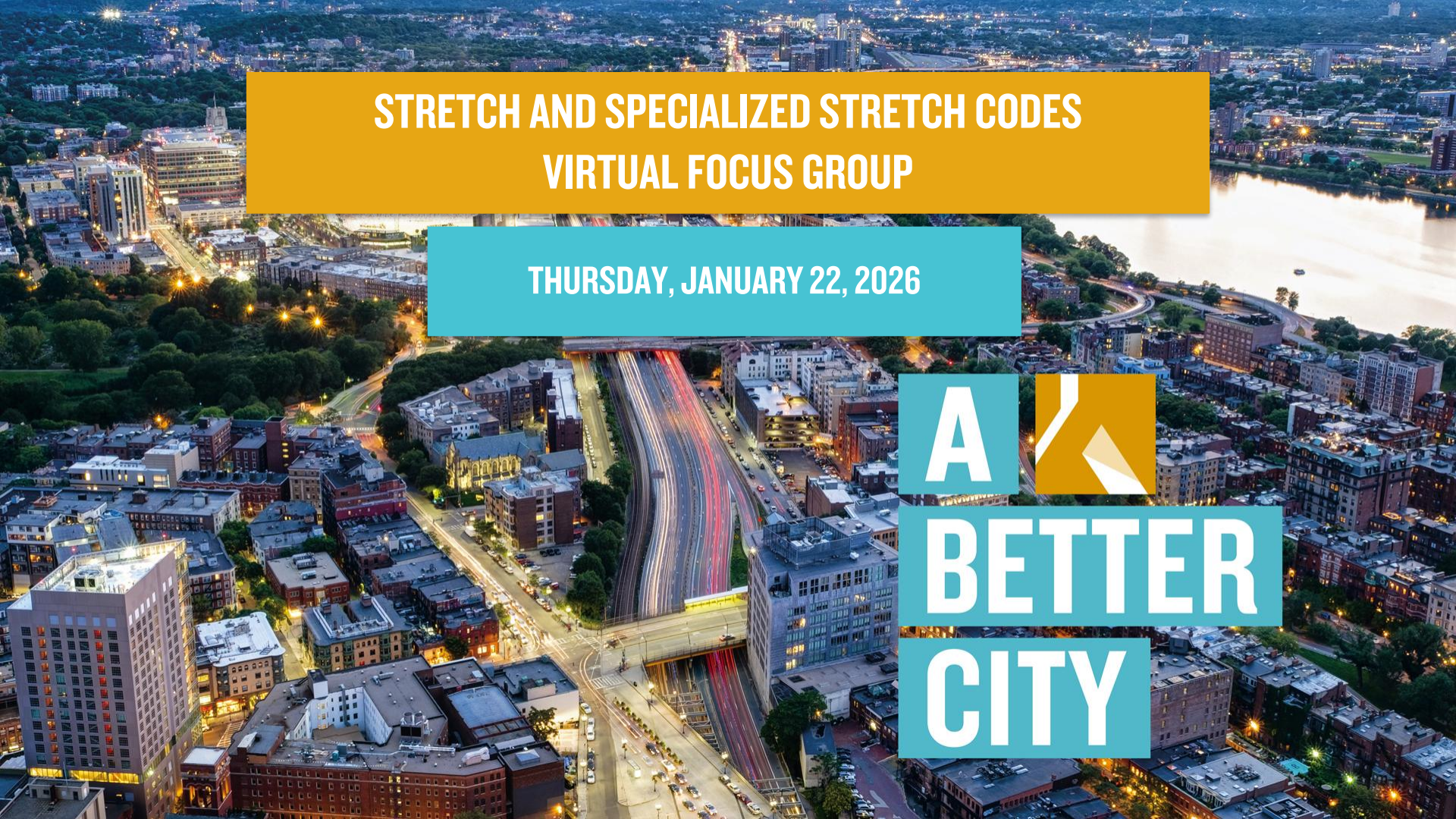

STRETCH AND SPECIALIZED STRETCH CODES
VIRTUAL FOCUS GROUP
THURSDAY, JANUARY 22, 2026
A
BETTER
CITY

AGENDA

12.00: Welcome, *Kate Dineen, A Better City*

12.02: Introduction, *Yve Torrie, A Better City*

12.05: DOER presentation, *Ian Finlayson and Paul Ormond, Department of Energy Resources (DOER)*

12.20: Q+A

1.25: Passive House resources, *Alexander Gard-Murray, Passive House MA*

MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES (DOER)

Ian Finlayson, Deputy Director, Energy Efficiency Division, MA Department of Energy Resources

Paul Ormond, Efficiency Engineer, MA Department of Energy Resources

A BETTER CITY

MASSACHUSETTS
DEPARTMENT OF ENERGY RESOURCES

MA Energy Code: Update for A Better City

January 22, 2026

Ian Finlayson & Paul Ormond

OVERVIEW / AGENDA

- Energy Codes 101
  - WHY MA MODIFIES IECC TO CREATE A “THERMAL CODE”
  - HOW “THERMAL CODE” BENEFITS PROJECT AND RATEPAYERS
- MEPA results
  - WIDESPREAD PASSIVE HOUSE AND ELECTRIFICATION ADOPTION
- Mass Save incentives
- Key Stakeholder input since 2023
  - DISTRICT ENERGY
  - AIR LEAKAGE IN RENOVATIONS
  - RESIDENTIAL ALTERATIONS / ADDITIONS / ADUS
  - TEDI COMPLIANCE
- Feedback and Discussion

