ZERO to 101

Net Zero Buildings

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MAPC

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Contents

MAPC's Municipal Net Zero Playbook

A strategic guide for municipal action to reduce community-wide greenhouse gas emissions to net zero by 2050

MAPC's Municipal Net Zero Playbook ("the Playbook") provides guidance and tools to equip cities and towns with the resources to tackle their climate goals in an efficient and equitable manner. The Playbook is an interdisciplinary tool for municipal planners, energy/sustainability staff, and community members that seeks to empower cities and towns to implement net zero actions within their communities. These resources will help local net zero action implementers understand their role in advancing greenhouse gas (GHG) emissions reductions, adopting local policies, and accelerating state-level policy changes.

Explore all of MAPC's resources on Net Zero Planning:
https://www.mapc.org/net-zero/

How to Use the Playbook

START HERE

MAPC developed two guiding frameworks to help communities navigate the Net Zero approach as they start on, or ramp up, their Net Zero journeys. Cities and towns can use these frameworks to inform community engagement, plan development, and strategy prioritization as they seek to customize their local Net Zero Action Plans.

Framework for Action

Learn how to navigate the Net Zero planning process and evaluate priority actions for a local net zero plan.

Framework for Equity

Learn how to develop Net Zero Plans that assess and acknowledge existing inequities and work to uplift and provide direct benefits to underserved communities.

Zero Emissions Mobility

Tackle GHG emissions reductions from how people get around a community.

Net Zero Buildings

Make buildings highly efficient and optimize clean energy for electricity, heating, and cooling.

Clean Energy Supply

Transition to 100 percent renewable sources of energy across a community.

Climate-Smart Zoning and Permitting

Take a strategic approach to local zoning and permitting updates.

CHOOSE YOUR OWN ADVENTURE

Drawing on our years of experience working with cities and towns on clean energy and climate, MAPC has compiled information on the best practices and actions municipalities can implement in their plans to advance toward Net Zero. You can start with the Chapter you are most interesting in tackling, or review each in depth.

The Playbook provides a starting point for each priority action, with links to resources, at MAPC and beyond, that offer more detailed guidance on implementation.

WHAT'S NEXT?

As our work with communities expands, we plan to continue to add and update chapters to the Playbook that touch on emerging best practices.

In order to guide our communities to net zero emissions by 2050, we need to transition the ways that we heat and cool our buildings while making them significantly more energy efficient.

Transitioning to net zero buildings will generate multiple benefits in addition to emissions reductions. These other benefits include more comfortable homes and working spaces, improved health outcomes, greater resilience in the face of extreme weather and other emergencies, and reduced energy costs for building owners and occupants. Simply put, the switch to net zero will make our buildings better, stronger, and much less wasteful.

The following strategies for **Net Zero Buildings** provide your community with recommended actions that draw on best practices and innovations from across the Commonwealth of Massachusetts and country to:

Reduce greenhouse gas emissions from buildings

Electrify new and existing buildings

Advocate for statewide net zero building policies

The Playbook provides a selection of priority actions to advance each of these strategies in your community. Each action's urgency factor of 2025, 2030, or 2050 provides a recommended year by which to fully implement the action. For each action, the Playbook outliness the **action type, urgency, timeframe to implement, local and national examples, scale of impact, type of expense, lead implementer and key partners, and performance indicators.** Where available, we have also identified funding opportunities and tools to measure action impacts.

Playbook Indicators

Timeframe to Implement

Short-term *(Less than one year)*

Intermediate *(1 to 5 years)*

Long-term *(5 years or more)*

Ongoing

Type of Expense

Staff

Capital

Operations

Benefits and Impacts

The listed benefits and impacts are in addition to reductions in greenhouse gas emissions.

Equity

Environmental

Economic

Energy

Health

Calculating Tool

Playbook Terms

Type Actions are sorted into the categories of advocacy, financing, plan, policy, program, or outreach.

Urgency Each action is assigned an urgency factor of 2025, 2030, or 2050, providing a recommended year by which to fully implement the action.

