

Creating A Clean, Affordable, Equitable and Resilient Energy Future For the Commonwealth



MA Municipal Stretch Energy & Opt-In Specialized Codes

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Today's Presentation



New climate policies and building codes



Review of Stretch Code and HERS ratings

Current code in Shutesbury



Overview of Specialized Opt-In Code



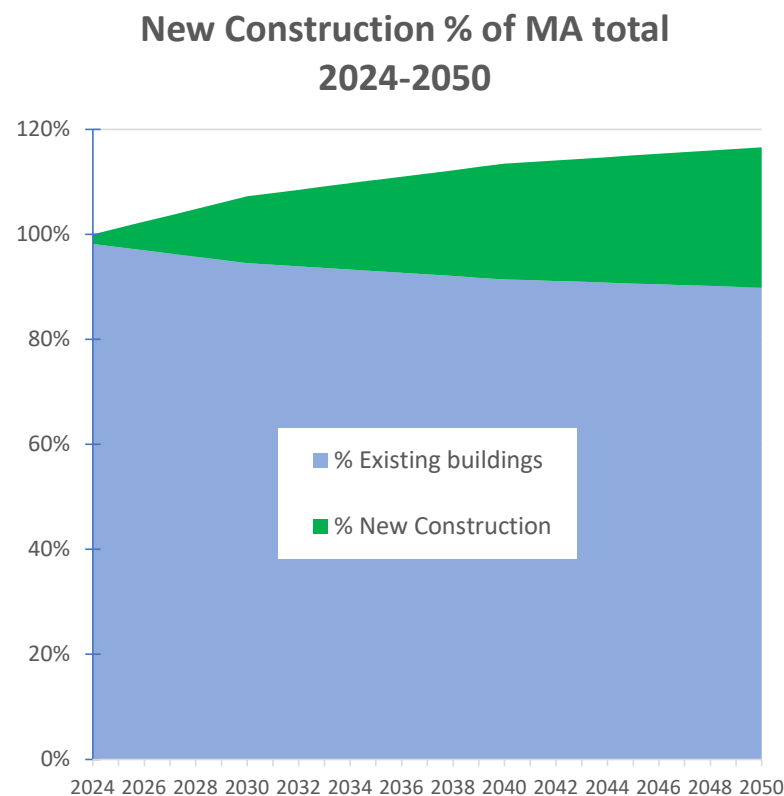
Climate Act Signed March 2021

The legislation signed into law updates the greenhouse gas emissions limits related to the 2008 Global Warming Solutions Act, commits Massachusetts to achieve **Net Zero emissions in 2050**, and authorizes the Secretary of Energy and Environmental Affairs (EEA) to establish an emissions limit of no less than **50% for 2030**, and no less than **75% for 2040**.



Building Energy Code's role in reducing emissions

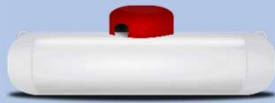
- Building code is the primary policy impacting new buildings.
- New buildings (built after 2023) **~27% of all building space by 2050**
- New buildings are easiest and cheapest to make 2050-compliant
- New construction market helps drive cost reductions in building retrofits
- 2030: Massachusetts legal limit is at least 50% reduction in GHG from 1990



OIL



PROPANE



GAS



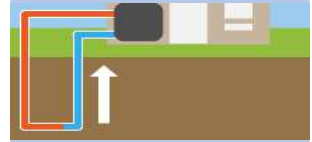
**ELECTRIC
RESISTANCE**



**ELECTRIC
COLD CLIMATE
AIR SOURCE
HEAT PUMP**



**ELECTRIC
GROUND SOURCE
HEAT PUMP**



Pounds of emissions to deliver 1 MMBtu of heat into a space (in 2020)

