

# Update on Massachusetts' *Clean Energy and Climate Plan for 2025 and 2030*

Judy Chang,  
Undersecretary of Energy and Climate Solutions  
Massachusetts Executive Office of Energy and Environmental Affairs  
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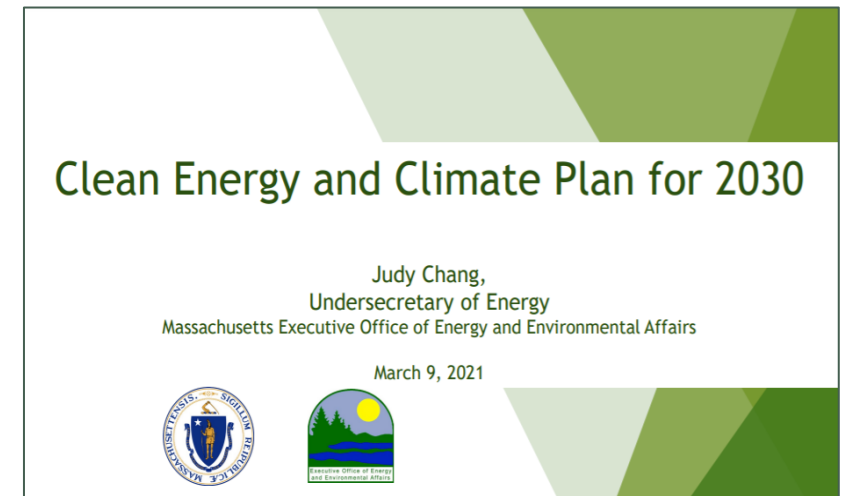
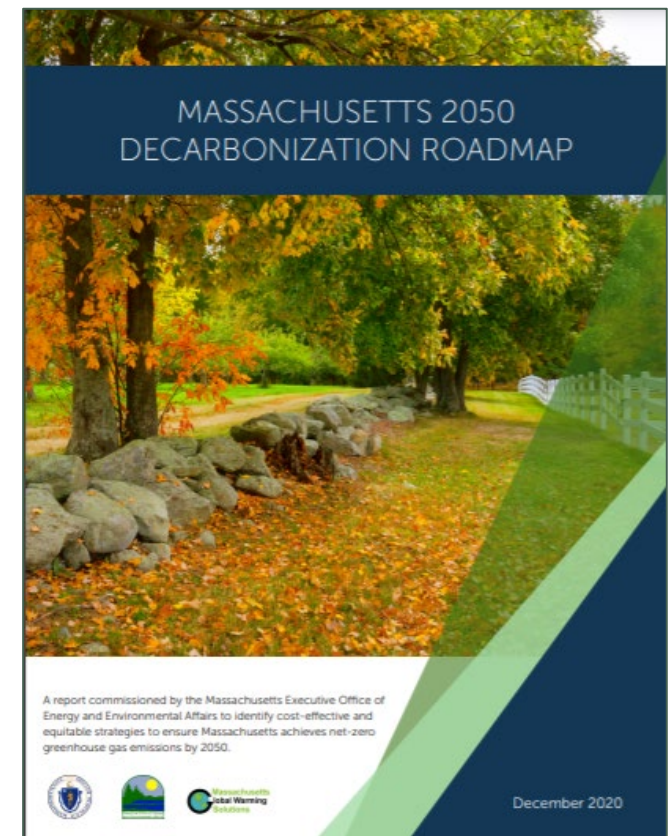


# Content

- ▶ New Statutory Requirements
- ▶ GHG Emissions Limits and Sublimits
- ▶ Update on Energy Efficiency and Energy Transition Plan
- ▶ Timeline for Building Code Development

# Quick Refresher

- ▶ Dec. 30, 2020:
  - ▶ Massachusetts 2050 Decarbonization Roadmap (2050 Roadmap) reports released on [www.mass.gov/2050Roadmap](http://www.mass.gov/2050Roadmap)
  - ▶ Secretary Theoharides set the 2030 emissions limit at 45% below the 1990 baseline level
  - ▶ Interim Clean Energy and Climate Plan for 2030 (Interim 2030 CECP) released on [www.mass.gov/2030CECP](http://www.mass.gov/2030CECP)
- ▶ January 7 to March 22, 2021:
  - ▶ Public comment period on the Interim 2030 CECP
  - ▶ January 15: Public webinar on the 2050 Roadmap
  - ▶ March 9 & 15: Public webinars on the Interim 2030 CECP



