



PERSPECTIVES: DECARBONIZATION AND CLIMATE ACTION IN COMMONWEALTH PUBLIC BUILDINGS

6.26.2024

A Conversation with
Betsy Isenstein, DCAMM Deputy Commissioner of
Facilities Management and Decarbonization
Sarah Creighton, DCAMM Climate Strategist

The document is believed to be accessible – due to the difficulty of translating presentations, if questions arise, please contact the DSB at infodsbs@mass.gov for assistance with the document



Climate Action for State Buildings

Betsy Isenstein, Deputy Commissioner Office of Facilities Management and Decarbonization

Sarah Hammond Creighton, Climate Strategist



DIVISION OF
CAPITAL ASSET
MANAGEMENT &
MAINTENANCE

Commonwealth Climate Goals

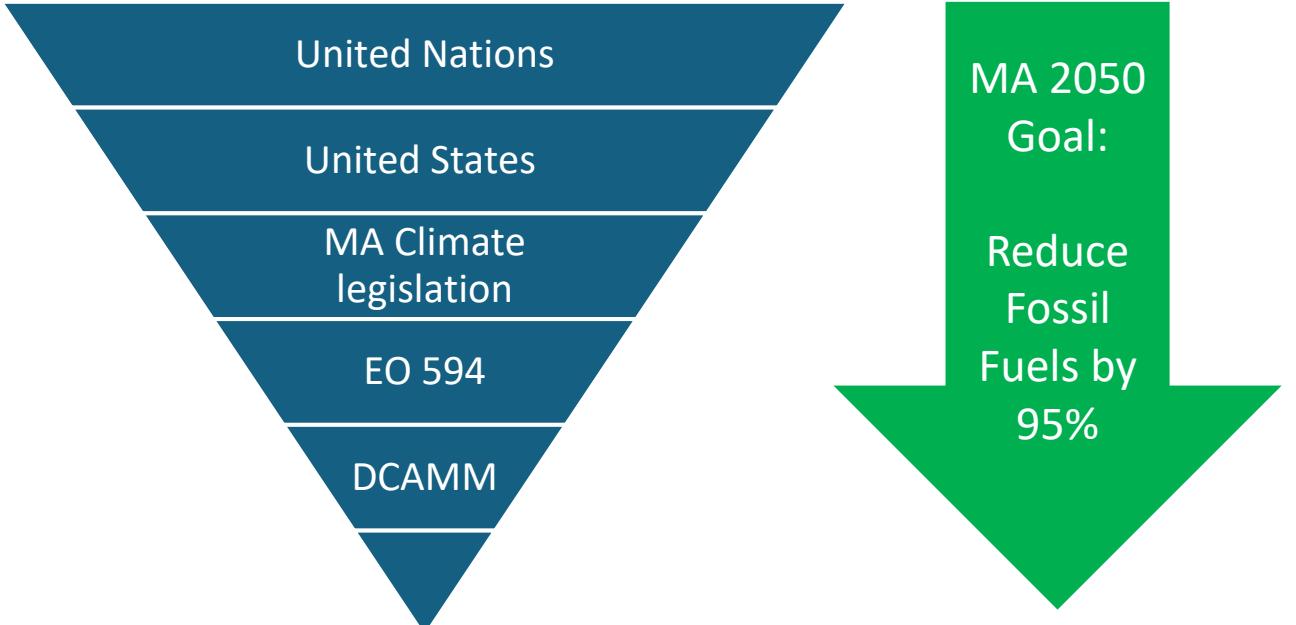


January 6, 2023

Governor Healey announces the first Massachusetts Climate Chief

“The climate crisis is Massachusetts’ greatest challenge, but there is enormous opportunity in our response,...”

Governor Healey



ZERO CARBON INITIATIVE





We work with state agencies to create and manage forward-thinking, sustainable buildings to meet the needs of the Commonwealth's citizens and help achieve a zero-carbon future.

We are partners with fellow agencies to help them meet their strategic needs with fiscally responsible building and real estate solutions.

We support the growth of the Commonwealth's economy and actively engage with private sector partners to make it easier to do business with the Commonwealth.

We work to expand access, opportunity and equity to create more inclusive services, planning and outcomes for all the citizens of the Commonwealth.

