



**RESILIENT
SWAMPSCOTT**
CLIMATE ACTION FOR OUR COMMUNITY



**BUILDINGS &
ENERGY**

**Community Meeting
Specialized Energy Code Overview
Renewable Energy Committee**

Specialized Energy Code - Introduction

What is it: The new Specialized Code is a climate-focused energy code option created by the [2021 Climate Act](#).

Purpose: To reduce emissions in newly constructed buildings

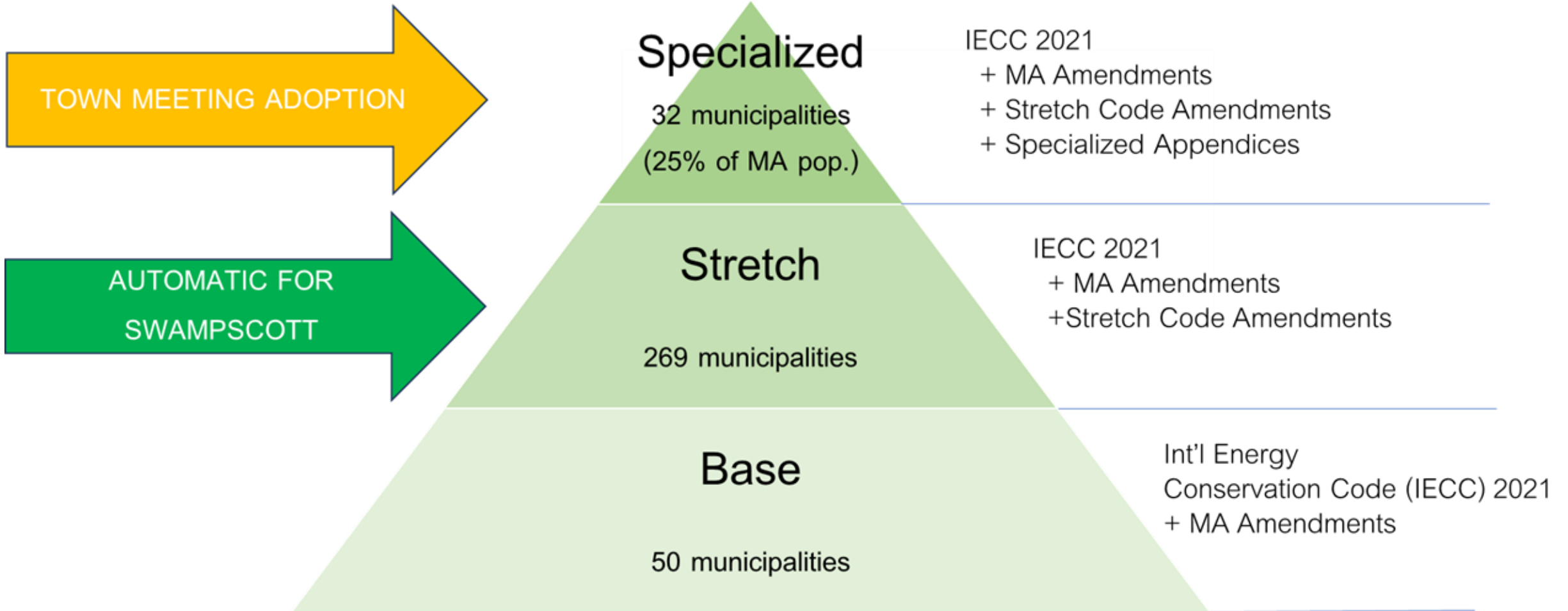
Goal: Align with Massachusetts mandate to achieve net-zero emissions by 2050

Proposal: Adopt the Opt-In Specialized Building Code at Swampscott Town Meeting, March 2024

Related Town Bylaw: The Specialized Code builds on the Stretch code in Swampscott Bylaw, Article XVI.

