Leading by Example Council Agenda
July 19, 2022

- Welcome
- MA News and LBE Updates
- Framework for Change Management
- Getting Buy-in from Key Stakeholders
- Sustainable Behaviors Beyond the Workplace

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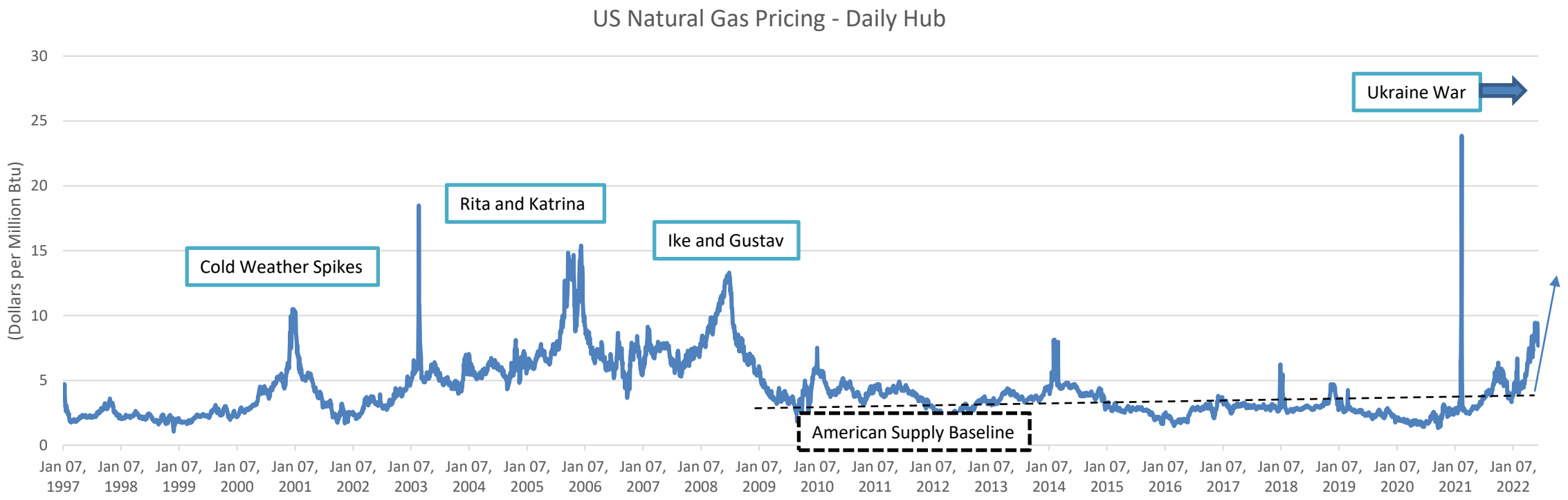
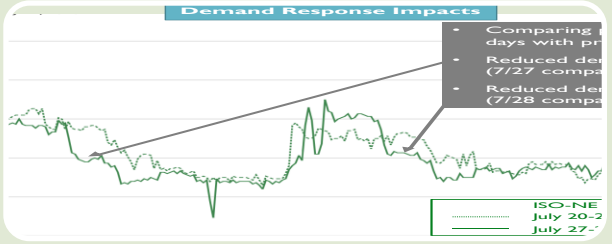
Wholesale Energy Markets and Winter Pricing

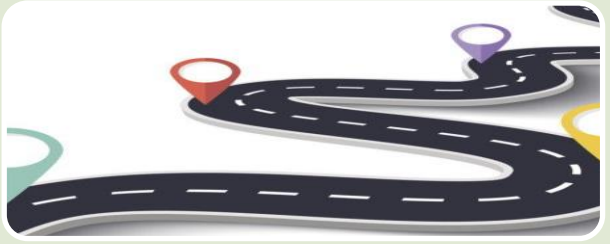


- **46%** of energy generation in New England is from natural gas
- Traditionally, recent natural gas pricing in the US has been driven by national supply and demand, with cold weather impacting demand and hurricanes impacting supply
- US natural gas price have been connected more to global natural gas pricing with the increase in LNG exports
- **New England natural gas prices are higher than the US average in winter months** because of winter heating demand and constrained infrastructure to bring natural gas into the region

Winter Pricing: Implications for State Entities

- Costs for electricity and natural gas expected to increase this winter
- If your long-term contract is set to expire soon, be prepared for cost increases
- If you are not locked into a long-term contract, you may see substantial increases as winter approaches
- The best way to avoid high energy costs? Avoid energy use!





Behavior Change

- Reduce set points in office spaces
- Ensure windows and doors stay firmly shut
- Dress warmly

Operational Change

- Adjust building schedules to reduce peak demand
- Lower building set points
- Lower hot water temperatures

Long-Term Planning

- Invest in thermal efficiency
- Consider solar PPAs to lock in electric rates
- Take advantage of local clean energy via electrification

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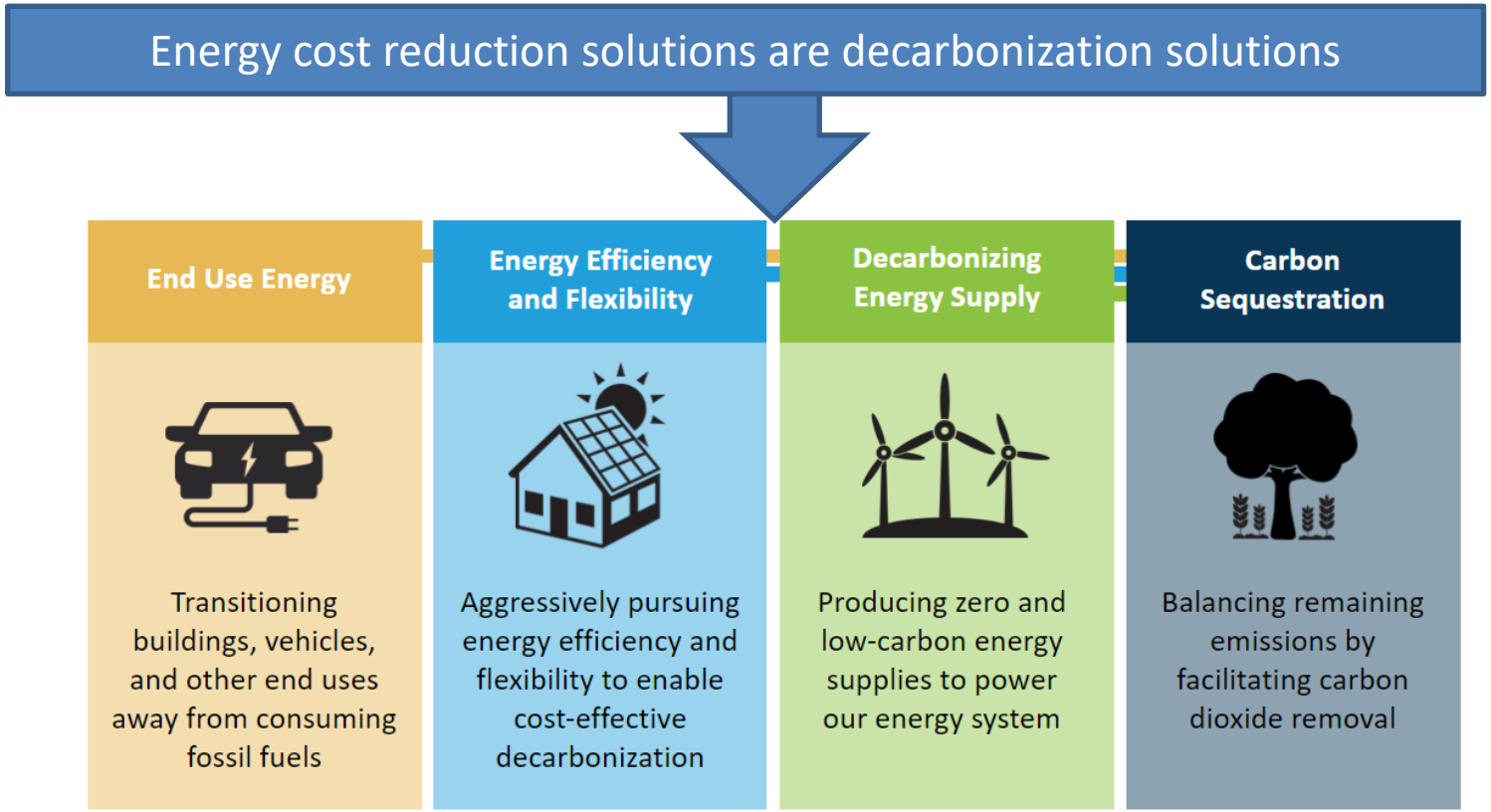
Policy Solutions to Energy Pricing Volatility

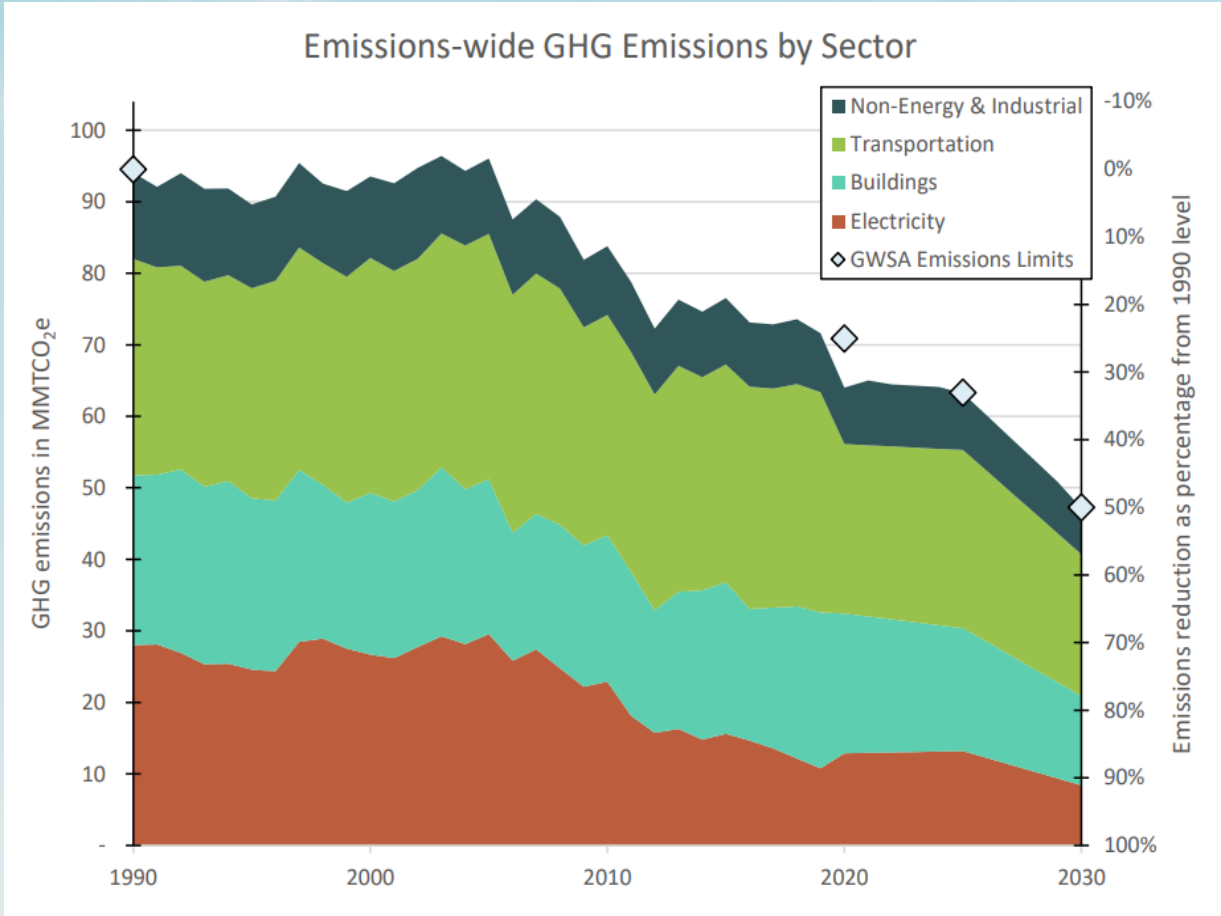
- Massachusetts is focusing on local supply of renewable energy (Solar PV, Offshore Wind, Canada hydropower)
- Electrifying buildings and transportation
- Delays in some of these strategies have contributed to the current pricing challenges



Clean Energy and Climate Plan 2025 and 2030

- EEA released 2025/2030 CECP on 6/30/22
- New statewide GHG reduction targets set:
  - 33% below 1990 baseline by 2025
  - 50% below 1990 baseline by 2030
  - Currently at ~25% emissions reduction
- Sublimit targets set for each sector

	2020*	2025	2030
Transportation	22%	18%	34%
Buildings	18%	28%	47%
Electric Power	54%	53%	70%



*Covid year likely skewed data

2025/2030 CECP Building Sector Strategies

Electrify residential and commercial building heat via heat pumps

Specialized opt-in energy code for and updated stretch energy code

Building emissions reporting ordinances for larger buildings to meet EUI thresholds

Weatherization and efficiency to reduce heating demand

Commission on Clean Heat developing recommendations for regulations and policies through end of 2022 to support these efforts

2025/2030 CECP Transportation Strategies

Goal of 200,000 total EVs on the road and 15,000 public charging stations by 2025

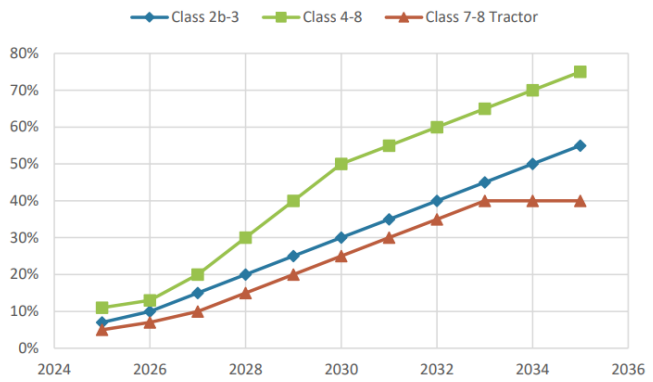
Goal of 900,000 EVs on road and 75,000 public charging stations by 2030

Building training and resource libraries for workforce development, technical assistance, and customer support

Entire MBTA bus fleet to battery electric buses by 2040

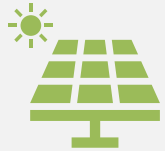
Scale up ZEV sale requirements in alignment with CA regulations

Figure 4.2. Advanced Clean Truck Rule with ZEV Sales Requirements



2025/2030 CECP Other Strategies

Minimize the growth of non-energy emissions that are expected to grow through the next decade (e.g., HFCs in heat pumps)



Clean energy procurements through investments in offshore wind, solar PV, energy storage, and transmission

2021 Climate Law raised RPS minimum standard to 40% by 2030. MassDEP proposing increase to CES minimum standard to 60% by 2030

EEA will work with EJ populations to ensure they benefit from these programs, grants, and investments

Executive Order 594 and 2025/2030 CECP

EO 594 goals and strategies align with 2025/2030 CECP objectives

Executive Order 594 2004 baseline	**2025**	**2030**
EV charging stations at state facilities	350	500
ZEVs in state light duty fleet	325 (5%)	1,625 (20%)
Reduce onsite fossil fuel emissions	-20%	-35%

2025/2030 CECP 1990 baseline	**2025**	**2030**
EV charging stations in MA	15,000	75,000
ZEVs on road in MA	200,000 (~4%*)	900,000 (~18%*)
C&I heating and cooling emissions	-35%	-49%

*based on 5m registered vehicles in MA (Federal Highway Administration)

MA Building Energy Codes Public Comment Period

- Public hearings will be held 7/22, 8/2, and 8/8
- Written comments accepted until August 12. Email comments to stretchcode@mass.gov with "building code comments" in the subject line.