# New Statutory Requirements

On March 26, 2021, Governor Baker signed into law “An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy” (Chapter 8 of the Acts of 2021), which requires the following :

Statewide greenhouse gas emissions limits for every 5 years between 2020 and 2050

Sector-based statewide emissions sublimits

A roadmap plan to realize each emissions limit

## Emissions Limits:

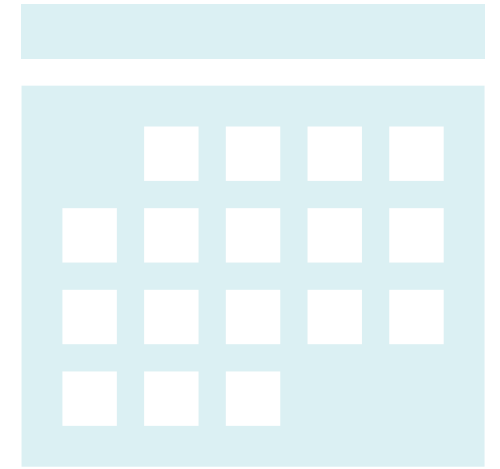
- ▶ Interim 2030 statewide emissions limit of “at least 50% below the 1990 level”
- ▶ Interim 2040 statewide emissions limit of “at least 75% below the 1990 level”
- ▶ Statewide emissions limit for 2050 that “achieves at least net zero statewide greenhouse gas emissions; provided, however, that in no event shall the level of emissions in 2050 be higher than a level 85 per cent below the 1990 level” [M.G.L. Chapter 21N, Section 3(b)]

## Emission Sublimits:

Adopt sector-based statewide emissions sublimits as components of each emissions limit for the following sectors:

- ▶ Electric power
- ▶ Transportation
- ▶ Commercial and industrial heating and cooling
- ▶ Residential heating and cooling
- ▶ Industrial processes
- ▶ Natural gas distribution and service
- ▶ “any other sector or source the secretary may designate”

# New Statutory Requirements



## Roadmap Plans:

- ▶ “Each limit shall be accompanied by publication of a comprehensive, clear and specific roadmap plan to realize said limit.”
- ▶ Each “roadmap plan” have many requirements, including the following requirements for natural and working lands (NWL):
  - statewide baseline measurement and tracking of current carbon flux on NWL
  - statewide goals to reduce greenhouse gas emissions and increase carbon sequestration on NWL
  - a NWL plan that outlines actions to meet these statewide goals

## Deadlines:

- ▶ **JULY 1, 2022**
  - 2025 and 2030 emission limits, sublimits, and plans
- ▶ **JANUARY 1, 2023**
  - 2050 sublimits and plan
- ▶ **JANUARY 1, 2028:**
  - 2035 emissions limits, sublimits, and plan
  - Updates/revisions to 2050 sublimits and plan
- ▶ **JANUARY 1, 2033:**
  - 2040 emissions limits, sublimits, and plan
  - Updates/revisions to 2050 sublimits and plan
- ▶ **JANUARY 1, 2038:**
  - 2045 emissions limits, sublimits, and plan
  - Updates/revisions to 2050 sublimits and plan

# Completing the 2025/2030 CECP

- ▶ We are committed to:
  - ▶ Developing strategies, policies, and programs that can help Massachusetts reach 50% emissions reduction by 2030, with more specificity and clearer timeline;
  - ▶ Significantly expanding discussion of equity and just transition, and developing equitable policies and programs;
  - ▶ Improving tracking of CECP implementation on [www.mass.gov/gwsa](http://www.mass.gov/gwsa)
- ▶ We are working closely with other government agencies to stay coordinated on policies and their potential impact on greenhouse gas emissions.