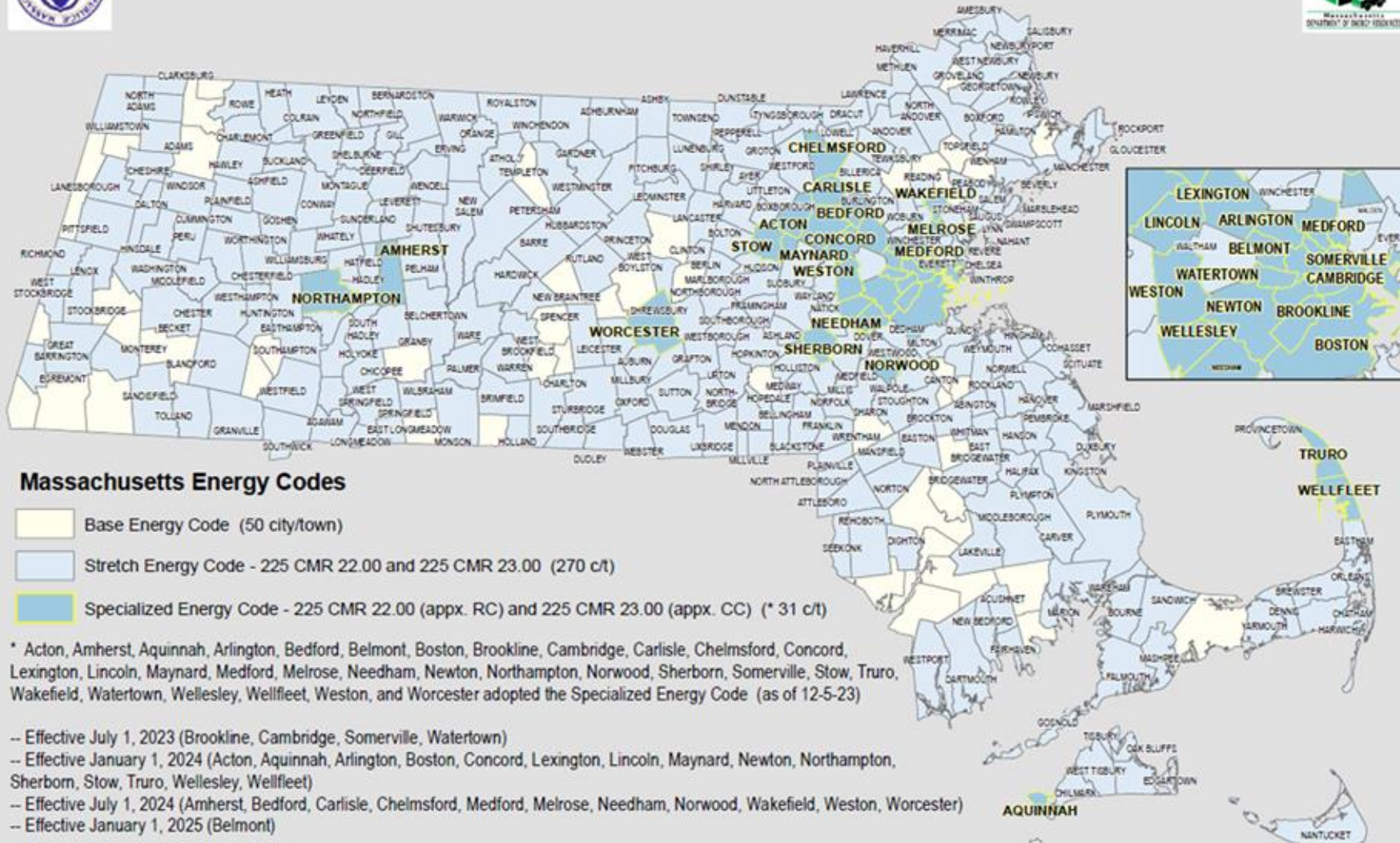
The 2021 Climate Law, established statewide limits on greenhouse gas (GHG) emissions, requiring a reduction of GHG emissions thirty three percent (33%) percent below 1990 levels in calendar year 2025 and a fifty percent (50%) percent reduction by calendar year 2030. The Executive Office of Energy and Environmental Affairs issued the Massachusetts Clean Energy and Climate Plan for 2025 and 2030 (CECP) that establishes a framework for meeting these goals, mainly through electrifying non-electric energy uses, decarbonizing the electric grid, and maximizing the efficiency of buildings and transportation.

