

A BERDO for Newton

The First in a series of Discussion Sessions

Today's presenters are:

William Ferguson: City of Newton Co-Director of Sustainability and Project Manager for the Public Buildings Dept.

Michael Gevelber: Professor of Mechanical Engineering at Boston University and member of the Newton Citizens Commission on Energy.

A BERDO for Newton (Building Emissions Reduction and Disclosure Ordinance)

- We are at the early stage of developing an ordinance for Newton based on Boston BERDO. Important for meeting Newton's Climate Goals.
- City Council passed a resolution in support (4/19/22).
- The ordinance will require large buildings to reach net zero by 2050.
- The City has a team working on it with help from the Energy Commission.
- We are holding information and discussion sessions for building owners for input while we are developing the ordinance.
- We are looking for owners who are interested in participating in Advisory Groups to provide input to the development of the ordinance.

A BERDO for Newton (Building Emissions Reduction and Disclosure Ordinance)

- If you received an invitation to this information session it is because you are one of 225 owners, or represent an owner, of one of the 411 largest buildings in Newton.
- These are buildings that are more than 20,000 square feet or include 15 or more residential building units.
- This list of buildings comes from the Newton assessor's data base.
- The City of Newton is the owner of 32 buildings on this list.
- This is the first in a series of BERDO sessions that will be held throughout the year.

A BERDO for Newton (Building Emissions Reduction and Disclosure Ordinance)

AGENDA

- What is BERDO?
- What buildings might be covered?
- Why BERDO?
- How does it work?
- Proposed Timelines and Process

Building Emissions Performance Standard

A building performance standard sets carbon targets for existing large buildings that decrease over time.

- Directly targets largest source of emissions;
- Sets long planning horizons;
- Provides flexibility in how buildings meet targets and when they make investments.



A BERDO for Newton



City staff are working on a BERDO for Newton based on Boston BERDO.



It will combine Boston 1.0 (energy reporting) and 2.0 (emission limits).



2.0 will be phased in after 1.0 is in place for a period of time.

Boston BERDO

(Building Emissions Reduction and Disclosure Ordinance)

For existing buildings, most of which will still be around in 2050.

For large commercial and large residential buildings.

Two phases: BERDO 1.0 (energy reporting) and 2.0 (emission limits over 25 years).

Boston BERDO 1.0 –Energy and Emissions Reporting

Boston passed BERDO 1.0 in 2013.

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graph TD; A[Boston passed BERDO 1.0 in 2013.] --> B[BERDO 1.0 required reporting of energy use and GHG emissions.]; B --> C[BERDO 1.0 failed to produce voluntary reductions in GHG emissions.]; C --> D[BERDO 2.0 passed by Boston in September 2021. It sets emissions standards and requires buildings to reach net zero emissions by 2050.];
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BERDO 1.0 required reporting of energy use and GHG emissions.

BERDO 1.0 failed to produce voluntary reductions in GHG emissions.

BERDO 2.0 passed by Boston in September 2021. It sets emissions standards and requires buildings to reach net zero emissions by 2050.

Boston BERDO 2.0-Building Emissions Performance Standard

Requires annual reporting.

Sets mandatory GHG emissions standards.

Buildings are required to be at net zero emissions by 2050.

Emissions requirements are on a declining schedule.

Boston ordinance used as a model & learn from their implementation experience.

Changes will be made to fit Newton.

