City of Newton Proposed BERDO

Building Emissions Reduction and Disclosure Ordinance

Nov. 13, 2023

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- Boston as Model
- Emissions Standard
- Compliance Timeline for Bldg Owners

Discussion

Continued

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- Emissions Investment Fund
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- Issues Still Under Review by BERDO Team

Newton BERDO Team

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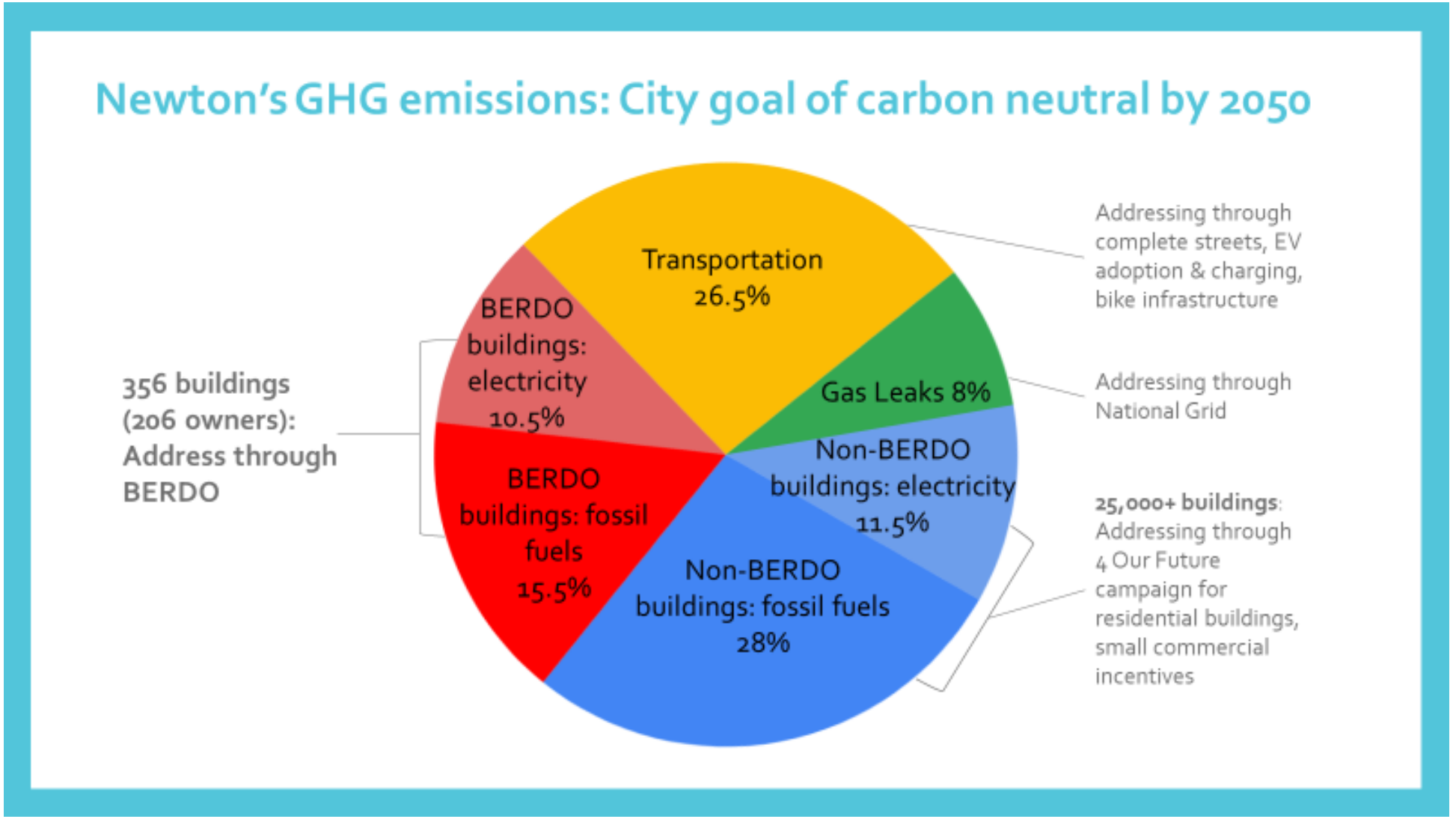
- NCCE- Halina Brown, Phil Hanser, Michael Gevelber
- Green Newton- Dan Ruben
- Consultant- Philip Eash-Gates, Synapse Energy Economics

Why BERDO?