Feasibility A sampling of local, national, or international examples is provided to illustrate on-the-ground implementation. Some actions we have assessed to be impactful have not yet been demonstrated in other communities – these actions are identified as leadership opportunities.

Lead Implementer Each action includes a suggested municipal staff person or department responsible for leading the execution of the action and any decision-making involved. This will differ from community to community.

Key Partner(s) We identified partners within the municipality and the broader community who will be critical to successful implementation of the action.

Scale of Impact Actions have been identified as either an enabling action, hard to measure and high impact, or measurable and high impact. A high impact action is based on whether or not there is a direct connection with emissions reductions within a priority sector. Enabling actions may not have a direct connection to emissions reductions, but they are essential to put in place early on to support greater emissions reductions over time.

Performance Indicators Each action includes suggested metrics to track success and impact during implementation of the action.

Strategy: Reduce greenhouse gas emissions from buildings.

Action A:
Develop an emissions performance standard.

Include a plan for phasing in different types of existing buildings.

Type
Policy

Timeframe to Implement
Long-term *(5 years or more)*

Urgency
By 2030

Feasibility
National examples – New York, NY, Local Law 97[1]; Washington, DC, Clean Energy DC Omnibus Act[2]

Lead Implementer
Select Board or City Council

Key Partners
Planning Department, Energy Manager, Inspectional Services Department, Institute for Market Transformation (IMT)

Performance Indicators
- Adoption of building performance standard
- Pounds of greenhouse gas reductions from participating buildings

Scale of Impact
Hard to measure/ high impact

Type of Expense
Staff time

Benefits and Impacts
Environmental - Reduced air pollution
Economic - Reduced energy costs
Health - Increased thermal comfort and indoor air quality for building occupants

Develop an emissions performance standard.

Building performance standards (BPS) are policy mechanisms that municipalities and states can use to set high-level thresholds for building performance while not prescribing exactly how each building must meet the emissions performance standard.

- Look to establish a local BPS on a carbon emissions intensity per square foot basis, as demonstrated in New York City.
- Evaluate BPS use cases to determine the best structure, thresholds, and timeline for your community's building stock.
- Develop a plan for phasing different building types into the policy, likely starting with the biggest GHG emitters, such as large commercial and residential buildings, before later phasing in smaller residential and commercial, institutional buildings, and laboratories.

This action is most effective when paired with a building energy use disclosure ordinance or benchmarking policy (see **Action B**), which will provide valuable baseline data to determine the appropriate thresholds to set within the standard.

Equity Considerations

To avoid negatively impacting low-income residents and other vulnerable populations, such a standard should be designed carefully with these groups in mind. For example, an emissions performance standard should give building owners enough lead time to ensure that they can meet the standard without displacing tenants. The benefits of such a standard – such as lower energy costs and increased resiliency - should also be accessible to these vulnerable populations. For example, instead of exempting affordable housing from the standard, work with affordable housing owners and developers to ensure that the policy is structured in a way that allows them to participate.

Immediate Next Step

Research building performance standards adopted by other communities and develop a draft standard that fits your municipality. Adopt a building energy use disclosure ordinance (see **Action B**).

Explore resources available from the Institute of Market Transformation: https://www.imt.org/wp-content/uploads/2019/10/IMT-Building-Performance-Standard-Basics-2-PG.pdf

Action B:
Adopt a building energy use disclosure policy.

Include appropriate enforcement mechanisms and requirements to reduce emissions over time.

Type
Policy

Timeframe to Implement
Intermediate *(1 to 5 years)*

Urgency
By 2025

Feasibility
Local and national examples – at least 30 cities have enacted this, including Boston[3]; Cambridge[4]; and South Portland, ME[5]

Lead Implementer
Select Board or City Council

Key Partners
Energy Manager, large building owners, Northeast Energy Efficiency Partnerships (NEEP), Institute for Market Transformation (IMT)

Performance Indicators
- Number of buildings that report energy use
- Pounds of greenhouse gas reductions from commercial buildings

Scale of Impact
Enabling action

Type of Expense
Staff time

Benefits and Impacts
Energy - Increased awareness of energy consumption in buildings and motivation to implement energy retrofits

Adopt a building energy use disclosure policy.