170

145

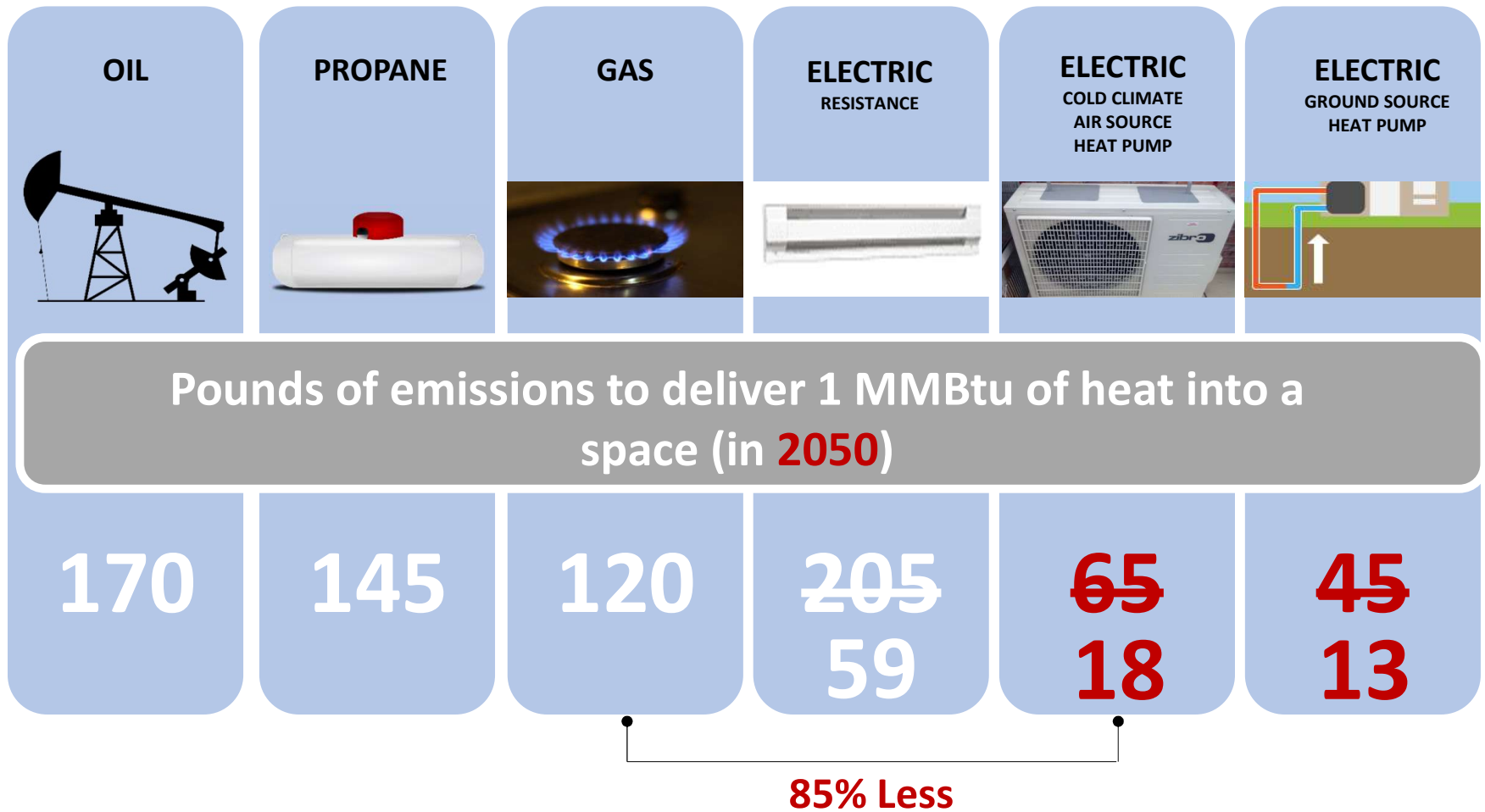
120

205

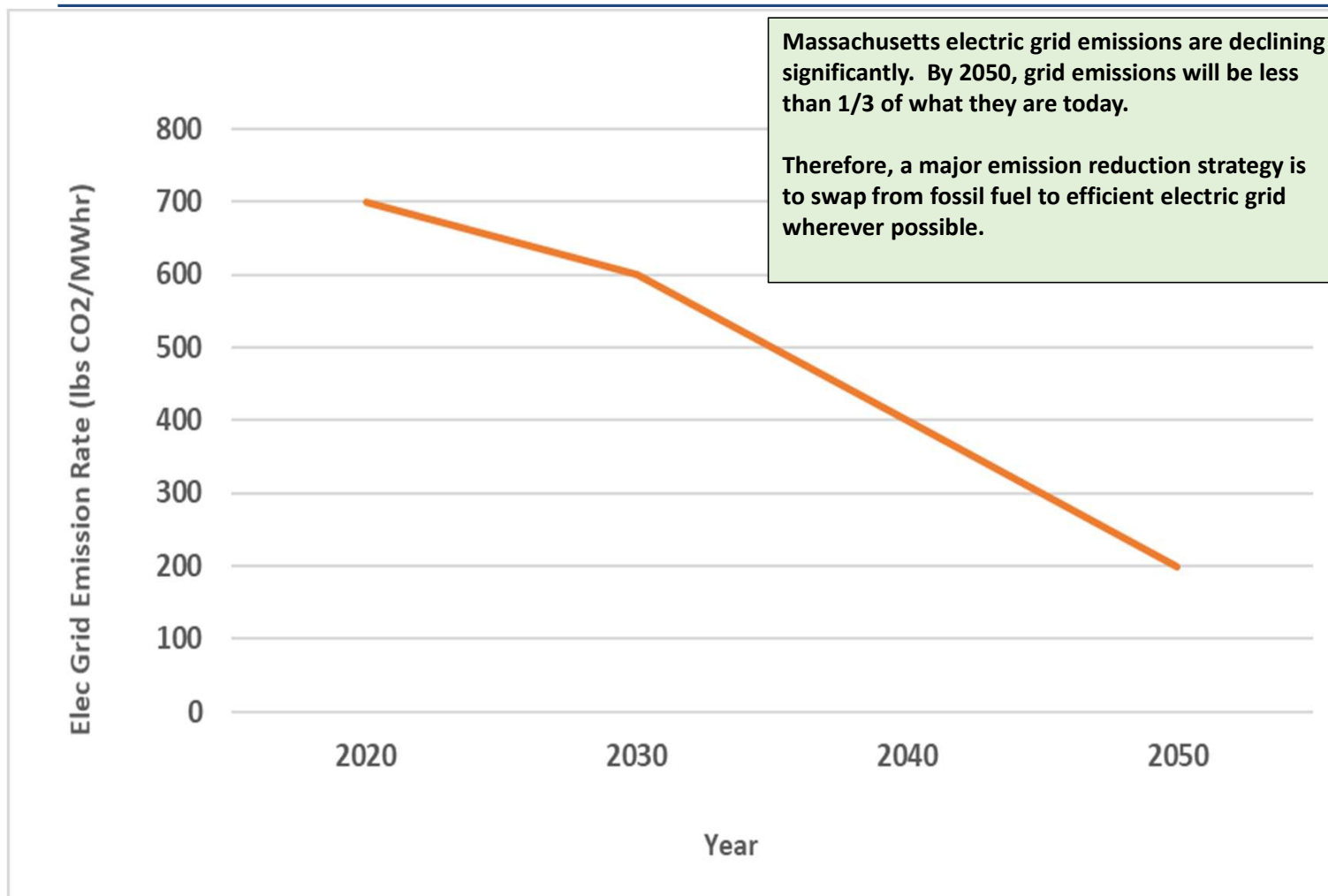
65

45

45% Less



How We'll Get There



Base, Stretch, and Specialized – 3 Options

Base Code (IECC 2021)

- New construction in towns & cities not a green community
- **50 communities**