Newton's GHG emissions: City goal of carbon neutral by 2050
Transportation 26.5%
BERDO buildings: electricity 10.5%
Gas Leaks 8%
BERDO buildings: fossil fuels 15.5%
Non-BERDO buildings: electricity 11.5%
Non-BERDO buildings: fossil fuels 28%
356 buildings (206 owners): Address through BERDO
Addressing through complete streets, EV adoption & charging, bike infrastructure
Addressing through National Grid
25,000+ buildings: Addressing through 4 Our Future campaign for residential buildings, small commercial incentives

Buildings Covered

- 356 buildings equal to or greater than 20,000 square feet of gross floor area
- Residential and non-residential buildings
- Exceptions: residential condos?, state and federal buildings

Proposed Covered Buildings (Excluding Residential Condos)

- There are 356 BERDO-covered buildings, with a combined GFA of 22.7 million square feet.
- Covered buildings account for 1.6% of the total number of buildings in Newton, 16.3% of the total building floor area in Newton, 40% of total buildings emissions and 26% of all Newton emissions.

Tier	Description	Count of Buildings	Number of Owners	Total GFA (sq ft)	Emissions (metric tons CO_2e)	
1	Non-residential, GFA ≥ 100,000 sq ft	47	29	8,631,279	77,774	42%
2	Non-residential, GFA 50,000–99,999 sq ft	70	41	4,948,885	42,246	23%
3	Non-residential, GFA 35,000–49,999 sq ft Residential, GFA ≥ 50,000 sq ft	67 18	15 51	2,825,059 2,191,572	23,480 11,824	13% 6%
4	Non-residential, GFA 20,000–34,999 sq ft	107	88	2,848,581	23,678	13%
5	Residential, GFA 20,000–49,999 sq ft	47	25	1,279,608	6,845	4%
Total	**All covered buildings**	**356**	**206***	**22,724,984**	**185,845**	**100%**

*Note that the total number of covered building owners is less than the sum of the rows, because some building owners appear in multiple tiers.

