MassCEC's High Performance Buildings Update to EEAC

APRIL 16, 2025

Overview of MassCEC High Performance Buildings

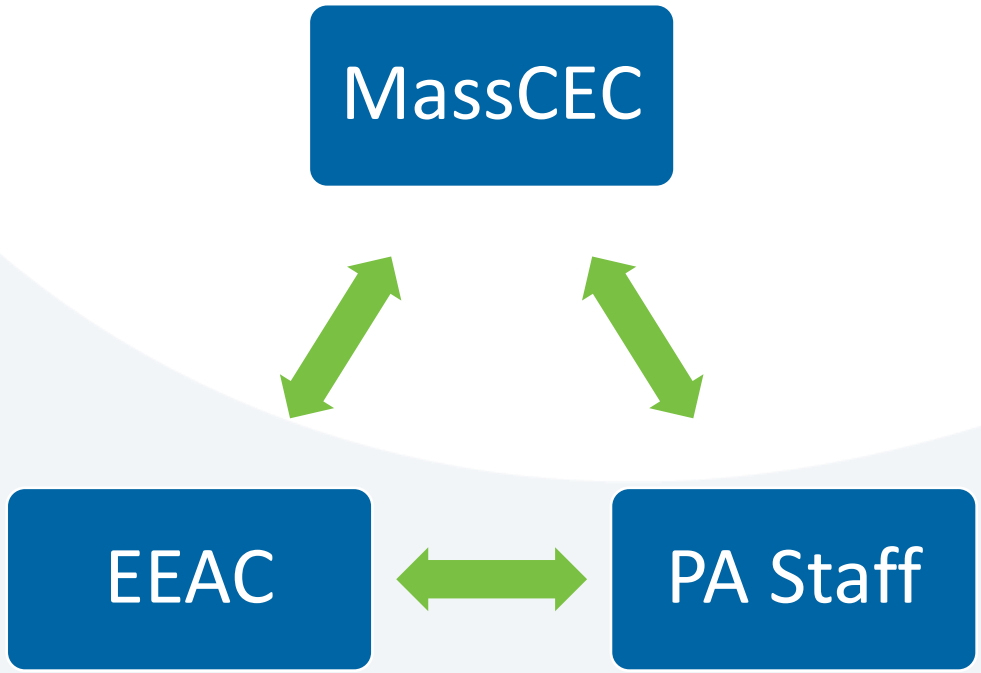
MassCEC's Work Spans Four Main Areas of Climate Impact for MA

Climatetech Innovation & Investment	Accelerating Decarbonization	Large Scale Deployment: Offshore Wind	Clean Energy & Climate Workforce Development
We help new climate-focused businesses grow faster by backing a vibrant community of researchers, startups, and established industry players - creating an ecosystem where they connect and thrive.	**We contribute to meeting our state's ambitious climate goals by tackling barriers to widespread use of clean energy and climate technology** in buildings, transportation, and the grid.	**We're building a cutting-edge offshore wind industry, marshaling world-class ports** while addressing supply chain and workforce development challenges**.**	**We're growing a diverse and talented clean energy workforce** by supporting a dynamic network of community-based organizations, labor, training providers, schools and employers committed to a sustainable future for all.

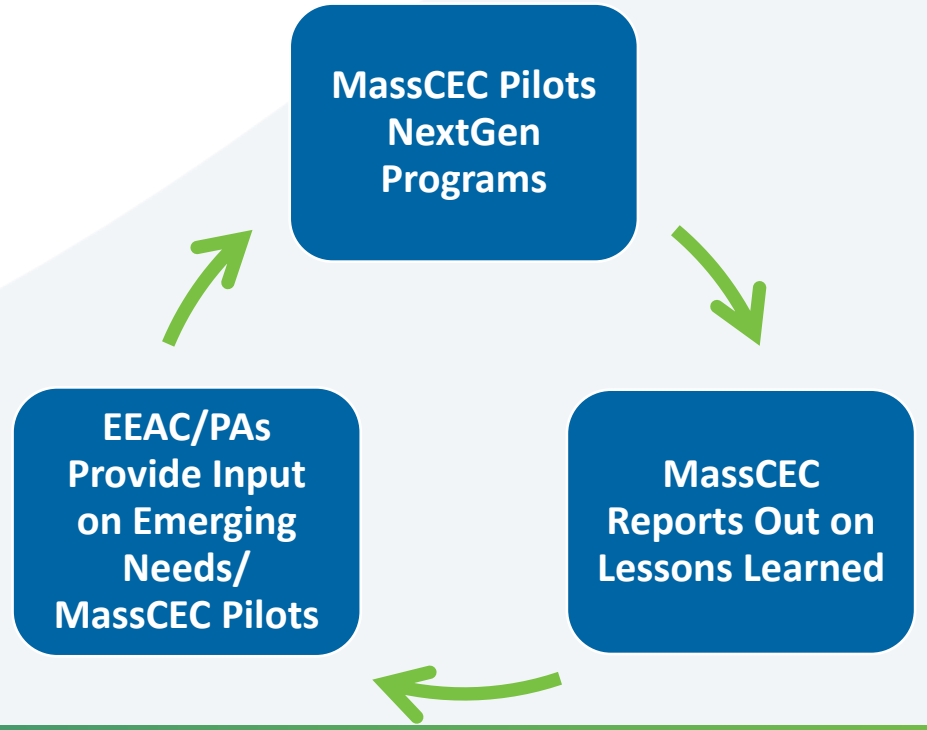
Objectives of MassCEC Engagement with EEAC