Draft Code language, webinar, and additional information available on DOER website

Three Pathways in Specialized Opt-in Code:		
1: All Electric Building	**2: Mixed Fuel Building**	**3: Zero Energy Building**
Efficiency requirements* and all electric for space and water heating and other equipment	Efficiency requirements* plus pre-wiring for electrification plus rooftop solar where feasible	Efficiency requirements* and on-site solar to offset annual energy use, plus pre-wiring if using fossil fuels

*Focuses on thermal efficiency (heating, cooling, hot water), high performance envelope

Stretch Code (Update)

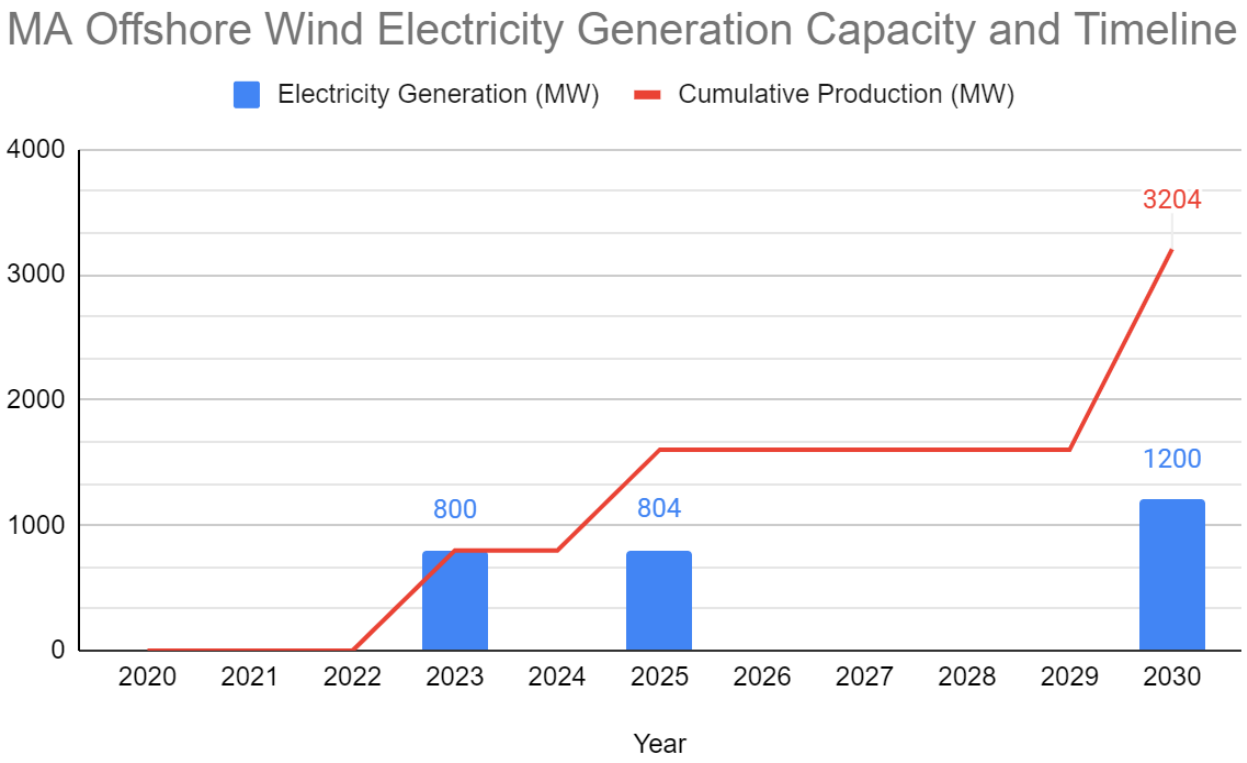
- New Buildings in towns and cities that adopted, including all green communities
- 299 communities
- DOER update effective in 2023

Specialized Opt-in (New Code Option)

- New Buildings in towns and cities that choose to opt-into this code
- Available for adoption Dec 2022

State projects required to meet Specialized Code within 6 months of promulgation as per EO594

MA Offshore Wind



3,200 MW represents 25% of MA annual electricity demand

Vineyard 1 Project

- Onshore construction since 2021
- Offshore construction to begin in 2022
- Expected to begin delivering power to the grid in 2023

Diesel Emissions Reduction Grant Funding

- $1.88 million in grants available to replace diesel vehicles, engines, and equipment with zero emission alternatives
- Eligible vehicle/engine types include:
  - School and transit buses
  - Medium & heavy-duty trucks (GVWR over 16,000lbs)
  - Marine engines
  - Locomotives
  - Non-road diesel engines (construction, ag., cargo etc.)
- Eligible technologies include idle reduction and engine/equipment replacement with zero-tailpipe emission alternatives
- Applications must be submitted by August 24, 2022

Eligibility requirements, applications, and more information can be found on the DEP website

Large Scale Campus Decarbonization

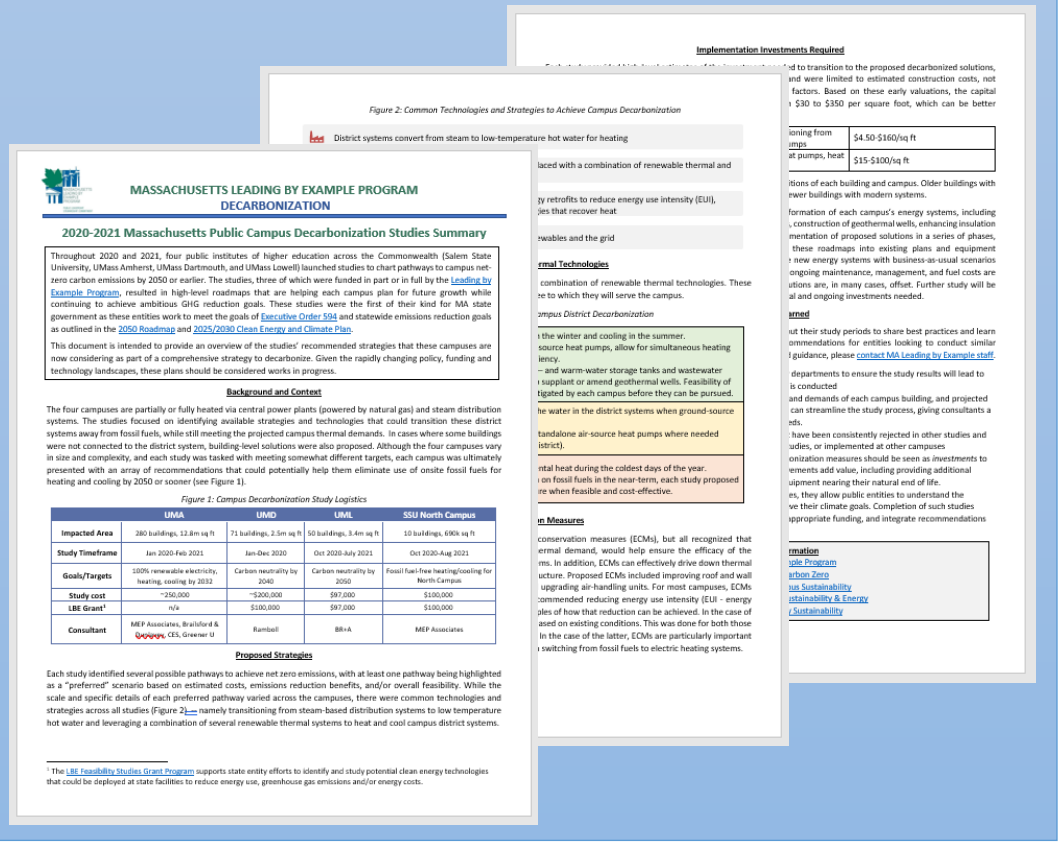


- Princeton, Miami University in Ohio and Ball State are in the process of decarbonizing their district systems
- See webinar and slides on DOE [Better Buildings Solution Center]

Institution	Old	New
Ball State	**Coal fired steam plant**	**GeoExchange and hot water heating system**
Miami University (Ohio)	**Coal-fired steam plant**	**GeoExchange system with chiller plants and thermal storage**
Princeton	**Natural gas CHP**	**District hot water heating system, electric heat pump facilities, daily thermal storage, and on-site PV**

UMass Amherst | UMass Dartmouth | UMass Lowell | Salem State University

Three-page summary document on completed MA university decarbonization studies [now online]!



MASSACHUSETTS LEADING BY EXAMPLE PROGRAM
DECARBONIZATION

2020-2021 Massachusetts Public Campus Decarbonization Studies Summary

Throughout 2020 and 2021, four public institutes of higher education across the Commonwealth (Salem State University, UMass Amherst, UMass Dartmouth, and UMass Lowell) launched studies to chart pathways to campus net-zero carbon emissions by 2050 or earlier. The studies, three of which were funded in part or in full by the Leading by Example Program, resulted in high-level roadmaps that are helping each campus plan for future growth while continuing to achieve ambitious GHG reduction goals. These studies were the first of their kind for MA state government as these entities work to meet the goals of Executive Order 594 and statewide emissions reduction goals as outlined in the 2050 Roadmap and 2025/2030 Clean Energy and Climate Plan.

This document is intended to provide an overview of the studies' recommended strategies that these campuses are now considering as part of a comprehensive strategy to decarbonize. Given the rapidly changing policy, funding and technology landscapes, these plans should be considered works in progress.

Background and Context

The four campuses are partially or fully heated via central power plants (powered by natural gas) and steam distribution systems. The studies focused on identifying available strategies and technologies that could transition these district systems away from fossil fuels, while still meeting the projected campus thermal demands. In cases where some buildings were not connected to the district system, building-level solutions were also proposed. Although the four campuses vary in size and complexity, and each study was tasked with meeting somewhat different targets, each campus was ultimately presented with an array of recommendations that could potentially help them eliminate use of onsite fossil fuels for heating and cooling by 2050 or sooner (see Figure 1).

Figure 1: Campus Decarbonization Study Logistics

	UMA	UMD	UML	SSU North Campus
Impacted Area	280 buildings, 12.8m sq ft	71 buildings, 2.5m sq ft	50 buildings, 3.4m sq ft	10 buildings, 690k sq ft
Study Timeframe	Jan 2020-Feb 2021	Jan-Dec 2020	Oct 2020-July 2021	Oct 2020-Aug 2021
Goals/Targets	100% renewable electricity, heating, cooling by 2032	Carbon neutrality by 2040	Carbon neutrality by 2050	Fossil fuel-free heating/cooling for North Campus
Study cost	~250,000	~$200,000	$97,000	$100,000
LBE Grant[1]	n/a	$100,000	$97,000	$100,000
Consultant	MEP Associates, Brailsford & Dunlavey, CES, Greener U	Ramboll	BR+A	MEP Associates

Proposed Strategies

Each study identified several possible pathways to achieve net zero emissions, with at least one pathway being highlighted as a "preferred" scenario based on estimated costs, emissions reduction benefits, and/or overall feasibility. While the scale and specific details of each preferred pathway varied across the campuses, there were common technologies and strategies across all studies (Figure 2)— namely transitioning from steam-based distribution systems to low temperature hot water and leveraging a combination of several renewable thermal systems to heat and cool campus district systems.

[1] The LBE Feasibility Studies Grant Program supports state entity efforts to identify and study potential clean energy technologies that could be deployed at state facilities to reduce energy use, greenhouse gas emissions and/or energy costs.

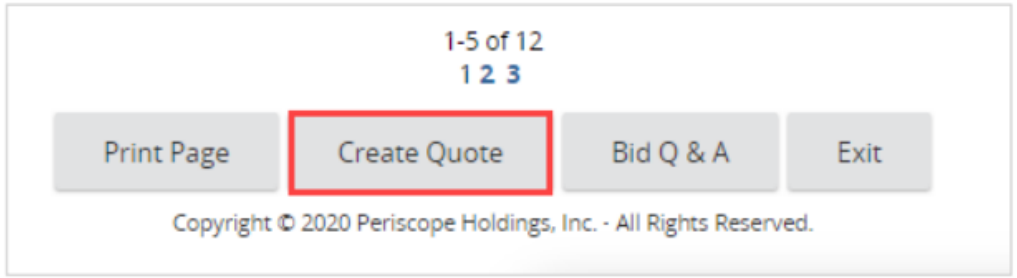
Figure 2: Common Technologies and Strategies to Achieve Campus Decarbonization

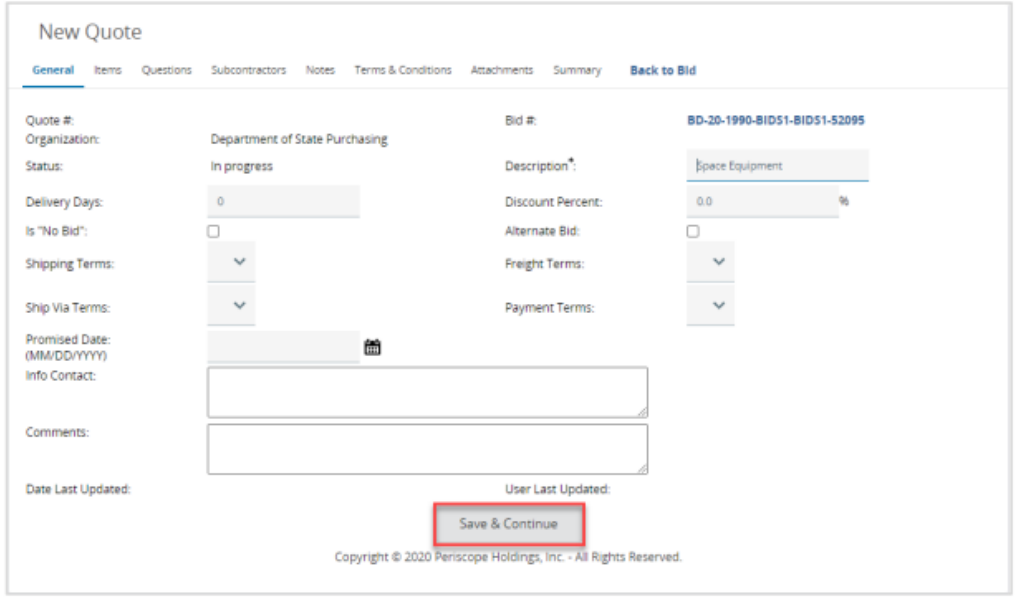
District systems convert from steam to low-temperature hot water for heating

Implementation Investments Required

New DOER Grants Process

- All grant applications must be submitted via COMMBUYS
- Entities require a "Seller" account
- To apply, navigate to the Grant PON on COMMBUYS and select "Create Quote"
- Need assistance?
  - See a detailed walkthrough available here
  - Additional guides, including basics on COMMBUYS navigation, can be found on the OSD website
  - Contact the OSD Help Desk: OSDHelpDesk@mass.gov, 1-888-627-8283 or 617-720-3197
- Once submitted on COMMBUYS, let LBE staff know so that we can ensure documents are received





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LBE Feasibility Study Grants