Boston BERDO: Covered Buildings

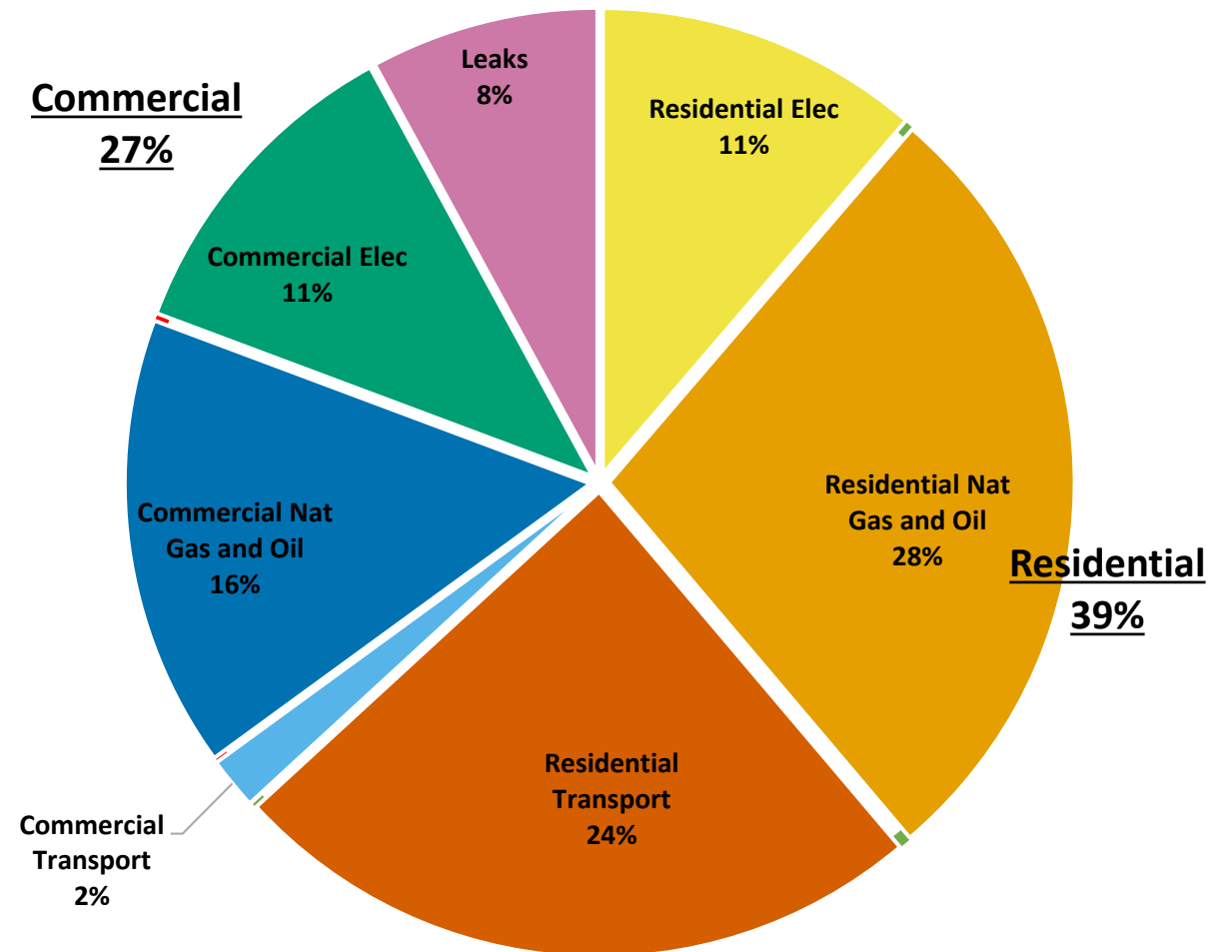


- Large Non Residential Buildings (NRB).
 - > 20,000 SF
 - 2 or more buildings on one parcel > 20,000 SF
- Large residential buildings (RB).
 - > 15 units or 20,000 SF
 - 2 buildings on one parcel > 15 units or 20k SF

Newton 2019 GHG Emissions: 717,500 MT

Newton's GHG emissions & meeting climate objectives

- 66% of Newton's emissions come from buildings
- ~400 large NRB and residential buildings account for 27% of Newton's emissions (225 owners)



GHG emissions from Newton's non-residential buildings (NRB) & RB by size

| <u>NRB by Size (sqft.)</u> | <u>Number of bldgs.</u> | <u>% of Newton's total emissions</u> |
|----------------------------|-------------------------|--------------------------------------|
| >100,000 | 51 | 12% |
| 50,000 -100,000 | 61 | 5% |
| 20,000 – 50,000 | 153 | 6% |
| < 20,000 | 46 | 0.5% |

Target NRB: 23% of Newton's GHG emissions

42% of these GHG emissions from electricity (easier and cheaper to green)

Large Residential buildings: a variety of different types (for-profit, dorms, assisted living, low income). 120 large residential buildings contributing 4.3% to Newtons GHG emissions.

