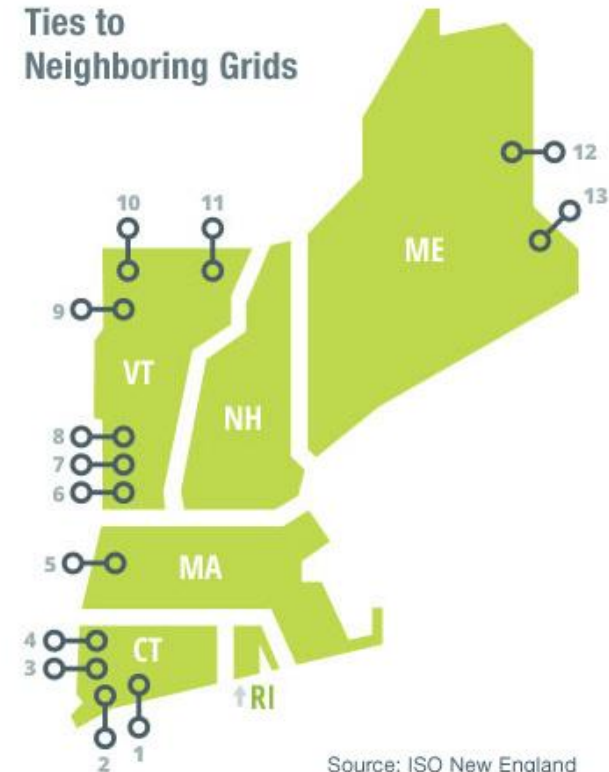
Key regulatory questions and preliminary proposals

New England's Electric Grid

Boston is located within the New England regional grid, operated by ISO-New England (ISO-NE). Electricity is generated across the New England region and transmitted to offices, homes and other electricity users via transmission lines and substations. ISO-NE operates this regional power system, manages wholesale electricity markets and engages in long-term power system planning.



Ties to Neighboring Grids

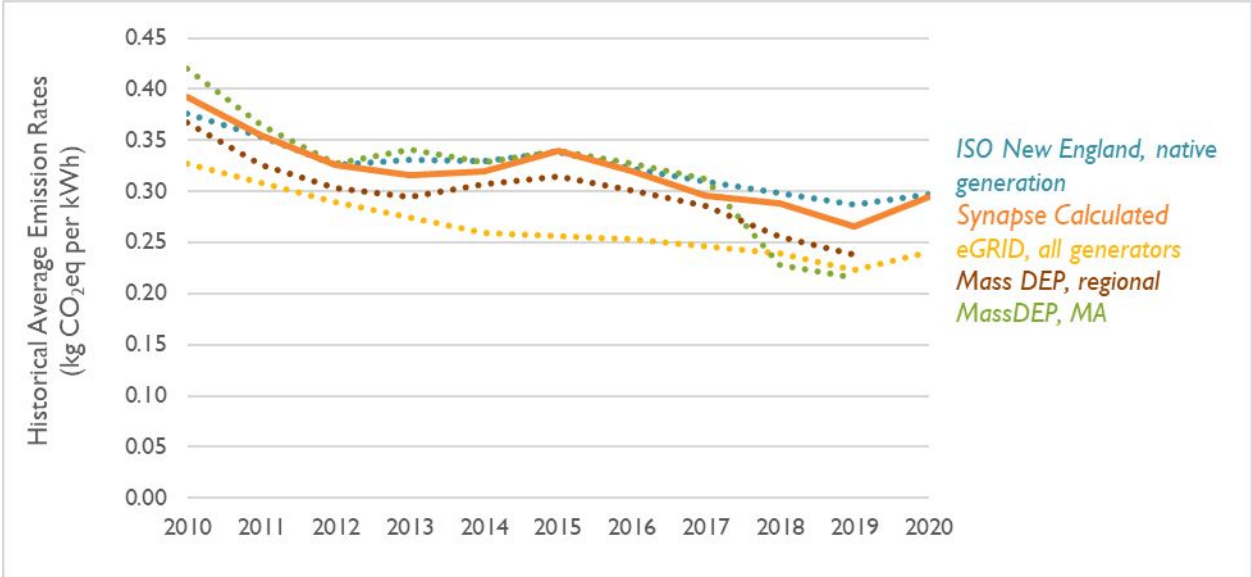


Source: ISO New England

Grid Emissions Factors

Definition

- A Grid Emissions Factor represents the amount of greenhouse gases released (measured in CO₂e) by unit of electricity consumed from the grid.
- Official emissions factors for each year are available with a 2 - 3 year delay.
- Emissions factors vary by methodology.
- Boston is connected to a regional grid that includes the rest of New England (ISO NE).