Awards	• $75,000 per study • $100,000 max per entity per 6-months
Eligibility	• State entities including executive branch agencies, state institutions of higher education, and quasi-public authorities
Eligible Studies	• Support directives of EO594 • Renewable thermal, innovation, long-term decarbonization roadmaps, etc
Schedule	• Rolling applications • Studies should target completion within 6 months (longer may be requested)
PON Response Deadline	• June 30, 2023

More information, PON, and application form on the LBE Grants page

LBE Grant Program to Support Fleet Charging Infrastructure

- LBE launching program to support deployment of EVSE, to be used primarily by state fleet
- Will provide 100% of cost of installation, will streamline funding and remove administrative challenges found in current programs
- Funds will support equipment, installation, and up to 3 years of data and maintenance
- Additional funding available for agencies with significant deployment in EJ communities
- Focusing on Level 2 stations, but Level 1 chargers still eligible

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LBE Fleet EVSE Program Logistics

- Eligible entities include all under EO594:
  - Public Higher Education
  - Executive Branch Agencies
  - MBTA non-revenue fleet
- Funds cover up to 100% of costs of Level 1 and Level 2 stations related to:
  - Equipment
  - Installation
  - Up to 3 years of maintenance and data service
  - Pre-wiring
- Targeting $7,500 per Level 2 port; expensive projects will need to provide justification for higher costs
- Applicants must agree to complete EVSE installation within six months of grant award

By the Numbers	
Total Funding	$800,000
Maximum eligible allotment per entity, per fiscal year*	≤200 vehicles: $100,000 >200 vehicles: $150,000
Adder if min. number of stations installed in EJ neighborhoods*	$25,000
*May be awarded across multiple applications	

Application Deadline: 4/1/23

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Application Process

Identify Priority Sites

- Work with OVM, LBE, internal staff as needed

Determine Locations

- Within selected site, determine ideal location(s) for charging stations
- Consult "EV Charging Considerations Guide"

Solicit Vendor Quotes

- Develop Scope of Services and obtain at least three quotes from VEH102
- Adapt template Scope of Services developed by LBE

Select Vendor

- Tentatively select a vendor, but do not sign contract before applying for grant funding

Submit Grant Application

- Include vendor project proposal and costs for any elements of project entity would like covered by LBE grant

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Meeting Spotlight: Growing the Sustainability Circle

Expanding Expertise, Engagement, and Enthusiasm for Change Within Our Institutions

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Framework for Organizational (and Statewide) Change

Change Management

- "…a structured approach that ensures changes are implemented **thoroughly** and **smoothly** – and have the **desired impact**." (MindTools)
- "…an enabling framework for **managing the people** side of change." (Prosci)
- "…a systemic approach to dealing with the transformation of an organization's **goals, processes or technologies**…to implement strategies for effecting change, **controlling change and helping people** to adapt to change." (TechTarget)

Kotter's 8-Step Process

- Kotter's ***8-step Process for Leading Change*** is based on observations of leaders and organizations trying to transform or execute their strategies
- While designed with company change in mind, these steps are broadly applicable to institutional, and society-wide, change
- Many state entities are already implementing these steps!

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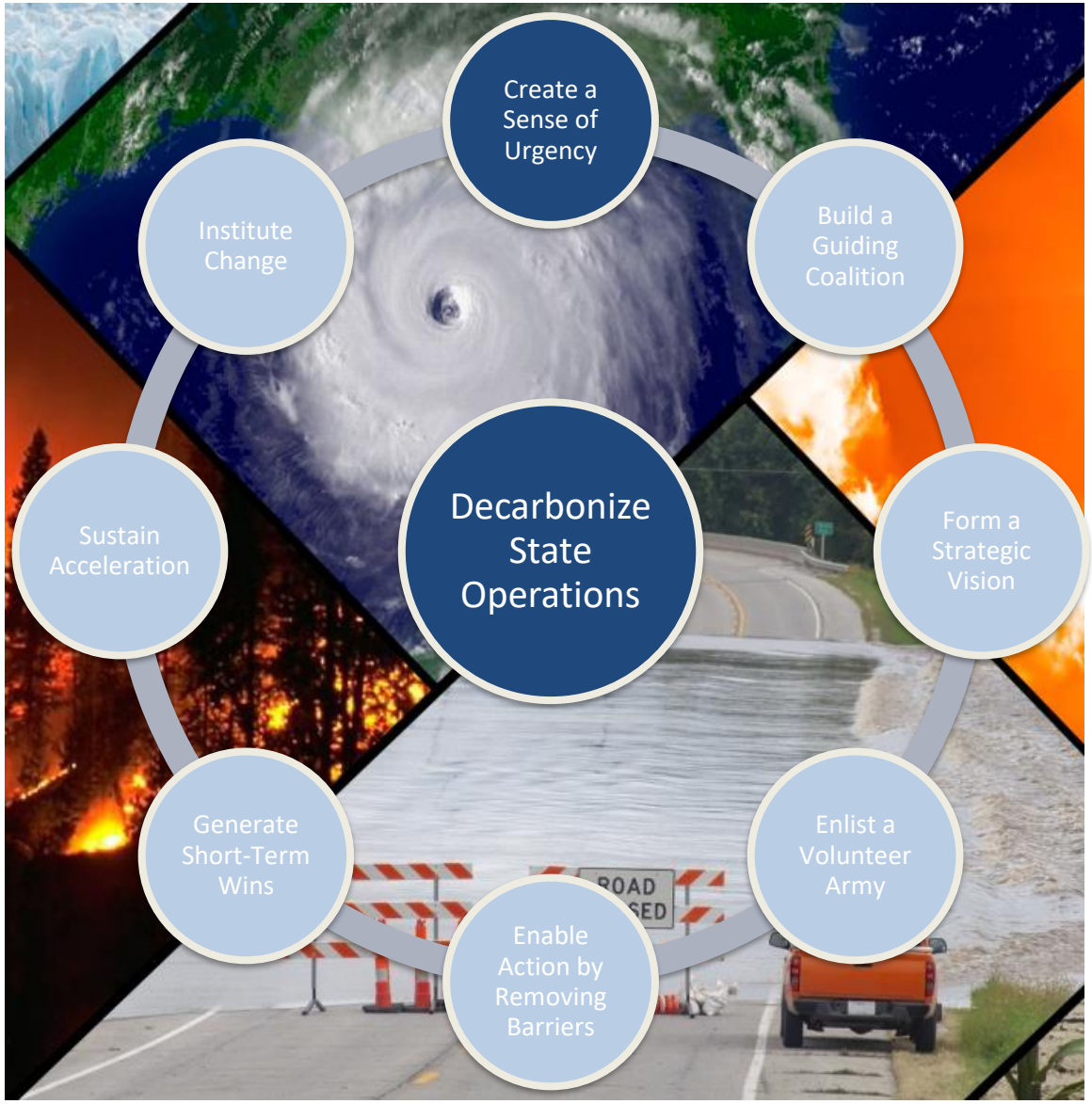
Creating a Sense of Urgency

Leaders must describe opportunity for change that will appeal to heads and hearts

- ✓ Climate crisis impacting resident well-being, state operations, regional stability, and global livability
- ✓ State/regional/federal/global policies push for action
  - ➢ 2007 Regional Greenhouse Gas Initiative
  - ➢ 2007 EO484
  - ➢ 2008 Global Warming Solutions Act



Build a Guiding Coalition

Coalition must consist of members from multiple levels, representing many functions, to receive information at all levels and synthesize into new ways of working

- ✓ LBE Council includes agencies with authority over key policy drivers, as well as many of the entities that contribute to emissions portfolio
- ✓ UMass Presidents Sustainability Council includes representatives from all campuses and President's Office, meets regularly to coordinate goals and strategies
- ✓ Green Teams and Climate Action Teams we will hear from today invite participation from multiple levels and departments to move sustainability efforts forward

Form a Strategic Vision and Initiatives

A Vision should be communicable, desirable, flexible, feasible, imaginable, simple, and create a verbal picture

- ✓ EO594 sets portfolio-wide goals and directives for buildings and vehicles, and lays out strategies to help entities achieve goals
- ✓ Campus and DCAMM decarbonization planning creates the vision and outlines the roadmap for implementable solutions
- ✓ DCR Growing Wild program lays out importance of pollinator habitats and vision for DCR sites and homeowners to support habitat restoration goals

Enlist a Volunteer Army

Significant numbers of employees are needed to drive change. Coalition must build excitement around the "Big Opportunity" and develop sense that one "wants to" (vs. "has to") contribute.

- ✓ LBE recruits and designates LBE Coordinators, welcomes state employees to the email list, conducts individual meetings with partners, etc
- ✓ Many campus sustainability teams include students and staff that volunteer time to support sustainability efforts and educational events
- ✓ We'll talk more about this later in the agenda!

Enable Action by Removing Barriers

Leaders can work to remove barriers, such as inefficient processes or archaic norms, to help employees work across boundaries and create impact

- ✓ LBE works to provide digestible information and data, as well as targeted grant programs to help agencies navigate complex processes and identify programmatic priorities
- ✓ Rist Institute for Sustainability & Energy at UMass Lowell alleviates challenges around siloed departments by synergizing all sustainability efforts under one roof
- ✓ Commonwealth Energy Intelligence provides actionable, real-time data, enabling agencies like Trial Courts to make operational changes that reduce demand and consumption

Generate Short-Term Wins

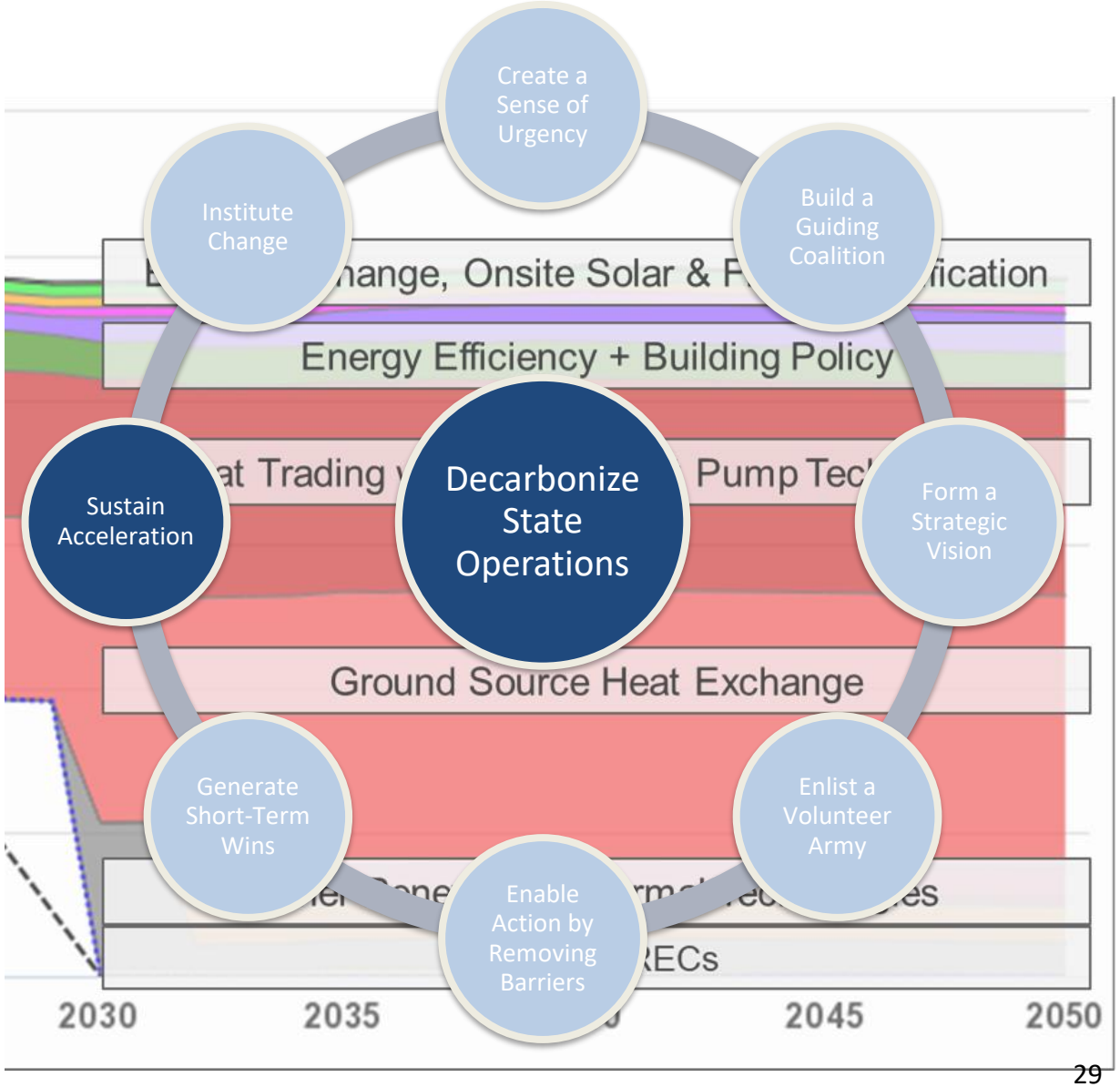
Wins must be collected, categorized, and communicated early and often to track progress and energize staff

- ✓ LBE recognizes leaders through its annual Recognition Awards
- ✓ DCAMM celebrates work of individual staff at annual MAFMA Awards
- ✓ Annual events help DOER's Green Communities Division to celebrate the addition of new Green Communities
- ✓ OSD EPP program's annual report highlights positive environmental and financial impacts of environmentally preferable purchasing of state entities

Sustain Acceleration

After first successes, continue to initiate changes and increase credibility by showing improvements in systems, structures, and policies