- MassCEC was designed to pilot and "prove out" clean energy, energy efficiency, and decarbonization initiatives and approaches
- MassCEC and Mass Save goals are increasingly aligned, and MassCEC has ability to test out new approaches
- MassCEC can take EEAC/PA input on next generation programs and ideas and test out on a smaller scale
- MassCEC can share program lessons learned and deliver input for EEAC/PA decision-making

Ongoing MassCEC Communication



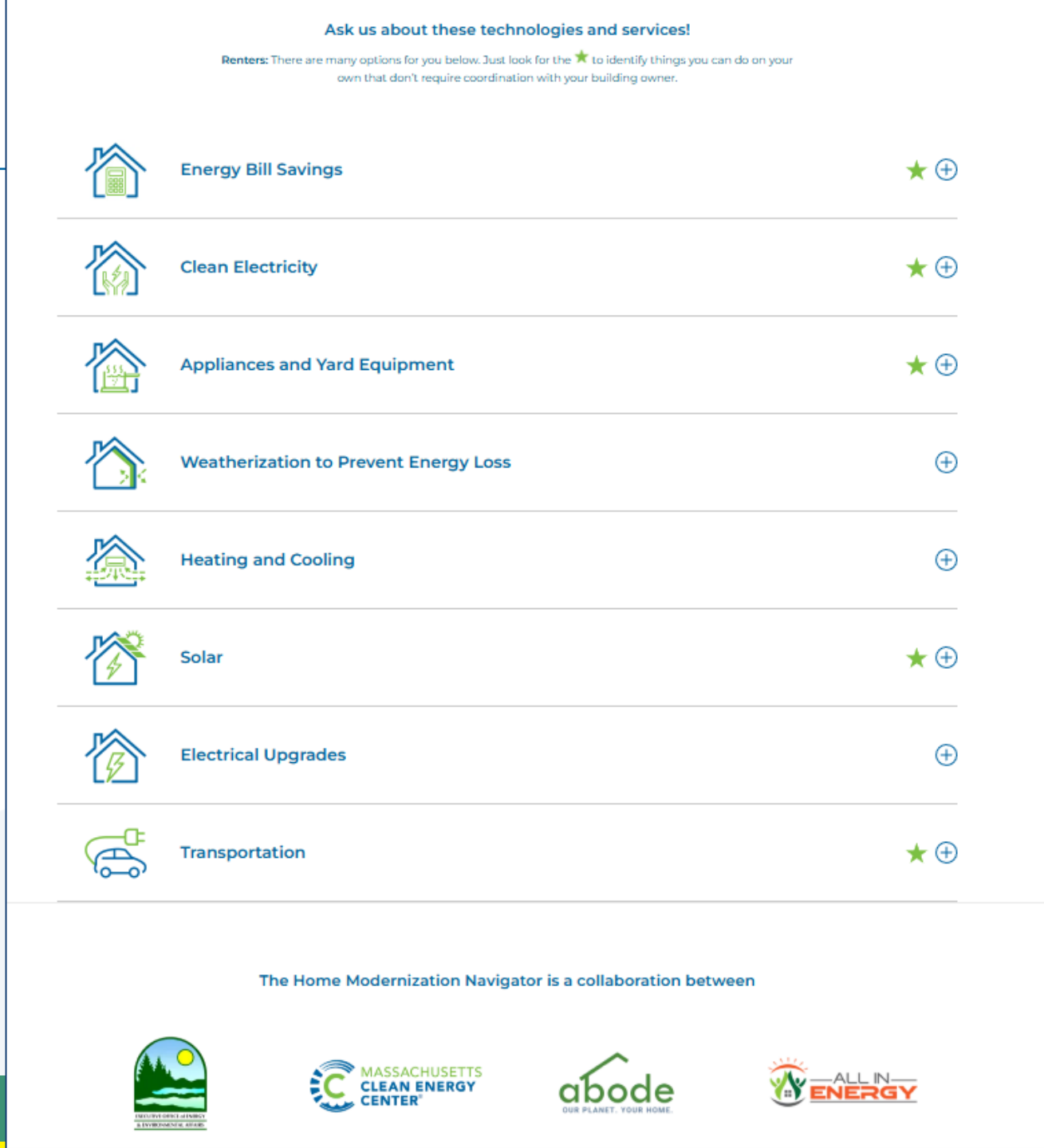
Ongoing MassCEC/EEAC Engagement

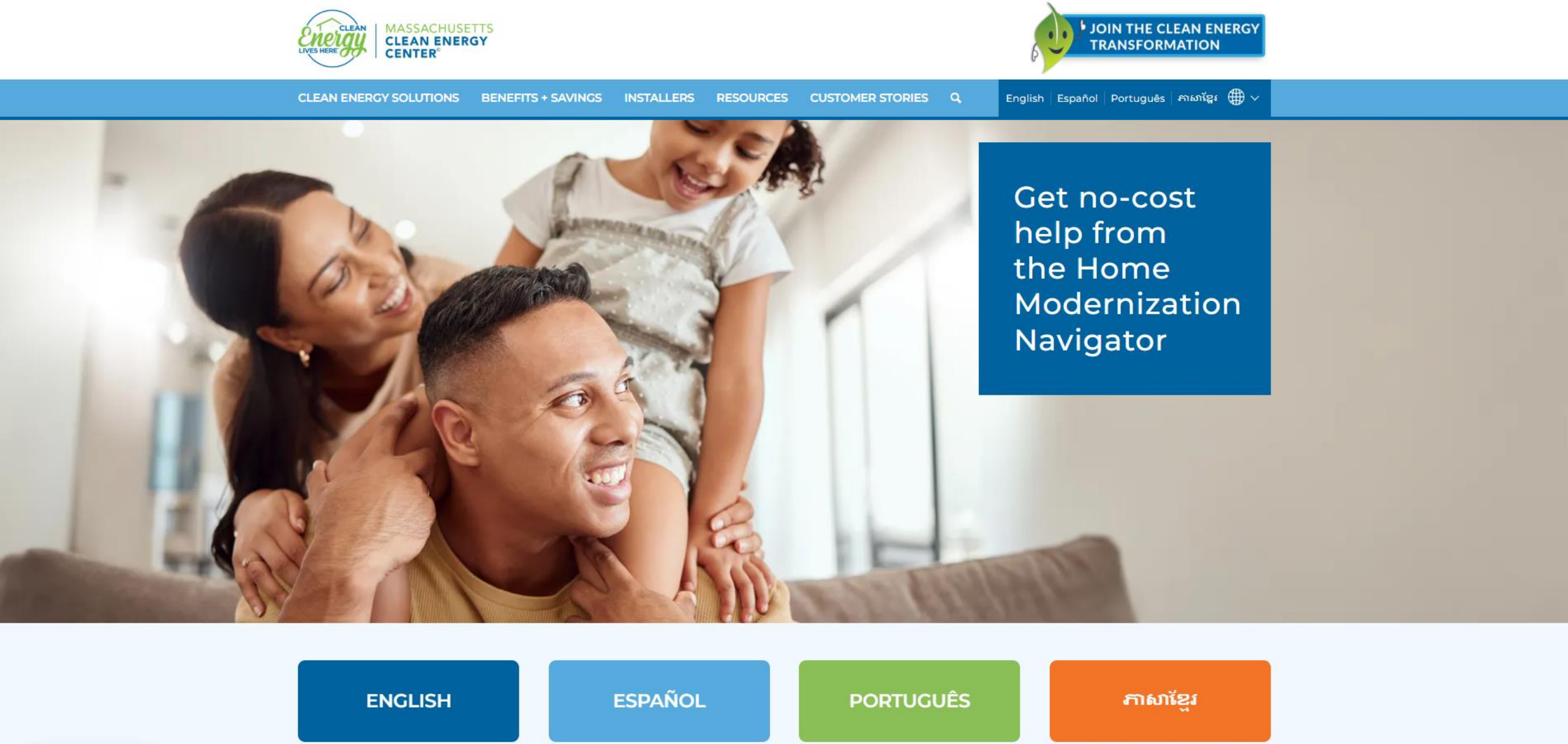


Home Modernization Navigator

Home Modernization Navigator

- Purpose: Help residents access programs, services, and incentives for clean energy, energy efficiency, home electrification, and sustainable transportation.
- Lead by: Abode Energy Management & All in Energy
- Outputs:
  - Engagements via video call, phone, & email
  - Re-engagements
  - Targeted outreach
- Timing: Springfield and Lowell for 2025, future years under discussion
- Funding: $2,250,000 (for 2025, potential for follow-up funding)
- Audience: For 2025 the Navigator is targeting renters, homeowners, and rental property owners of 1- to 4-unit buildings in Lowell and Springfield




MASSACHUSETTS CLEAN ENERGY CENTER
JOIN THE CLEAN ENERGY TRANSFORMATION
CLEAN ENERGY SOLUTIONS
BENEFITS + SAVINGS
INSTALLERS
RESOURCES
CUSTOMER STORIES
English
Español
Português
Get no-cost help from the Home Modernization Navigator
ENGLISH
ESPAÑOL
PORTUGUÊS

MASSACHUSETTS CLEAN ENERGY CENTER

JOIN THE CLEAN ENERGY TRANSFORMATION

CLEAN ENERGY SOLUTIONS | BENEFITS + SAVINGS | INSTALLERS | RESOURCES | CUSTOMER STORIES | English | Español | Português | ភាសាខ្មែរ

health and comfort and reduce energy costs at home!