Energy Code Choices



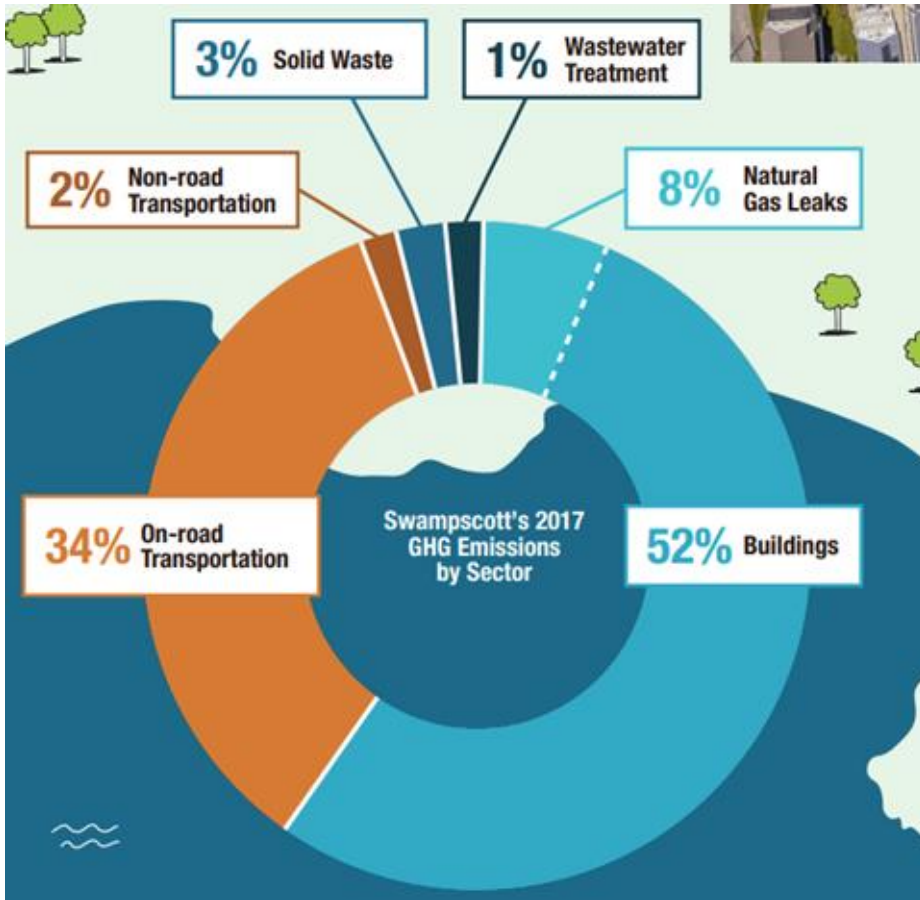


Massachusetts Building Energy Code Adoption by Municipality



MA DOER, 12-5-2023, jpfister

How Swampscott Contributes to Climate Change



BUILDINGS & ENERGY

Goal 2: Buildings in Swampscott are designed, constructed, and maintained to be resilient and produce net-zero emissions.