Facilities Planning

Project Delivery

Property Management

Real Estate Services

Access & Opportunity

Contractor Services



DCAMM Commitment



ZERO

**The Commonwealth's
goal approaches zero
emissions
(Exec Order 594)**



CARBON

**We focus on carbon --
especially from fossil fuels**



INITIATIVE

**This is an agency-
wide initiative**



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Decarbonization of State Buildings: a Priority

Urgent: 25 years

Expensive: \$ Billions

Opportunity: infrastructure renewal

Relies on: green, cost-effective, robust electricity

Challenges: aging infrastructure, historic buildings, and electric capacity



Lowell Justice Center – LEED Platinum



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Executive Order 594: Required

Existing Buildings

- Fossil fuel free – considered and prioritized
- Prepare for decarbonization
- Energy efficiency
- Resilient
- EV charging

New and Substantial Renovations

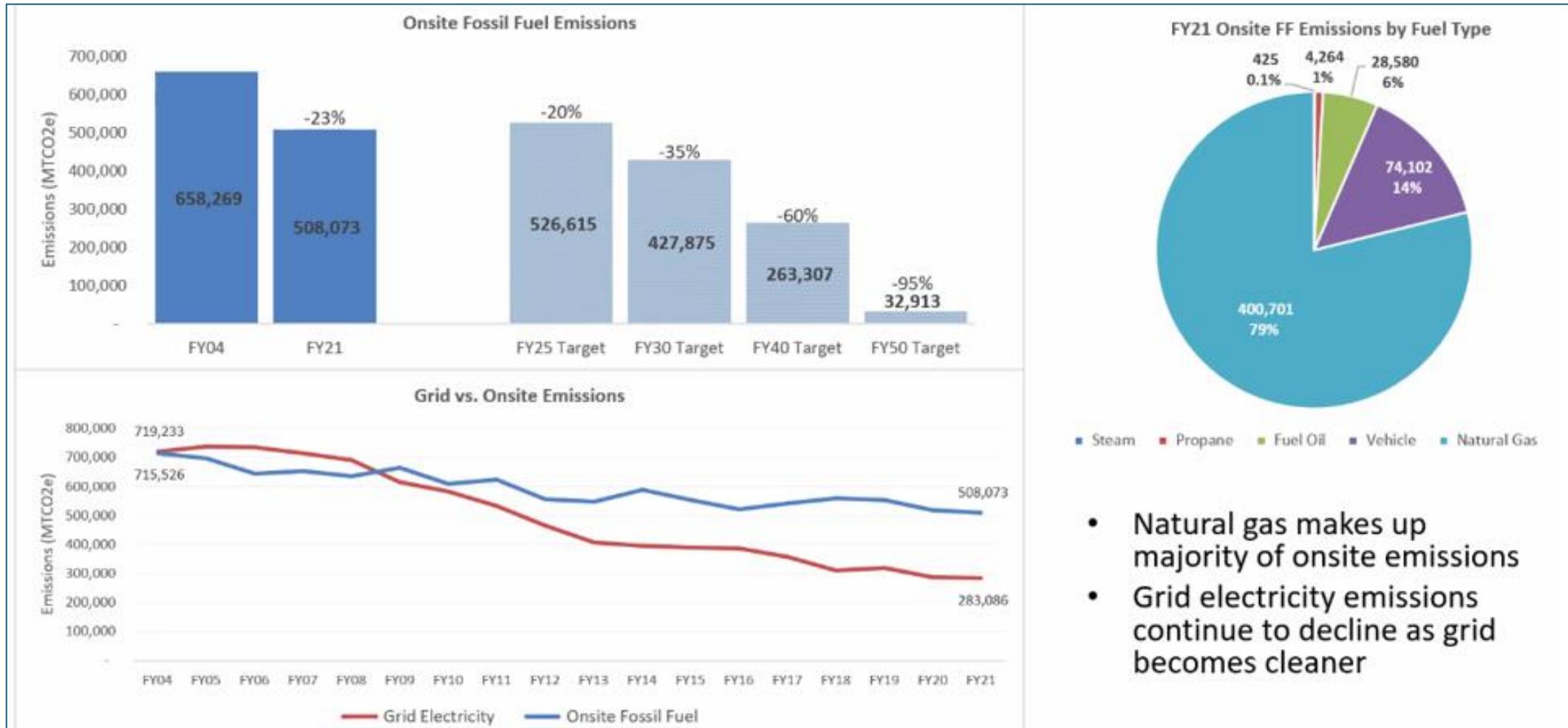
- Opt-in Stretch Code
- Fossil Fuel Free: heat, water heat, kitchen
- LEED Silver or better (certified) or Passive House
- Energy efficiency
- Solar ready
- Resilient
- EV charging