(9% of pop)

Expected from BBRS:
Jan 2025

Stretch Code (2023 update)

- New construction in towns & cities that are a green or stretch community
- **270 communities**
(66% of pop)

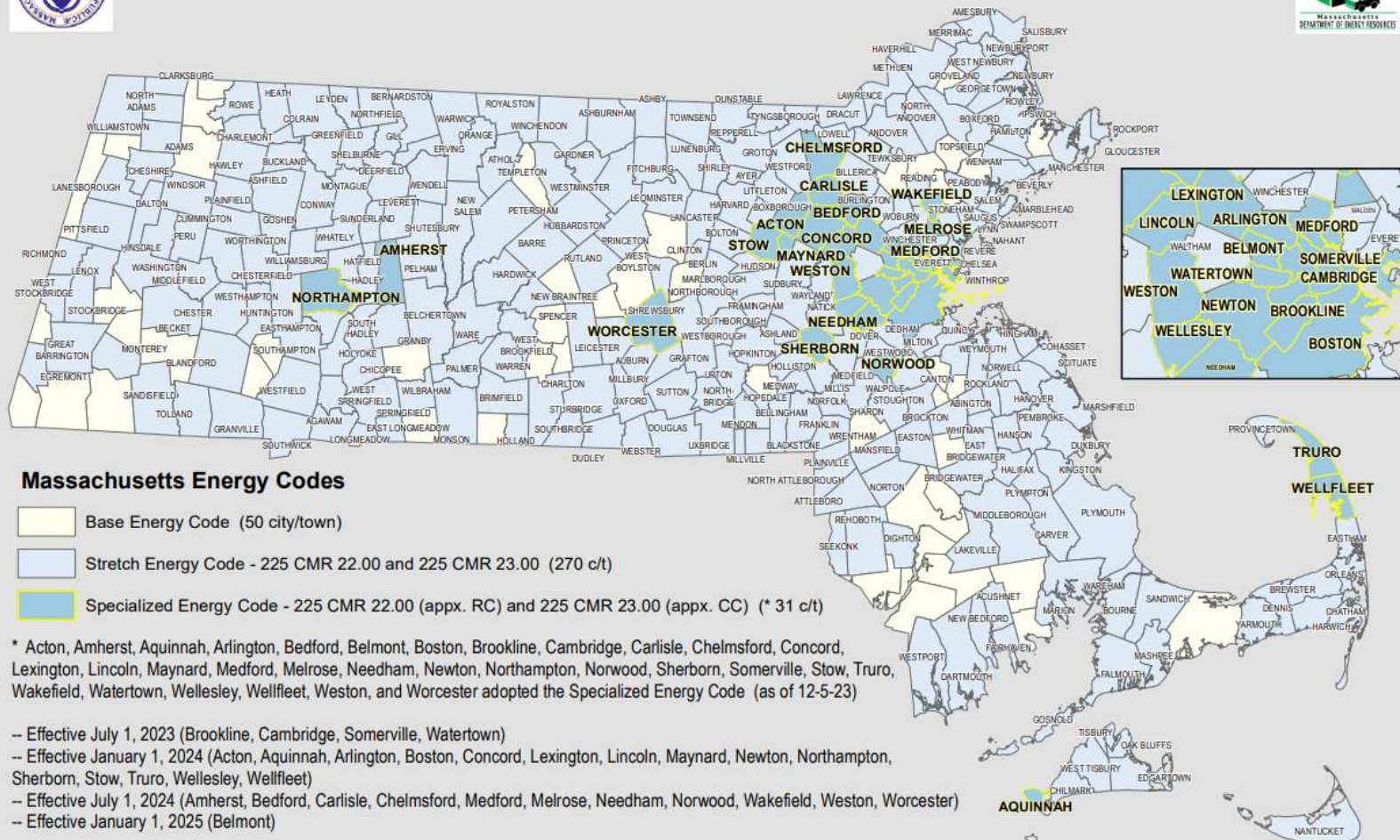
Residential : Jan '23
July '24
Commercial: July '23