2.1 Pursue deep energy retrofits and electrification of existing buildings through a phased approach.

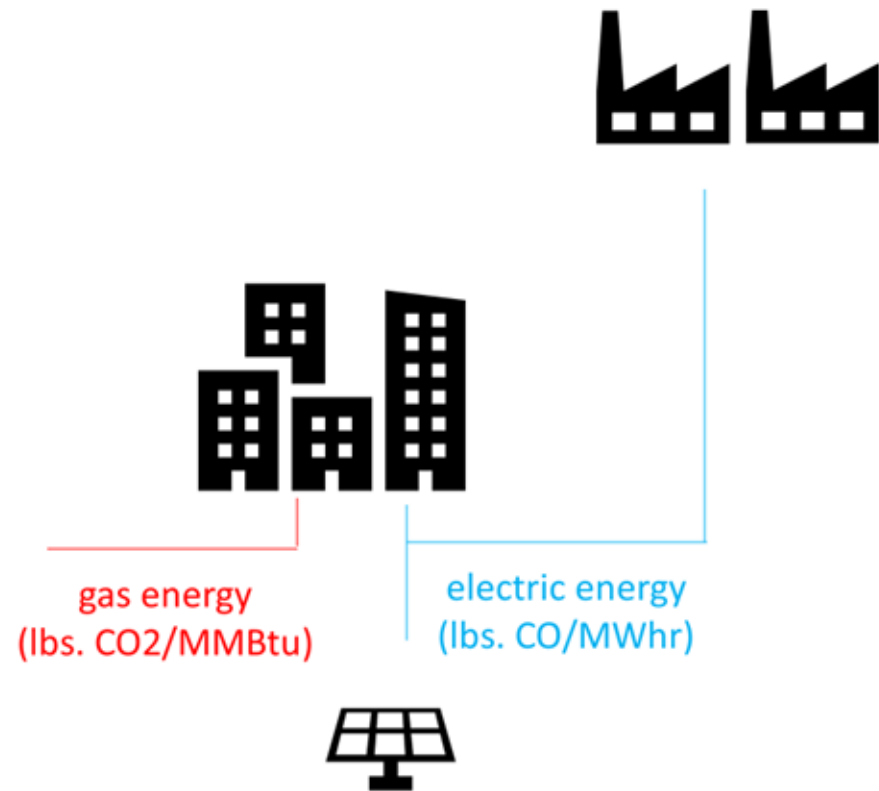
2.1.A Develop a targeted, multilingual campaign for weatherization and energy efficiency, prioritizing low-income residents, renters, and landlords.

2.1.B Establish and promote incentives, such as reducing or waiving permit fees, for projects that