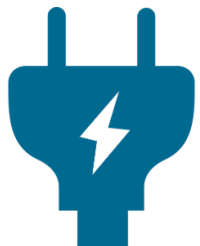
# Major Transformations for this Decade from the Interim 2030 CECP



- ❑ **New Buildings:** Highly-efficient new construction
- ❑ **Existing Buildings:** ~1,000,000 Homes and ~350 million sq-ft of commercial property retrofitted with clean heating, high-efficiency insulation
- ❑ **Building Heat:** Significantly less residential and commercial gas usage than today



- ❑ **Light-Duty:** Over 750,000 *new* zero emission cars & trucks on the road
- ❑ **Med. & Heavy:** 20,000 *new* zero emission vehicles (ZEV) on the road + cleaner diesel fuel blends
- ❑ **Miles Travelled:** 15% reduction in light-duty commuter miles traveled



- ❑ **Generation:** 6,000 MW of new clean energy built and interconnected
- ❑ **Transmission:** First of several new regional transmission lines operational
- ❑ **System:** New ISO-NE transmission planning & clean energy markets are ready to add 1 GW offshore wind & 500 MW of solar every year, plus 2 or 3 more large transmission lines, through 2050

# What Could Getting to 50% in 2030 Look Like?

Sector	Gross GHG Emissions (MMTCO <sub>2</sub> e)			GHG Reductions from 2017	Key topics to achieve 50% emissions reduction by 2030
	1990	2017	2030 (45%)		
Buildings	23.8	19.7	10.3	9.4	New policies to be explored through Commission on Clean Heat and Regulatory process at Department of Public Utilities; Implementation of New Building Codes and new Energy Transition programs
Transportation	30.5	30.5	22.5 - 22.7	7.8 - 8	Explore opportunities to limit light-duty vehicle fleet growth
Electricity	28.2	13.6	8.5 - 9.4	4.2 - 5.1	2021 Climate Law increased RPS and created municipal light plants' commitments to reducing GHG emissions
Non-Energy & Industrial	12.0	9.2	7.8 - 9.7	(0.5)* - 1.4	Federal action on HFCs, complemented by additional action from MassDEP.
<b>Total Gross Emissions</b>	<b>94.5</b>	<b>73.0</b>	<b>49.1 - 52.1</b>	<b>20.9 - 23.9</b>	<b>50% Emissions Limit: 47.3 MMTCO<sub>2</sub>e (1.8 – 4.8 MMTCO<sub>2</sub>e additional reductions)</b>
<b>% Reduction from 1990</b>	-	<b>23%</b>	<b>45% - 48%</b>		
*Negative reduction indicates an increase -- this reflects partial mitigation of emissions growth.					



# Preliminary Timeline of Clean Energy and Climate Plan

Task (* denotes public meetings)	2021												2022											
	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12				
<b>Clean Energy and Climate Plan (CECP)</b>																								
Update energy pathways analysis																								
Assess macroeconomic and jobs impacts																								
Develop CECP for 2025 & 2030						*							*											
Set limits and sublimits for 2025 & 2030																								
Submit 2025/2030 CECP to Legislature																								
Set sublimits and develop CECP for 2050																*		*						
<b>Natural and Working Lands (NWL)</b>																								
Extend forest carbon analysis																								
NWL inventory improvements																								
Develop NWL Plan as part of 2025/2030 CECP and 2050 CECP						*				*	*				*		*							
Set NWL baseline & NWL goals for 2025, 2030, 2050																								
<b>Commission on Clean Heat</b>																								
Develop E.O. establishing Commission																								
Convene Commission																								
Develop Clean Heat Recommendations											*	*	*											