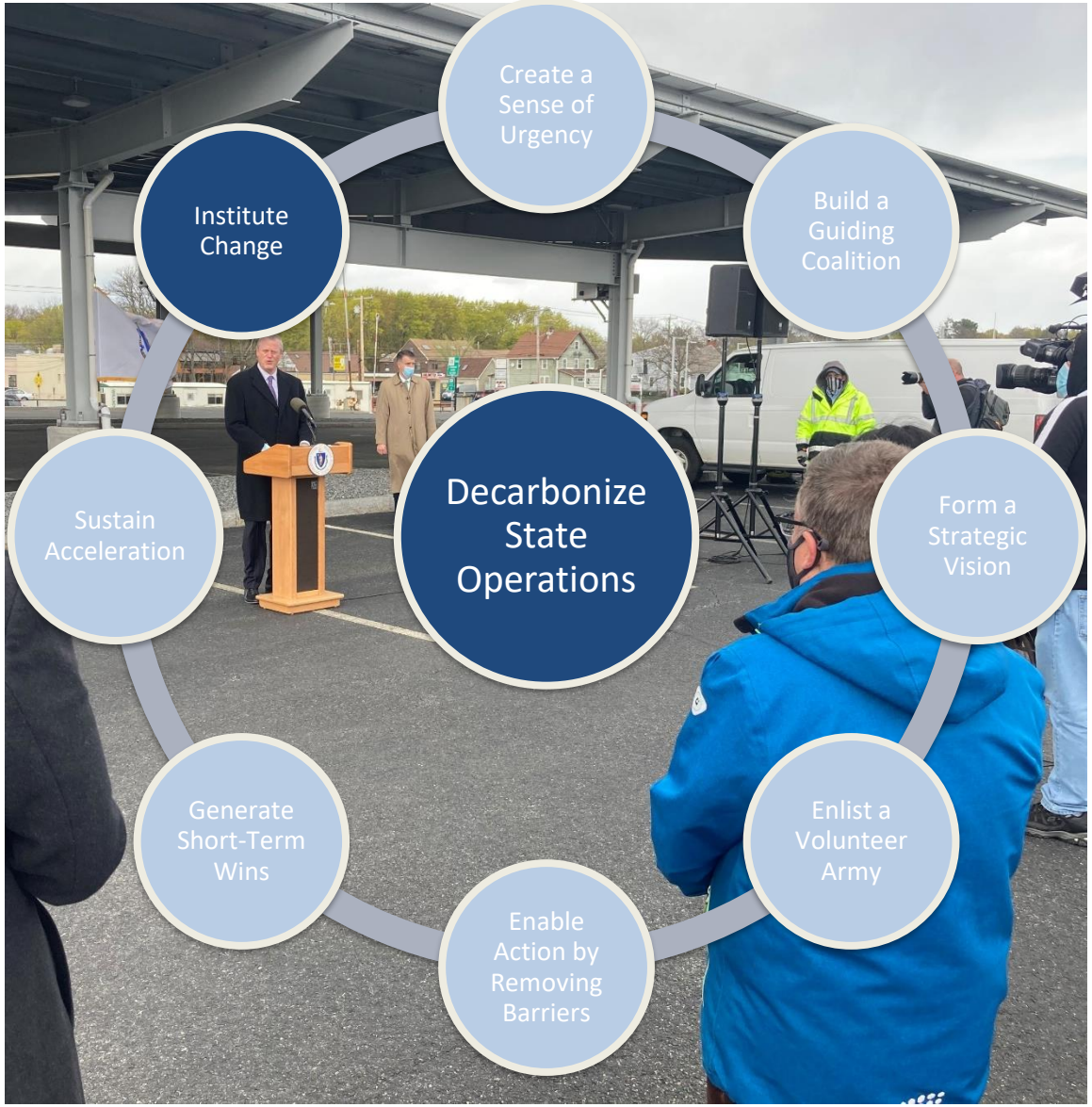
- ✓ EO594 built on success of EO484, set new targets and laid groundwork for new programs
- ✓ Previous campus decarbonization plans provided valuable lessons to help streamline and focus future planning efforts
- ✓ MassDOT Aeronautics piloted battery-powered landscaping equipment at airports in 2017 and have since supported procurement of hundreds of pieces of equipment for municipal airport use



Institute Change

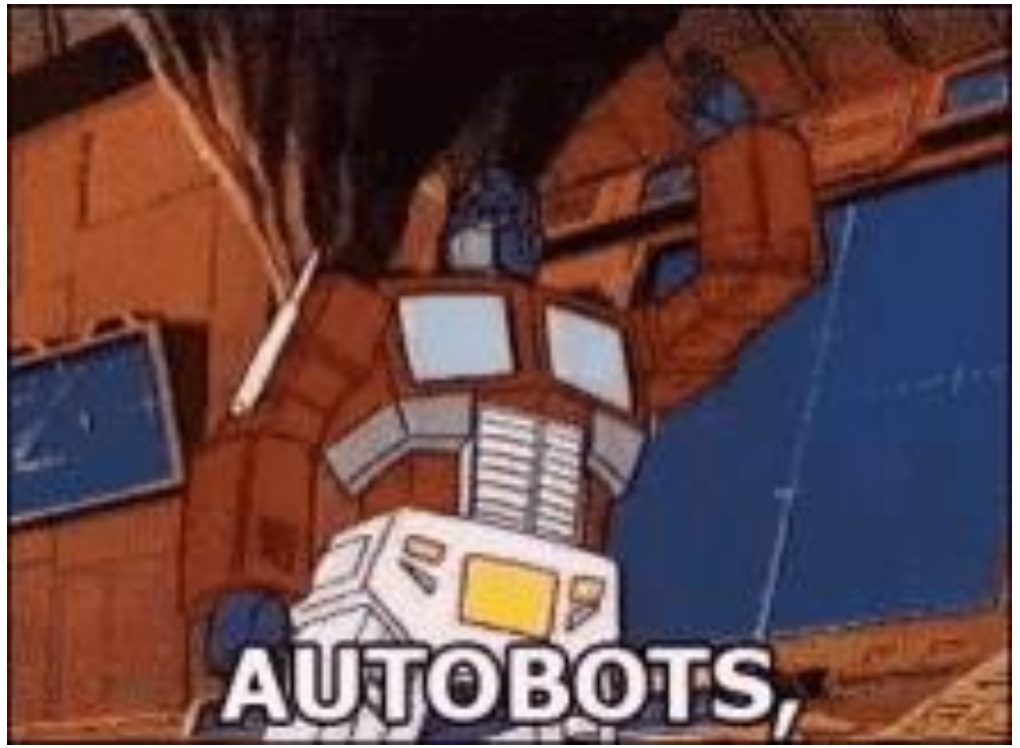
Leaders must define and communicate the connections between new behaviors and the organization's success. Culture changes after people's actions have been successfully altered.

- ✓ New construction at DCAMM defaulting to high-efficiency, all-electric buildings
- ✓ Statewide vehicle contract limiting passenger cars, SUVs, and vans to hybrid or better
- ✓ UMass Amherst Carbon Zero Plan, which sets a pathway to net zero emissions by 2032, will impact all capital projects and decision-making on campus



In a Nutshell…

- Kotter's 8-Step Process requires us to:
  - ✓ Create sense of urgency
  - ✓ Build a coalition
  - ✓ Form a vision
  - ✓ Enlist volunteers
  - ✓ Remove barriers
  - ✓ Generate wins
  - ✓ Sustain acceleration
  - ✓ Institute change
- As we hear from our speakers today, consider how these different elements are being put into action and how we can follow their example to transform our operations



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It Takes a Village:
Getting Internal Buy-In from Key Stakeholders

MBTA: Sustainability Committee

LBE Council Meeting

July 12, 2022

Agenda

- Background
- Values and Goals
- Activities
- Members
- Promotion
- Logistics
- Reflections Thus Far
- Questions, Advice, Future Speakers

Background

- Began with conversation and brainstorming between Landon and Erica
  - Already existing friendship
  - Previous experience with sustainability, including informal committees
  - Erica had recently hosted a meeting on sustainability opportunities with the engineering department
- Erica was very receptive and excited
- Previous sustainability coordinator had hosted Earth Day events and other internal engagement opportunities so familiar to department

Values

- Completely voluntary
- Participant-directed
- Open and approachable to all
- Should be fun

Goals

- Make the T more sustainable
- Learn more about sustainability at the T and more broadly
- Meet people from other departments
- Increase sustainability in committee members' personal lives

Activities

- Host a committee meeting roughly every 5 weeks for 45 min-1 hour (3 thus far)
  - Meeting 1: Kick-off and Sustainability/Resiliency at the T Intro
  - Meeting 2: Pollinator Gardens
  - Meeting 3: Resiliency at the T and in the Communities
- Meetings have consisted primarily of presenters (internal and external) followed by Q&A and discussion
- Other activities have/may include project meetings (such as pollinator conversations), topic deep-dive committee meetings, field trips, lunches, and coffee chats

Members

- Open to any employee or contractor at the T
- No real 'membership': anyone who has attended an event or expressed interest has access to the Sharepoint and surveys, regardless of their commitment level
- Participants are primarily from administrative/support functions in office roles. Less participation from operational and front-line roles
  - Likely driven by promotion medium (slack), relationships, availability and perhaps interest level
- 43 current members of the Sharepoint
- Estimated 40+ unique attendees of the committee meetings

Promotion

- Originally promoted via Slack in a general channel and a sustainability-focused channel
- Also forwarded each meeting to people we thought would be interested and encouraged others to do the same
- The slower growth is helpful for us to work out the kinks and develop a sustainable model

Logistics

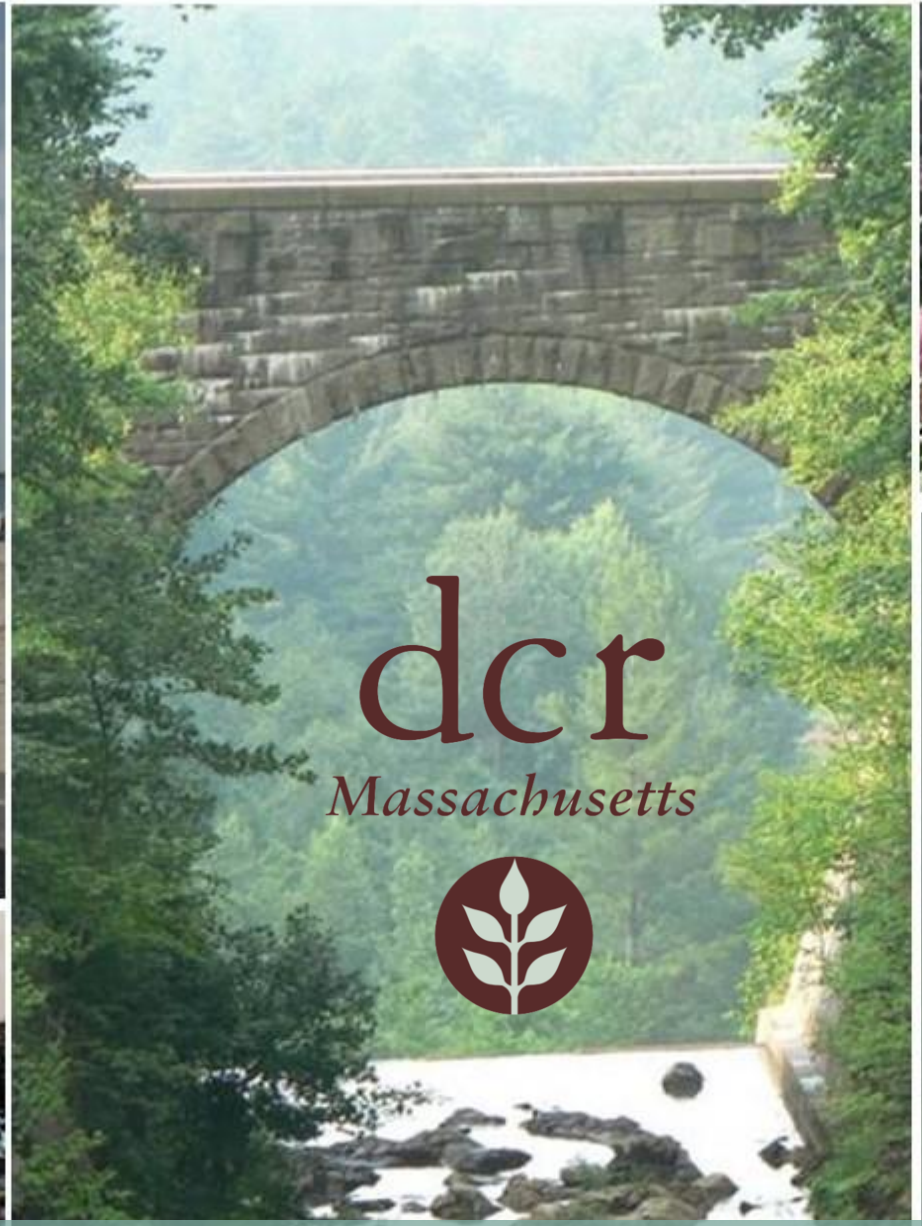
- 'Leadership' currently consists of 5 employees and 2 interns
  - No formal structure of responsibilities between leadership as of now
  - Any employee that wants to help can join
- All slides and other materials are posted in a Sharepoint group and shared with all 'members'
- Surveys sent out after each committee meeting to solicit feedback and ideas for future topics and activities

Reflections Thus Far

- Successes
  - Informal nature of committee meetings and zero-stakes commitment have hopefully made the committee more approachable
  - We are always looking for feedback and suggestions; meeting topics have been largely determined by member suggestions
- Challenges
  - Organizing meetings and follow-up meetings takes time; need to figure out how to divide work so we are more efficient
  - If goal is to make T more sustainable, how do we follow up topic introductions with actions/projects at the T without creating significantly more work for people. Do we want to lead this, or is our role to provide a forum for information and connections and then empower others to make changes on their own?
  - Involving more operational and front-line employees in the future
  - We are still early in our existence; how do we sustain interest and participation?

Questions, Advice, Future Speakers

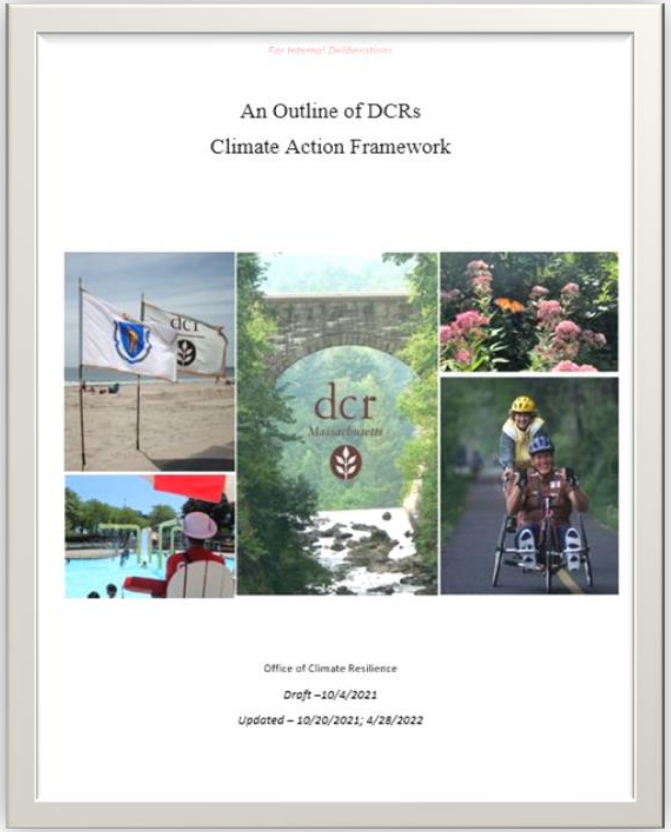
- We are open to any questions, suggestions or ideas/volunteers for future guest speakers and topics!