Specialized Code ("Net-Zero")

- New Construction in towns & cities that vote to opt-in to this code
- **31 communities**
(25% of pop)
- **Effective date:**
Typically 6-11 months after Town/City vote



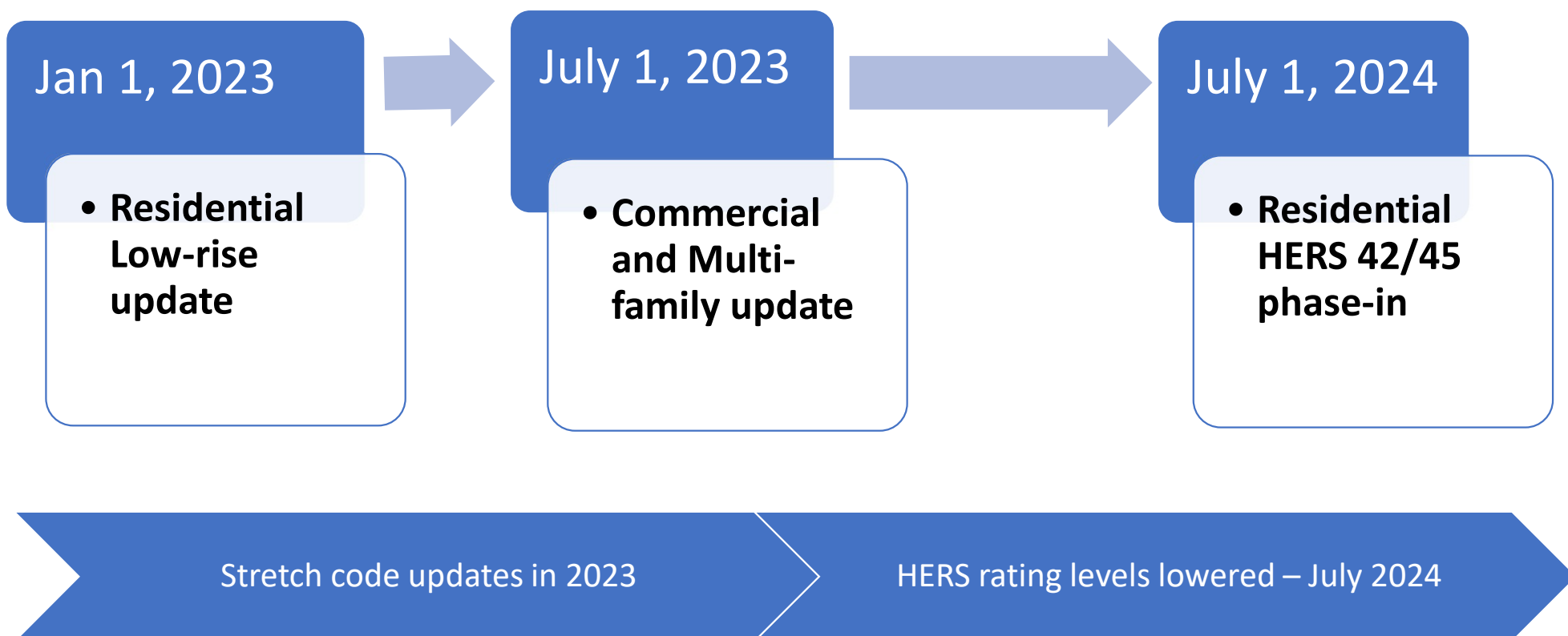
Massachusetts Building Energy Code Adoption by Municipality