Value of *thermal code*: energy efficiency PLUS

Comfort

Simplified, reduced HVAC

Resilience

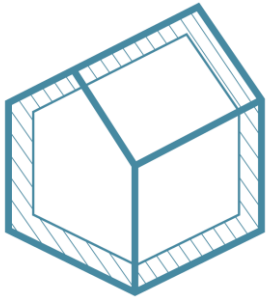
Grid-friendly electrification

+ cost effective: lower life cycle cost for <u>all</u> building types

https://www.mass.gov/info-details/final-stretch-code-guideline-materials?auHash=cyHdJ0-aKeSKJLbQxVafygKhfAQT_0NW7kiF-sgWGMk#stretch-energy-code-study-report

The four pillars of the Massachusetts Thermal Code

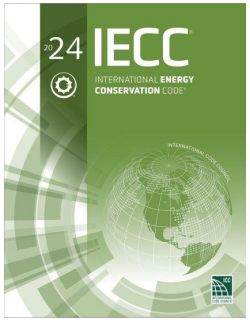
Envelope U-Value



Low Air Infiltration

Ventilation Energy Recovery

Thermal Bridge Mitigation



the Massachusetts
THERMAL CODE

Base Code

IECC 2021 w/
modest
changes

50 municipalities
8% by population

New construction,
Major Alterations
+ Additions

Stretch Code

IECC 2021 w/
4 thermal pillars

246 municipalities
60% by population

New construction

Specialized Code

IECC 2021 w/
4 thermal pillars
+
Passive House
(multifamily > 12,000 sf)
+
All-electric or
Electric-ready + Solar

55 municipalities
32% by population

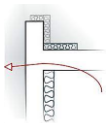
Where can you find the codes?

MA Building Code = CMR 780 10th Edition

Base Code = IECC 2021 w/ MA amendments
Find these amendments in:
780 CMR Chapter 11R (residential)
780 CMR Chapter 13 (commercial)

Stretch Code = IECC 2021 w/ MA amendments
Find these amendments in:
225 CMR Chapter 22 (residential)
225 CMR Chapter 23 (commercial)

Specialized Code = IECC 2021 w/ MA amendments
Find these amendments in:
225 CMR Chapter 22 + Appendix RC (residential)
225 CMR Chapter 23 + Appendix CC (commercial)

	IECC/ASHRAE Model Code	Massachusetts' Thermal Code
 Envelope U-value	Unlimited tradeoffs	Backstop
 Low Air infiltration	Low air leakage + verify	Low air leakage + verify
 Ventilation energy recovery	Low expectations	High expectations
 Thermal bridge mitigation	Weak (0 to 1)	Strong (0 to 10)

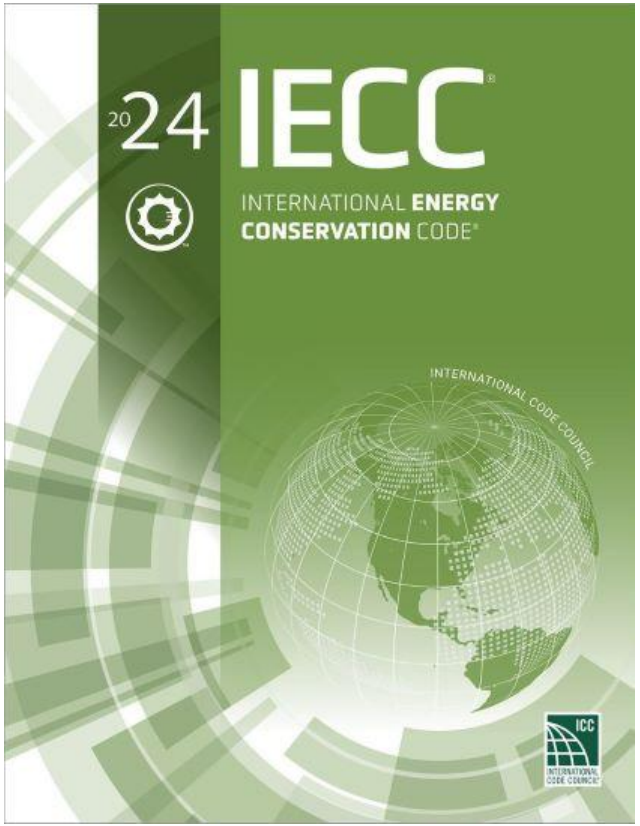
	Net First Cost	Life Cycle Cost
Small office	+4.5%	-0.2%
Large office	-4.0%	-8.3%
Primary school	+2.7%	-1.9%
Secondary school	+0.8%	-2.5%
Midrise multifamily	+3.2%	-1.9%
Highrise multifamily	+4.2%	-1.1%

Improved (with elec heat) compared to code (with gas heat)