Get Started Today

We'll introduce you to this new service

CALL US AT 844-CLEAN-95

Schedule a video or phone call at a convenient time for you

SCHEDULE APPOINTMENT

Send us your questions so we can support you

EMAIL US

TOP

Home Navigator

Assessment Report and Decarbonization Plan

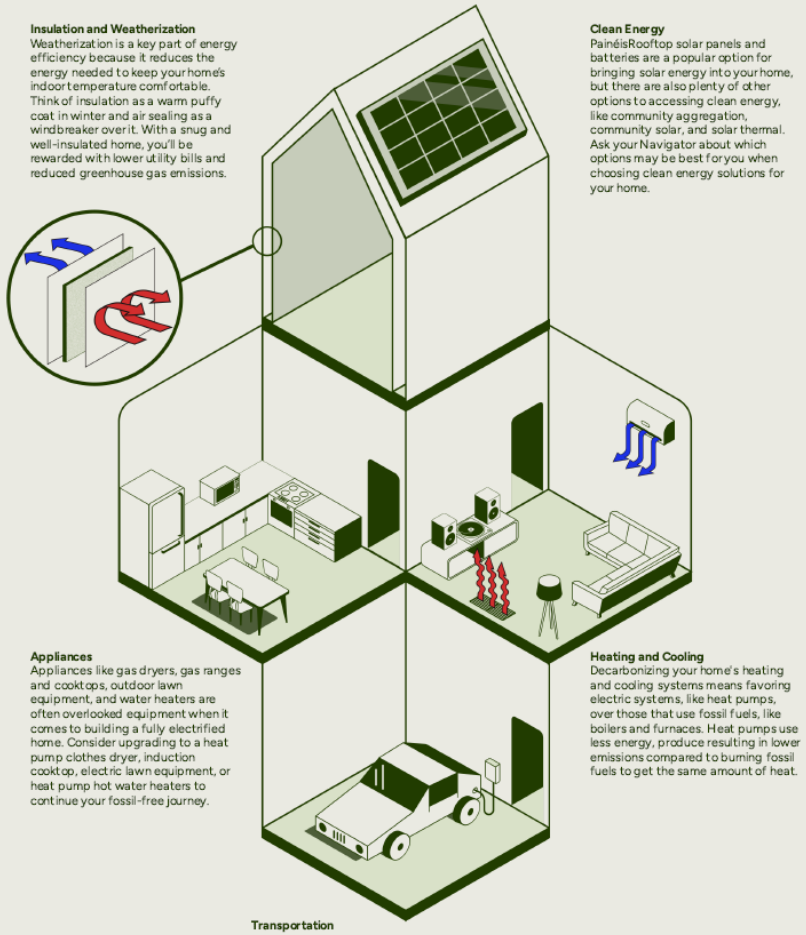
Test Customer

April 8, 2025

123 Test Blvd

Testville, MA 02478

What Makes a Decarbonized Home?



Insulation and Weatherization
Weatherization is a key part of energy efficiency because it reduces the energy needed to keep your home's indoor temperature comfortable. Think of insulation as a warm puffy coat in winter and air sealing as a windbreaker over it. With a snug and well-insulated home, you'll be rewarded with lower utility bills and reduced greenhouse gas emissions.

Clean Energy
PainéisRooftop solar panels and batteries are a popular option for bringing solar energy into your home, but there are also plenty of other options to accessing clean energy, like community aggregation, community solar, and solar thermal. Ask your Navigator about which options may be best for you when choosing clean energy solutions for your home.

Appliances
Appliances like gas dryers, gas ranges and cooktops, outdoor lawn equipment, and water heaters are often overlooked equipment when it comes to building a fully electrified home. Consider upgrading to a heat pump clothes dryer, induction cooktop, electric lawn equipment, or heat pump hot water heaters to continue your fossil-free journey.

Heating and Cooling
Decarbonizing your home's heating and cooling systems means favoring electric systems, like heat pumps, over those that use fossil fuels, like boilers and furnaces. Heat pumps use less energy, produce resulting in lower emissions compared to burning fossil fuels to get the same amount of heat.

Transportation
A decarbonized home builds a solid foundation for sustainability, and cleaner transportation can have a similar impact on reducing emissions. Electric cars, bikes, scooters, or bike share programs help you takeing the fossil-free lifestyle from home to work or wherever life takes you.

Decarbonization Plan

Completed Projects

- [x] Mass Save weatherization

Primary Recommendations

- [x] Electrical service upgrade (above ground)
- [x] Air source heat pumps - Ducted
- [x] Heat pump water heater

Secondary Recommendations

- [x] Heat pump dryer
- [x] Solar PV: Purchase
- [x] Battery storage
- [x] Tree pruning

Future Considerations

- [x] Triple-pane windows

Early Results & Next Steps

- Collaborating with:
  - Community First Partnership
  - Municipalities
  - Local CAP agencies
  - Local community-based organization
- Engaged around 350 residents so far
- 120 Decarbonization Plans created
- Increased outreach planned for coming months
- Working to strategically re-engage participants
  - Video call is preferred by residents for the first engagement
  - Email is more common for re-engagements
- Around a quarter of engagements have included discussion of opportunities for energy bill savings
- MassCEC is discussing plans for 2026 with the Program Administrators: What aspects of this work can lead to the most valuable learnings?