Boston's Declining Emissions Standards

(Newton schedule will be different)

Based on Synapse Study, real Building data. Input from Building Owners & MEP experts

| Building type | Emissions threshold (kgCO ₂ e/SF) | | | | | |
|--------------------------|--|------|------|------|------|------|
| | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Assembly | 7.8 | 4.6 | 3.3 | 2.1 | 1.1 | 0.0 |
| College/University | 10.2 | 5.3 | 3.8 | 2.5 | 1.2 | 0.0 |
| Education | 3.9 | 2.4 | 1.8 | 1.2 | 0.6 | 0.0 |
| Food Sales & Service | 17.4 | 10.9 | 8.0 | 5.4 | 2.7 | 0.0 |
| Healthcare | 15.4 | 10.0 | 7.4 | 4.9 | 2.4 | 0.0 |
| Lodging | 5.8 | 3.7 | 2.7 | 1.8 | 0.9 | 0.0 |
| Manufacturing/Industrial | 23.9 | 15.3 | 10.9 | 6.7 | 3.2 | 0.0 |
| Multifamily housing | 4.1 | 2.4 | 1.8 | 1.1 | 0.6 | 0.0 |
| Office | 5.3 | 3.2 | 2.4 | 1.6 | 0.8 | 0.0 |
| Retail | 7.1 | 3.4 | 2.4 | 1.5 | 0.7 | 0.0 |
| Services | 7.5 | 4.5 | 3.3 | 2.2 | 1.1 | 0.0 |
| Storage | 5.4 | 2.8 | 1.8 | 1.0 | 0.4 | 0.0 |
| Technology/Science | 19.2 | 11.1 | 7.8 | 5.1 | 2.5 | 0.0 |

Boston BERDO: Pathways to Compliance

Energy Efficiency Improvements: pays for itself.