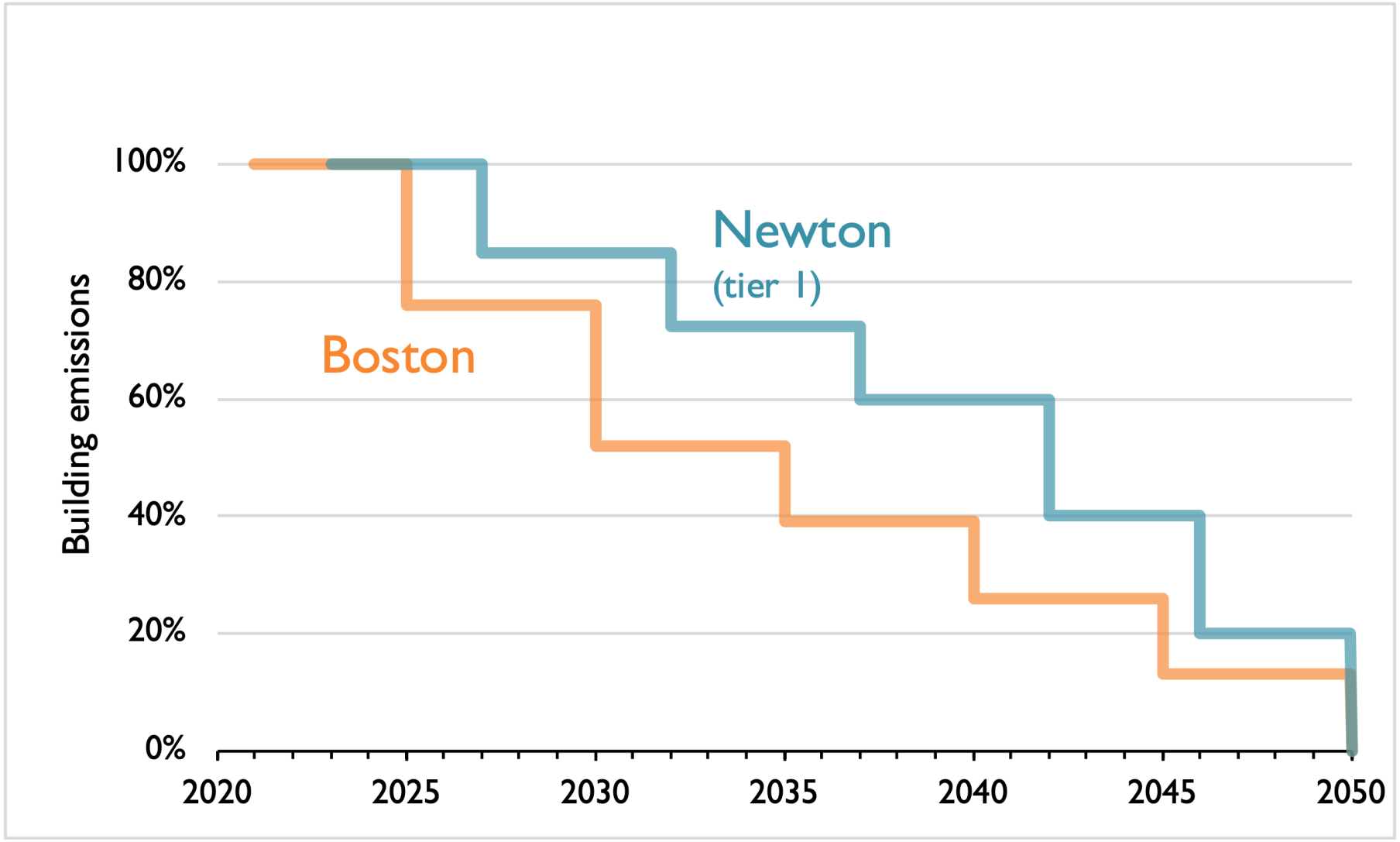
Boston as a Model-Proposed Differences

- Since 2013 Boston has had a Building Energy Reporting Requirement.
- In Sept. 2022 Boston adopted an Emissions standard because the reporting requirement was not achieving energy savings.
- Newton's proposed BERDO is based on Boston with some notable exceptions:
  - Timeline: Emissions reductions start in 2025 in Boston-2027 in Newton.
  - Newton is focused on individual buildings and Boston includes buildings on a parcel.
  - Rate of Emissions reduction is not steep in the early years.

ProposedTable 1: CO_2e Emissions Standards by Building Use

Building use	**Emission standards ($kgCO_2e/SF/yr$)**					
	Period 1	**Period 2**	**Period 3**	**Period 4**	**Period 5**	**Period 6**
Assembly	8.4	6.0	4.7	2.8	1.4	0.0
College/University	12.6	8.5	5.8	3.4	1.6	0.0
Education	4.2	3.3	2.6	1.7	0.8	0.0
Food Sales & Service	19.0	13.4	10.2	6.4	3.2	0.0
Healthcare	15.2	12.6	10.1	6.6	3.2	0.0
Lodging	6.3	4.7	3.7	2.4	1.1	0.0
Manufacturing/ Industrial	27.1	22.9	18.6	11.7	5.0	0.0
Office	5.9	4.4	3.3	2.0	0.9	0.0
Residential	4.8	3.5	2.6	1.6	0.8	0.0
Retail	9.3	6.3	4.4	2.2	0.9	0.0
Services	9.3	6.5	4.7	3.0	1.5	0.0
Storage	7.3	5.1	3.4	1.8	0.6	0.0
Technology/Science	20.3	15.9	12.3	7.0	3.3	0.0