Chelsea Veterans' Community Living Center



Focus: Onsite fossil fuel emissions



Source: DOER, LBE

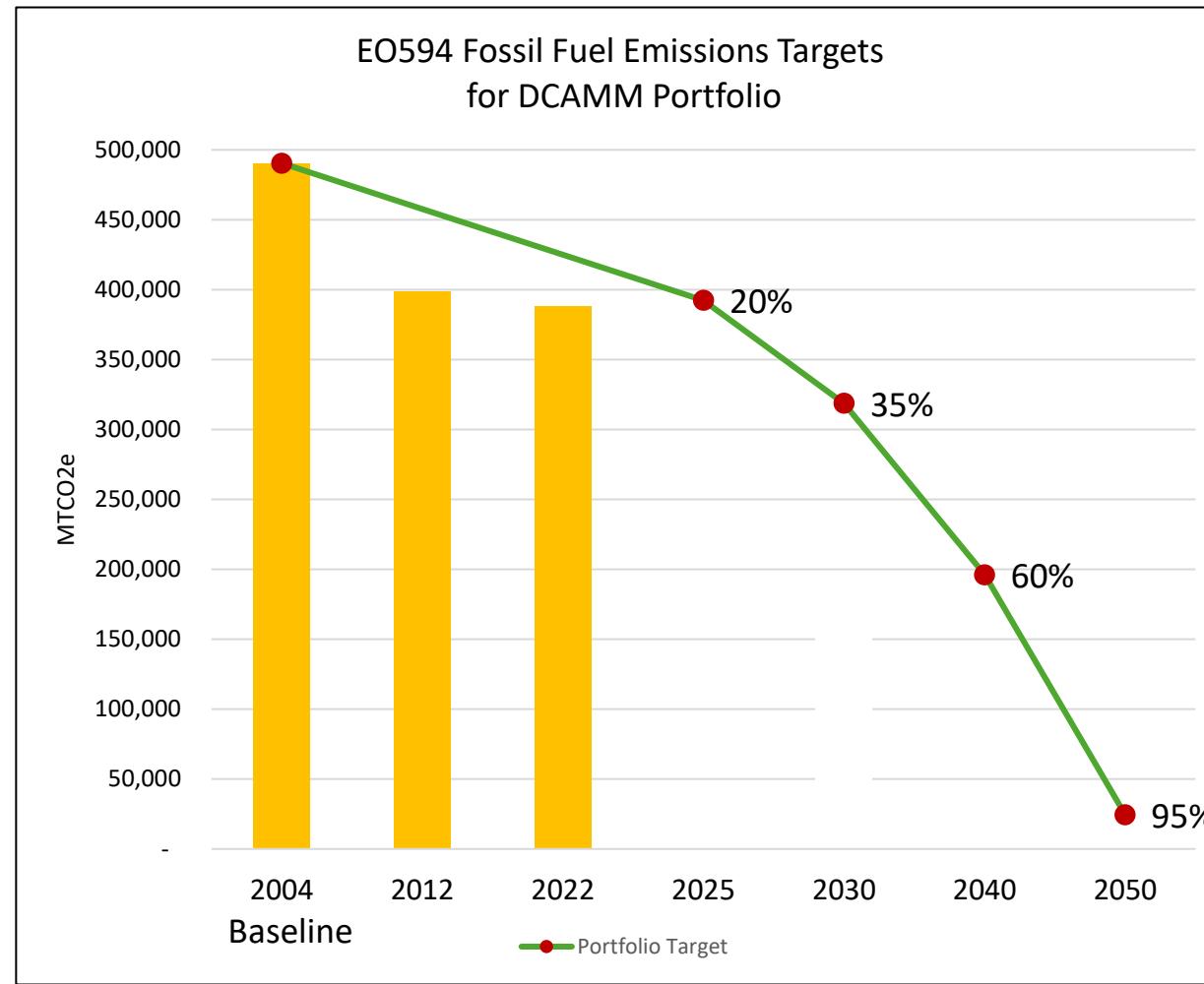