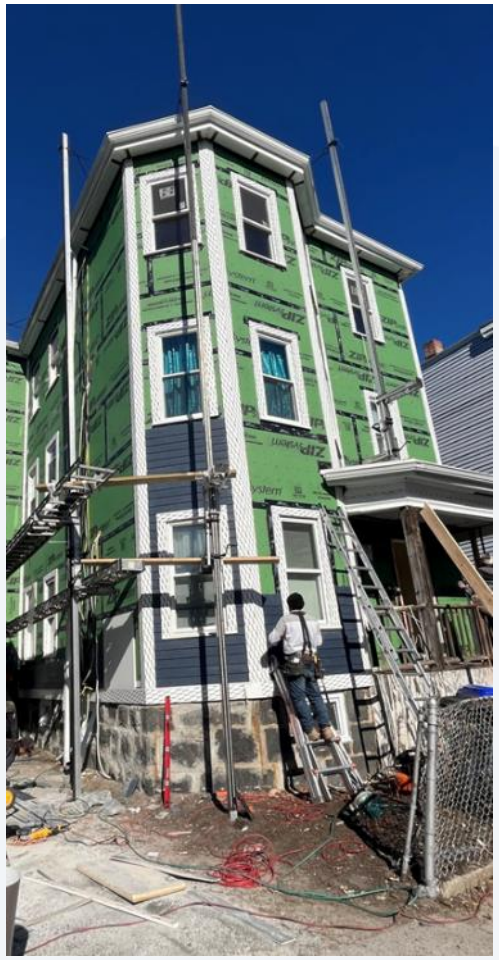
"The process is very easy. I was glad to speak to someone who could answer my questions. Also, Pete was able to tell me about the Turnkey program."

-Springfield Resident

Decarbonization Pathways

Decarbonization Pathways Pilot Goals & Target Outcomes

Create and Test Scalable Approach	Create and test a holistic approach to decarbonizing homes that could be scaled by Mass Save® and/or other entities. • Does this approach get people to take action? • Is it scalable?
Collect Data	Collect data on costs, best practices, and performance of decarbonization measures.
Lessons Learned & Case Studies	Develop lessons learned, resources, and case studies to support homeowners, landlords, and contractors that are ready and able to decarbonize their buildings now.



Decarbonization Pathways Pilot Outcomes

The Decarbonization Pathways Pilot has tested & refined many aspects of supporting home decarbonization.

- Protocol for a decarbonization HEA
- Report/plan for homeowner
- Decarbonization “decision-time” support offering to follow an HEA
- Curriculum for training HEA advisors on decarbonization

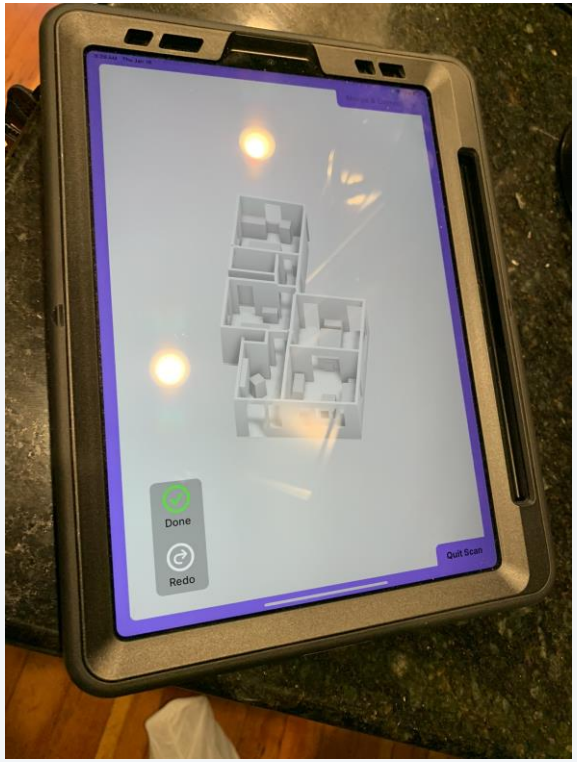
Case Studies & Data Coming Soon

Pilot guided residents of all income levels to make significant progress on their home decarbonization journey, including many who have fully decarbonized.

"I never could have done it by myself – having that roadmap and the prioritizations was really helpful to visualize everything and make sure everything gets accomplished."
-Low-income homeowner