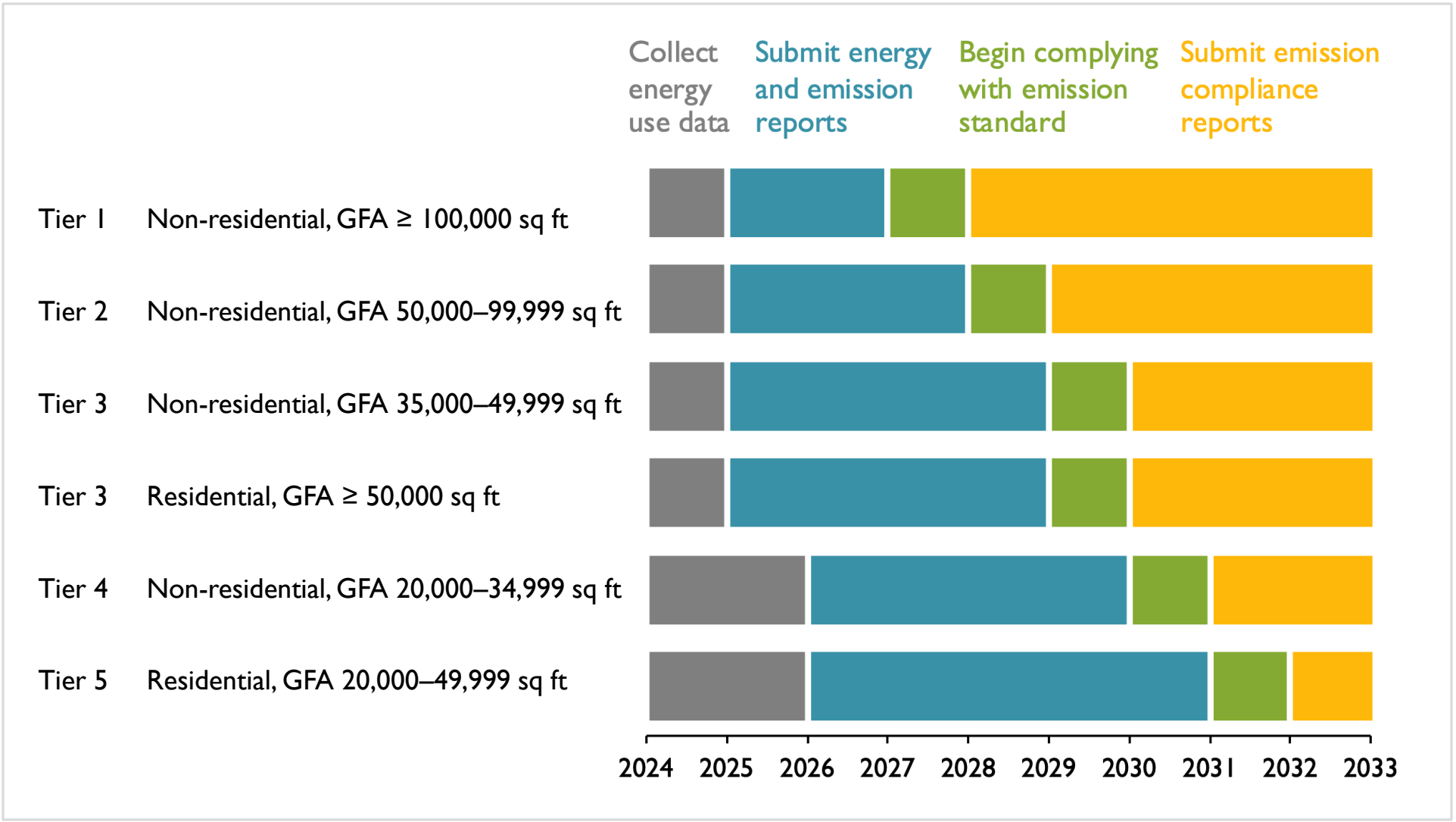
Proposed Rate of Emissions Reduction



Proposed Compliance Timeline for Bldg. Owners

Building Tier	Bldg Description	1st Energy and Emissions Report Due	1st Emissions Compliance Year	1st Report under Emissions Compliance
Tier 1	NR ≥ 100,000 sf GFA	September 15, 2025	2027	September 15, 2028
Tier 2	NR ≥ 50,000 < 100,000 sf GFA	September 15, 2025	2028	September 15, 2029
Tier 3	R > 50,000 sf GFA and NR ≥ 35,000 and < 50,000 sf GFA	September 15, 2025	2029	September 15, 2030
Tier 4	NR > 20,000 and < 35,000 sf GFA	September 15, 2026	2030	September 15, 2031
Tier 5	R > 20,000 and < 50,000 sf GFA	September 15, 2026	2031	September 15, 2032
	NR= Non-residential buildings			
	R= Residential buildings			
	GFA= Gross Floor Area			

Proposed Compliance Timeline for Bldg. Owners



Proposed Compliance Flexibility

- Portfolios- combine emissions rating of 2 or more buildings.
- Individual Compliance Plans- choose a base year from 2013 to now.
- Hardship Plans- unique circumstances or conditions.
- Multiple Compliance Pathways- phased compliance, energy efficiency, ACP.

Enforcement

- Enforcement will be by the Newton Law Department.
- Penalties for non-compliance begin the third year after the effective date of emissions requirements.
  - Failure to submit a report.
  - Inaccurate report.
  - Failure to meet emissions standard.
- Penalties and other enforcement provisions do not apply to residential tenants.

Proposed Emissions Investment Fund

- Fines, fees and penalties are placed in a special City fund.
- Fund is administered by the Climate/Sustainability Office and can be used for:
  - Projects that benefit Environmental Justice Populations,
  - Costs incurred by the City in administering the program created pursuant to this Ordinance,
  - Costs incurred by the City in complying with the program created pursuant to this Ordinance,
  - Costs incurred by non-profit entities that operate within the City, including but not limited to entities that operate affordable housing, in complying with the program created pursuant to this Ordinance,
  - Education related to implementation of the requirements of this ordinance.

Legal Authority

- Newton Law Department has reviewed.
- This is new territory legally.
- Wouldn’t be surprised if it is challenged by some building owners in Boston.

Issues Still Under Review by BERDO Team

- Maryland approach: do not include electricity emissions in standard.
- Residential Condos: should they be included?
- Residential Buildings: 20,000 sq. ft. GFA adjustment?

Extra Slides

Covered Buildings (Excluding Residential Condos)

- There are 356 BERDO-covered buildings, with a combined GFA of 22.7 million square feet.
- Covered buildings account for 1.6% of the total number of buildings in Newton, 16.3% of the total building floor area in Newton and 26% of total emissions.

Tier	Description	Count of Buildings	Number of Owners	Total GFA (sq ft)	Emissions (metric tons CO_2e)	
1	Non-residential, ≥100,000 sq ft	47	29	8,631,279	77,774	42%
2	Non-residential, 50,000–99,999 sq ft	70	41	4,948,885	42,246	23%
3	Non-residential, 35,000–49,999 sq ft Residential, ≥50,000 sq ft	67 18	15 51	2,825,059 2,191,572	23,480 11,824	13% 6%
4	Non-residential, 20,000–34,999 sq ft	107	88	2,848,581	23,678	13%
5	Residential, 20,000–49,999 sq ft	47	25	1,279,608	6,845	4%
Total	**All covered buildings**	**356**	**206***	**22,724,984**	**185,845**	**100%**

*Note that the total number of covered building owners is less than the sum of the rows, because some building owners appear in multiple tiers.