\* Denotes public meetings



# Targets for 2022

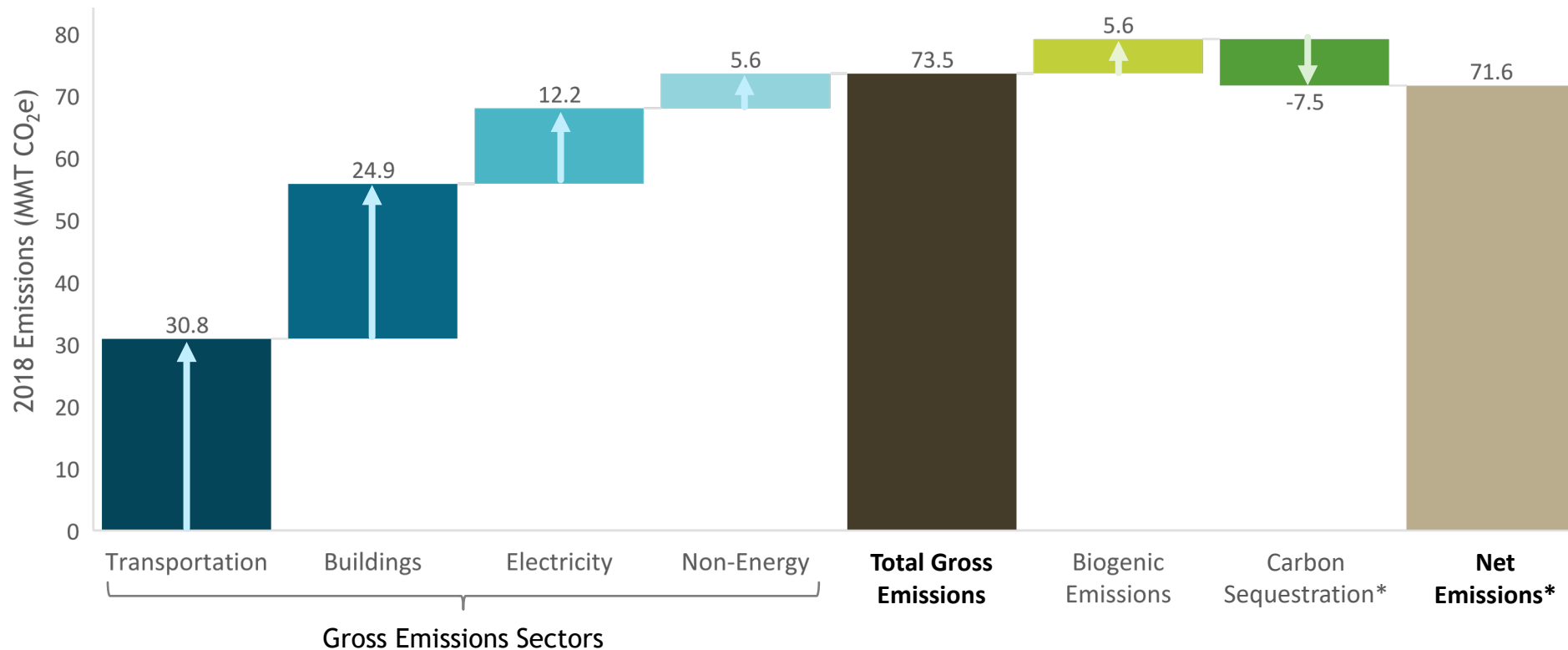
In March 2022, we will present and gather feedback on:

1. Proposed emissions limits and sublimits for 2025 and 2030;
2. Proposed goals for reducing emissions from and increasing carbon sequestration on natural and working lands (NWL)
3. Proposed policy portfolio that aim to achieve these emission limits, sublimits, and NWL goals.



# Input on Emissions Accounting and Tracking

- ▶ PROPOSAL: Set the emissions limits for 2025 and 2030 as a percentage of gross emissions reduction from the 1990 baseline level
- ▶ PROPOSAL: Track net emissions on an annual basis starting from 1990 to help us track progress towards Net Zero by 2050



\* Preliminary Estimates

# What are Gross Emissions and Net Emissions?

- ▶ **Gross Emissions:** greenhouse gas emissions from the combustion, oxidation, and leakage of fossil fuels and other non-biogenic sources in Massachusetts, plus emissions from out-of-state generation of electric power consumed in Massachusetts.