go beyond what is required by code, such as installing all-electric systems or utilizing energy from renewable or non-emitting energy sources.

2.2.A Adopt the Municipal Opt-in Specialized Energy Code.

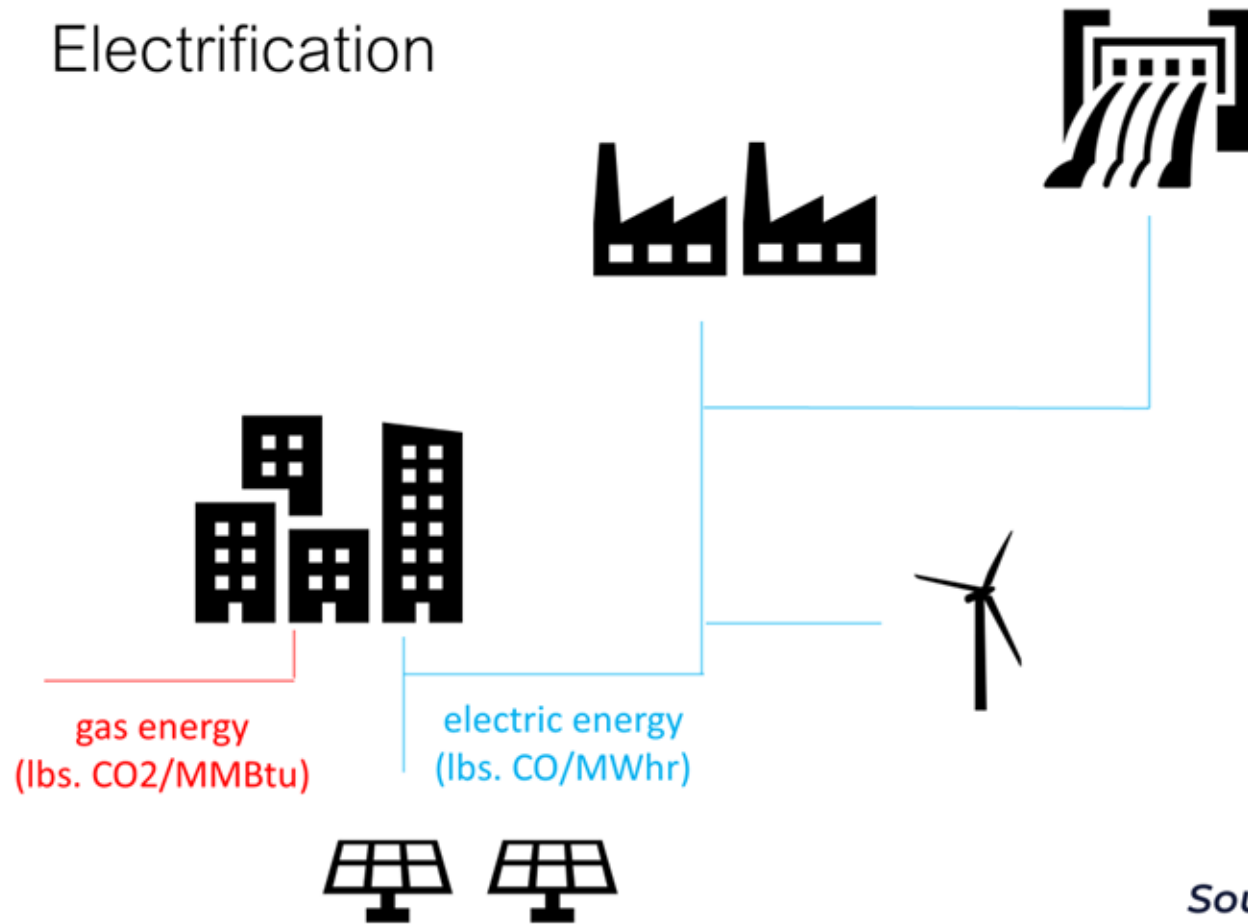
2.2.B Adopt the state's Commercial Property Assessed Clean Energy (C-PACE) program to support local financing of commercial clean energy projects.