Does not include MassSave and other incentives

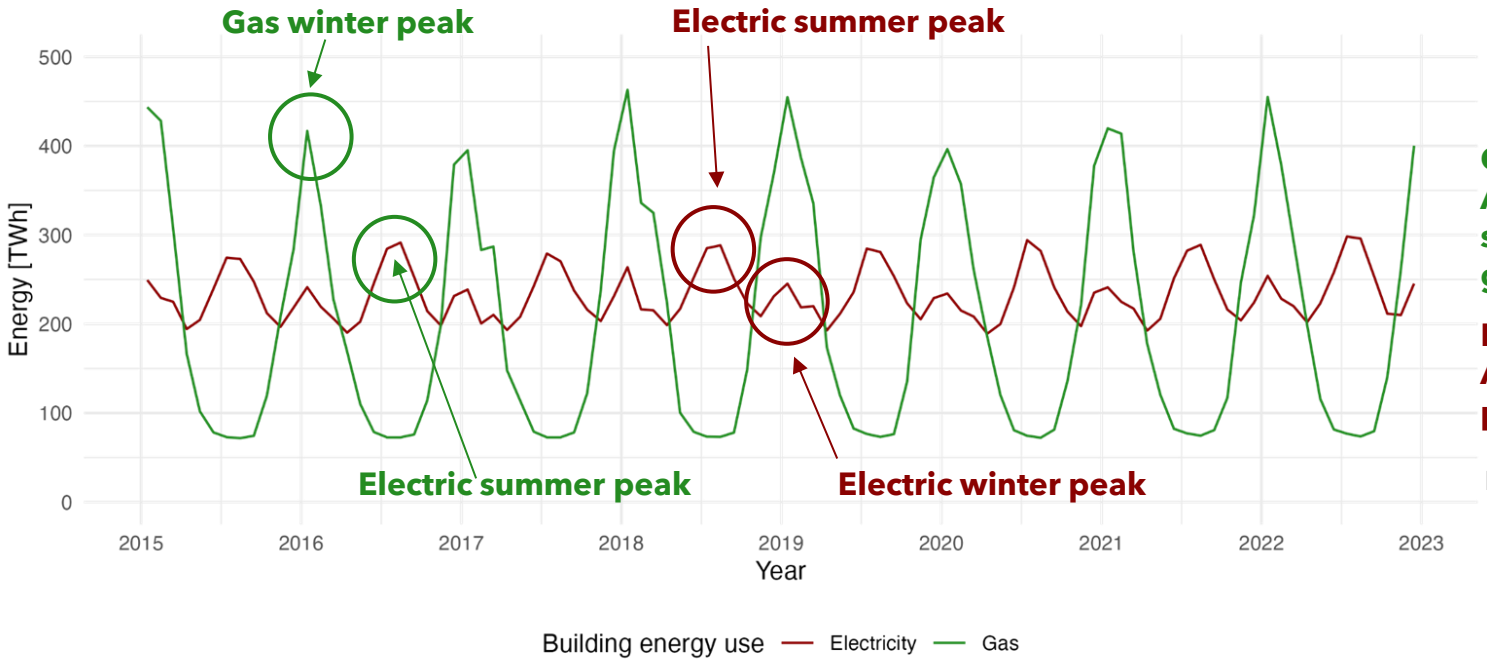
Cost effectiveness

HOW DOES THE IECC BASE CODE DEAL WITH PEAK LOADS?