- ▶ *Major sources:* fossil fuel combustion, industrial processes, natural gas system leaks, agricultural practices, non-biogenic waste

- ▶ **Net Emissions:** the difference between all greenhouse gases released into the atmosphere and those removed from the atmosphere from all sources and sinks in a defined scope, such that:

$$\textit{net emissions} = \textit{gross emissions} + \textit{biogenic emissions} - \textit{carbon sequestration}$$

- ▶ **Biogenic Emissions:** emissions resulting from biological processes or the use of biologically-derived materials (excluding fossil fuels, materials of ancient biological origin).

- ▶ *Major sources:* biofuel and biomass combustion, biogenic waste, deforestation, wetland outgassing

- ▶ **Carbon Sequestration:** the uptake of carbon dioxide from the atmosphere combined with long-term storage of the carbon in terrestrial, ocean, geological or durable product reservoirs.

- ▶ *Major sinks:* forest growth, afforestation, wood products

# Input on Categories of Emissions Sublimits

PROPOSAL: Set emissions sublimits for 2025 and 2030 for the following categories to be consistent with current statewide greenhouse gas emissions inventory:

- Electricity { ▶ Electric power (includes electricity use in residential, commercial, industrial, and transportation)
- Transportation { ▶ Transportation fuel use
- Buildings { ▶ Residential onsite fuel use  
▶ Commercial onsite fuel use  
▶ Industrial onsite fuel use
- Non-Energy & Industrial { ▶ Industrial processes  
▶ Methane leaks from natural gas distribution and service

## ▶ Categories in the 2021 Climate Law:

- ▶ Electric power
- ▶ Transportation
- ▶ Commercial and industrial heating and cooling
- ▶ Residential heating and cooling
- ▶ Industrial processes
- ▶ Natural gas distribution and service
- ▶ "any other sector or source the secretary may designate"

# Mass Save Program Overview

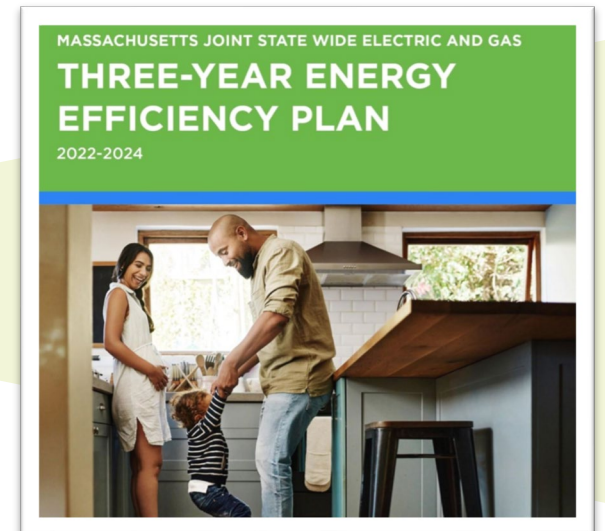
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- ▶ Established under the 2008 Green Communities Act
  - Required the Mass Save Program Administrators to develop energy efficiency plans
  - Electric and Gas Energy Efficiency Plans are funded by ratepayer dollars
- ▶ The Energy Efficiency Advisory Council (EEAC) reviews the plans
  - Plans must meet the emissions reduction target set by the Secretary of Energy and Environmental Affairs
- ▶ Once finalized by the EEAC the plans submitted to the Department of Public Utilities.
  - DPU has 90 days to review and approve the plans
  - 2021 Roadmap Act requires that the DPU consider the social cost of carbon when reviewing the plans
- ▶ Plans are carried out by the program administrators (utilities)



# 2022-2024 Three-Year Plan Overview

- ▶ On October 27th, the Energy Efficiency Advisory Council (EEAC), chaired by DOER, voted unanimously to approve the Mass Save program administrators' 2022-2024 statewide Three-Year Energy Efficiency Plan for Mass Save
- ▶ Plans were submitted on November 1<sup>st</sup> to the DPU for review
- ▶ This \$4 billion investment plan represents a transformational shift of these programs to better align with Massachusetts' climate requirements and environmental justice goals with strong commitments to electrification, weatherization and equity
- ▶ **3 High Level Priorities** arose from this process
  1. Greenhouse Gas Reductions focused on Electrification
  2. Equity
  3. Workforce Development