Stretch Energy Code

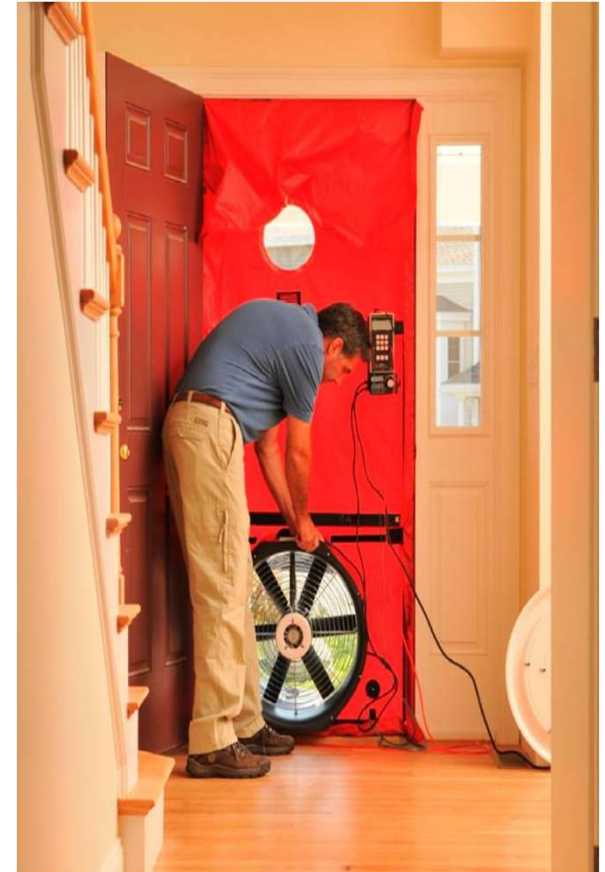
Current Code in Shutesbury

Timeline: Stretch code update

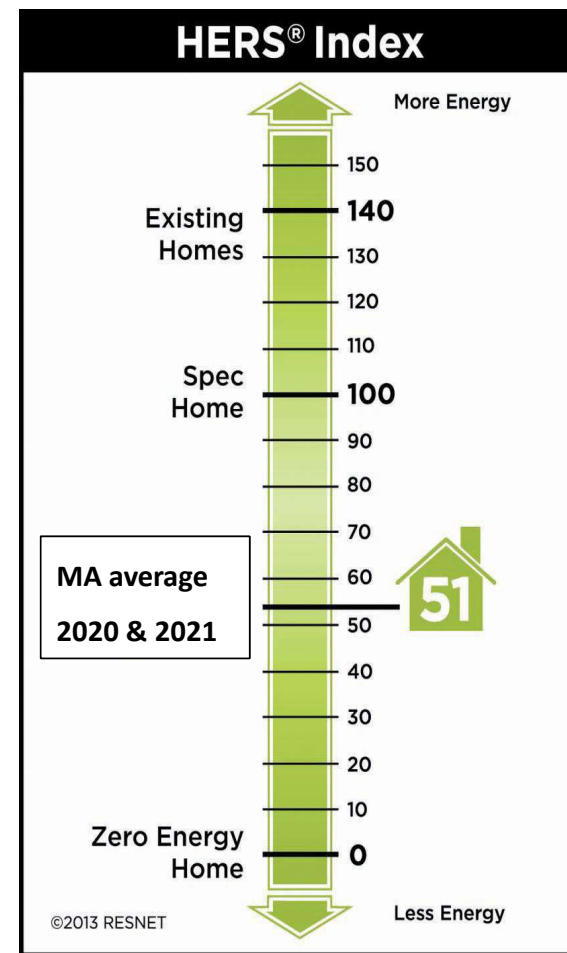
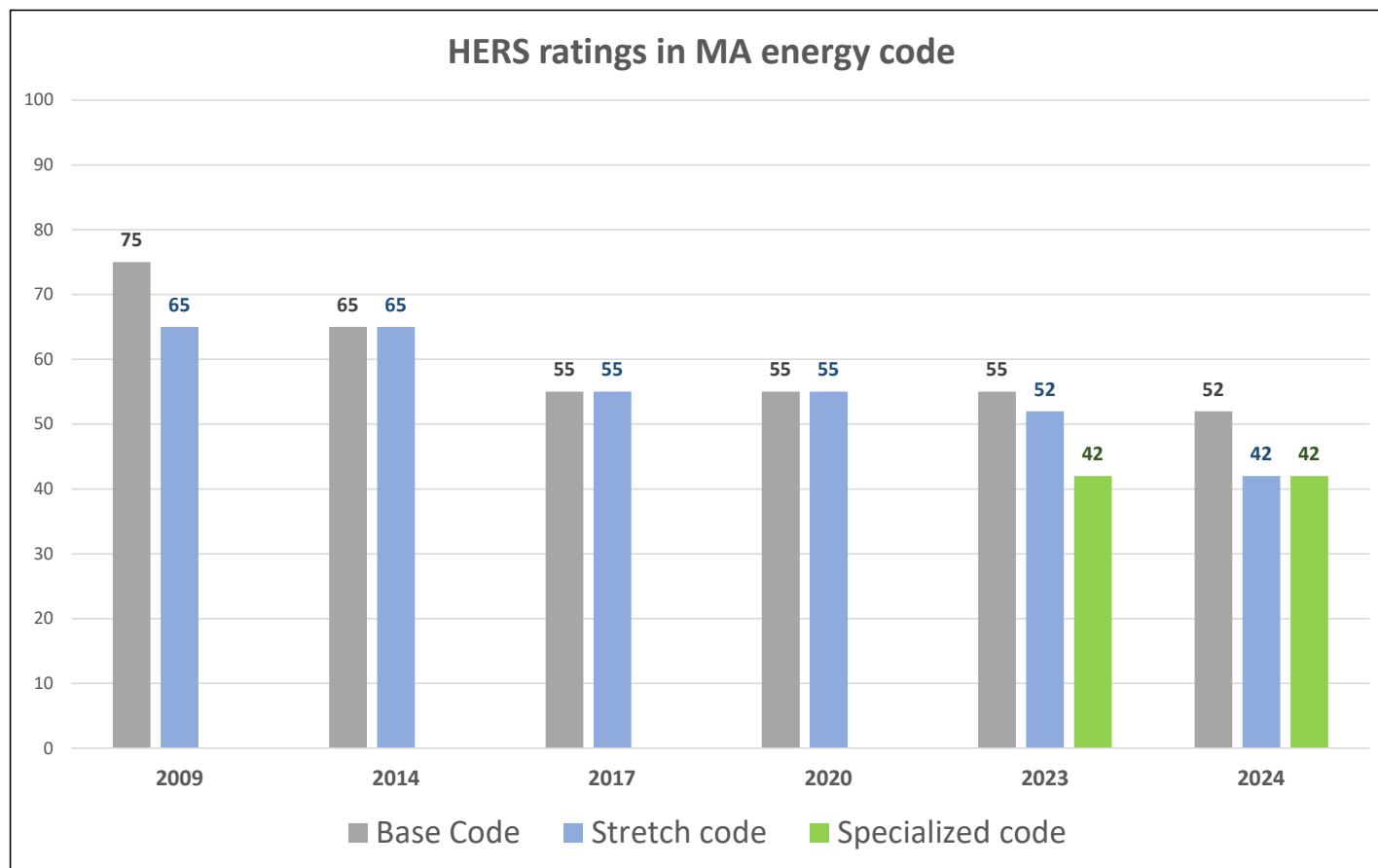


What is the HERS Process?

- ✓ Review Building Plans via Computer Modeling
 - ✓ Preliminary HERS score
- ✓ In-process inspections
 - ✓ Duct tightness test (if applicable)
 - ✓ Insulation inspection
- ✓ Final inspection
 - ✓ Blower door test
- ✓ Finalize energy model based on verified performance and equipment
- ✓ Final HERS certificate provided to local code official



(Simplified) History of HERS ratings in MA energy code





STRETCH CODE RESIDENTIAL LOW RISE

Changes with the New Stretch Code

Residential Low-Rise: 1 & 2 family and Town-houses

- New Construction
 - HERS Index Reduction
 - New Ventilation Requirements
 - Electric Vehicle Readiness
 - Changes in Design Pathways
 - Added Passive House Design Pathway
 - Removed Energy Star 3.1 Pathway
- Existing Building Upgrade Requirements
 - Large Additions & Level III Alterations over 1,000 sf or exceeding 100% of existing conditioned floor area