Covered Buildings (Including Residential Condos)

- The table below shows BERDO coverage if residential condominiums were included in the ordinance.
- The analysis represents an upper bound by assuming that each residential condo complex contains a single building.
- Some complexes are likely composed of multiple smaller buildings. If residential condos are ultimately included in BERDO, the tax assessor's office will verify which complexes contain covered buildings.
- These buildings represent 28% of total GHG in Newton.

Tier	Description	Count of Buildings	Number of Owners	Total GFA (sq ft)	Emissions (metric tons CO_2e)	
1	Non-residential, ≥100,000 sq ft	47	29	8,631,279	77,774	38%
2	Non-residential, 50,000–99,999 sq ft	70	41	4,948,885	42,246	21%
3	Non-residential, 35,000–49,999 sq ft Residential, ≥50,000 sq ft	67 38	15 1,580	2,825,059 5,101,710	23,480 24,201	12% 12%
4	Non-residential, 20,000–34,999 sq ft	107	88	2,848,581	23,678	12%
5	Residential, 20,000–49,999 sq ft	83	675	2,356,977	11,427	6%
Total	**All covered buildings**	**412**	**2,380***	**26,712,491**	**202,805**	**100%**

*Note that the total number of covered building owners is less than the sum of the rows, because some building owners appear in multiple tiers.

Impact of Residential Condos

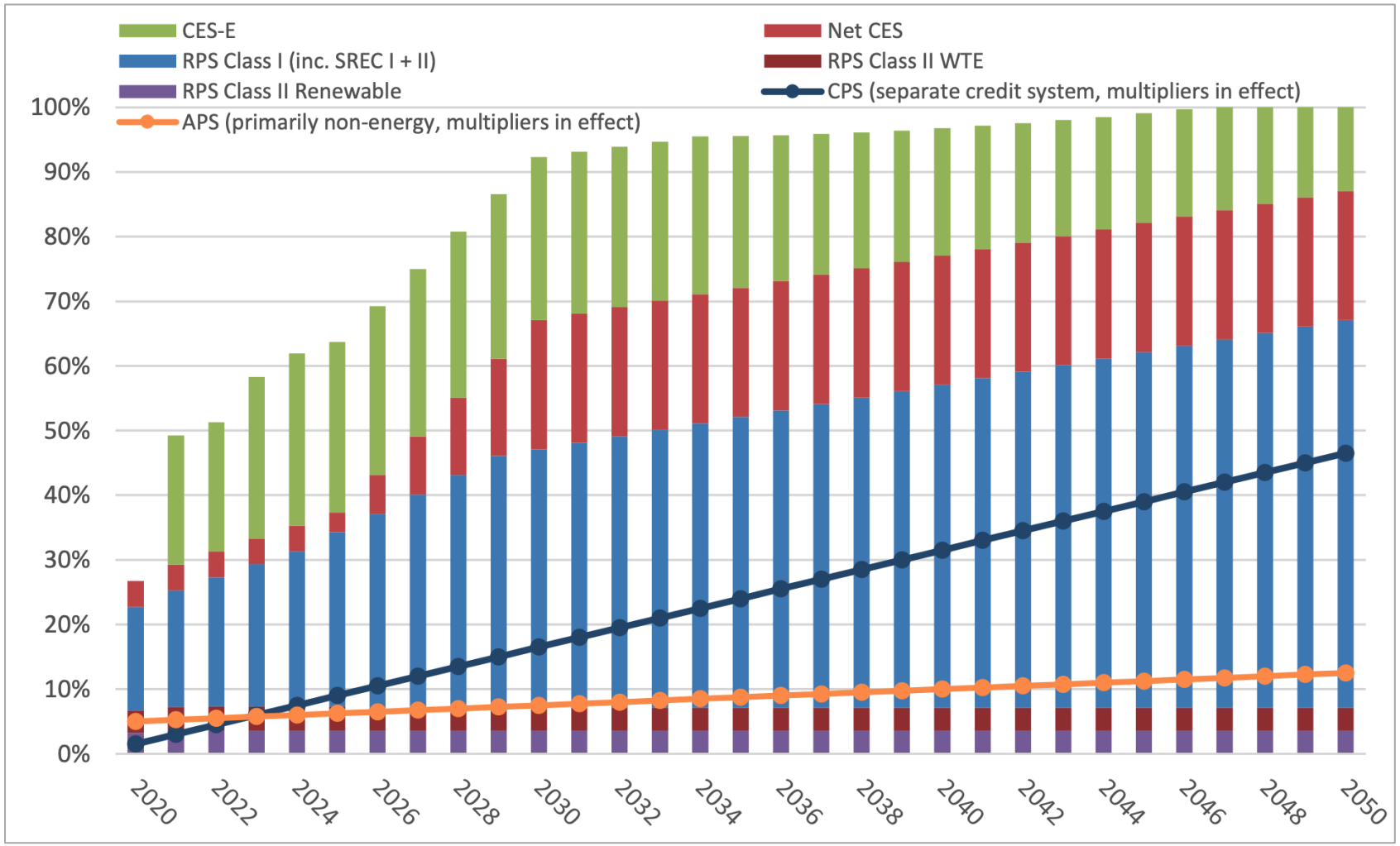
- The table below isolates the impact of residential condos.
- Including residential condos would increase the number of buildings included in Tier 3 by 24% and Tier 5 by 77%.
- The total number of buildings covered by BERDO would increase by 16% and covered emissions would increase by 9%.
- The number of covered building owners would increase dramatically, from 66 to 1,595 owners in Tier 3 and 25 to 675 owners in Tier 5.