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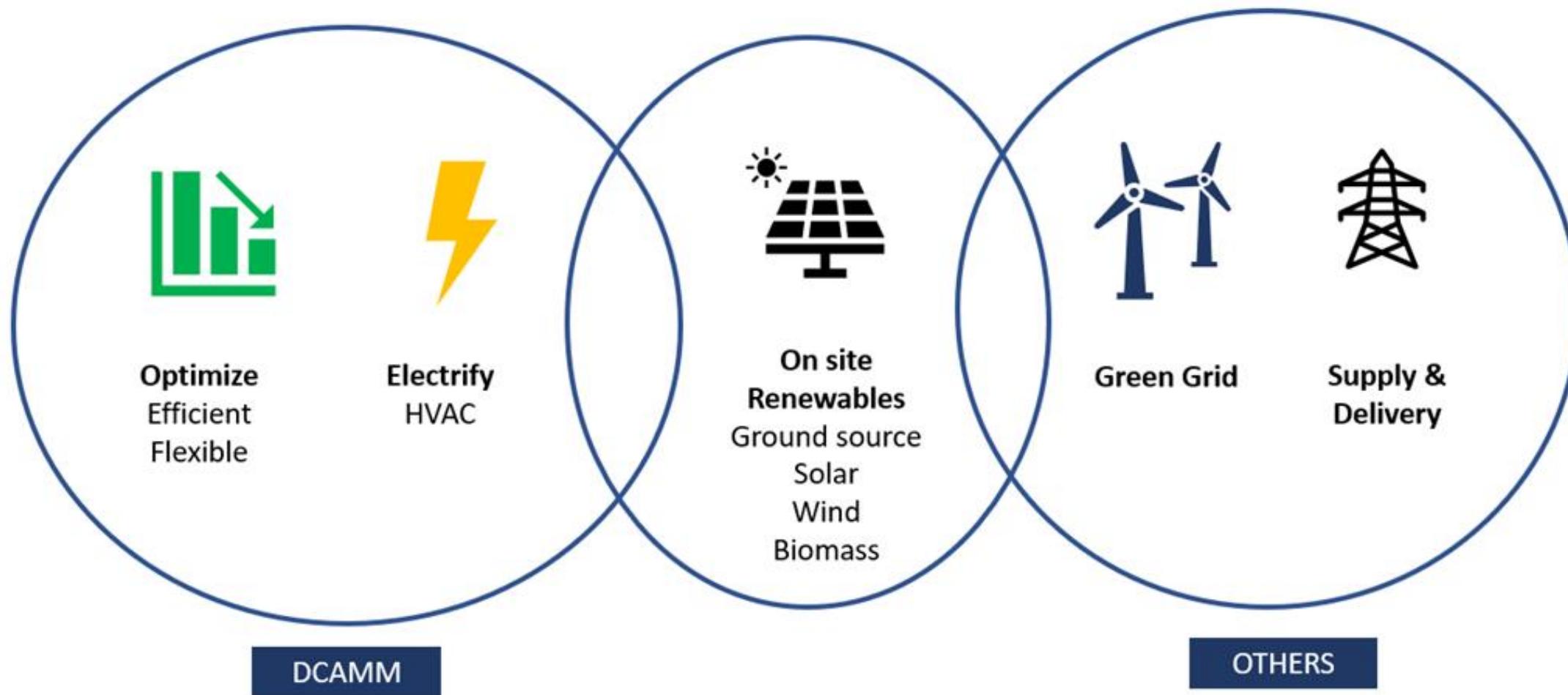
ZERO CARBON INITIATIVE