Changes with the New Stretch Code

Residential Low-Rise: 1 & 2 family and Town-houses

- New construction
 - **Jan. 2023:** HERS 55 changed to HERS 52
 - **July 2024:** HERS 45 (all electric)
HERS 42 (mixed fuel)
 - EV ready wiring: 1x 240 volt, 50-amp circuit per home
 - Heat/Energy recovery ventilation
 - Passive House Design Pathway (Phius 2021 or PHI)
 - Energy Star 3.1 no longer an option
- Large Additions & Level III Alterations (over 1,000 sf or exceeding 100% of existing conditioned floor area)
 - Required to meet HERS rating
 - HERS 52 – 58, depending on home energy sources

Increased Incentives for builders & developers

- All-electric homes are generally cheaper to build
Heat Pump(s) replaces both Central A/C + Furnace(s)
- Mass Save: 1-4-unit all-electric homes
\$15,000 for HERS 45 single-family
\$25,000 for HERS 35 / Passive House single-family
- Mass Save: multi-family Passivehouse
\$3,000 per unit plus design study funding
- Federal IRA:
\$2,500 or \$5,000/home from 45L tax credit: (aligned with HERS)
up to \$6/sqft from 179D tax credit for commercial & multi-family

<https://www.masssave.com/saving/residential-rebates/all-electric-home>

<https://www.masssave.com/saving/residential-rebates/passive-house-incentives>

Opt-in Specialized Energy Code

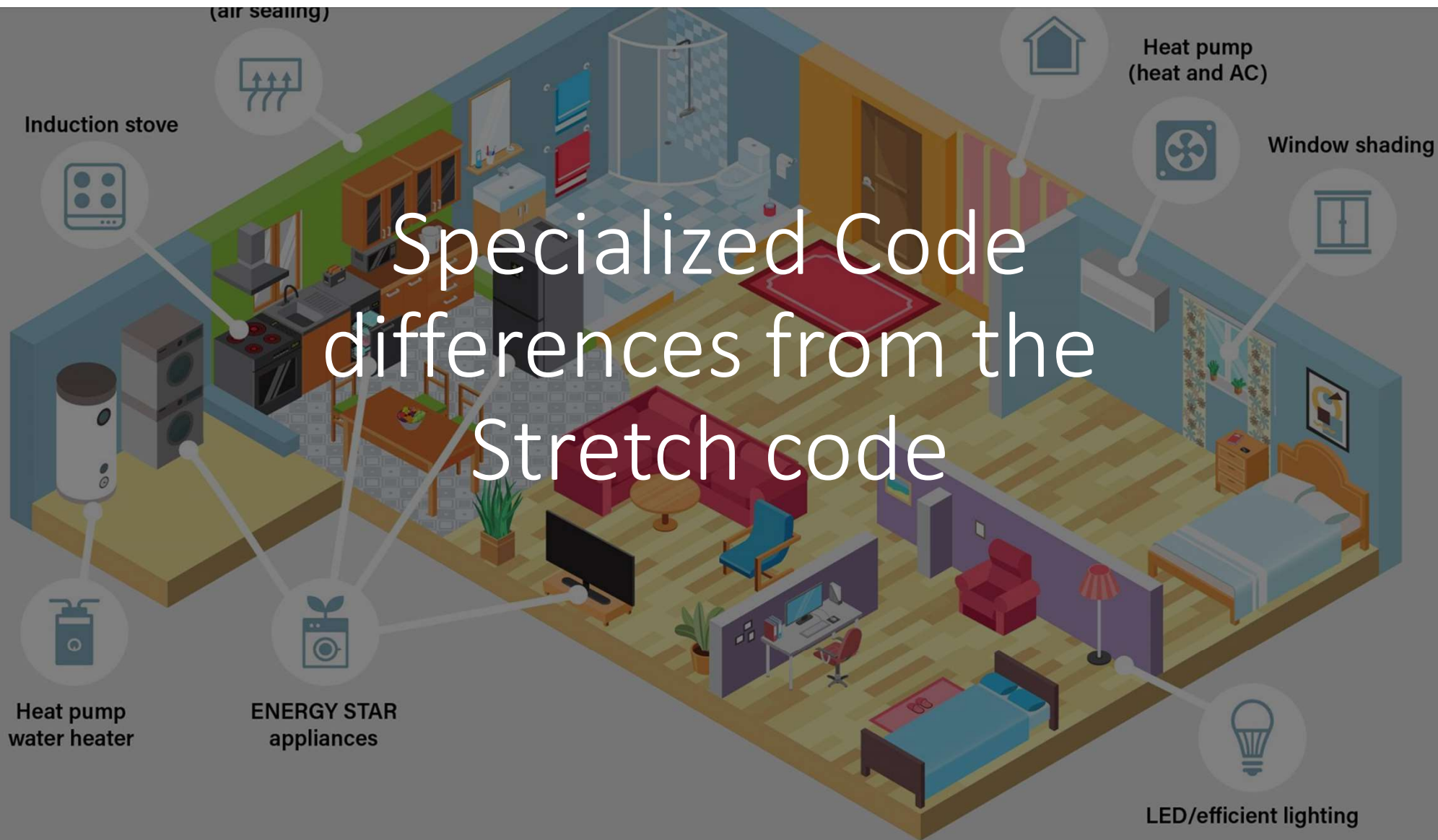
Would need to be adopted at Town Meeting