COST DRIVER: PEAKING CAPACITY OF ELECTRICITY & GAS NETWORKS

NEW GAS BUILDINGS ADD TO BOTH NETWORK PEAKS,
NEW ELECTRIC BUILDINGS CONCERN IS AROUND FUTURE WINTER PEAKS

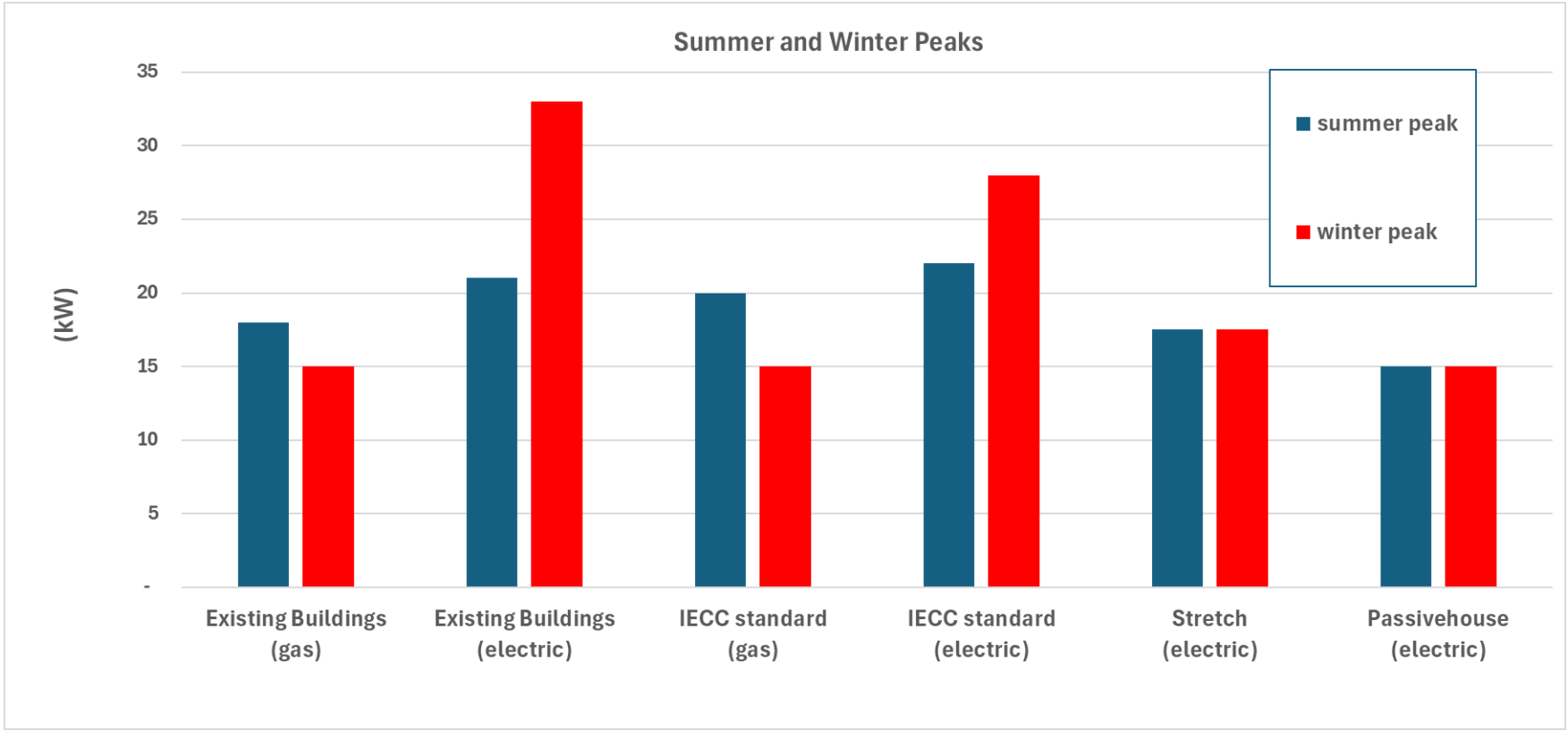


Gas Home: Adds to Elec summer and gas winter peak

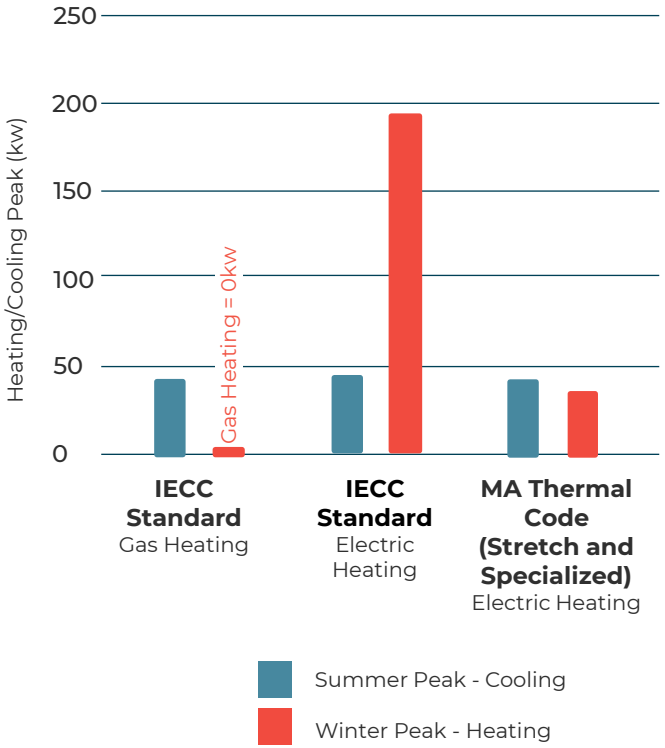
Electric home: Adds to elec peaks

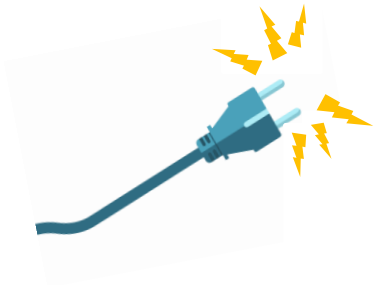
EIA-176

Energy Code Goals: manage peak electric loads



What is “grid-friendliness” ?