This policy is an important enabling action that many communities are already using to drive emissions reductions in the building sector across New England and throughout the United States.

- Require large buildings above a certain size to report their energy use annually, with appropriate enforcement mechanisms and requirements to reduce emissions over time (see **Action A**).
- Set a building size threshold at a level that will address a large portion of GHG emissions in your community, whether that is 5,000 square feet – such as in **Fort Collins, Colorado**[6] – or 25,000 square feet, such as in **Cambridge**.[7]
- Phase-in requirements for all participating buildings to complete energy audits at predetermined intervals (e.g., every three years) and for buildings not meeting performance standards to complete energy retrofits or retrocommissioning projects.

Equity Considerations

As with **Action A**, municipalities should work with affordable housing owners and developers to ensure that the policy is structured in a way that allows them to participate.

Immediate Next Step

Develop a draft of a building energy disclosure ordinance for stakeholder consideration. Determine the building size threshold using assessor's data to ensure that at least most commercial and multifamily buildings are included.

Review example policies at: https://www.buildingrating.org/

Explore NEEP's educational resources: https://neep.org/initiatives/resilient-high-performance-buildings-communities/energy-rating

Building Benchmarking Policies

Building energy benchmarking policies have become a popular tool for municipalities looking to encourage large commercial and multifamily buildings to track and manage their energy use. It is often said that one cannot manage what one does not measure. Benchmarking energy use gives energy managers and building owners the data necessary to make informed decisions about how to reduce emissions and save on their energy bills.

The energy benchmarking ordinance in South Portland, Maine[8] is helping the city find cost savings and transform the market for efficient buildings. The city requires that participating buildings report energy use every year and complete a comprehensive energy audit within the first five years of reporting. Compliance with the policy is incentivized with a reduced development fee of up to 5,000 dollars for building owners.

Action C: Create and preserve efficient affordable housing.

Type
Program

Timeframe to Implement
Ongoing

Urgency
By 2025

Performance Indicators
- Number of energy- and water-efficient affordable housing units built/retrofitted

Feasibility
Local examples – Boston E+ Green Building Program[9]; Cambridge Sustainable Affordable Housing[10]; Mass Clean Energy Center (MassCEC) Passive House Design Challenge[11]

Scale of Impact
Hard to measure/high impact

Type of Expense
Capital and staff time

Funding and Financing
Low-Income Housing Tax Credit; municipal bonds; Mass Save multi-family incentives

Lead Implementer
Planning Department

Key Partners
Housing developers, Community Development Corporations, housing authorities, community-based organizations

Benefits and Impacts
Economic - Reduced energy and water costs
Health - Improved indoor air quality, decreased rates of asthma, and decreased medical visits
Equity - Increased housing affordability and climate resiliency

Create and preserve efficient affordable housing.

Municipalities should strive to develop new homes that are both affordable and highly energy- and water-efficient, while preserving existing affordable homes that are retrofitted to high efficiency standards. This approach accomplishes complementary goals of reducing carbon pollution and ensuring that residents have high-quality affordable housing.

- Work with developers and local housing advocates to promote the production, and preservation, of high-efficiency affordable housing. This should include low-income and workforce housing that accommodates different family sizes and income levels.
- Meet high performance building standards such as Passive House[12] while maintaining affordability for residents, and use equitable transit-oriented development (eTOD) principles to guide this work (see the **Climate-Smart Zoning and Permitting Chapter** for more infomation on eTOD).[13]
- Provide a municipal funding match from an affordable housing trust fund or other municipal funding source to help support these efforts.
- Establish protections to maintain affordability for current residents while energy retrofits are being completed.