RESIDENTIAL

Low Rise & Multi-family

Specialized Code differences from the Stretch code



Specialized vs Stretch code - Residential Low-Rise

Energy Source(s)	Home Size	Stretch code (July 2024)	Specialized Code (Jan 2024)
All Electric New Homes	Any Size home	HERS 45 or Passivehouse	
Mixed-Fuel New Homes	Under 4,000 sq ft	HERS 42	+Solar PV (min 4kw) + wiring for electrification
	4,000 sq ft and over	HERS 42	+ Solar PV (to net-zero) + wiring for electrification
	Any	Passivehouse option	+ wiring for electrification
Home additions & alterations	Any	Same as Stretch code	
Historic or Existing homes	Any	Energy Code exemption if it would damage the historic fabric of the building	

Specialized Residential Code: Solar PV sizing

- Mixed-fuel buildings, Solar required when there is a suitable solar-roof zone of 300 sq ft or greater
- All-electric buildings – solar not required, just solar-ready roofs



Home Type	Solar required
All-electric	No
Passivehouse	No
Mixed-fuel <4,000 sq ft	4 kW
Mixed-fuel 4,000 sq ft +	Enough for net-zero (8+ kw)
other R-uses	0.75 W/sq ft (same as commercial)

Specialized vs Stretch code – Multi-family

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

Specialized vs Stretch code – what’s different?

Commercial Buildings:

Building Type	Fuel Type	Stretch code (July 2024)	Specialized Code
Schools, Offices, Municipal buildings	All Electric	TEDI or Passive house	
	Mixed Fuel	TEDI or Passive house	TEDI + Solar PV or Passive house + wiring for electrification
Other Commercial (over 20,000 sf)	All Electric	ASHRAE or TEDI or Passive house	
	Mixed Fuel	ASHRAE or TEDI or Passive house	ASHRAE + Solar or TEDI + Solar or Passive house + wiring for electrification

Specialized Code: Adoption process & Timeline

Adoption Process: Similar to the Stretch code

- Warrant article
- Town Meeting Bylaw vote or City Council vote

Timeline: Published in State Register – Dec 2022

- Town meeting / city council vote
- Effective date: Jan 1, or July 1
- recommend 6-12 months



ANNUAL TOWN MEETING 2020 Warrant Article Guide

ARTICLE 1: TOWN REPORTS

Through this article, the Town accepts the reports of many department and committee leaders for the previous calendar year.

ARTICLE 2: BUDGET

This article approves the operating budgets for the Town, Salisbury Public Schools and Joseph A. Bailey Regional High School for the year starting on July 1, 2020. The budget includes operational, contractual, services, goods and debt payments. You will find information on the budget in the warrant and Town Manager's Proposed FY20 Budget. <https://www.salisburyvt.gov/finance>

ARTICLE 3: CAPITAL BUDGET

This article includes capital needs for the new and old buildings, including the new high school project.

Frequently Asked Questions

1 Does the Opt-In Specialized Code apply to existing structures?

No. Improvements to existing structures, depending on size, are regulated by the Updated Stretch Code and Base Code.

2 Will the Opt-In-Specialized Code discourage the creation of affordable housing?

No. Incentives will continue to encourage affordable housing while the Opt-In Specialized Code delivers benefits for residents.

3 Is it possible to install a gas cooktop?

Yes. This is permitted under the Mixed Fuel pathways.

4 Why adopt the Opt-In Specialized Code?

The #1 reason is that it requires pre-wiring, avoiding costly retrofits down the road and expediting electrification.

5 Why does the Opt-In Specialized Code permit fossil fuels?

It preserves market choice at a time when utility pricing is highly volatile and utility costs vary 300% among MA communities. “Net zero” definitions vary widely.

Next Steps & Resources

Stay in touch

Sign up for DOER energy code email updates:

<https://app.e2ma.net/app2/audience/signup/1965182/1356542/>

Code language, case studies, detailed technical information here:

<https://www.mass.gov/info-details/stretch-energy-code-development-2022>

Contact your local Green Communities Coordinator

<https://www.mass.gov/service-details/contact-gc-coordinator>

Energy Code Training (free via Mass Save®)

- <https://www.masssave.com/en/learn/partners/energy-code-training-and-events>

Contractor Training

- <https://www.masssave.com/en/saving/residential-rebates/passive-house-training>