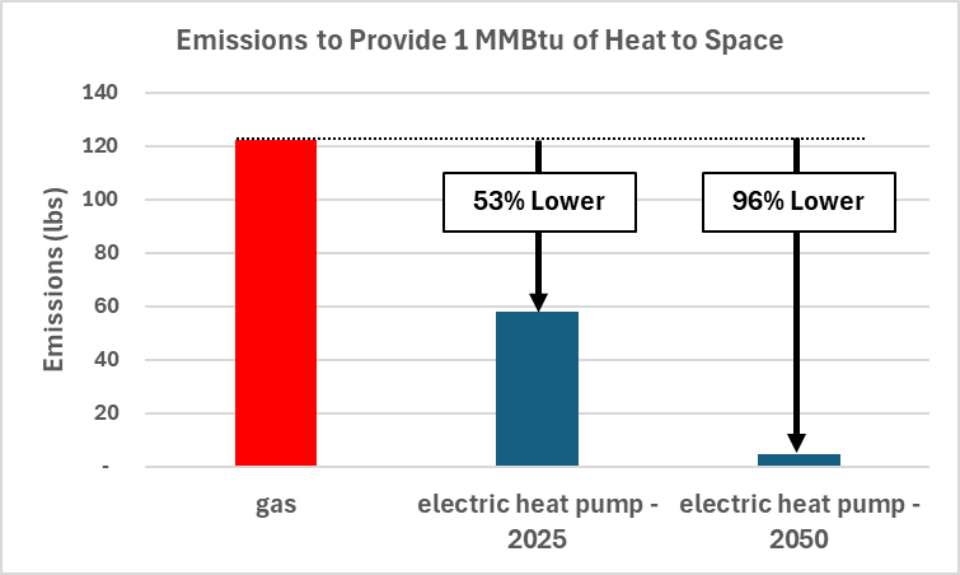


Example Load on Electric Grid due to Heating/Cooling in a school

KEY CONSIDERATION: ELECTRIFICATION IN RESIDENTIAL & COMMERCIAL

- Electric vs gas heating
  - 53% LOWER GHG IN 2025
  - 96% LOWER GHG IN 2050

- Critical that new buildings migrate toward electrification, to pave the way for more expensive existing building conversions



Based on 95% efficient natural gas boiler vs. 320% efficient air source heat pump, 2023 emission rate of 633 lbs/MWh, 2050 emission rate of 50 lbs/MWh

From MEPA project review data

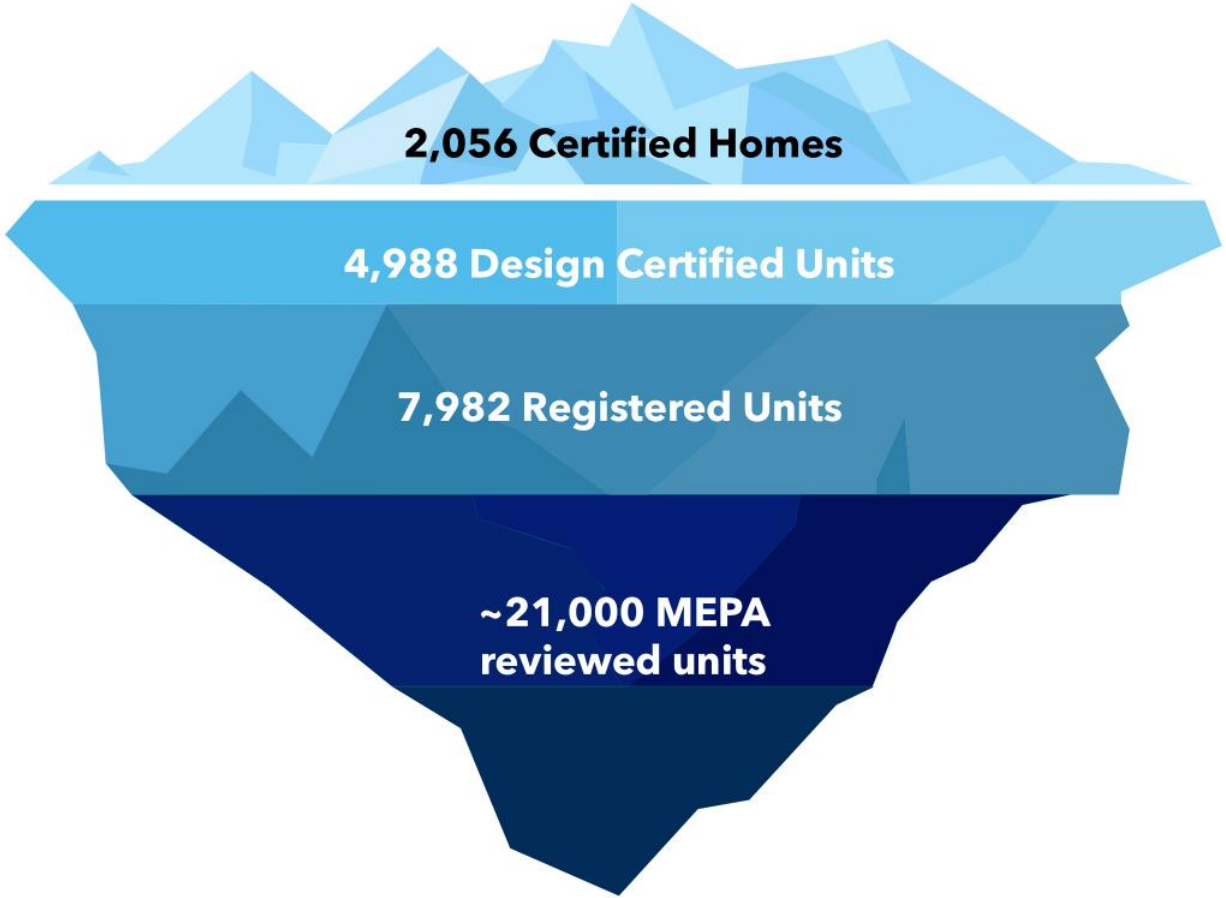
Period 2020-2025

- **~60,000 MF residential units**
- **>34,000 Passive House**
- **2020-2021 MF 19% Passive House**
- **2022-2025 MF 73% Passive House**

Adoption of Electrification of Space heating (by sf)

- **2020 – 7%**
- **2021 – 39%**
- **2022 – 53%**
- **2023 – 51%**
- **2024 – 97%**
- **2025 – 93%**