Equity Considerations

Low-income residents and people of color, who have historically been excluded from homeownership, are most impacted by the current housing crisis. Low-income residents also face greater barriers to accessing resources for energy efficiency and other clean energy solutions (e.g., solar PV), including high upfront costs and program design that favors higher-income households, such as high credit score requirements. As climate change accelerates, people from additional demographic groups will also feel the impacts of the lack of affordable and efficient housing. Implementation of this action should prioritize the needs of communities of color to ensure that the benefits of energy and water efficiency are distributed equitably to those who have been historically excluded.

Immediate Next Step

Work with stakeholders to develop a housing production plan that includes eTOD and prioritizes energy- and water-efficient design such as Passive House. Identify municipally-owned land that is suitable for housing development and issue a Request for Proposals (RFP) to dispose of the land for affordable housing development that includes net zero or other high-performance building standards in the selection criteria.

Explore MAPC's affordable housing work: https://www.mapc.org/our-work/expertise/housing/

Timeframe to Implement
Intermediate *(1 to 5 years)*

Urgency
By 2025

Type
Outreach

Action D:
Partner on clean energy outreach programs.

Work with service providers on outreach to significantly increase uptake of clean energy measures.

Performance Indicators

- Number of homes and businesses receiving energy efficiency retrofits
- Number of buildings converted from oil, propane, and/or electric resistance heating systems to clean heating & cooling systems
- Pounds of greenhouse gas emissions reduced from homes and businesses

Feasibility
Local examples – Solarize Plus Mass[14]; MassEnergize[15]; Melrose Energy Challenge[16]; Lawrence Saves Energy Program[17]

Lead Implementer
Sustainability Department and/or Committee

Type of Expense
Capital and staff time

Scale of Impact
Measurable/high impact

Key Partners
MAPC, local environmental groups, volunteers, utilities/Mass Save Program Administrators, energy efficiency contractors, MassCEC

Funding and Financing
Mass Save Municipal Partnership offering[18]

Benefits and Impacts
Health - Improved indoor air quality, decreased rates of asthma, decreased medical visits
Economic - Increased value of the building stock, reduced energy costs
Environmental - Increased resistence of homes in the face of extreme weather
Equity - Increased benefits for low- and moderate-income residents

Partner on clean energy outreach programs.

Partnering with service providers (e.g., solar installers or home performance contractors) to develop outreach programs is a proven strategy to increase the adoption of clean energy products and services in homes and businesses. Outreach campaigns can simplify the process of selecting a vendor and often reduce costs through collective purchasing power and bulk discounts.

- Replicate successful models such as the Solarize and Solarize Plus programs supported by the Massachusetts Clean Energy Center (MassCEC), the **Melrose Energy Challenge**,[19] and the Weatherize model developed by the **Island Institute**[20] and **Vital Communities**.[21]
- Consider developing a combined campaign for energy efficiency retrofits, solar PV, air source and ground source heat pumps, and electric vehicle charging stations.
- Focus on reaching underserved groups such as renters or moderate-income households who face greater barriers to participation in clean energy programs.

Equity Considerations

Renters, moderate-income residents (those between 60% and 80% of State Median Income), and residents with limited English proficiency have historically been underserved by clean energy programs in Massachusetts. These same groups will continue to be underserved if there is not a concerted effort by communities, service providers, and program administrators to form partnerships that address the barriers to undertaking clean energy upgrades. With such an effort to build partnerships that address access barriers, the benefits of this action can be distributed broadly and equitably across the community.

Immediate Next Step

Engage local stakeholders (e.g., committees, community organizations, service providers) in co-creating an outreach partnership designed to reach underserved groups.

Explore MAPC's resources on residential energy efficiency outreach: https://www.mapc.org/resource-library/energy-efficiency-outreach/

Case Study: Cambridge partners with All In Energy to reach renters and underserved residents

In Cambridge, renters' median incomes are about half of those of homeowners, and they spend twice as much of their income on housing costs. In an effort to expand access to energy efficiency and associated cost savings to renters and other underserved residents, the City's **Cambridge Energy Alliance**[22] partnered with **All In Energy**[23], a nonprofit dedicated to expanding access to clean energy services. All in Energy hired a multilingual outreach team, including canvassers and event staff, to engage renters both directly and through community organizations.