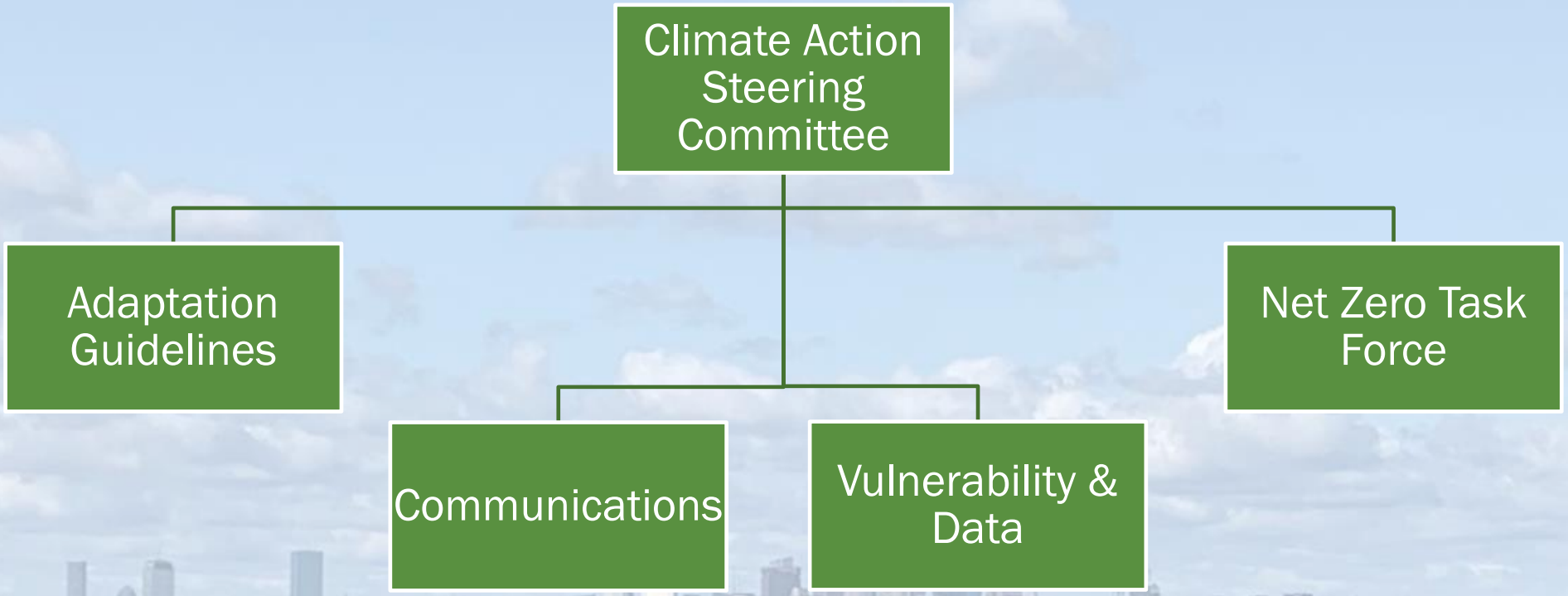
CLIMATE ACTION TEAM

DCR'S CLIMATE ACTION FRAMEWORK

- Climate Resilience Office
- Living internal guidance document – not a plan
- Developed by DCR staff for DCR Staff
- Steering Committee Meets monthly (Deputy Commissioner level)



DCR CLIMATE ACTION TEAM



Climate Adaptation

Climate Mitigation

CLIMATE ACTION TEAMS: WORKSTREAMS

Net Zero (LBE) Task Force

- DCR's Statewide Decarbonization Initiative
- 10% BioFuel Conversion
- DCR 2022 Decarbonization Study (Building Pilot Sites)
- Fleet EV Charging Station Assessment

Vulnerability Assessment & Enterprise Assets

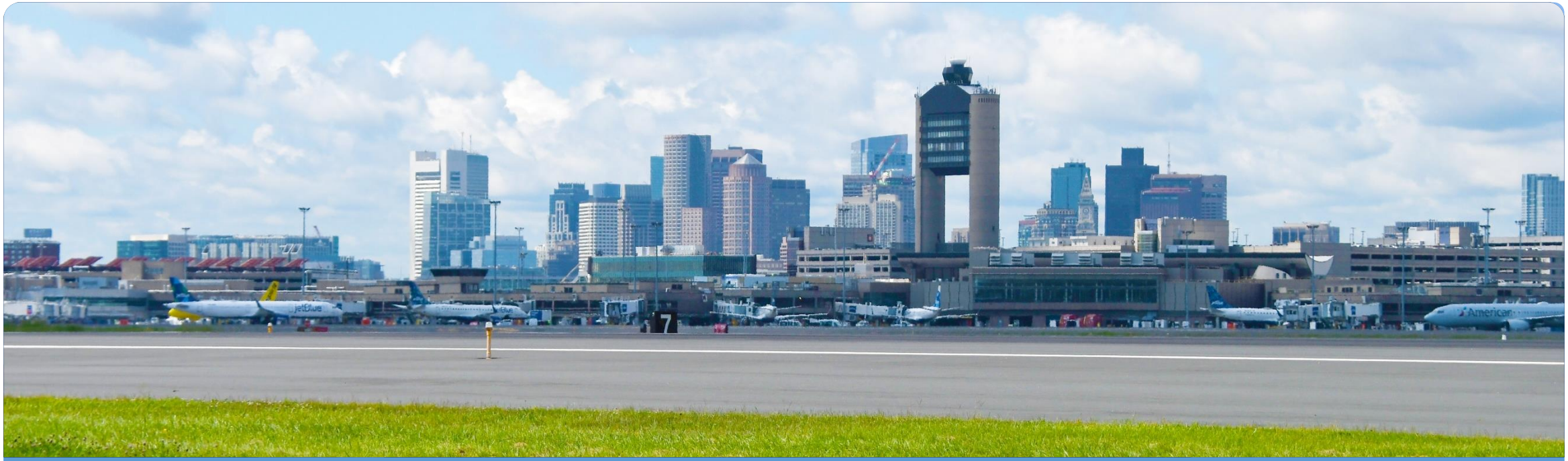
- DCR Climate Change Vulnerability Assessment Methodology
- Field Collector to track impacts of climate change at DCR facilities

Adaptation Guidelines (formal name TBD)

- Assess and streamline DCR climate impacts and hazard mitigation
- Conduct internal capability and capacity assessment of DCRs Adaptative Capacity
- Develop short and long term Climate Adaptation Goals and Projects for the SHMCAP.

Communications

- Plan for communication and information for staff
  - and the public (in future years)
- Training Needs Survey
- Wireframe for staff Climate SharePoint



Climate Action from Air to Sea: Massport Net Zero Plan

Leading By Example Council Meeting
July 19, 2022

massport

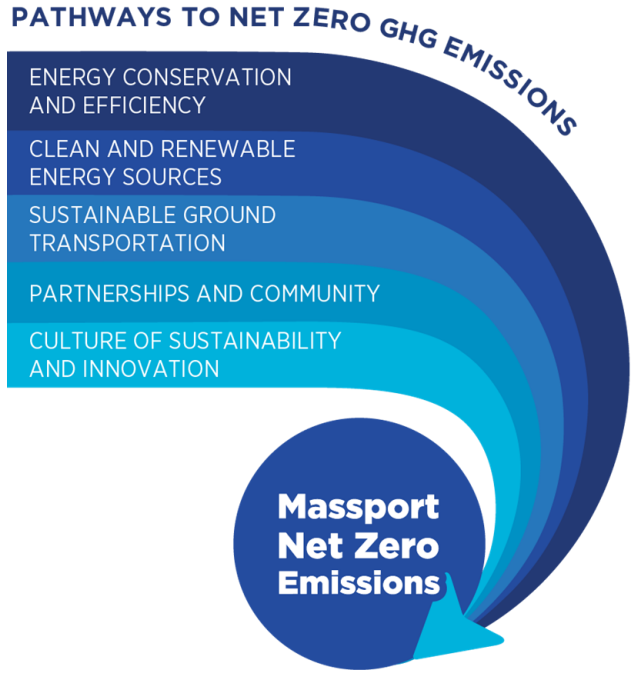
What is Massport?

- Not Just Logan!
- 3 Airports: Boston Logan (BOS), Worcester Airport (ORH), Hanscom Airfield (BED)
- Flynn Cruiseport
- Conley Shipping Terminal
- Numerous tenant properties in Charlestown, the Seaport & S. Boston, plus over 30 acres of parklands!

Massport's goal is to be Net Zero by 2031 – 75th Anniversary

NET ZERO Definition for the assignment:

Massport-controlled greenhouse gas emissions are zero due to carbon reduction achieved through electrification of buildings and equipment, onsite energy efficiency and renewable energy generation, purchase of green power. and emission offsets, if required for any remaining emissions

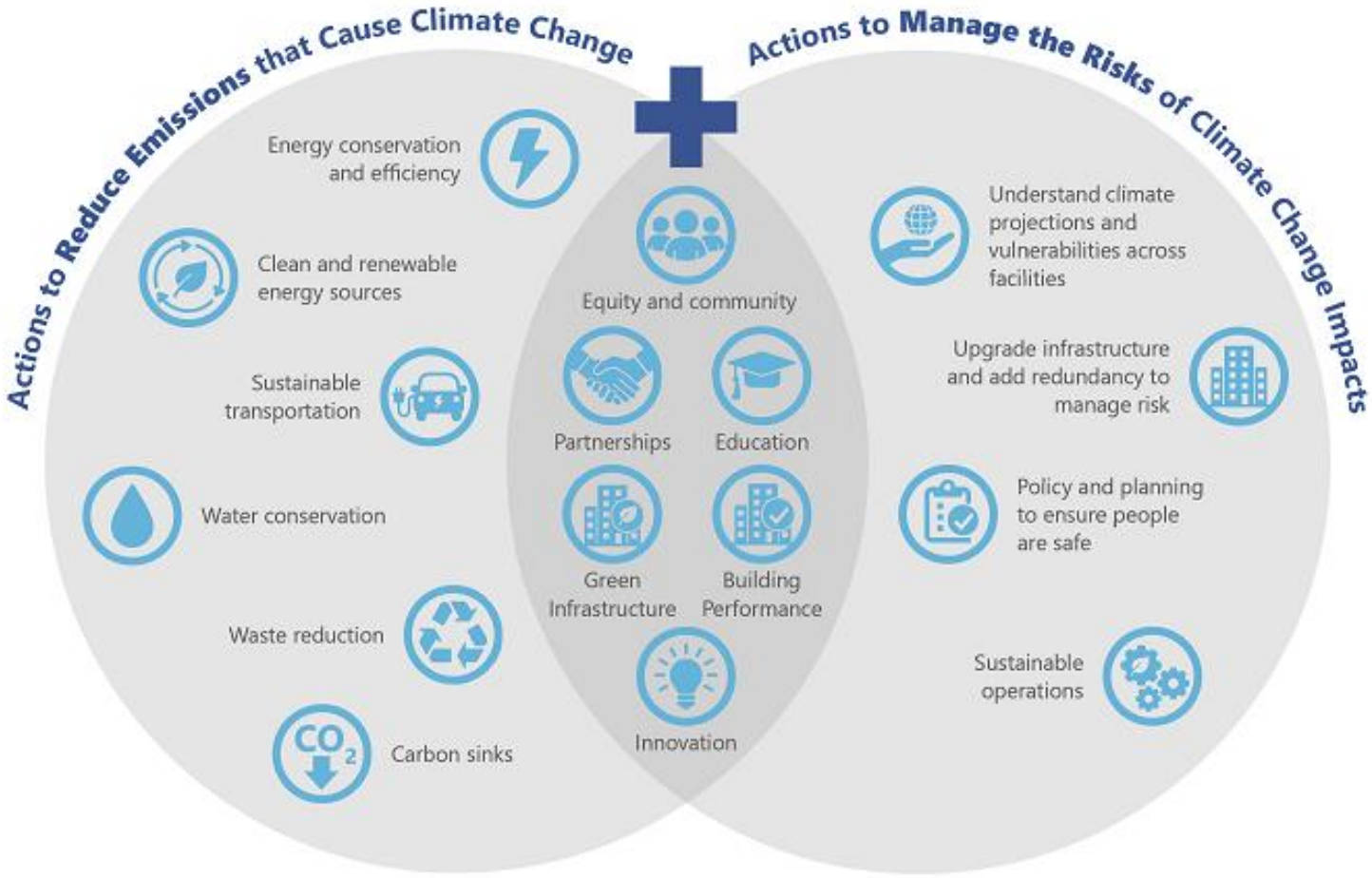


Scopes 1 & 2: Massport Controlled – 12.5% of total emissions

Scope 3: Massport Potentially Influenced – 87.5% of total emissions

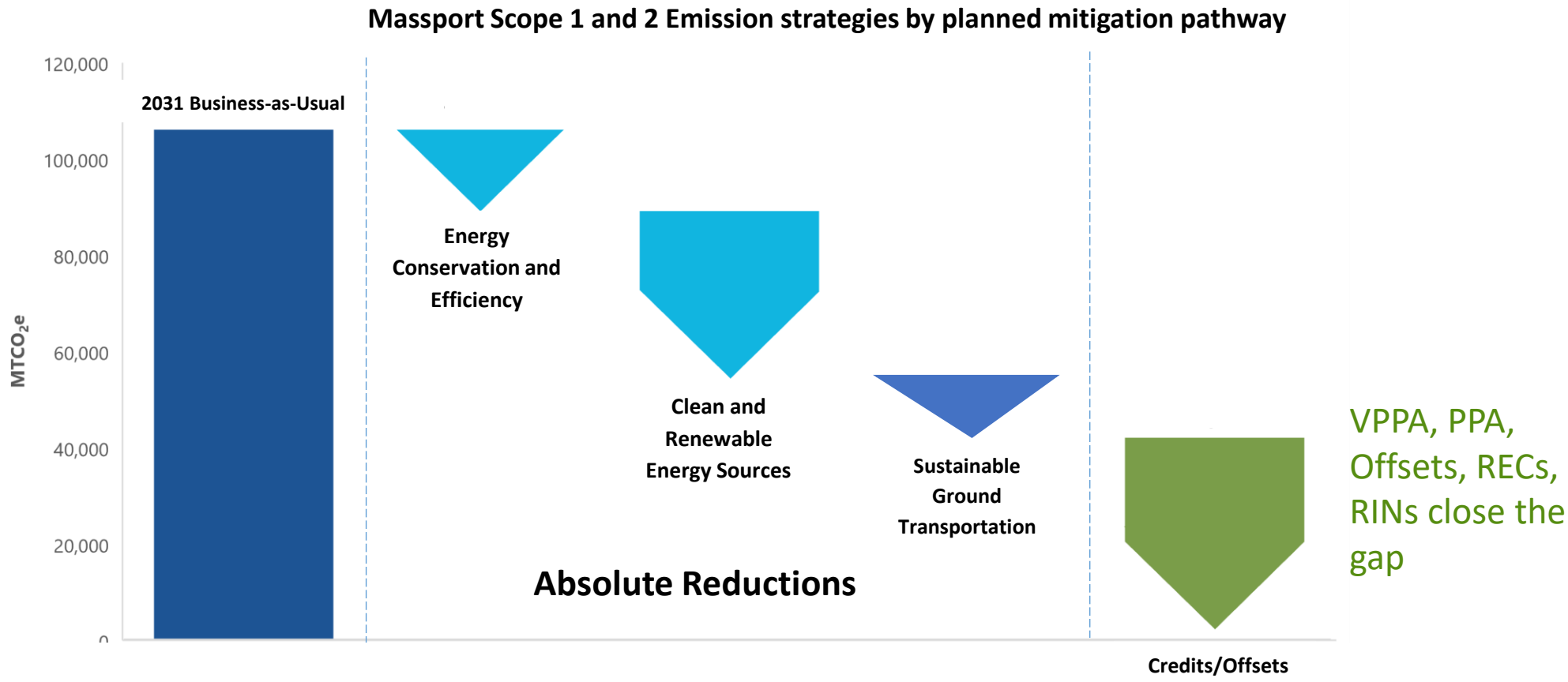
Net Zero Roadmap is a component of a broader Authority-wide *Climate Action Plan*

Reducing GHG emissions to net zero



Preparing for Climate Change Impacts

The goal of Massport-controlled (Scope 1 & 2) net zero GHG in 2031 is achievable, but some offsets are necessary