The Passive House iceberg : Over 35,000 new housing units



Passive house – multi-family incentives

Incentives | How to Participate | Eligibility

Multi-Family (5+ units)			
Tier	**Base**	**ENERGY STAR**	**Passive House**
Overview	All-electric heating, cooking, and clothes drying	ENERGY STAR Multi-Family New Construction (MFNC) v1.2	Passive House
Performance Specification	Low-rise: ≥15% savings above baseline or HERS: ≤45 High-rise: Exceed baseline	ENERGY STAR MFNC v1.2	Passive House certification (Phius or PHI)
Incentives	Low-rise: $1,500/Unit High-rise: $1,000/Unit	Low-rise: $2,500/Unit High-rise: $1,750/Unit	Both: $3,750/Unit ($750 Pre-Cert, $3,000 Final Cert)
Passive House adders	$5,000 Feasibility Study Incentive Up to 75% Energy Modeling Costs ($500/Unit or $20,000/Project max)		

Significant refinements since 2023:

- Residential additions/alterations/ADUs
  - HERS ratings modified from HERS 52-58 to HERS 52-75
  - Significant engagement with Building Officials, HERS raters, project designers
- District Energy Systems
  - Pathway for investment in central plant conversion to all-electric
  - DOER order of conditions, allows buildings to qualify as mixed fuel without pre-wiring
- TEDI modeled buildings
  - New consultant support for TEDI modeling
  - Modifying small building TEDI heating limits, based on project review and feedback
- Air leakage testing in renovations
  - SETAC guidance on revised language

Specialty	Name	Org.
DOER chairs	Ian Finlayson, Paul Ormond	DOER
State code officials	Ross Seavey	DOL
IECC	Kim Cheslak	PNNL
ASHRAE / PNNL	Michael Tillou	PNNL
HERS rating	Michael Browne	RDH
Passivehouse	Isaac Elnecave	Phius
Stretch codes	Lauren Gunther	Dimella Shaeffer
MA Code officials	Nelson Miller	MBCIA
MA Code officials	Fred Lonardo	MFBO
HVAC	Magda Lelek	Andelman & Lelek
Envelope	Wei Lam	RDH
Energy Modelling	Chris Schaffner	The Green Engineer
Commercial Real Estate	Brian Granetz	Skanska
Office	Julie Janiski	Buro Happold
Schools/Municipal	Martine Dion	SMMA
Labs	Jacob Knowles	BR+A
Multi-Family	Matt Root	Materially Better
Affordable Housing	Christina McPike	Winn Companies

Stretch Energy Codes Technical Advisory Committee (SETAC)

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Coming soon: Public comments on Stretch and Specialized

Key topics for public comment include:

- District Energy Systems
- HERS ratings for ADUs – existing vs new buildings
- Air leakage in renovations
- Modified TEDI limit for small buildings

Thank you!

Questions?