All In Energy collaborated with Neeeco, a Mass Save certified home performance contractor, to hire a multilingual Rental Property Energy Advisor to perform no-cost home energy assessments for renters. This position was designed as a stepping stone into the full role of Energy Advisor to help diversify the industry by providing pathways to employment and valuable work experience.

Action E:
Lead by example on municipal building performance.

Complete retrocommissioning and deep energy retrofits in all existing municipally-owned buildings.

Type
Program

Timeframe to Implement
Ongoing

Urgency
By 2030

Feasibility
National examples – Orlando, FL, Green Works Municipal Operations Plan[24]

Performance Indicators
- Number of deep energy retrofits undertaken in municipal facilities
- Pounds of greenhouse gas reductions from municipal facilities
- Number of non-public buildings following the municipality's lead

Lead Implementer
Facilities Department

Key Partners
Energy auditors, building engineers, School Committee, and Superintendent

Scale of Impact
Measurable/high impact

Funding & Financing
Green Communities grants; energy services contracts; municipal bonds; Mass Save commercial incentives

Type of Expense
Capital and staff time

Benefits and Impacts
Environmental - Reduced air pollution
Economic - Reduced municipal operational costs and increased taxpayer savings
Health - Increased thermal comfort and indoor air quality for building occupants

Lead by example on municipal building performance.

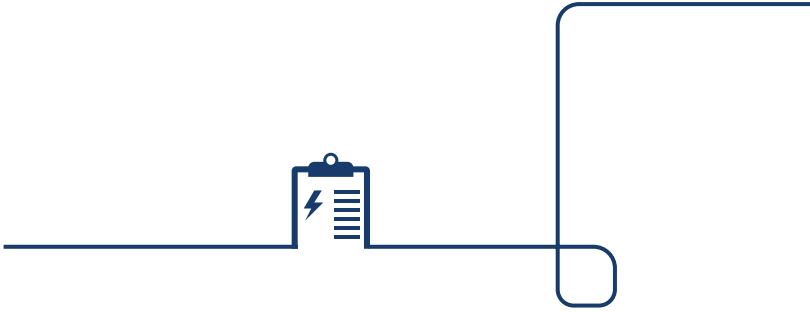
While municipal facilities typically make up less than five percent of community-wide emissions, it is still valuable for municipalities to show leadership on measures to maximize existing building energy performance.

- Conduct energy audits, deep energy retrofits (such as whole-building insulation or air sealing improvements), and retrocommissioning for schools and other large facilities. Retrocommissioning work involves a close examination of existing energy systems and recommendations on improvements to ensure efficient operations and building envelope.
- Consider pairing this work with evaluation of on-site renewable energy suitability at municipal properties (See the **Clean Energy Supply Chapter** for more information).
- As retrofits and renewable energy projects are completed, promote these buildings as models for other buildings in the community.

Immediate Next Step

Identify the most inefficient buildings to target for retrocommissioning and retrofits, and develop a near-term multi-year plan and timeline for implementing these projects. If your community participates in the Green Communities Program, update your Energy Reduction Plan to include a strategy for deep energy retrofits and retrocommissioning.

Check out MAPC's support for Green Communities: https://www.mapc.org/our-work/expertise/clean-energy/green-communities/



Action F
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Action G
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Strategy: Electrify new and existing buildings.

Action F:
Incentivize electrification for building owners.

Provide incentives for efficient electric space and water heating, cooling, and cooking appliances.