VPPA, PPA, Offsets, RECs, RINs close the gap

Net Zero Effort is CEO Led and Supported by Highest Leadership

Lisa Weiland

CEO

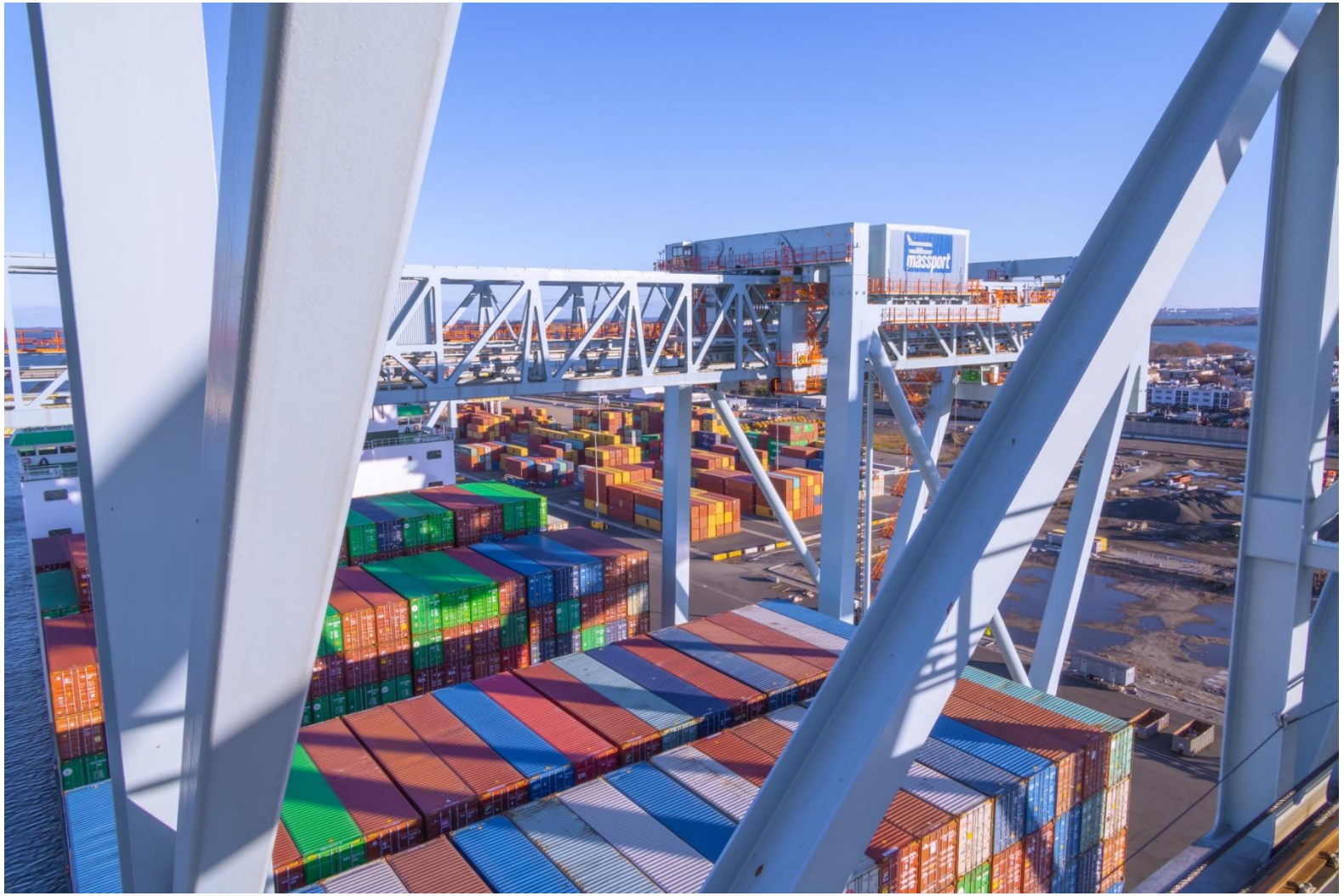
Luciana Burdi

Executive Director of Capital Programs and Environmental Affairs

Engagement Process

- Authority-Wide Engagement came from the top down and allowed us to reach across every facet of the organization.
- Ultimately strong leadership was the biggest area of success for us.
- Easier to get buy-in from all stakeholders when the highest levels of the organization support it.
- Leadership delegated to a cross-department team to develop the net zero plan with consultant support.
- Net Zero Plan was written during COVID when the organization was shut down and travel stopped.
- Allowed for a deep look into the organizations processes and goals.
- Was a deep focus on managing costs and environmental benefits jointly.

Thank You and Questions



Discussion and Questions

Putting the Pieces Together for Societal Change

State Entity Action

Internal Behavior Change

Behavior Change at Home

d Buy-in Support Climate Action

Bringing it Home: Supporting Sustainable Behaviors Beyond the Workplace

CELEBRATING 40 YEARS

Drive Green Overview

By: Devan DiLibero, EV Program Coordinator

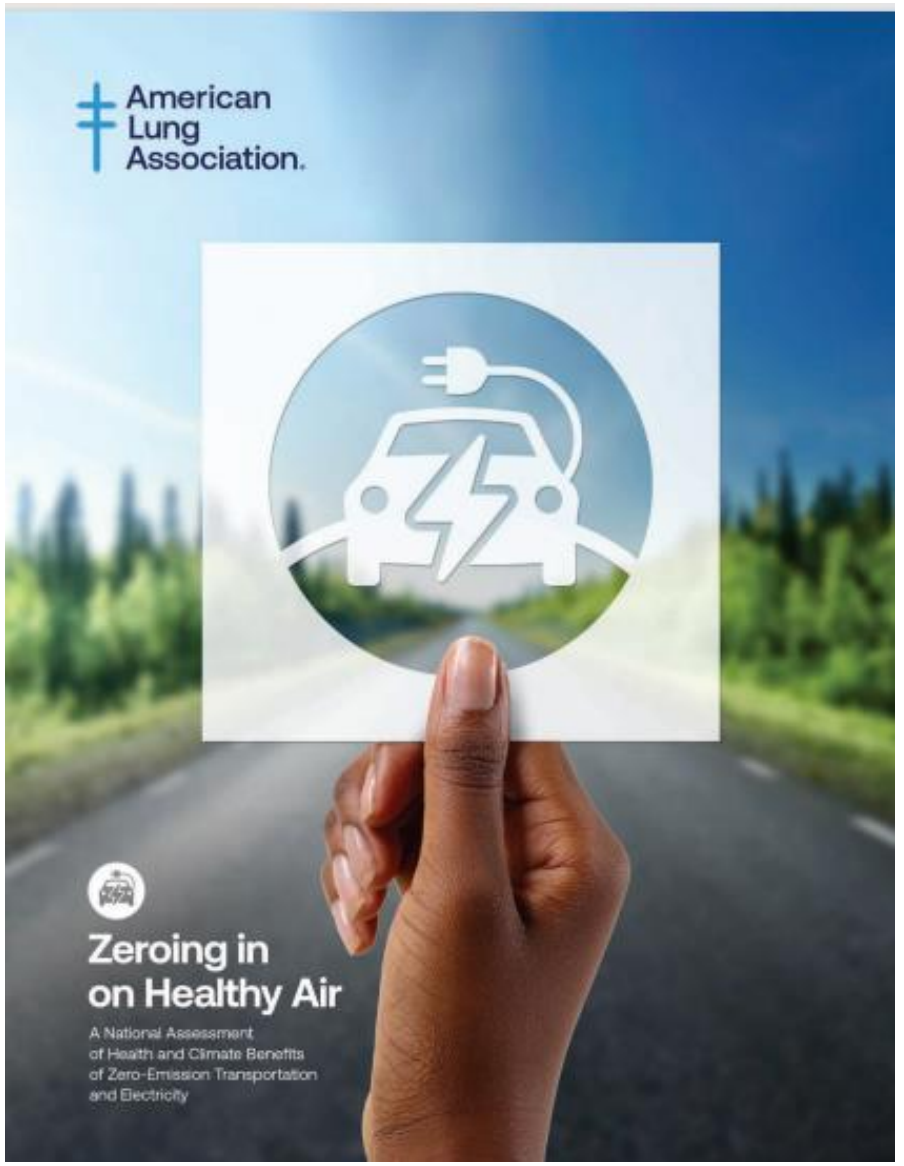
July 19, 2022

What we'll cover.

1. Why did we create Drive Green?
2. What is Drive Green? – Education & EV Shopping Tool
3. Electric Vehicle Incentives

Why did we create Drive Green?

- GHG Emissions
- Public Health
- Efficiency
- Lower Fuel & Maintenance Costs



What is Drive Green? - Education

Drive Green

Learn about electric cars and get support to switch.

Learn About Electric Cars

Introduction to EVs

Charging & Driving

What Do Electric Cars Cost?

Savings & Incentives

Pre-Owned EVs

Environment & Health

Education

Charging & Driving

Charging Basics

Charging is easier than you probably think. Here's everything you need to know. **Read more...**

Batteries & Safety

EV batteries will last as long as the car and modern EVs are some of the safest cars around. **Read more...**

Winter Driving

EVs can handle whatever a New England winter can throw at them. **Read more...**

Charging At Home & On The Go

Most EV drivers charge at home, but public charging networks are improving all the time, too. **Read more...**

What is Drive Green? – EV Shopping Tool

- Drive Green's shift from a discount model to a pre-order shopping tool.
- Pre-owned and new cars!
- Read our blog! – It's Really Hard to Find An Electric Car Right Now

EV Shopping Tool

Step 1:
Compare The Cars

Current State: MA ✔ New | Pre-owned

Sort by

Program eligibility

☐ **In our program**

Type

☐ Battery electric
☐ Plug-in hybrid

Electric range

☐ 200 or more miles
☐ 100 or more miles
☐ 50 or more miles

Base MSRP

☐ Less than $30,000
☐ $30,001 - $40,000

Cars In Our Program 8 results

AVAILABLE FOR PREORDER

Visit Nissan's website

2022 Nissan Ariya

Vehicle Type Battery electric SUV	*Range* 300 mi/charge	*Drive* FWD/AWD
Efficiency 99 MPGe	*Battery size* 63 or 87 kWh	*Towing Capabilities* 1500 lbs
Level II Charging	*Rate* 22 kW	*Speed* 60 mi/hr charging
DC Fast Charging Standard	*Rate* 130 kW	*Plug type* J1772/CCS Combo

Base MSRP
$47,125

Federal tax credit
$7,500

MA state rebate
$2,500

Price after incentives
$35,950

☐ Select car

Incentives

Individual Incentives	Public Entities
Federal Tax Credit	MOR-EV Truck
MA State MOR-EV Rebate	MassEVIP
	Make Ready Programs – National Grid & Eversource

Questions?

Devan DiLibero
Electric Vehicle Program Coordinator
Devan@greenenergyconsumers.org

Thank You!

Join the
Drive Green Face
book
Community
Group

Follow us
on Instagram

Sign up for the
Drive Green
Newsletter

Sign the Pledge
that your next
car will be electric

Creating a Clean, Affordable and Resilient Energy Future for the Commonwealth

DOER
Massachusetts Department of Energy Resources

Residential Solar Installations: Things To Know

July 19, 2022

Things To Consider When Considering Solar

- Is the building a likely candidate for solar – shading, condition of the roof, building's age. In rare cases, interconnection issues.
- Ownership model – Direct Ownership versus Power Purchase Agreement (PPA) or Solar Lease. Incentives such as tax credits are only available in the direct ownership model.
- Selecting an installer. National versus local. Many installers will only do either Direct ownership or PPAs based on their affiliation and backing. Shop around before making a decision.
- Is Solar + Storage an option, i.e. should you get a battery system?
- If a Solar system won't work, is Community Solar an option?

Incentives for Residential Solar

- The Solar Massachusetts Target (SMART) program provides direct payments from your utility based on the solar system's production.
- Many residential solar installations will be eligible for net-metering or Alternative On-bill Credits, which generates bill credits when a system is producing more than the home is using.
- Federal tax credit of 26% for systems in service before 1/01/23, 22% for systems in service after 12/31/2022 and before 1/01/24.
- Mass. Personal Income Tax Credit of up to 15% of system cost, up to $1000.
- Mass. Sales Tax and Property Tax exemptions.

Massachusetts SMART Program

- The Solar Massachusetts Target (SMART) program was authorized by a DPU decision in 2018.
- DOER oversees the program through their regulations and guidelines and has final approval on all applications.
- The program is administered by the three major utilities. CLEAResult runs the day-to-day application and customer service process.
- Customers of Municipal Light plants are not eligible for the SMART program.

SMART Program
How to apply and what do you get

- The online application process is managed by CLEAResult – masmartsolar.com
- Application should be submitted by the installer, not the homeowner.
- Small systems below 25kW have a streamlined application process
- Once the system receives final approval, system owner receives incentive payments based on system production and tariff rates.
- Incentive payments are based on a declining block structure, depending on the utility block the system is placed in.

PLEASE NOTE - Due to higher electricity rates and the declining incentive structure of the SMART program, some applications may receive an incentive payment rate of $0.00. Please see Notice at https://www.mass.gov/doc/declining-smart-incentive-rates/download

Links

- SMART program portal - https://masmartsolar.com/
- DOER SMART program webpage - https://www.mass.gov/info-details/solar-massachusetts-renewable-target-smart-program
- Declining Rate notification - https://www.mass.gov/doc/declining-smart-incentive-rates/download
- MassCEC Solar website - https://goclean.masscec.com/clean-energy-solutions/solar-electricity/
- MassCEC Residential Solar Guide https://goclean.masscec.com/downloads/MassCEC-Residential-Solar-GUIDE.pdf
- DPU Net Metering webpage - https://www.mass.gov/guides/net-metering-guide

July 19, 2022

Katelyn Mazuera
Eversource

Residential Efficiency: 2022-2024 Plan Updates

WE ARE MASS SAVE®:

BERKSHIRE GAS An AVANGRID Company

Cape Light Compact

EVERSOURCE

Liberty

nationalgrid

Unitil

mass save®

Together, we make good happen for Massachusetts.

Your local electric and natural gas utilities and energy efficiency service provider are taking strides in energy efficiency: Berkshire Gas, Cape Light Compact, Eversource, Liberty Utilities, National Grid and Unitil.

As one, we form Mass Save®, with the common goal of helping residents and businesses across Massachusetts save money and energy, leading our state to a clean and energy efficient future.