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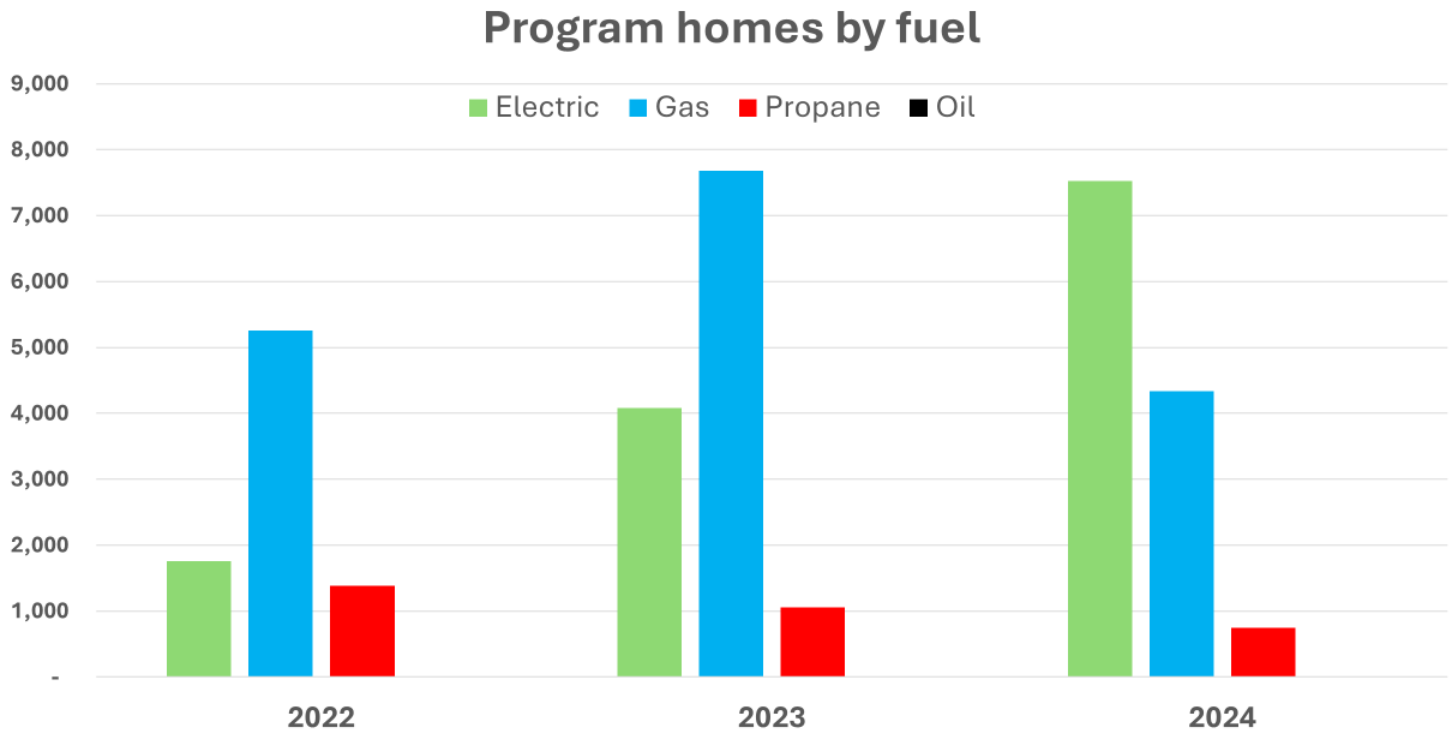
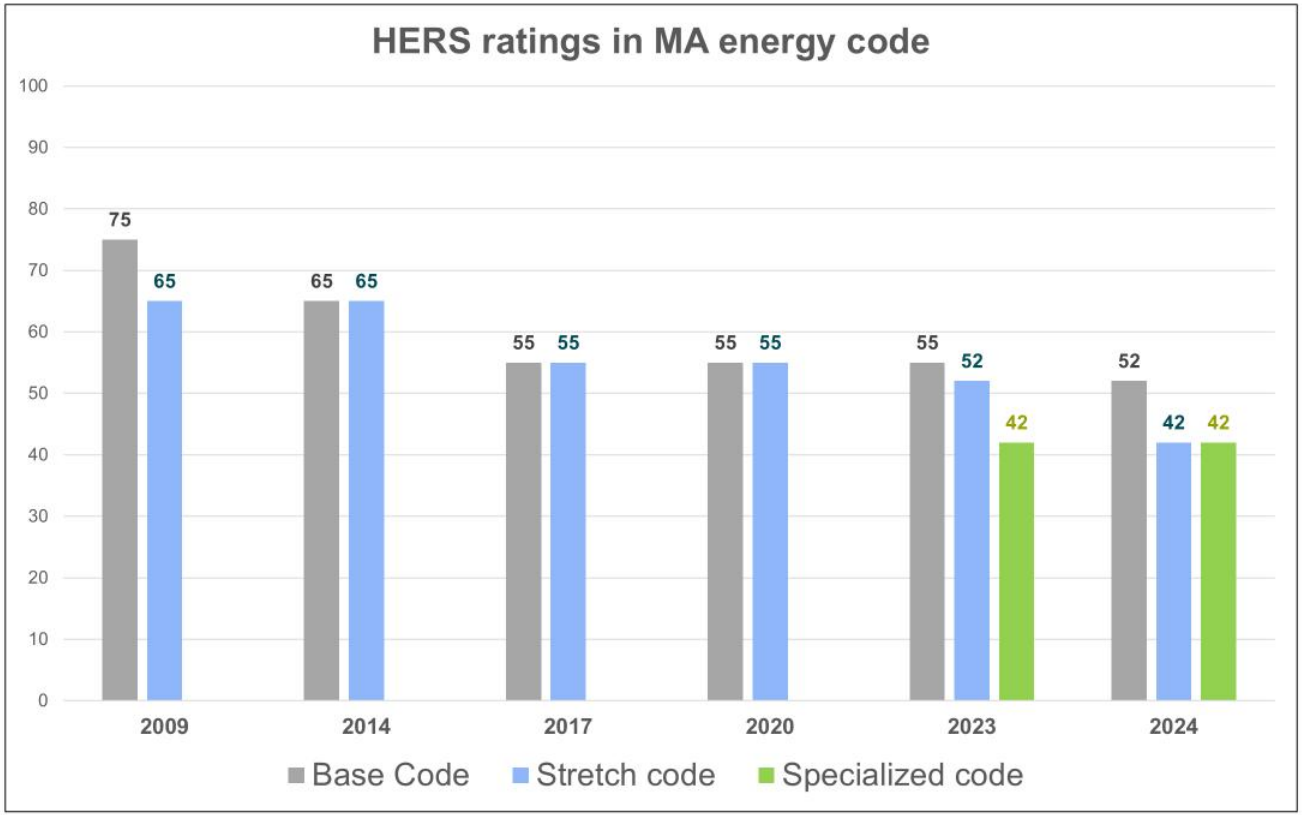
Appendix – reference slides