Type
Financing

Urgency
By 2025

Timeframe to Implement
Long-term *(5 years or more)*

Feasibility
National example – Energy Smart Bangor[25]

Funding & Financing
MassCEC funding[26]; Mass Save rebates[27]; surplus tax revenues reinvested in efficiency programs

Lead Implementer
Sustainability Department and/or Committee

Performance Indicators
- Number of homes converted from fossil fuel-based or electric resistance heating systems to clean heating and cooling systems
- Pounds of greenhouse gas reductions from buildings

Scale of Impact
Measurable/high impact

Key Partners
MassCEC, utilities, building owners, local environmental groups

Type of Expense
Capital expenditure

Benefits and Impacts
Health - Improved indoor air quality, decreased rates of asthma, and decreased medical visits
Economic - Increased energy cost savings and building stock value
Equity - Increased comfort and air quality for low-/moderate-income residents

Incentivize electrification for building owners.

- Offer local incentives to support the electrification of existing buildings in your community. Incentives may include financing, grants, and property tax credits.
- Raise awareness and provide education to residents and business owners about existing statewide financing and other incentives, such as Mass Save or Alternative Energy Credits from the MA Department of Energy Resources (see **Action D**).
- Consider leveraging local funds or non-financial incentives to further encourage electrification of buildings. For example, through its **Energy Smart Bangor**[28] program, the City of Bangor, ME, reinvested surplus tax revenues to provide an additional incentive for residents on top of the statewide rebate program for clean heating and cooling systems and weatherization.

Municipalities can also deploy incentivizes through zoning and permitting mechanisms. Learn more in the **Climate-Smart Zoning and Permitting Chapter**.

Equity Considerations

Incentivizing building owners to transition to efficient electric heating, cooling, and cooking can benefit everyone in a community by reducing energy costs, improving air quality (indoor and outdoor), and increasing occupant health and comfort in homes and businesses, but only if those incentives are structured to be inclusive of underserved populations. For example, tax credits only benefit those with significant tax payments to make and therefore may exclude low- or moderate-income households.

Immediate Next Step

Meet with municipal staff to explore opportunities to incentivize efficient electric heating, cooling, and cooking and develop an initiative to promote electric heating, cooling, and cooking.

Explore MAPC's resources on clean heating and cooling technologies: https://www.mapc.org/resource-library/clean-heating-and-cooling/

Type
Policy

Urgency
By 2025

Timeframe to Implement
Intermediate *(1 to 5 years)*

Action G:

Adopt a net zero standard for new municipally-owned and funded buildings.

Feasibility
Local examples – Amherst, MA, Zero Energy By-Law[29]; Cambridge, MA, Net Zero Action Plan[30]; Wayland, MA, Town Meeting Resolution[31]

Lead Implementer
Select Board or City Council

Key Partners
Inspectional Services Department, Facilities Department, School Department, Housing Authority

Type of Expense
Staff time

Scale of Impact
Measurable/ high impact

Performance Indicators

- Adoption of net zero building standard
- Number of new buildings in compliance with net zero carbon standard
- Pounds of greenhouse gas reductions from public buildings

Benefits and Impacts

Environmental - Increased resistence of homes in the face of extreme weather
Economic - Reduced upfront costs for HVAC systems and reduced maintenance and energy costs for occupants
Health - Improved indoor air quality, lighting, and comfort
Energy - Increased access to renewable energy through on-site generation

Adopt a net zero standard for new municipally-owned and funded buildings.

While a small source of emissions community-wide (see **Action E**), municipal buildings still present an important opportunity for local governments to reduce emissions and demonstrate the feasibility and appeal of net zero buildings to the broader community.

- ○ Develop and adopt a policy that requires higher levels of energy efficiency and renewable energy generation, includes net zero standards for new construction, and sets broader sustainability metrics for public projects.
- ○ Include provisions in the policy that expand to include major renovations in the near term and, when feasible in MA, private buildings (see **Action H**).

Equity Considerations

Public housing has been underfunded for decades, and residents often live in inefficient, unhealthy housing. The benefits of net zero buildings can be distributed across the entire community if municipal buildings and public housing are built to net zero standards.