Tier	Description	Count of Buildings	Number of Owners	Total GFA (sq ft)	Emissions (metric tons CO_2e)	
3	Residential, ≥50,000 sq ft	20	1,529	2,910,138	12,378	6%
5	Residential, 20,000–49,999 sq ft	36	650	1,077,369	4,582	2%
Total	**All Covered Residential Condos**	**56**	**2,174***	**3,987,507**	**16,960**	**8%**
Total	**All Covered Buildings**	**412**	**2,380***	**26,712,491**	**202,805**	**100%**

*Note that the total number of covered building owners is less than the sum of the rows, because some building owners appear in multiple tiers.

Massachusetts Clean Energy Regulations

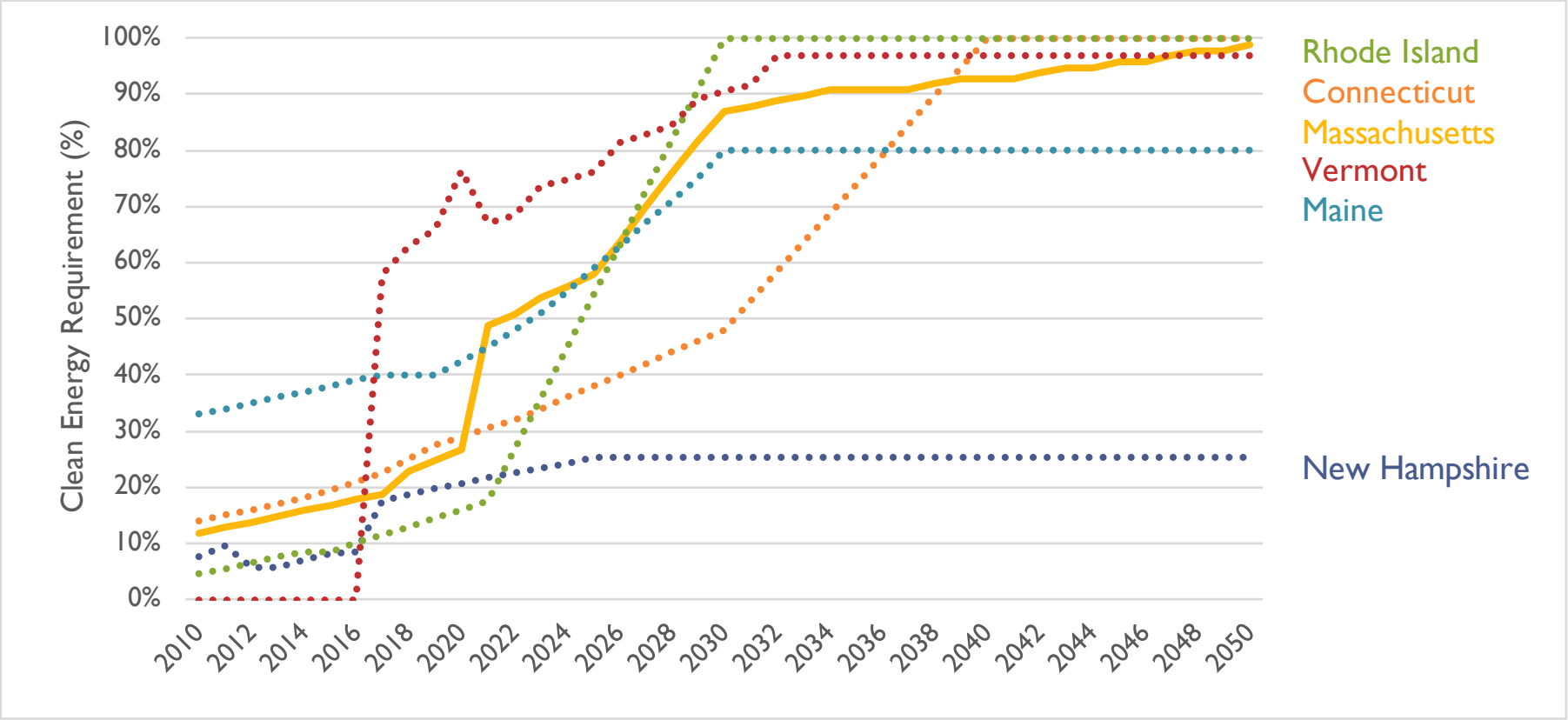
Combined renewable and clean energy procurement mandates require about 90 percent emissions-free electricity in Massachusetts by 2030 and 100 percent by 2050