Electrification



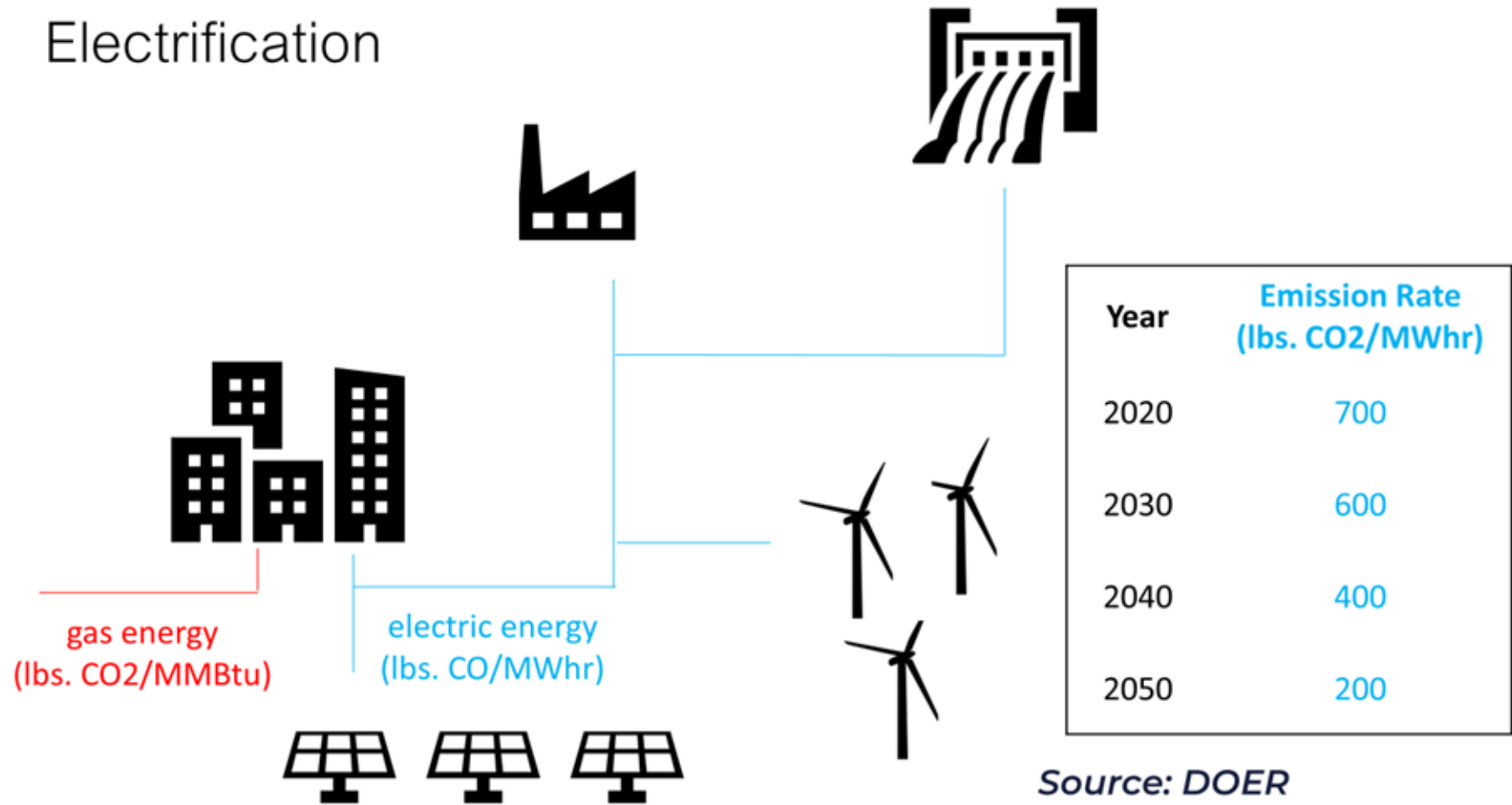
Source: DOER

Electrification



Source: DOER

Electrification



Specialized Energy Code - Basics

- Applies to new construction only
 - Stretch code applies to additions and major renovations
- Accelerates electrification now and facilitates it down the road
 - This new code option was mandated by the 2021 Climate Act, designed so new construction is consistent with a net zero MA economy by 2050
- Proposed effective date July 1, 2024 in Swampscott
 - Aligns with a significant update in the stretch code
- Is a requirement for DOER's new Climate Leaders Program
 - Swampscott would have access to different grant funds

Specialized Energy Code - Basics

- High Performance Standards for large homes using fossil fuel
 - Homes greater than 4,000 conditions square feet (CSF) that use fossil fuel must be net-zero energy
- Pre-wiring required for buildings using fossil fuel
 - Buildings using fossil fuel (except multi-family and passive house projects) must pre-wire for future electrification
- Solar required for fossil fuel buildings
 - Buildings using fossil fuel must install a certain amount of rooftop solar (with exemptions for shaded sites and Passive House buildings)
- High performance standards for large multi-family
 - Multi-family buildings with > 12,000 CSF must use Passive-House pathway

Specialized Code Requirements – LOW-RISE RESIDENTIAL

		Minimum Efficiency Pathway		Electrification		Renewable Generation	
Building Type	Fuel Type	Stretch	Specialized	Stretch	Specialized	Stretch	Specialized
Up to 4,000 s.f.	All Electric	HERS45 or Passive House	HERS45 or Passive House	Full	Full	Optional/solar ready req.	Optional/solar ready req.
Up to 4,000 s.f.	Mixed Fuels	HERS42 or Passive House	HERS42 or Passive House	Optional	Pre-wiring required	Optional/solar ready req.	Solar PV (except shaded sites and Passive House certified buildings)
Over 4,000 s.f.	All Electric	HERS45 or Passive House	HERS45 or Passive House	Full	Full	Optional/solar ready req.	Optional/solar ready req.
Over 4,000 s.f.	Mixed Fuels	HERS42 or Passive House	HERS0 or Passive House 0	Optional	Pre-wiring required	Optional/solar ready req.	Solar PV or other renewables to meet the zero energy building definition