# 2022-2024 EE Plan Key Priorities

## Equity

- DOER convened an EEAC Equity Working Group to establish equity recommendations, targets, budgets, and reporting
- **Partnerships:** \$6 million for Community First partnerships to partner with municipalities and community based organizations to increase participation in EJ communities
- **Moderate Income:** \$136M earmarked for enhanced incentives for moderate income customers and pre-weatherization barrier funding
- **Language Isolated Residents:** Commitment to developing language access plan (\$9M investment)
- **Renters/Landlords:** Commitment to prepare strategic plan for serving renters and landlords
- **Workforce:** \$49 million for workforce development, including new Clean Energy Pathways Program



## Electrification and GHG Goals

- The plan meets the Secretary's GHG goal of 847,000 metric tons of CO<sub>2</sub>e reduced in 2030
- \$800 million investment for increased goals for electrification in residential, low and moderate income, and commercial sectors
- Reduction in budget and limiting support for fossil fuel heating (oil, propane, gas)
- Weatherization investments totaling \$639M across residential, low and moderate income, and small businesses
- New incentives for gas to electric fuel switching and ground source heat pumps
- All electric new construction incentives starting in 2022 (residential and commercial buildings)
- Two new deep energy retrofit offerings for commercial and affordable multi-family buildings in 2022
- Continuing successful Passive House incentives for multi-family new construction

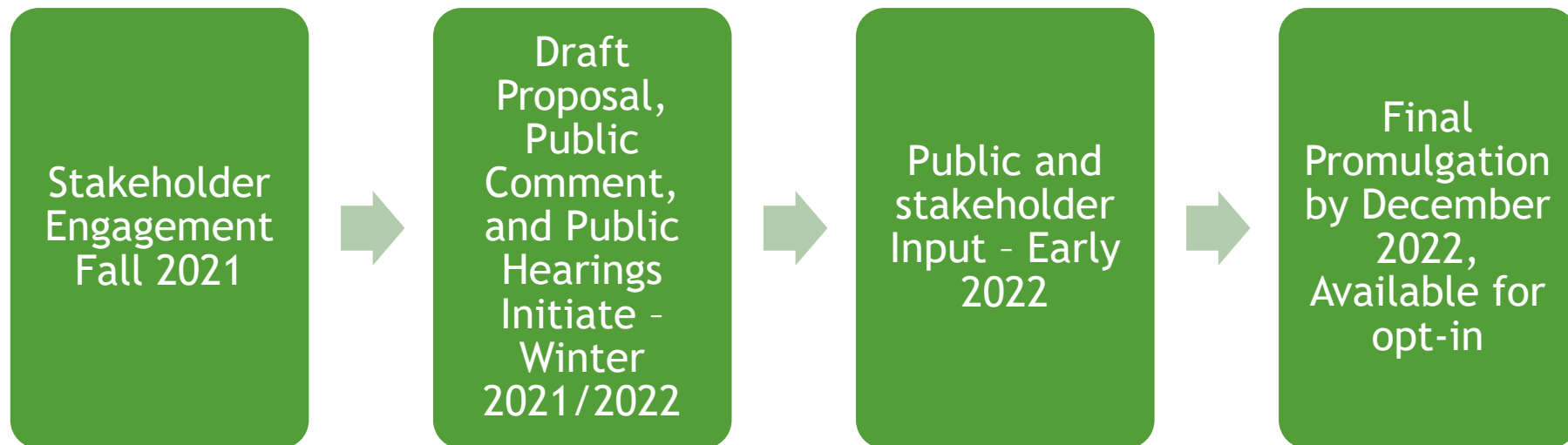
# Building Code

## Stretch Energy Code

- ▶ Above code requirement adopted by cities and towns, established in statute in 2008
- ▶ Adopted by over 90% of cities & towns steadily over past 12 years
- ▶ Climate Act authorizes DOER to update

## Specialized Stretch Energy Code

- New Municipal opt-in code for cities and towns
- Must include definition of net-zero building and net-zero performance standard
- DOER must hold at least five public hearings in geographically and population density diverse locations



**Thank you!**