Immediate Next Step

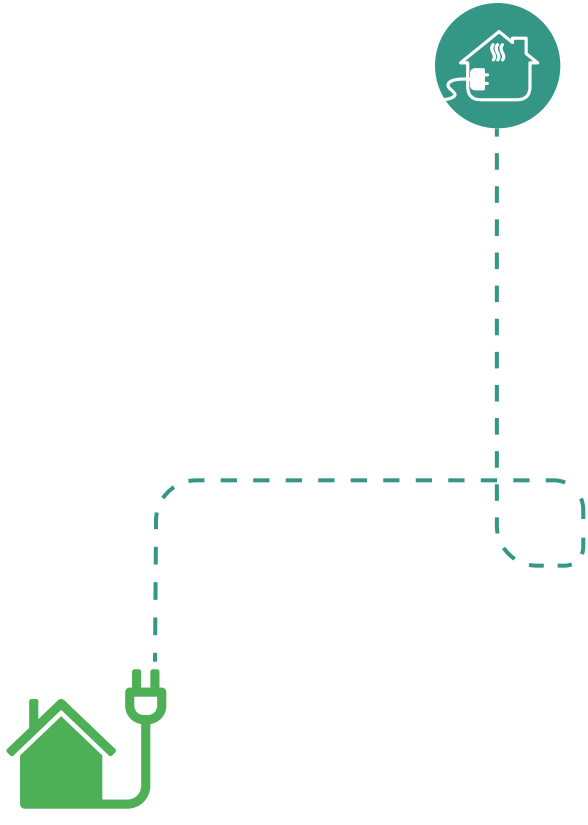
Research net zero carbon standards adopted by Amherst, Boston, Cambridge, Wayland, and other communities and develop a draft net zero standard that fits your municipality for Town Meeting or City Council within the next year.

Explore MAPC's resources on Wayland's Town Meeting Resolution: http://www.mapc.org/resource-library/net-zero-building-ordinances/

Policy Options for Electrifying Residential and Commercial Buildings

Many Massachusetts municipalities have identified the electrification of space and water heating, cooking, and other end uses as a key strategy for reducing emissions. However, the policy options for requiring electrification at the local level are limited. With uniform statewide building and gas codes and the 2020 finding from the Massachusetts Attorney General's Office[32] that current laws do not allow municipalities to exclude fossil fuels in new construction, new building electrification can be advanced through a variety of carrots and sticks at the local level.

The measures recommended by this chapter in **Actions A**, **F**, and **G** in conjunction with the advocacy in **Action H** and the climate-smart zoning provisions included in the Net Zero Playbook's **Climate-Smart Zoning and Permitting Chapter** are a good place to start.



Action H
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Strategy: Advocate for statewide Net Zero building policies.

Action H:

Advocate for net zero stretch energy code.

Type
Advocacy

Urgency
By 2025

Timeframe to Implement
Ongoing

Feasibility
National examples – Washington, DC, Net Zero Energy Compliance Path[33]; California State Building Code 2019 Update[34]

Lead Implementer
Municipal Chief Executive Officer

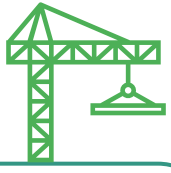
Key Partners
Select Board or City Council, Inspectional Services Department, MAPC, Board of Building Regulations and Standards (BBRS), NEEP, MCAN, Sierra Club, Built Environment Plus, New Buildings Institute, Energy Efficient Codes Coalition

Performance Indicators
- Number of written and oral comments submitted
- Adoption of net zero stretch code

Scale of Impact
Enabling action

Type of Expense
Staff time

Benefits and Impacts
Environmental - Reduced air pollution
Economic - Reduced energy costs
Health - Increased thermal comfort and indoor air quality for building occupants



Advocate for net zero stretch energy code.

A net zero stretch code allows communities to ensure that new construction and major renovations will be built to net zero standards and helps ensure that buildings are not locked into high emissions for years into the future.

- ○ Support legislation that establishes a net zero stretch code in Massachusetts.
- ○ Advocate for the adoption of the net zero stretch code by the Board of Building Regulations and Standards (BBRS).
- ○ When available, adopt the net zero stretch energy code within your municipality. Municipalities should pair adoption of a net zero stretch energy code with outreach and education for developers, builders, and residents.