Specialized Code Requirements – COMMERCIAL

Building Type	Fuel Type	Minimum Efficiency Pathway		Electrification		Renewable Generation	
		Stretch	Specialized	Stretch	Specialized	Stretch	Specialized
Offices & Schools > 20,000 S.F.	All Electric	Thermal Energy Density Intensity (TEDI) or Passive House	Thermal Energy Density Intensity (TEDI) or Passive House	Full	Full	Optional	Optional
Offices & Schools > 20,000 S.F.	Mixed Fuels	TEDI or Passive House	TEDI or Passive House	Optional	Pre-wiring required	Optional	On-site solar PV: Min. of 1.5 W/sf for each of the 3 largest floors or 75% of Potential Solar Zone Area
High Ventilation (Hospitals & Labs)	All Electric	TEDI, 10% better than ASHRAE 2019 or Passive House	TEDI, 10% better than ASHRAE 2019 or Passive House	Full	Full	Optional	Optional
High Ventilation (Hospitals & Labs)	Mixed Fuels	TEDI, 10% better than ASHRAE 2019 or Passive House	TEDI, 10% better than ASHRAE 2019 or Passive House	Optional	Pre-wiring required	Optional	On-site solar PV: Min. of 1.5 W/sf for each of the 3 largest floors or 75% of Potential Solar Zone Area
Multi-Family > 12,000 S.F.	All Electric	TEDI, HERS 45, Passive House	Passive House or HERS 0	Full	Full	Optional	Optional
Multi-Family > 12,000 S.F.	Mixed Fuels	TEDI, HERS 45, Passive House	Passive House or HERS 0	Optional	Pre-wiring required	Optional	Optional
Small Commercial <20,000 S.F, except Multi-Family	All Electric	Prescriptive pathway plus stretch code amendments	Prescriptive pathway plus stretch code amendments	Full	Full	Optional	Optional
Small Commercial <20,000 S.F, except Multi-Family	Mixed Fuels	Prescriptive pathway plus stretch code amendments	Prescriptive pathway plus stretch code amendments	Optional	Pre-wiring required	Optional	On-site solar PV: Min. of 1.5 W/sf for each of the 3 largest floors or 75% of Potential Solar Zone Area

Why act now?

- Climate Change is happening now! State Mandate to achieve net-zero by 2050
 - 52% of emissions in town come from buildings powered by fossil fuel
- Urgency to Act! Specialized Code incentivizes all-electric or passive house in new construction
 - We recommend Town Meeting adoption in March 2024
 - Implement in July 2024 to align with timing of updated Stretch Code
 - Opportunity to positively influence new development projects
 - The Vinnin Square, Glover project presents a unique opportunity to make a positive choice that eliminates fossil fuels in new construction and therefore reduces emissions in our building stock going forward.
- Implements an action in Resilient Swampscott, our Climate Action Plan:
 - Buildings & Energy, Action 2.2.A Adopt the Municipal Opt-in Specialized Energy Code.
- Achieve Green Communities “Climate Leader” designation to qualify for additional grants \$\$\$
- 32 communities have already voted to adopt the Specialized Code. (including Salem most recently)

Additional Information

Stretch and Specialized Code Additional Information

Frequently asked questions (FAQs):

<https://www.mass.gov/doc/2023-stretch-energy-and-municipal-opt-in-specialized-building-code-faq/download>

Summary of updated regulations:

<https://www.mass.gov/doc/summary-document-explaining-stretch-energy-code-and-specialized-opt-in-code-language/download>

What training and materials are available on the Stretch and Specialized codes The Mass Save program provides training for code officials, builders, and design professionals <https://www.masssave.com/en/learn/partners/energy-code-training-and-events>

For more information on the residential cost studies, visit <https://www.mass.gov/doc/residential-stretchcode-costs-and-benefits-case-studies/download>

Stretch vs Specialized

A few notes

- ★ Updates to the **Stretch** Code already impose higher efficiency standards
 - Residential: HERS 42 index rating (vs 52 for base code)
 - Commercial: IECC 2021 + MA reqts, TEDI, or 2019 ASHRAE App G + MA reqts
- ★ Although the updated **Stretch** code will reduce emissions in all new construction; the **Specialized** code achieves higher emissions reduction with electrification or passive house construction.
- ★ The **Specialized** code is a small step. The Specialized Code does not ban fossil fuel; however it incentivizes electrification. New buildings with fossil fuel are required to be “electrification ready” and add solar if possible.
- ★ Overall costs (construction and operating) are projected to be less for all-electric construction, especially when incentives are factored in.