Cohort 3: Continuing through this Summer

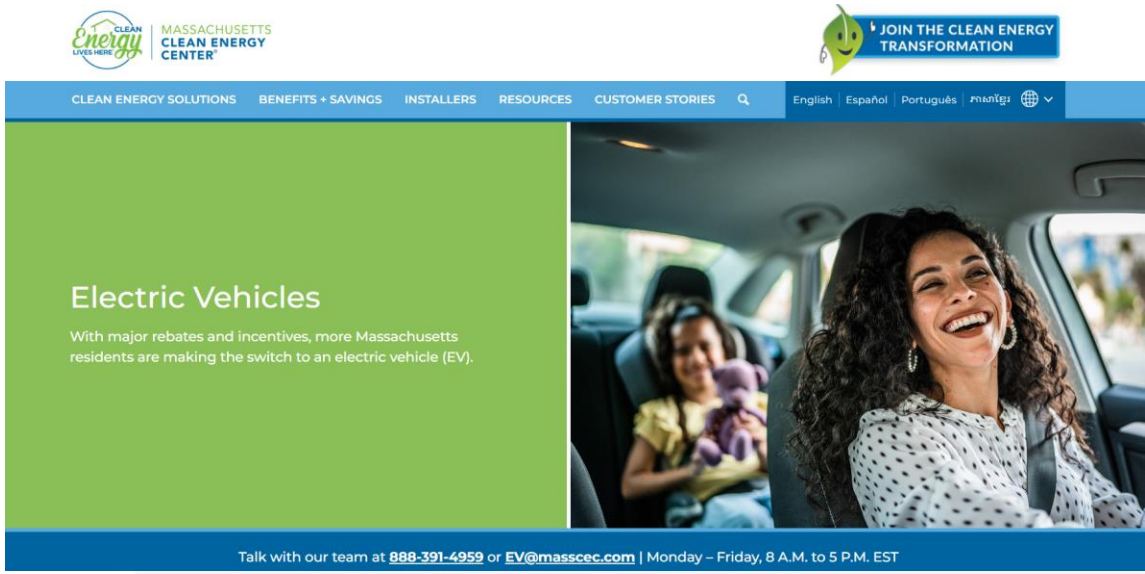
- Phase 1 of Cohort 3
  - November 2024 through now
  - Focus on preparing for Mass Save scaling
  - 6 trained advisors conduct assessments
  - Keep visits ~ 2hrs
- Phase 2 of Cohort 3
  - April 2025 through Summer 2025
  - Focus on additional learnings about virtual follow up support
  - Continuing to Conduit Tech

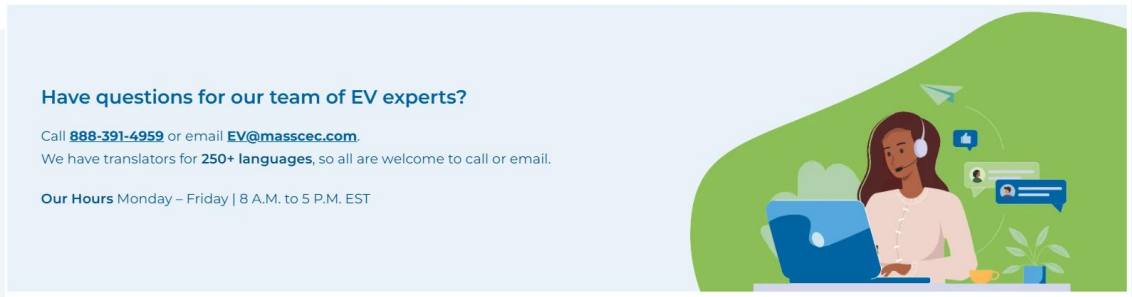


Clean Energy Lives Here Updates

Enhanced EV Webpages + NEW EV Support Service!

- Available to all MA residents
- The webpages provide information, tools, and resources on the following topics:
  - EV models, operation, and availability
  - EVSE installation and operation
  - State and federal EV and EVSE incentives, rebates, and tax credits
  - Vehicle Finder Tool
  - Public EV Charging Map
  - And more!
- Webpages are being translated into Spanish, Mandarin, Cantonese, Portuguese, Haitian Creole, and Khmer
- Customer Support Call center
  - Live statewide!
  - Supports translation into >250 languages





Renter & Property Owner Content

COMING SOON!

- Developing new content targeting renters and rental property owners
- Conducted targeted survey outreach
- Will restructure the CELH site, to better assist a variety of residential clean energy journeys.
- Examples of new content:
  - Resources for renter-friendly clean energy solutions like electric bikes, community solar, and induction cooktops.
  - Educational content for property-owners

www.CleanEnergyLivesHere.com

Building Performance Exchange

Building Performance Exchange

COMING SOON!

- Purpose: To serve as a hub for information, case studies, and training to equip the building professional community with the expertise to decarbonize larger existing buildings across the Commonwealth.
- Lead by: Built Environment Plus
- Outputs:
  - Case studies on successful energy retrofits and zero-over-time planning for large multifamily and all commercial building types
  - Educational content—toolkits, primers, and trainings
  - Peer-to-peer learning opportunities to share industry knowledge
  - New resources tailored to stakeholder needs
- Timing: 4 years
- Funding: $4,000,000
- Audience: Starting in Boston & Cambridge (because of BERDO & BEUDO)

BETA: Project Planning
&
BETA: Roadmaps

Overview & Goals

BETA: ROADMAPS

- **High-level portfolio decarbonization roadmaps** aligned with building capital needs with target of a zero emissions portfolio by 2050.
- Open enrollment for **non-profit and public entity** building owners
- **Roadmap process developed** by PowerOptions, with unique relationship to non-profit portfolio owners through existing utility procurement offering.