WE ARE MASS SAVE®:

BERKSHIRE GAS
An AVANGRID Company

Cape Light Compact

EVERSOURCE

Liberty

nationalgrid

Unitil

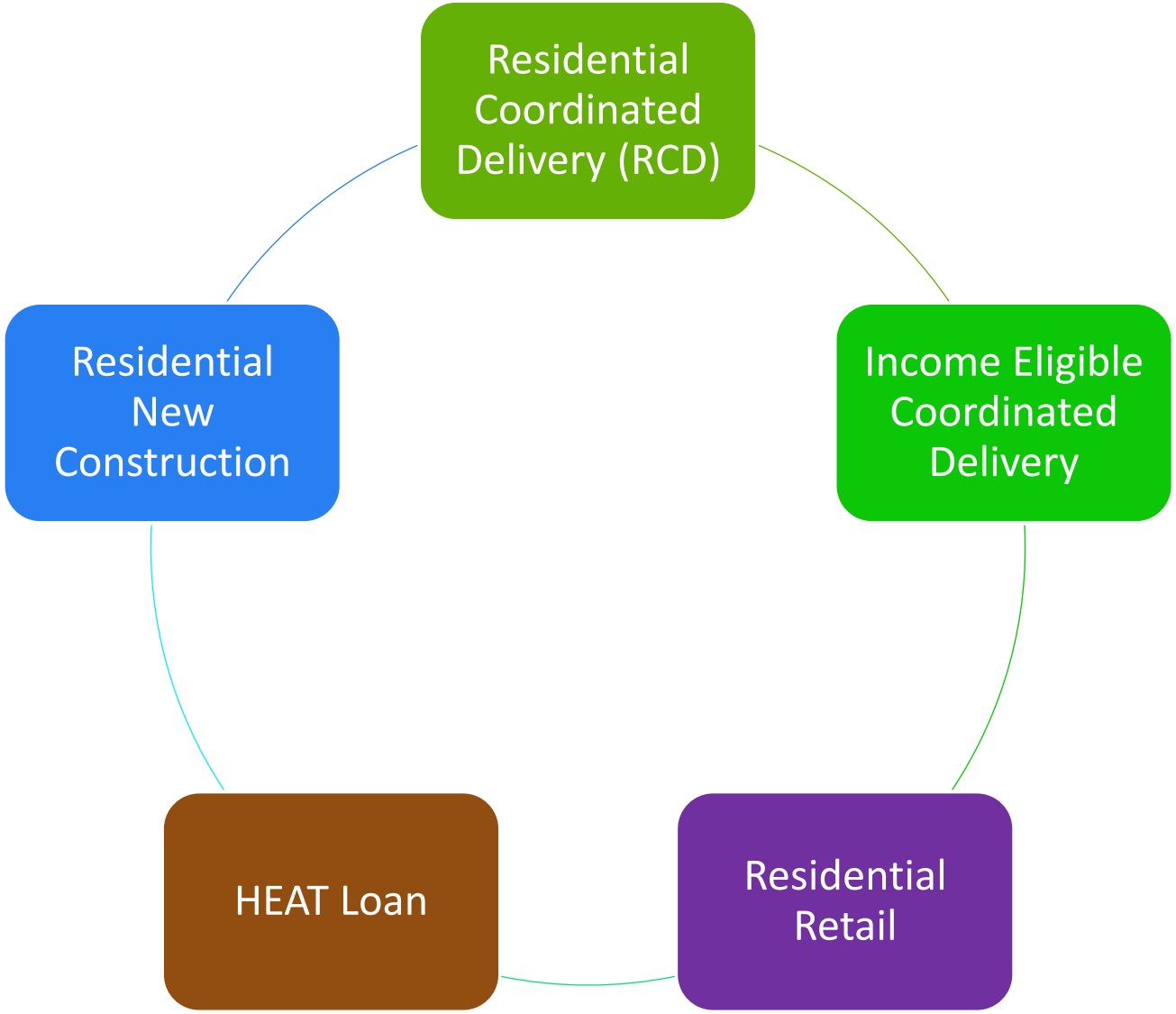
2022-2024 Energy Efficiency Plan Priorities

Equitable Service

Strategic Electrification

Workforce Development

Residential Offers



Incentives Available

Measure	Standard Incentive (80+% SMI)	Enhanced Incentive (61-80% SMI)	Income Eligible (<60 %SMI)
Weatherization	75% Incentive 100% Incentive for Renters & Whole Building	100% Incentive	100% Incentive
Pre-Weatherization Barrier Clearing	$250 Incentive $10,000 Financing	$7,000 Incentive Financing Available	100% Incentive
Oil & Propane Boilers & Furnaces*	Up to $2,300 rebate	Up to $6,000	100% Incentive Pending site specific evaluation and recommendations
Gas Boilers & Furnaces*	Up to $2,750 rebate	Furnaces up to $6,500 rebate Boilers up to $7,300 rebate (combo water heater)	
Air Source Heat Pumps*^	Up to $10,000 rebate for partial or full displacement	$8,000 rebate for partial displacement $16,000 rebate for full displacement	
Air to Water Heat Pumps*^	$10,000 rebate	$15,000 rebate	
Ground Source & Air to Water Heat Pumps*^	Up to $15,000 rebate for partial or full displacement	Up to $30,000 rebate	
0% Financing - HEAT Loan			

**Installation of recommended weatherization is required to receive these incentives*

^Cape Light Compact Moderate Income Heat Pump Rebate amounts differ from the statewide offer and are 80% of installed costs

Supporting Electrification

Robust Incentives

Heating & Cooling Consultations

Heating & Cooling Calculator

Residential Heat Pump Installer Network

Community Developments

Community First Partnership

Education Grants

Workforce Development

mass save

Thanks for listening.

WE ARE MASS SAVE*:

BERKSHIRE GAS
An AVANGRID Company

Cape Light Compact

EVERSOURCE

Liberty

nationalgrid

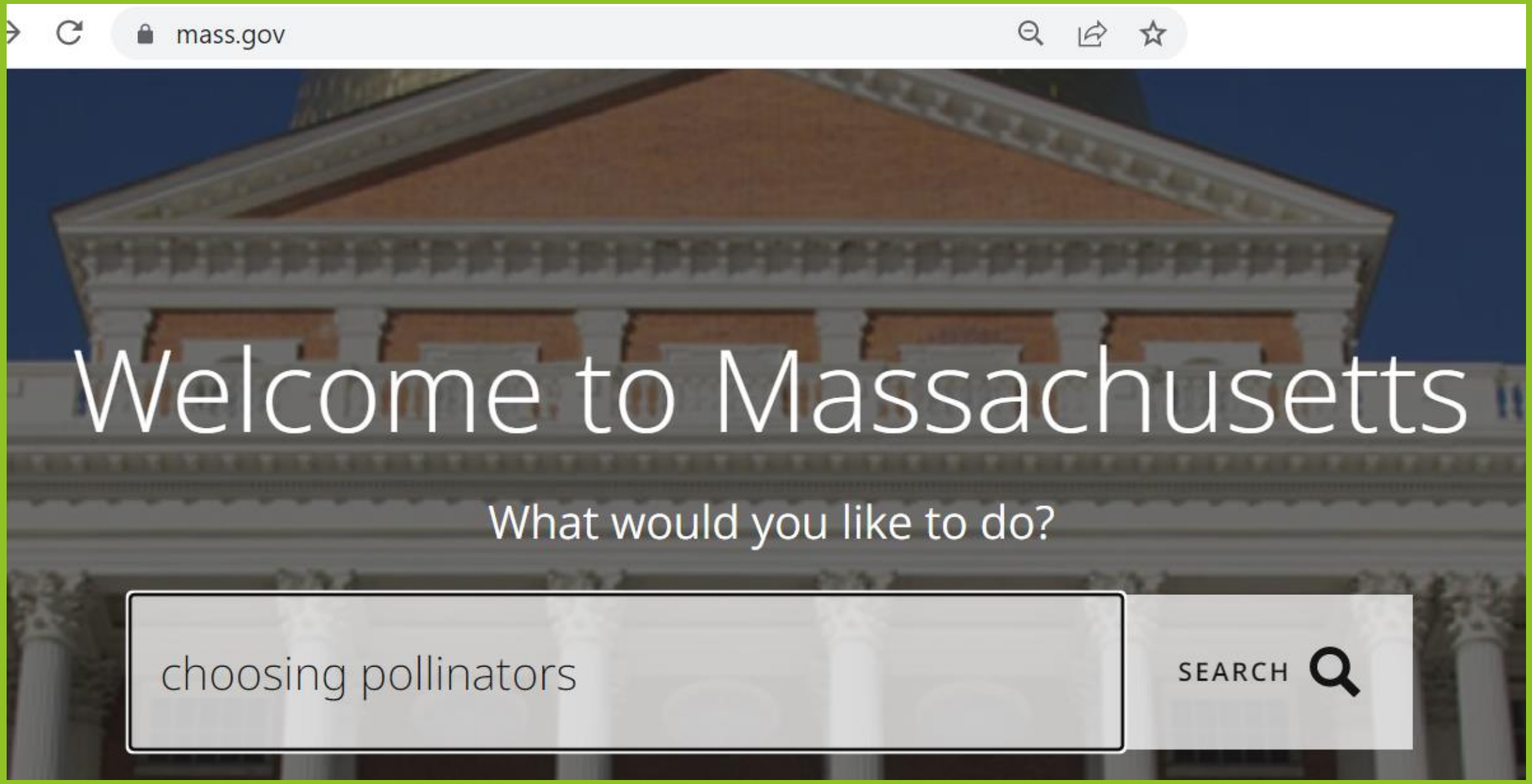
Unitil

CHOOSING POLLINATORS:

STATE RESOURCES TO PROMOTE NATIVE POLLINATOR GARDENING

Jennifer Forman Orth
Environmental Biologist
Mass. Department of Agricultural Resources

MDAR
MASSACHUSETTS DEPARTMENT OF AGRICULTURAL RESOURCES


mass.gov
Welcome to Massachusetts
What would you like to do?
choosing pollinators
SEARCH

OFFERED BY Massachusetts Department of Agricultural Resources | Massachusetts Grown...and Fresher!

Choosing Pollinator-Friendly Native Plants in Home Gardening or Landscaping

Tools for developing pollinator-friendly landscapes using native plant species

CONTACT

Jennifer Forman Orth

Phone

Online and Downloadable Resources

- Creating Pollinator-Friendly Gardens with Native Plants: Locally Available Options: Searchable List (NEW!) or Printable Version
- Cape Cod Native Plant Selector (from the Association to Preserve Cape Cod)
- Garden Centers and Nurseries that sell Native Plants
- Growing Wild Massachusetts (from DCR)
- Landscape design toolkits to support pollinators in the Connecticut River Valley (from Pollinate Northampton!)
- Landscaping with Native Plants on Nantucket (from the Nantucket Biodiversity Initiative)
- Massachusetts Native Plants and Pollinators Poster
- Native Plants Recommendations for Plymouth County (from SEMPBA)

Upcoming Events:

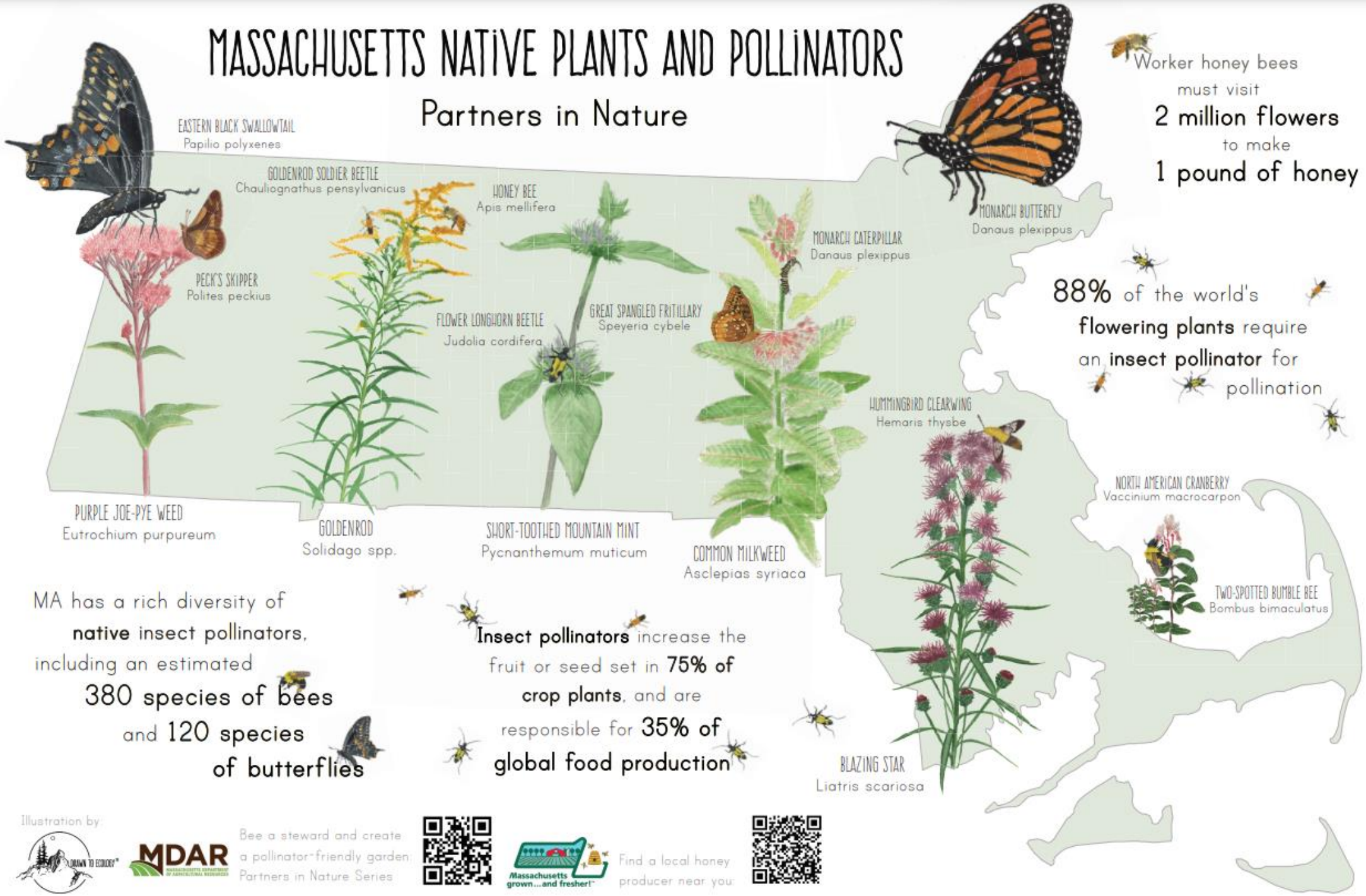
- 8/23/2022 Webinar: **Building a Better Monarch Butterfly Garden** (Horticultural Research Institute, **tHRIve series**)

Archived Events:

- **MAPN Seminar: NRCS Program for Construction Pollinator Habitat with Xerces Society & NRCS** (Mass. Pollinator Network)
- **Managing Pests While Protecting Pollinators**, Emily May, Xerces Society (Massachusetts Pollinator Network)
- **Project Wingspan Pollinator Habitat Technical Training Workshop Series**, free 5-part webinar (Pollinator Partnership)
- Lexington Nature Speaker Series, Dr. Robert Gegear: **More than Just the Buzz: Using native plant-pollinator systems**

MASSACHUSETTS NATIVE PLANTS AND POLLINATORS

Partners in Nature



Worker honey bees must visit **2 million flowers** to make **1 pound of honey**

88% of the world's **flowering plants** require an **insect pollinator** for pollination

MA has a rich diversity of **native** insect pollinators, including an estimated **380 species of bees** and **120 species of butterflies**

Insect pollinators increase the fruit or seed set in **75% of crop plants**, and are responsible for **35% of global food production**

Illustration by:

Bee a steward and create a pollinator-friendly garden: Partners in Nature Series

Find a local honey producer near you:

CREATING POLLINATOR-FRIENDLY GARDENS WITH NATIVE PLANTS: LOCALLY-AVAILABLE OPTIONS

Interested in improving pollinator resources on your property? The Massachusetts Department of Agricultural Resources has developed this list of native plant species commonly available at local nurseries. It includes basic information about flower color, light and soil moisture requirements, and flowering time, so that you can create habitat that supports a wide variety of insects.