Mass Save program – new housing by year



(Simplified) History of HERS ratings in MA energy code



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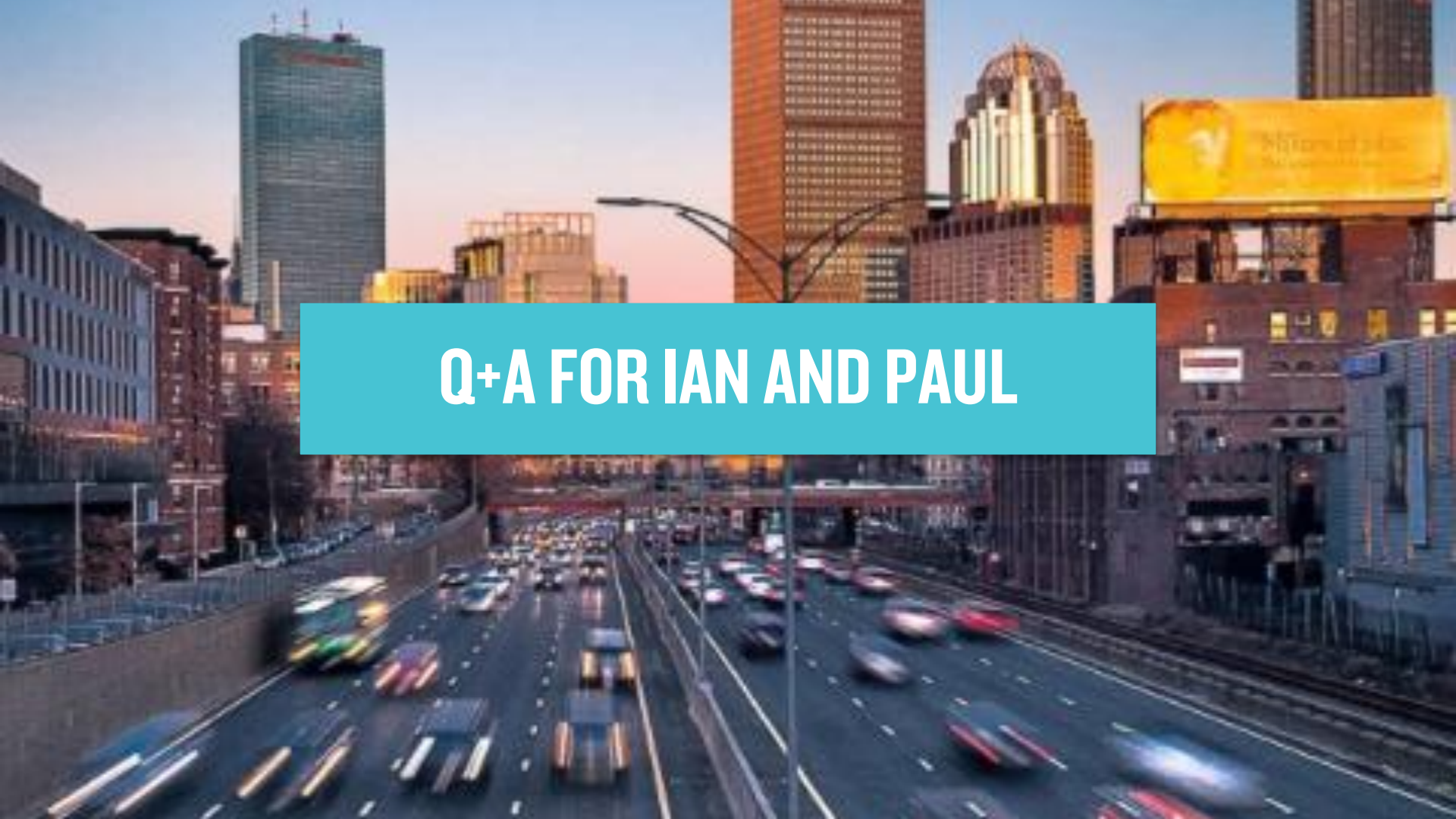
Specialized vs Stretch code – Multi-family

Building Type	Fuel Type	Stretch code (July 2024)	Specialized Code (Jan 2024)
New Multi-family (4+ stories & over 12,000 sf)	All Electric	HERS 45 or 48 w/embodied carbon or TEDI or Passivehouse	**Passivehouse**
	Mixed Fuel	HERS 42 or 45 w/embodied carbon or TEDI or Passivehouse	**Passivehouse + wiring for electrification**



Q+A FOR IAN AND PAUL

PASSIVEhouse
MASSACHUSETTS

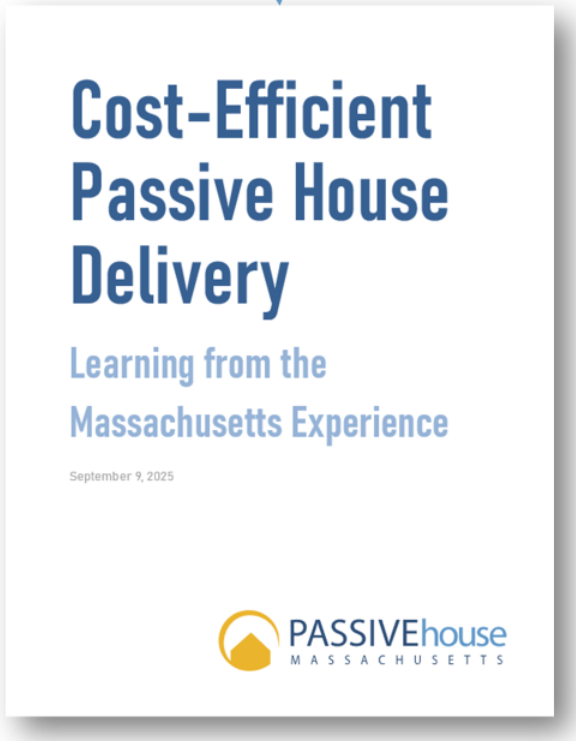
PHMass offers **free trainings**, events, and resources

- Visit phmass.org to learn more
- Join us every 2nd Tuesday for our Monthly Meeting in downtown Boston
- Email education@phmass.org to schedule a free training at your office

Mass Save offers **robust incentives** for Passive House

- Contact MultiFHR@icf.com to get started

Read our free report




THANK YOU!
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