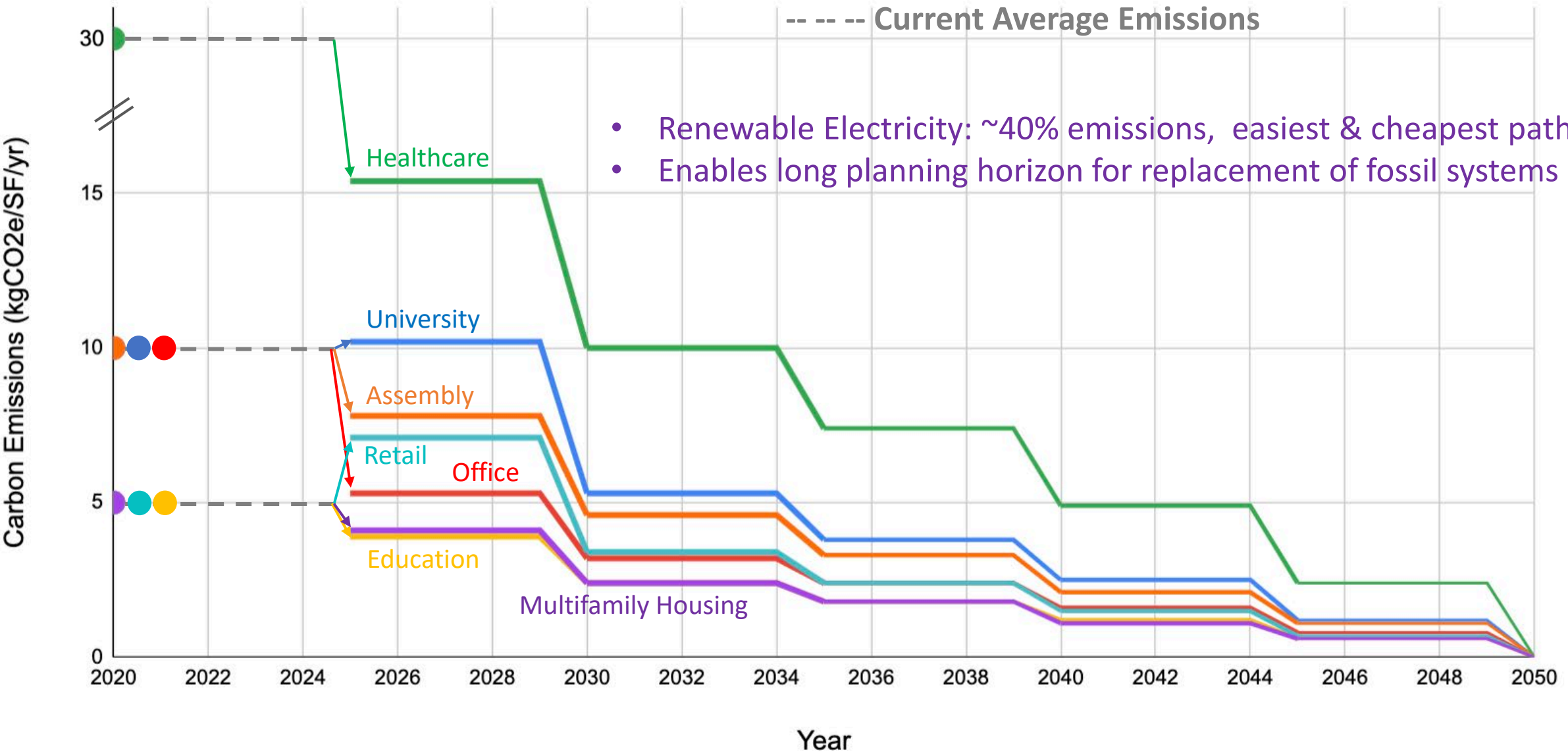
Procurement of Renewable Energy Certificates (VPPA) or NPC.

Renewable energy on site.

Electrification of heating.

Alternative compliance payments (as a last resort).

Boston's Current Emissions and Scheduled Compliance Standards under BERDO 2.0



Boston BERDO: Flexibility-Individual Plans

- Building owner needs an alternative schedule to reduce emissions.
- Must be reviewed and approved by the City.

Proposed Timelines for Newton BERDO



February 2023-

Ordinance passed by City Council

Summer 2024-

First energy use and GHG emissions report due from building owners for Calendar Year 2023.

Summer 2027-

First report due under the emissions standards for calendar year 2026.

Timelines may vary by building size and type.

Proposed Process for Newton BERDO



Discussion Sessions sponsored by City -
monthly

Updates on City website:
Newtonma.gov/NewtonBERDO

Advisory Groups

Special topic information sessions from
utilities, vendors, building owners

Email address:
NewtonBERDO@newtonma.gov

Support-

If BERDO
passes

Help Line

Training on EPA PM

Community leaders



EPA Portfolio Manager Link

- <https://www.energystar.gov/buildings/benchmark>
- Benchmarking tool
- Training

Newton
BERDO
website

[Newtonma.gov/NewtonBERDO](https://newtonma.gov/NewtonBERDO)

Newton
BERDO
email:

NewtonBERDO@newtonma.gov

Information on Climate Change & Global Warming

Newton Climate Action Plan :
<https://www.newtonma.gov/government/climate-and-sustainability/climate-action-plan>

Intergovernmental Panel on
Climate Change:
<https://www.ipcc>

[NASA website:](https://climate.nasa.gov/causes/)
<https://climate.nasa.gov/causes/>