Tips:

- Each section is organized by flowering season - choose a suite of species that provide pollinator resources in spring, summer, and fall
- Place plants in sweeps (several of the same species planted along a curve) to make it easier for pollinators to find the plants they prefer
- Support the greatest diversity of pollinator insects by selecting a variety of flower colors, shapes, and sizes
- If you are looking for true native species, stick with the plants that have a checkmark in the "Native to New England" column
- Need help determining the species that will grow best on your property, or have other questions? Consult with your local nursery or landscaper

PERENNIALS

Name	Flower Color	Light	Moisture	Flowering Time	Native to New England	Native to Northeast
Allegheny spurge (*Pachysandra procumbens*)	white	☀ ☀	💧 💧	spring	✓	✓
bloodroot (*Sanguinaria canadensis*)	white, pink	☀ ☀	💧 💧	spring	✓	✓
Canada wild ginger (*Asarum canadense*)	brown	☀ ☀	💧 💧	spring	✓	✓
golden star (*Chrysogonum virginianum*)	yellow	☀ ☀ ☀	💧 💧	spring		✓
marsh marigold (*Caltha palustris*)	yellow	☀ ☀ ☀	💧 💧	spring	✓	✓
moss pink (*Phlox subulata*)	white, blue, pink, red	☀ ☀	💧 💧	spring		✓
red columbine (*Aquilegia canadensis*)	red, yellow, pink	☀ ☀	💧 💧	spring	✓	✓
wild blue phlox (*Phlox divaricata*)	pink, lavender	☀ ☀	💧 💧	spring	✓	✓
creeping phlox (*Phlox stolonifera*)	purple, blue, pink	☀ ☀	💧 💧	spring, summer		✓
Culver's root (*Veronicastrum virginicum*)	white	☀ ☀	💧 💧	spring, summer	✓	✓
Eastern bluestar (*Amsonia tabernaemontana*)	blue/purple	☀ ☀	💧 💧	spring, summer	✓	✓
foam flower (*Tiarella cordifolia*)	white, pink	☀ ☀	💧	spring, summer	✓	✓
sundrops (*Oenothera fruticosa*)	yellow	☀ ☀	💧 💧	spring, summer	✓	✓
black cohosh (*Actaea racemosa*)	white, light pink	☀ ☀ ☀	💧 💧 💧	spring, summer, fall	✓	✓
fringed bleeding-heart (*Dicentra eximia*)	pink to red	☀ ☀ ☀	💧 💧 💧	spring, summer, fall		✓

Produced by the Massachusetts Department of Agricultural Resources. Last updated January 2020. mass.gov/agr

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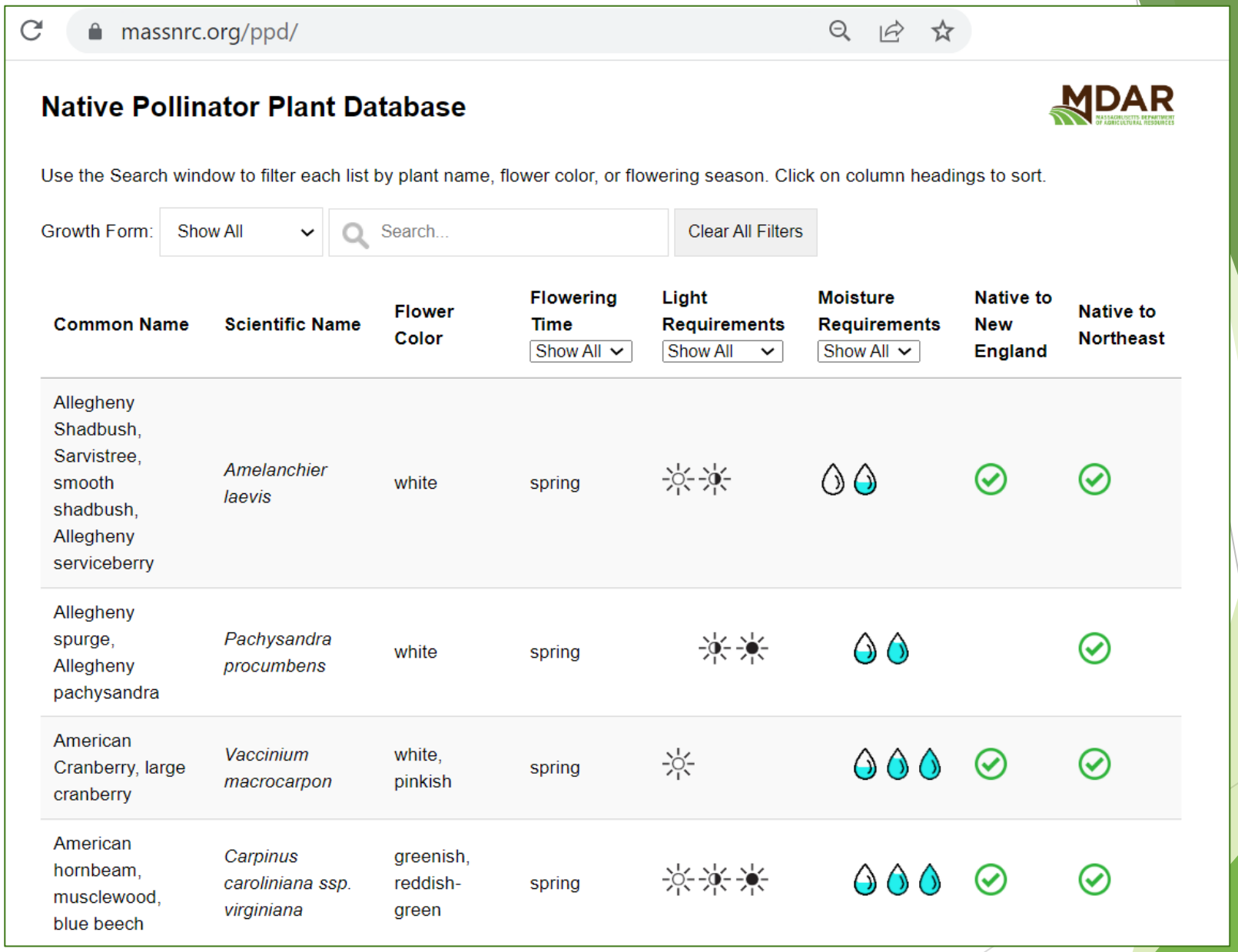


http://massnrc.org/ppd

Thank you!

Contact info:

Jennifer Forman Orth

Jennifer.Forman-Orth@mass.gov

617-626-1735

http://massnrc.org/pests

MDAR
MASSACHUSETTS DEPARTMENT OF AGRICULTURAL RESOURCES

Improving Recycling in MA

July 12, 2022

LBE Council

Janice Paré

RecycleSmartMA.org is an initiative of the Massachusetts Department of Environmental Protection

RecyclesmartMA.org

Why can’t we recycle everything?

Criteria for acceptance

(Drop-off programs may have *slightly* different rules.)

- Must not harm workers or equipment.
- Must be a shape or material the MRF (material recovery facility) equipment was designed to sort.
- Must have a consistent market.

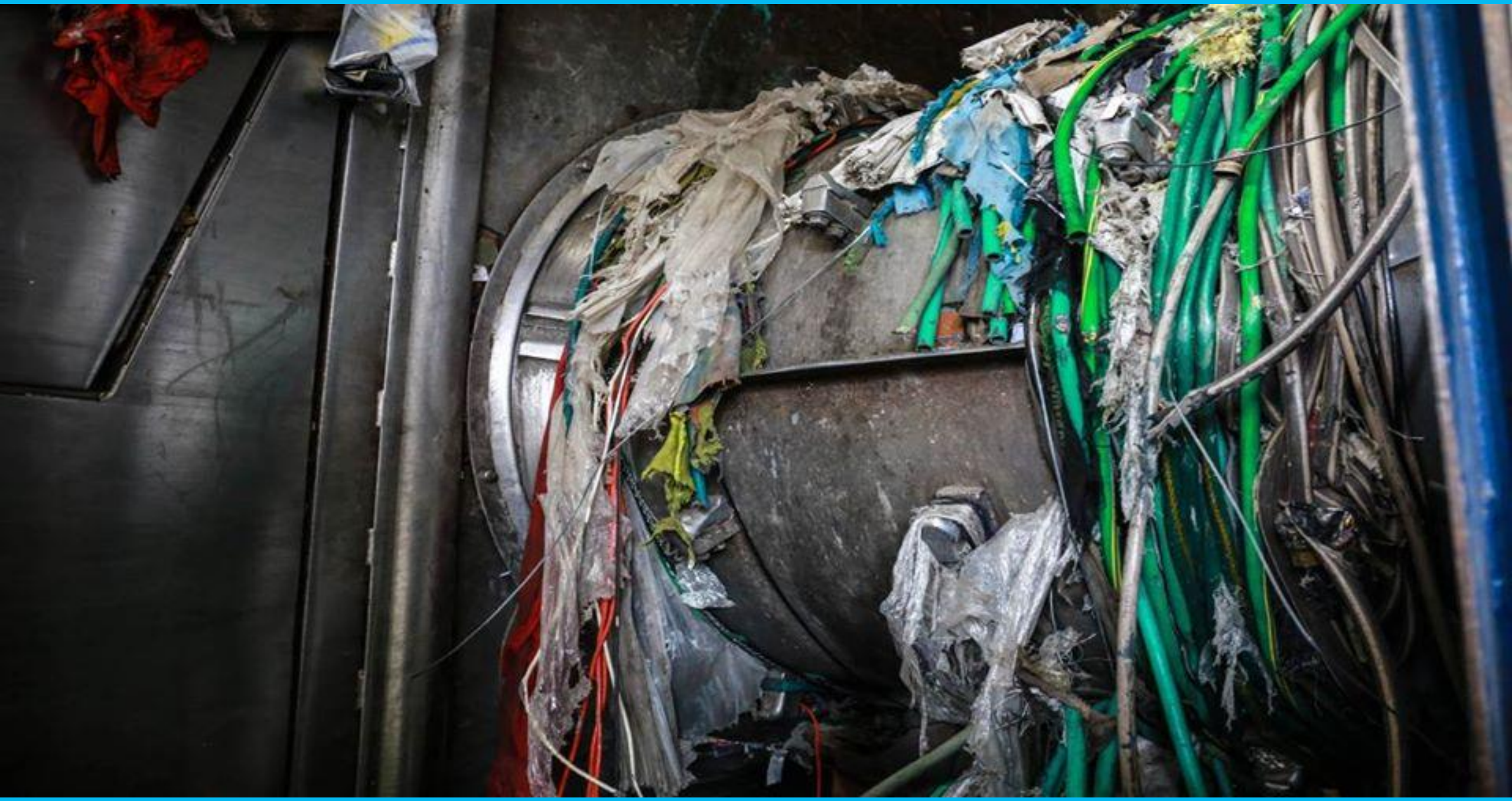
Recycle Smart

Wait,
what's
contamination?

Contamination is the wrong stuff in the bin.

(the part we have control over!)

Recycle Smart



Why should I trust Recycle Smart MA?

We ask the experts.

- We have over 40 years of collective experience in this field.
- If we don't know the answer to your inquiry, we will reach out to those who do.
- If anything changes, we will update the Recyclopedia!

Recycle Smart

Recycle Smart

Smart Recycling Guide

Your go-to reference for recycling in Massachusetts

MassDEP AN INITIATIVE OF THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

Metal

Food and Beverage Cans
empty and rinse

Plastic

Bottles, Jars, Jugs and Tubs
empty and replace cap

Glass

Bottles and Jars
empty and rinse

Paper & Cardboard

Mixed Paper, Newspaper, Magazines, Boxes
empty and flatten

NO!

Do Not Bag Recyclables
No Garbage

No Plastic Bags or Plastic Wrap
(return to retail)

No Food or Liquid
(empty all containers)

No Clothing or Linens
(use donation programs)

No Tanglers
(no hoses, wires, chains or electronics)

Recyclopedia: Can I recycle it?

Enter name of item (ex. bottle) Search

Use our online search tool at: RecycleSmartMA.org

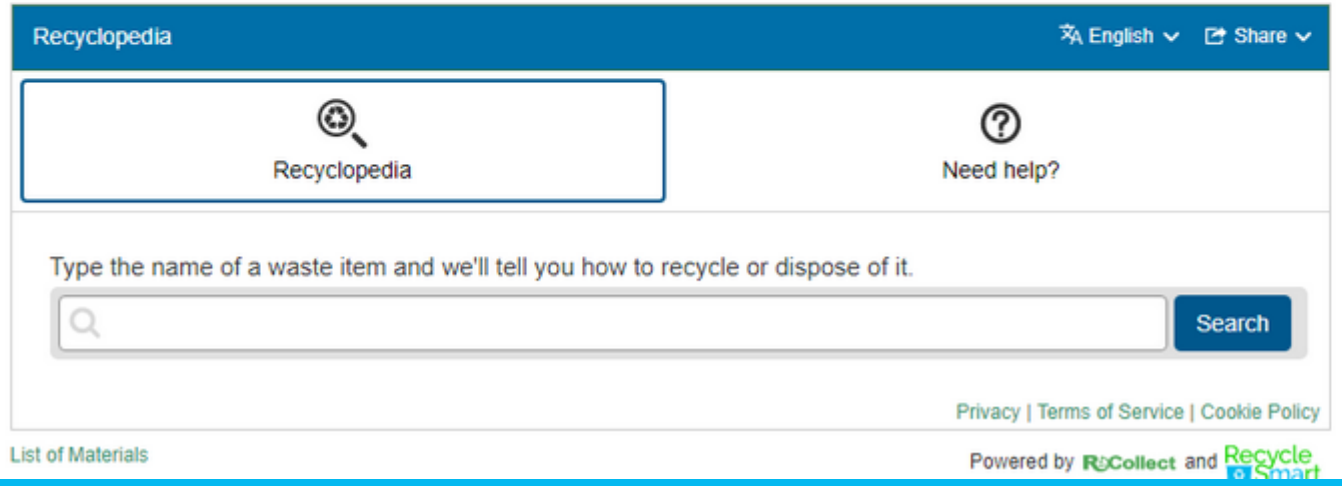
RecycleSmartMA.org

All recycling programs in Massachusetts accept the items pictured above.

Printed on Recycled Paper

What else do you offer?

RECYCLOPEDIA WIDGET



Embed the Recyclopedia widget directly on your organization's website. The widget allows anyone who visits your website to search hundreds of common items (from paper bags to pizza boxes) to find out if they belong in the recycling bin or elsewhere.

For more information on how to embed the widget, please email us at RecycleSmartMA@mass.gov.

NEWSLETTERS

Wish you could go back in time and catch up on the Recycle Smart Newsletter? We've got you covered! Check out our collection of newsletters – each one is a deep dive into various reuse, repair, and recycling topics that are sure to get you thinking. Read, share, and let us know what you think!

View the Recycle Smart Newsletters

SOCIAL MEDIA

Help spread the word about Recycle Smart by sharing these graphics on your social media feed. Looking for a specific RSMA post but can't find it? Send us an email at RecycleSmartMA@mass.gov

DOWNLOAD FOR SOCIAL

DOWNLOAD FOR SOCIAL

DOWNLOAD FOR SOCIAL

Recycle Smart

Thanks for listening!

Follow & Share

Facebook

Twitter

Instagram

RecycleSmartMA.org

Recycle Smart

Discussion and Questions

Next LBE Council Meeting

3rd Tuesday of the month!

Save the Date!

Tentative:

Tuesday, Sept. 20th

10:00 am–12:00 pm

Upcoming Tentative Meeting Dates:

Nov 8th

Jan 10th

March 14th

Creating a Clean, Affordable and Resilient Energy Future for the Commonwealth

DOER Massachusetts Department of Energy Resources