Equity Considerations

In preparation for advocacy on a net zero stretch code, municipalities should engage in discussions with Environmental Justice populations in their communities and empower community organizations to weigh-in on the code development process.

The building code presents an opportunity to make buildings healthier and safer, and to transition away from onsite combustion. Today, the upfront cost differentials of building to a net zero standard are minimal,[35] and will continue to reduce over time.[36] Subsequently, the annual energy costs can be reduced when buildings are built to a highly efficient standard and renewables are leveraged.

Immediate Next Step

Meet with state legislators to discuss your net zero plan and the importance of a net zero stretch code, and submit comments to the BBRS, attending and testifying at the May and November public hearings each year.

Follow MAPC's resources on state and national building code proceedings: https://www.mapc.org/resource-library/building-codes-climate-2/

Type
Advocacy

Urgency
By 2025

Timeframe to Implement
Intermediate term *(1 to 5 years)*

Feasibility
National examples – CT Green Bank[37], Cape & Vineyard Electrification Offering[38]

Lead Implementer
Municipal Chief Executive Officer

Key Partners
Select Board or City Council, MAPC, Energy Efficiency Advisory Council (EEAC), MassCEC

Action I:
Advocate for funding and financing options.

Support legislative and regulatory changes that accelerate deep energy efficiency retrofits and electrification of existing buildings.

Scale of Impact
Enabling action

Type of Expense
Staff time

Performance Indicators
- Number of written and oral comments submitted
- Establishment of local energy financing mechanisms

Benefits and Impacts
Economic - Increased access to incentives and financing

Advocate for funding and financing options

Robust state funding and financing options are necessary to support municipalities in advancing progress toward net zero in the residential and commercial sectors.

- ○ Identify legislative and regulatory policies to establish new funding and financing options, such as a statewide green bank, green loans and leasing, or residential property assessed clean energy. Across all advocacy efforts, municipalities should seek to expand access to historically underserved populations (e.g., low- and moderate-income, renter, and limited English proficiency households).
- ○ Advocate with State Representatives to sponsor or support legislation and participate in key regulatory or administrative processes within the Department of Energy Resources, the Energy Effficiency Advisory Council, and other statewide bodies.
- ○ Adopt local ordinances to opt into existing financing options for property owners in Massachusetts. Available as of July 2020, Commercial Property Assessed Clean Energy (CPACE) is a financing structure that allows commercial and multi-family property owners to borrow money for clean energy projects and make repayments through an assessment on their property tax bill.[39]

Equity Considerations

Funding and financing programs for deep energy efficiency retrofits and building electrification have historically underserved marginalized groups including renters, moderate-income residents (those between 60% and 80% of State Median Income), and residents with limited English proficiency. These same groups will continue to be underserved without a concerted effort by communities, service providers, and program administrators to form partnerships that address the barriers to participating in clean energy upgrades and design programs to prioritize equitable access. In advocating for increased funding and financing, communities should also work to ensure that these programs are designed to be more inclusive and more accessible to these groups.

Immediate Next Step

Connect with state legislators about policies to increase funding and financing for deep energy efficiency retrofits and building electrification.

Review resources from MassDevelopment on how to opt into CPACE: https://www.massdevelopment.com/pace

End Notes

1 New York City Local Law No. 97, https://www1.nyc.gov/assets/buildings/local_laws/ll97of2019.pdf

2 Washington, DC, Clean Energy DC Omnibus Act, https://lims.dccouncil.us/downloads/LIMS/40667/Signed_Act/B22-0904-SignedAct.pdf

3 Building Energy Reporting and Disclosure Ordinance page, City of Boston, https://www.boston.gov/departments/environment/building-energy-reporting-and-disclosure-ordinance

4 Building Energy Use Disclosure Ordinance page, City of Cambridge, https://www.cambridgema.gov/CDD/zoninganddevelopment/sustainablebldgs/buildingenergydisclosureordinance

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