Electricity consumed from the grid



Grid emissions factor



Emissions from electricity consumption

Grid Emissions Factors

Regulatory considerations

There are two types of grid emissions factors to consider:



**Forward-looking
emissions factor for
planning purposes**



**Annual emissions
factor for
compliance with
BERDO 2.0**

- Forward-looking grid emissions factors are important to enable building owners to plan investments in energy efficiency, electrification, and renewable energy procurement.
- Annual grid emissions factors are needed for compliance with BERDO each year.

In calculating these emissions factors, we need to balance providing **certainty** to building owners on their emissions and ensuring **accuracy** for emissions accounting and compliance.

Regulations for Grid Emissions Factors

Part 1

Preliminary proposals for discussion:

- The City of Boston will provide estimated **forward-looking grid emissions factors for planning purposes**.
 - Forward-looking emissions factors will be based on ISO NE projections.
 - These emissions factors shall not be used for compliance.
- Each year, the City of Boston will release an **annual grid emissions factor for compliance with BERDO 2.0**.
 - This annual grid EF will be based on real data published by ISO NE and any other relevant governmental sources for the compliance year.
 - We expect this EF would become available during the first 1-3 months of each year, before the compliance deadline of May 15.
 - This will be the default emissions factor used for compliance.

Regulations for Grid Emissions Factors

Part 2



Preliminary proposals for discussion:

- Subject to approval by the Environment Department, building owners may opt-in to use **time-of-use emissions rates for compliance with BERDO 2.0**.
 - Time-of-use emissions data would need to be aggregated into a custom annual emissions factor.
 - Owners may opt-in or opt-out from using time-of-use emissions factors every “Verification Year” (i.e., starting in 2026 and every 5 years thereafter).
 - Owners will need to demonstrate that the time-of-use emissions data and methodology they used is accurate and provide third-party verification (this will require specific verification in addition to the typical third-party data verification under BERDO).
 - Owners would need to publish their time-of-use emissions data publicly and make data available for audit.

The background of the slide is a dark blue wireframe illustration of a city skyline, viewed from an elevated perspective. The buildings are represented by white and light blue lines, creating a complex geometric pattern. A semi-transparent dark blue horizontal band runs across the middle of the image, serving as a backdrop for the text.

Renewable Energy Purchases

Key regulatory questions and preliminary proposals

Renewable Energy Purchases

As established by the Ordinance

The Ordinance establishes that buildings may mitigate their CO₂e emissions from electricity by:

- **Purchasing Renewable Energy Certificates (RECs).**
 - Must be generated by non-CO₂e emitting renewable sources and meet the RPS Class I eligibility criteria.
 - 1 REC = 1 MWh = 1,000 kWh of renewable electricity.
- **Entering Power Purchase Agreements (PPAs) for energy generated by renewable non-emitting fuel sources.**
 - A PPA is a contract by which an Owner agrees to purchase electricity from a generating facility over a fixed term of years.
 - The Ordinance allows out-of-state PPAs and virtual PPAs for compliance.
- **Participating in Boston's Community Choice Electricity program.**

Renewable Energy Certificates

Per the Ordinance:

“Buildings may mitigate CO₂e Emissions from electricity use by purchasing **unbundled Renewable Energy Certificates that:**

- (i) Are generated by **non-CO₂e emitting renewable sources and meet the RPS Class I eligibility criteria** outlined in 225 CMR 14.05, as may be amended from time to time;
- (ii) Are **tracked by the New England Power Pool Generation Information System;**
- (iii) Are **generated in the compliance period** in which they are used;
- (iv) Are **retired within six (6) months after the end of the compliance period** in which they are used; and
- (v) Comply with **any additional or different requirements set forth in the Regulations**, as may be amended from time to time.

In the event of a conflict between the requirements for Renewable Energy Certificates in this provision and the Regulations, the requirements in the Regulations shall prevail.”

Power Purchase Agreements

Per the Ordinance:

“Buildings may mitigate CO₂e Emissions from electricity use by entering Power Purchase Agreements for Energy generated by renewable non-emitting fuel sources, provided that:

- (i) The **Energy purchased** pursuant to a Power Purchase Agreement **is generated during the compliance period** for which a Building is mitigating CO₂e Emissions;*
- (ii) **The Renewable Energy Certificates** associated with the Energy purchased under a Power Purchase Agreement **are retired by the Building Owner within six (6) months after the end of the compliance period** in which used; and*
- (iii) The Power Purchase Agreement complies with **any additional or different requirements set forth in the Regulations**, as may be amended from time to time, including but not limited to **additionality criteria**. In the event of a conflict between the requirements for Power Purchase Agreements in this provision and the Regulations, the requirements in the Regulations shall prevail.”*

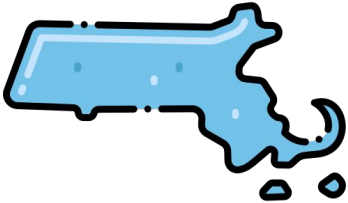
Community Priorities for Regulations on Renewable Energy Purchases

Regulations for renewable energy purchases should follow community priorities for BERDO 2.0:



Prioritize clean renewable energy generation that improves air quality and reduces greenhouse gas emissions.