Carbon from Commonwealth Buildings



Decarbonization Strategies

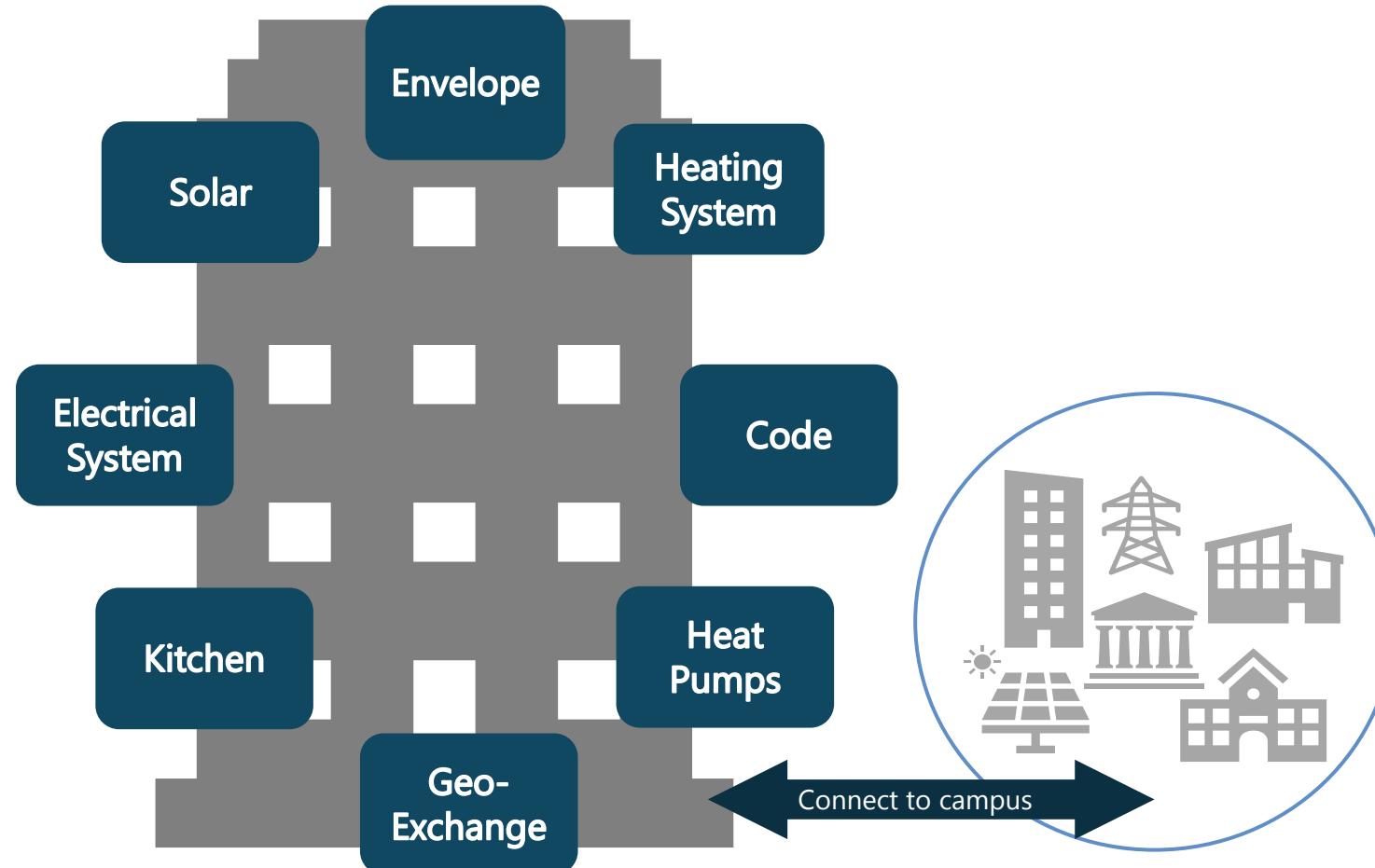


Decarbonization in DCAMM Projects

Infrastructure	Existing Buildings	New Buildings	Rightsize
Transition central plants off fossil fuels Electric infrastructure	Ready the buildings Electrify	Electrify High performance Reduce embodied carbon	Sell: retire from state portfolio Demolish: long term Require: electrification



Decarbonization is complicated



Decarbonization is possible

DCAMM progress

- Complete - 2.2 million SF fossil fuel free
- In progress - 890,000 SF off fossil fuels
- Renewables - 20,000 MWh/yr
- 1 Passive House certified
- Commissioning is standard
- Projects set EUI targets
- Low carbon concrete