Source: [Massachusetts Department of Environmental Protection 310 CMR 7.75: Clean Energy Standard (CES)]

New England Clean Energy Regulations

Most other states in New England have similar requirements



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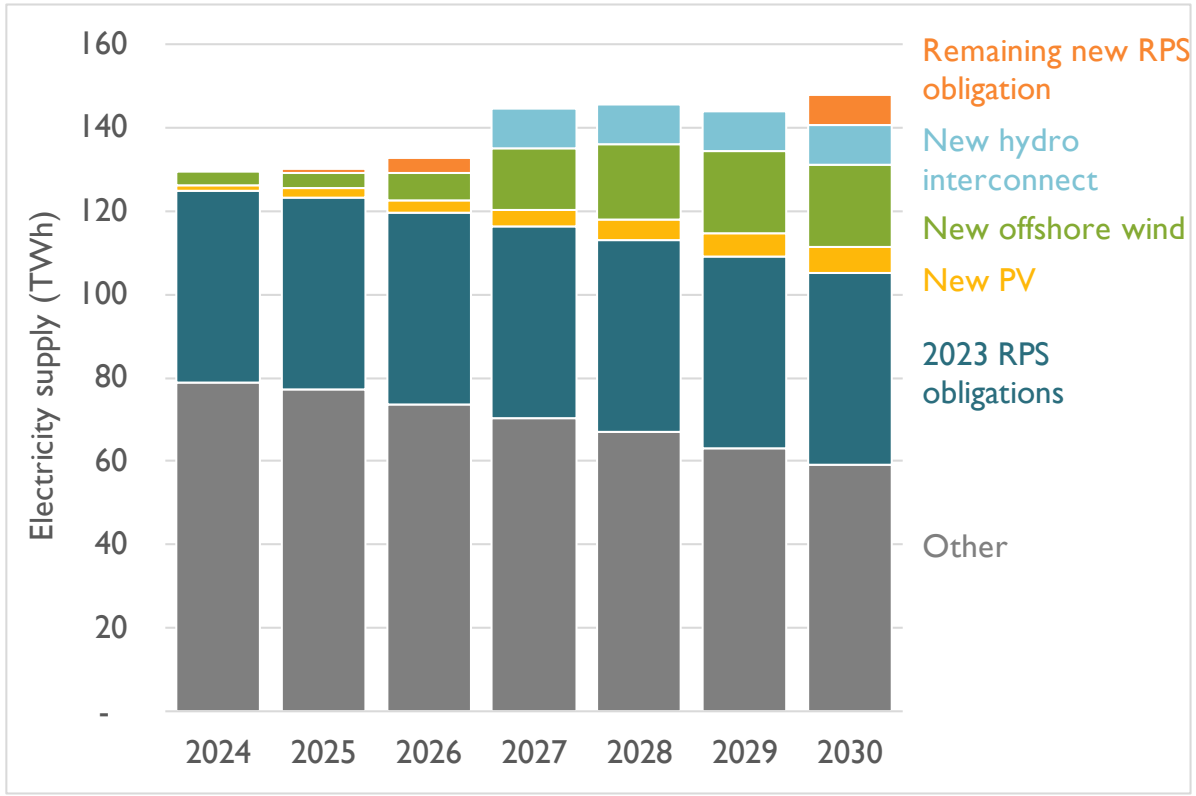
New England Clean Energy Regulations

- In 2022, New England achieved greater than 55% clean energy supply
- New renewable projects are needed to meet state mandates by 2030
- Planned offshore wind, PV, and hydro interconnect projects will meet most of the requirements
- Remaining obligations not covered by planned projects range from 1% of load in 2025 to 5% in 2030, with excess production in some years
- Remaining obligations can be met in several ways
  - New renewable projects that are not yet planned
  - Renewable imports from adjacent grid regions
  - "Banked" renewable energy certificates
- Potential offshore wind and transmission project delays may pose a risk to meeting states' obligations