Enable enrollment into the Boston CCE program, which reduces energy costs and promotes local renewable energy.



Promote new local renewable energy to provide job opportunities and improve energy resilience.

Regulations for Power Purchase Agreements

Preliminary proposals for discussion:

- All PPAs used for BERDO 2.0 compliance must meet the requirements set by the Ordinance as well as any **additionality** requirements set by regulations.
- Additionality requirements may include:
 - The **commercial operation date** for the contracted project is set after the PPA contract execution.
- Energy purchased through PPAs that meet the criteria in the Ordinance and Regulations will be assigned an emissions factor of zero.

Questions:

- Are there other additionality criteria we should consider?

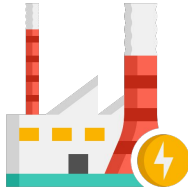
Who benefits from solar in MA SMART program?

There are different types of arrangements to benefit from solar energy in Massachusetts

Building installs solar PV and receives power (off-taker), but doesn't keep RECs



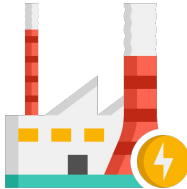
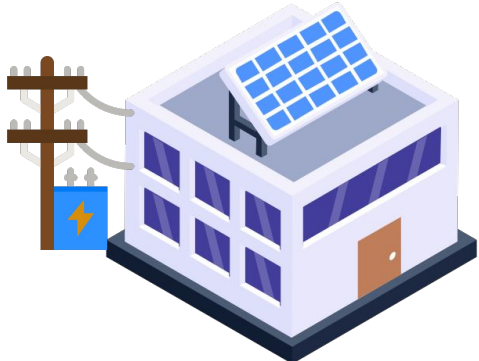
- Owns PV and receives net metering credits.



Utility

- RECs are retired by the utility through SMART program.
- SMART program provides incentive payments in return.

Community solar



Utility



- Many parties purchase power (off-takers)

Regulations for local solar generation and SMART Program

Preliminary proposals for discussion:

- *Up until a specified sunset date, energy off-takers from on-site solar systems or energy off-takers from PPAs for PV systems located in the City of Boston, may use the systems' annual energy generation for compliance with BERDO 2.0, regardless of whether the corresponding RECs are retired by or on behalf of the energy off-taker.*
 - *The building owner shall report the PV system's annual generation, as measured in kWh.*
 - *The PV systems' annual generation will be assigned an emissions factor of zero.*
- **Question for the group:**
 - *What would this mean for community solar projects? Are there other considerations for community solar?*
 - *What is a reasonable sunset date?*

Fossil Fuel Emission Factors

Fossil Fuel Emissions Factors

Preliminary proposals for discussion:

- *Emissions factors from ENERGY STAR Portfolio Manager shall be used for natural gas, fuel oil no. 1, fuel oil no. 2, fuel oil no. 4, and diesel oil.*
- *Emissions from fuel consumption shall be calculated by multiplying the total amount of fuel used by the appropriate emissions factor for each fuel type.*

Next Steps



Working Sessions Schedule for 2022

Additional meetings may be convened as needed and advertised via the BERDO newsletter and boston.gov/events.

Meeting Number	Date	Focus areas
#1	September 7	Blended emissions standards, designating tenant as owner, and change of ownership
#2	TODAY	Grid emissions (emissions factors) and renewable energy purchases
#3	September 21 1:00 - 2:30 p.m.	District energy systems and co-generation

KEY DATES FOR APCC HEARINGS (TENTATIVE SCHEDULE SUBJECT TO CHANGE):

Meetings publicly noticed and accessible via boston.gov/public-notice.

- **September 28 at 1:00 p.m. (APCC Special Hearing):** City presents first proposals for regulations.
- **October 19 at 1:00 p.m. (APCC Monthly Hearing):** City submits draft regulations language. At the discretion of the Commission, first public comment period will open.
- **November 16 at 1:00 p.m. (APCC Monthly Hearing):** Discussion of feedback from public comment period.
- **December 14 at 1:00 p.m. (APCC Monthly Hearing):** To be determined by prior hearing.

Reminders

- Please share additional feedback via [Google Form](#)
 - <https://forms.gle/aJgVgM1ZLUPtBYf3A>
- Updates will be posted on BERDO regulations page:
 - boston.gov/departments/environment/berdo-regulations-development.
- [Boston.gov/berdo](https://boston.gov/berdo) is also updated regularly

THANK YOU!

Please visit boston.gov/berdo for more information and updates.