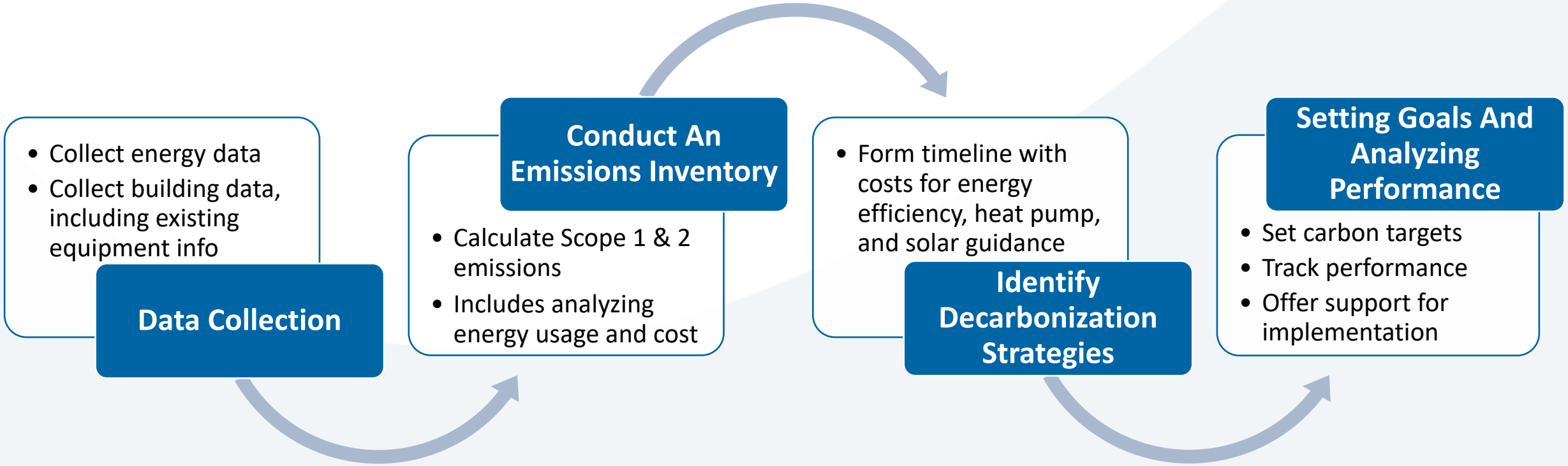
BETA: PROJECT PLANNING

- **In-depth** planning and technical decarbonization strategy studies for **individual buildings**
- **Decarbonization assessment framework** based on ASHRAE II Audit protocol with additional capital planning and financing considerations
- **Case studies and white paper,** including gap analysis of technical and financial challenges to achieving 2050-Ready buildings
- Rolling application for **commercial or large multi-family** building owners
- **Coordination** with Mass Save's Deep Energy Retrofit incentive program and identification of other implementation funding sources

BETA: Roadmaps Approach

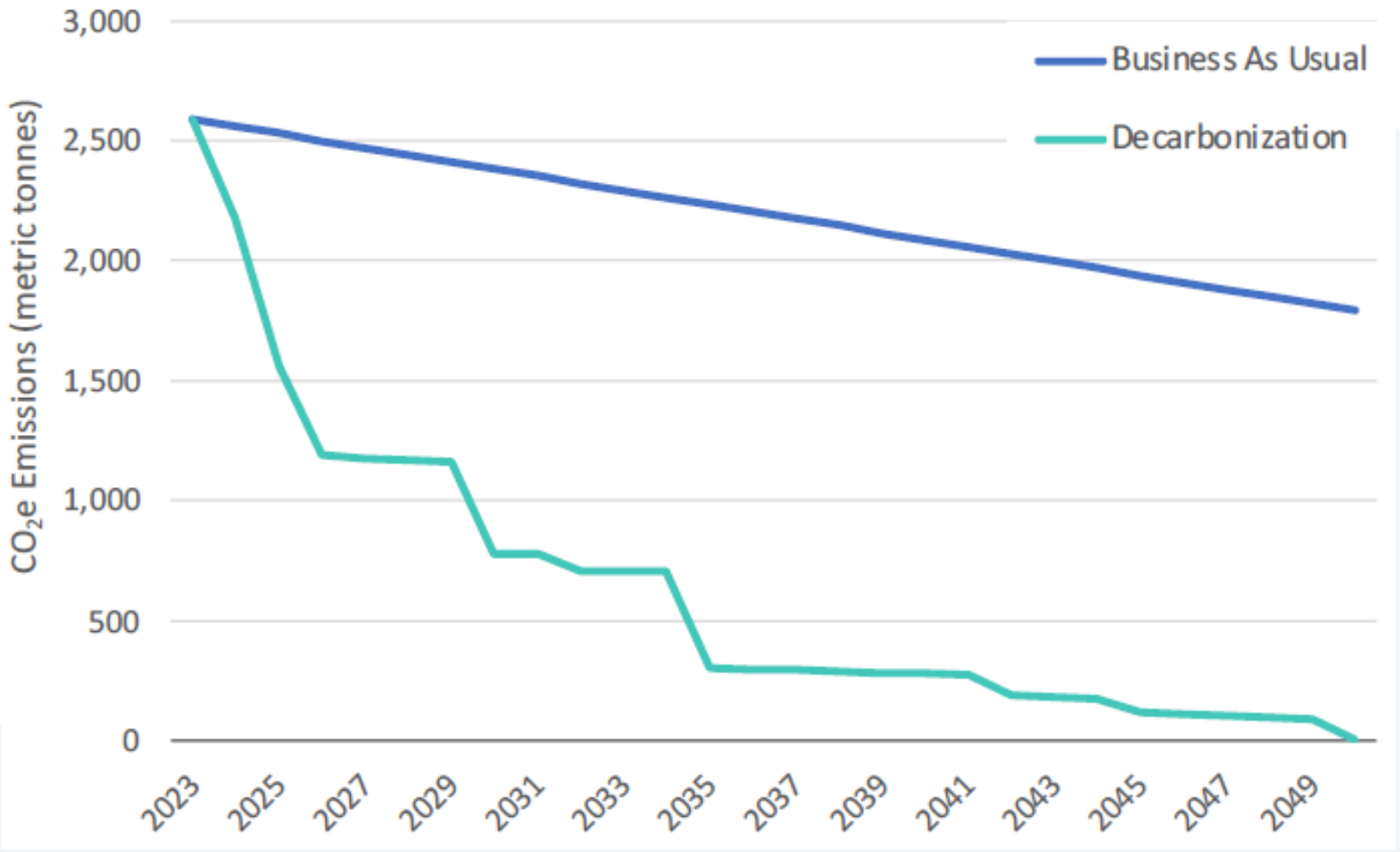
Desktop analysis and decarbonization study roadmap that includes:

virtual energy efficiency audit, virtual solar assessment, electrification, and REC purchases.



BETA: Roadmaps Results to Date

- Number of Completed Roadmaps:
  - 47
- Number of Buildings Supported:
  - 393
- Total Annual Energy Savings (mmBTU):
  - 1,441,000
- Total CO2 Savings (metric tonnes):
  - 78,000



PowerOptions

BETA: Project Planning Approach

1. **REDUCE** energy loads to an optimized state.
2. **RECONFIGURE** systems where possible to enable electrified heating solutions.
3. **RECOVER** as much energy as possible from air, water, and other sources.
4. **REPLACE** equipment incrementally over time until full decarbonization is reached.

BETA: Project Planning Results to Date

- Projects Enrolled: 18
- Projects Completed: 6
- Top Outstanding Typology Targets:
  - Medium Residential
  - Warehouse/Big Box
  - Process driven
  - Small Commercial/Mercantile
  - Food service
  - Grocery

Building Block	Target Number of Buildings	Total Applicants	Total Enrolled	% to target
Medium Residential	5	5	0	0%
Large Residential / Lodging	10	30	6	60%
Warehouse / Big-box	3	2	1	33%
Medium / Simple HVAC	5	9	2	40%
Large / Complex HVAC	8	6	4	50%
Ventilation Driven	2	4	2	100%
Education	5	20	3	60%
Process Driven	2	0	0	0%
Small Commercial	15	8	0	0%
MassDev	15	0	0	0%
Total	**70**	**84**	**18**	26%

Green School Works

Green School Works

- Purpose: Fund projects at public K-12 schools that improve energy efficiency, reduce carbon emissions, or mitigate the impacts of climate change
- Offerings:
  - Technical assistance
  - Implementation Grants
- Timing:
  - Technical assistance offered on ongoing basis
  - Implementation grants solicitation through April 30!
- Funding: $60 million
- Audience: Eligible public k-12 schools and school districts that serve a student population of 40% or more low-income for one or more of the last three school years. (Around half of the public schools in the state)

Green School Works Alignment with Mass Save

- Technical Assistance: Complementing new/updated Mass Save technical C&I technical assistance offerings:
  - Comprehensive Building Assessments
  - Portfolio Decarbonization Roadmaps
  - Focus Studies
- Implementation Grants
  - Projects seeking MassCEC GSW funding should also seek Mass Save incentives
  - Seeking projects where GSWs funding pushes the school to pursue deeper decarbonization

Other MassCEC High Performance Buildings Initiatives

Other MassCEC High Performance Buildings Initiatives

- **EmPower Massachusetts**: Community clean energy, electrification, and efficiency campaigns in Environmental Justice communities
  - https://www.masscec.com/program/empower-massachusetts
- **Solar For All**: Support for solar implementation for low-income households and affordable housing
  - https://www.mass.gov/massachusetts-solar-for-all-program
- **Embodied Carbon**: Establishing approaches for reducing embodied carbon in construction and concrete
  - https://www.masscec.com/program/embodied-carbon-reduction-challenge
- **Climate & Housing: ADUs**: How can we increase housing without increasing fossil fuel usage?
  - Launching soon!
- **Retrofit Cost Study**: What does it cost to do an all-electric retrofit?
  - Complete this summer!

Questions for Mass Save, EEAC

- Any input on the new programs being launched? Do they seem relevant to future Mass Save work?
- Any areas where MassCEC could be helpful in investigating topics that would be relevant in ~2028+?
- Any feedback on the interaction between MassCEC, Mass Save, and the EEAC?