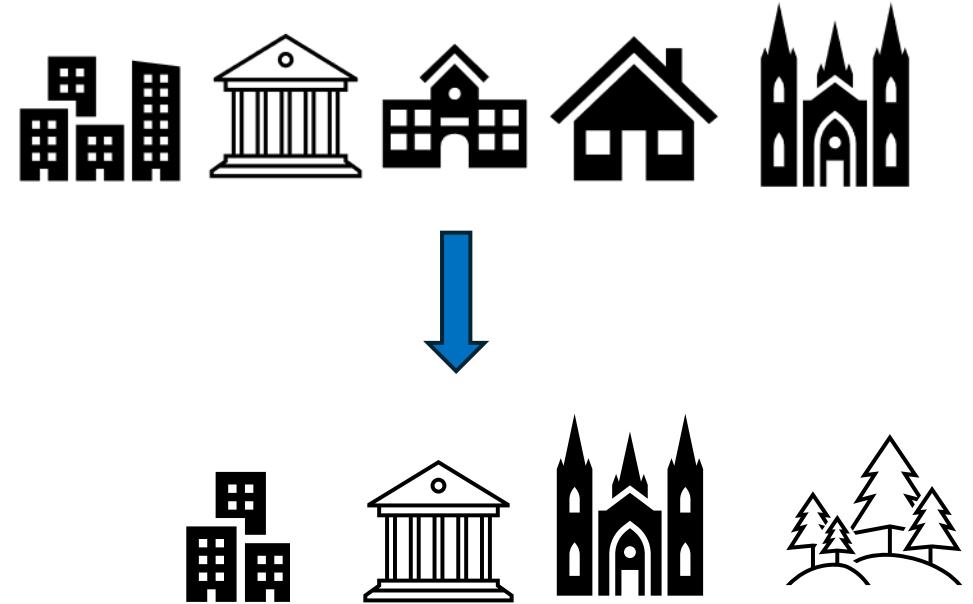
MA Fish and Wildlife Headquarters
Net Zero for 10 years!



Rightsizing

Meet the needs but not more

- Master plans
 - Sufficiency
 - Decarbonization
 - Space utilization
- Design and construction
 - Optimization
 - Programming and shared space
 - Reduce complexity
 - Material reuse
- Building reuse, demolition, partnerships