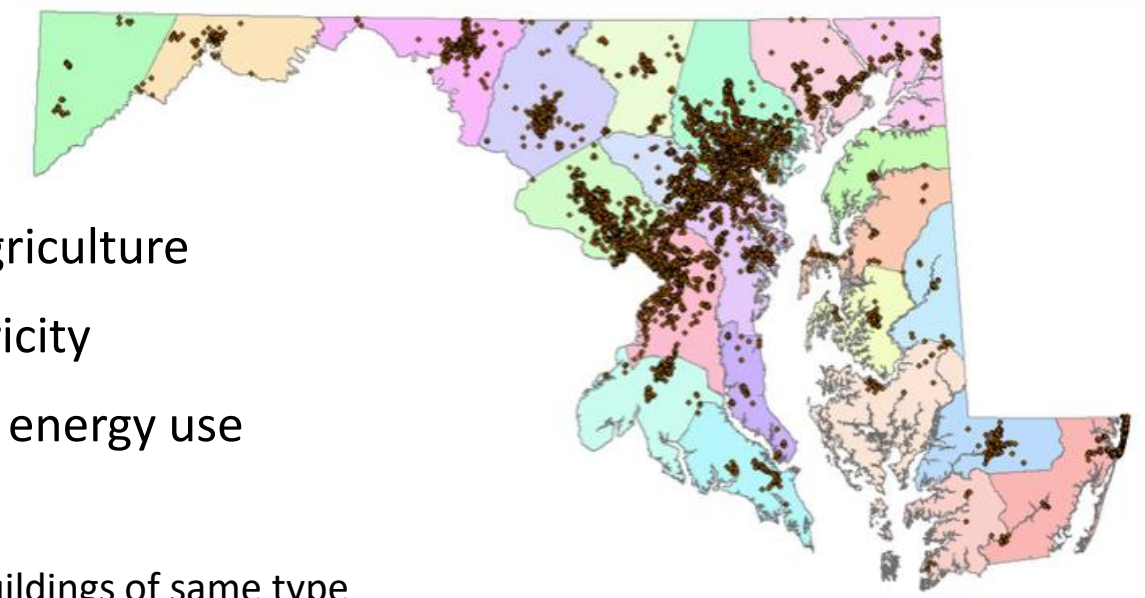
New England Electricity Supply and Clean Energy Requirements



Planned Offshore Wind Projects

Location	Name	Completion Date	Capacity (MW)	Current Status	Offtaker State
ME	New England Aqua Ventus I	2024	12	Permitting	ME
MA/RI	Revolution Wind	2026	704	Permitting	RI (400 MW) and CT (304 MW)
MA	Vineyard Wind 1	2024	800	Under Construction	MA
MA	SouthCoast Wind 1a	2028	804	Permitting	MA
MA	SouthCoast Wind 1b	2029	400	Permitting	MA
MA	New England Wind I	2027	800	Permitting	MA
MA	New England Wind II	2027	1232	Permitting	MA

Maryland Building Energy Performance Standards



- Covers buildings ≥35,000 square feet
- Exempt buildings: historic, schools, manufacturing, agriculture
- Does not regulate indirect GHG emissions from electricity
- Regulates “direct greenhouse gas emissions” and site energy use
  - Net direct GHG emissions standards
    - 20% reduction by 2030 compared with 2025 average buildings of same type
    - 60% reduction by 2035 compared with 2025 average buildings of same type
    - Net-zero direct GHG emissions by 2040
  - Site energy use intensity (EUI) standards
    - Yet to be established, but will require straight line progress toward final 2040 EUI target
    - Intended to reduce GHG, peak load, and energy costs
    - Likely not necessary in Newton to reduce GHG (Maryland RPS caps out at 50 percent in 2030)

“Maryland Approach” for Newton

Pros	Cons

• Would focus BERDO on onsite fossil fuel combustion, which lacks a state mandate to decarbonize
 	
• Would simplify the BERDO policy:
  • No extra metering for onsite generation
  • No tracking renewable purchases
  • No criteria development for renewables
 	
• Eliminates risk of regulatory loopholes (e.g., junk renewable energy certificates (RECs))
 	
• Can follow approach used for current standards or make more gradual to accommodate capital replacement cycles:
  • Align to Newton Climate Action Plan
  • Gradual decline at first
  • Tiered policy phase-in
 	
• Total cost of decarbonization would be lower (no need to decarbonize electricity)
	• Eliminates renewable electricity purchase as a low-cost compliance options in early years
	
	• Depending on compliance schedule, some owners may need to make onsite changes sooner
	
	• Doesn’t incentivize Newton Power Choice enrollment or onsite solar
	
	• Less incentive for energy efficiency
	  • Consider adding an option to include an energy use intensity (EUI) requirement in the future based on early reports; could be a fixed target or based on historical consumption
	
	• Departure from precedent of Boston and Cambridge building performance standards
	
	• Would need to update stakeholders about the proposed change