Executive Order 569: Resilience

Risks

- Extreme Precipitation
- Flooding
- Sea Level
- Extreme Heat
- Reliability

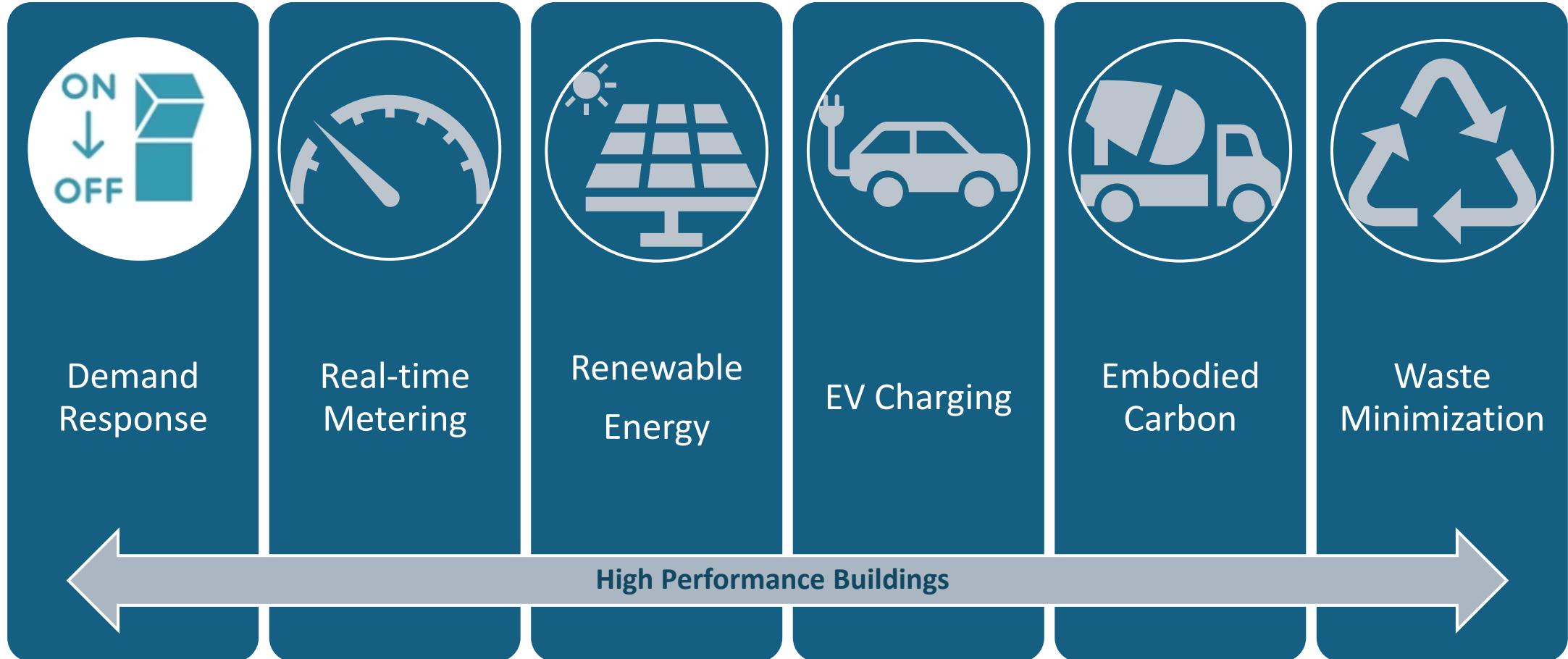
Assessed on every project

Design solutions

- Raise buildings
- Raise critical equipment
- Space conditioning
- Stormwater management



Other Opportunities



DCAMM expects

- Embrace sufficiency
- Understand energy and energy systems
- Set aggressive goals and measure progress
- Understand Exec Orders & MassSave
- Renewables need an expert
- QA/QC



MassBay Community College Health Science Building



Designer Guidelines and Procedures

DESIGN EXCELLENCE at DCAMM		
DESIGN	VALUE	STEWARDSHIP
Aesthetically pleasing, useful, and complements the surroundings	Maximize a building's long-term value	Sustainability, maintainability, wellness, safety, equity, and security
Meet programmatic needs	Sound capital investment	Maintainable, durable, safe
Design aesthetics	On budget	Carbon conscious
Inclusive	Appropriate	High performance
Efficient, flexible, functional	Rightsized	Sustainable and healthy
Minimal complexity & customization	Low operating & maintenance costs	Resilient



Never miss an opportunity

Opportunities by Project Phase				
	Study	Schematic	Design	Construction
Goals LEED, EUI, embodied carbon Track progress	✓ ✓	Track	Track	Track progress Certify LEED or PH
Resilience	✓	✓	✓	
Rightsize program & space	✓	✓		
Fossil fuel free Renewables	✓	✓ ✓	✓ ✓	
Efficient envelope Efficient systems Energy model		✓ ✓ ✓ w/LCCA	✓ ✓ ✓ w/MassSave	Envelope mockup & testing Controls and training
Commission		✓	✓	✓
Embodied carbon		✓	✓	Track submittals



The Multiplier Effect

- Continuous improvement
- Better buildings
- “New” technology becomes routine
- Increased knowledge
- Beyond state buildings



DCAMM Facilities Building, Northborough
1st Passive House certified building



Questions for Design Teams

- What high performance strategies did you pursue?
- How do you measure success?
- What have you learned in your last project?

Questions for us?



John J. Sprega Health & Science Building
Bristol Community College



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Resources

- Executive Order 594: Leading by Example...

<https://www.mass.gov/executive-orders/no-594-leading-by-example-decarbonizing-and-minimizing-environmental-impacts-of-state-government>

Guidance documents: <https://www.mass.gov/info-details/leading-by-example-executive-order-594-decarbonizing-and-minimizing-environmental-impacts-of-state-government#executive-order-guideline-documents->

- Executive Order 569

<https://www.mass.gov/executive-orders/no-569-establishing-an-integrated-climate-change-strategy-for-the-commonwealth>

- DCAMM Designer Guidelines and Procedures

<https://www.mass.gov/info-details/designer-guidelines-and-procedures>

