



GWSA Implementation Advisory Committee (IAC) Meeting

October 12, 2021 12:00PM – 2:00PM



Agenda

- Review and call to approve the 06/28/2021 IAC meeting minutes
- Sector and cross-sector updates from IAC work groups and state staff
 - Buildings Sector updates
 - Transportation Sector updates
 - Electric Sector updates
 - Land Sector updates
 - Clean energy workforce development
 - Clean Energy and Climate Plan for 2025 and 2030
- Feedback on IAC and IAC work group meetings
- Other IAC business
- Public comment

Buildings Sector Updates





PASSIVE HOUSE MULTIFAMILY PROGRESS

Presented By Beverly Craig, LEED AP

OUR MISSION

Grow the economy and help meet the state's ambitious clean energy and climate goals.



BENEFITS OF PASSIVE HOUSE DESIGN

- Ultra low energy use (40-60% better)
- Significantly lower greenhouse gas impact
- Healthier due to more fresh air, higher ventilation rates
- Better tenant experience (quieter, more comfortable, no sharing neighbors' air)
- Increased durability and quality of construction
- Improved ability to shelter in place

PASSIVE HOUSE DESIGN CHALLENGE (AUG '18)

<u>**Program:</u>** (\$1.8 million) Up to \$4k per unit for 8 affordable housing projects to build and certify to Passive standard (540 units)</u>

Interim Results: 2 occupied, 4 in construction, 2 recently broke ground. Projects reporting incremental costs ranging from 1.4% - 3.8% with average of 2.4%

Energy Monitoring: Performance of Passive House projects in Northeast confirms **40-60% energy reduction expectation**





Incremental Cost of Achieving Passive House Standard













WHY ARE INCREMENTAL COSTS LOW?

Equipment cost decrease because of more efficient building envelope: 6 out of 8 projects have significantly lower size/cost for heating and cooling equipment

Largest incremental costs:

- Much better ventilation
- Higher level of construction verification



MASS SAVE PROGRAM



Savings through energy efficiency

Passive House Multifamily Incentive

Pre-construction planning incentives

• \$3K per unit

Enrolled Projects

- 86 Buildings
- 5000+ Units

Passive House Education

- 48 Workshops/Lunch and Learns
- 1600+ Attendees

PERFORMANCE: BRISTOL COMMONS, TAUNTON 2014 16 AFFORDABLE 2-8 UNIT "STEALTH PASSIVE ALL ELECTRIC" LEED Gold Townhome 2 35.14 LEED Gold Townhome 3 40.73 LEED Gold Townhome 1 43.30 Lenox A 11.72 Median Heating Energy/sq. ft. **78% less** than LEED Gold Townhouses Bristol L 6.31 Bristol G 6.81 Bristol 7.32 Lenox B 7.76 Lenox D 8.01 Bristol C 8.16 Bristol J 8.19 Bristol E 8.35 Bristol F 8.55 Bristol M 8.64 Lenox C 8.67 Bristol O 8.82 Bristol H 9.08 Bristol A 9.53 Bristol N 9.58 Bristol D 9.75 Bristol K 10.52 Bristol P 11.32

30.00

35.00

40.00

45.00

50.00

25.00

kBtu/sf/year

5.00

10.00

15.00

20.00

10

PERFORMANCE: DISTILLERY, SOUTH BOSTON

Uses **62% less** energy per sq. ft. than median new multifamily in Boston



Data from Boston BERDO 2019; Credit to DOER Brendan Place

PERFORMANCE: PHILADELPHIA AFFORDABLE

PH Median is 57% less energy per sq. ft. than Median Code Built



Data from Philadelphia Energy Disclosure 2019 cross checked for LIHTC multifamily; Credit to Green Building United, Katie Bartolotta

PERFORMANCE: GILFORD VILLAGE KNOWLES III, NH

Uses 61% less energy per sq. ft. than Gilford Village Knowles II LEED built 2008 (same building, different green building standard)





<u>Results:</u>

• Passive House multifamily new construction can be built today with very low incremental cost and significant financial, owner, and occupant health and energy benefits

Transportation Sector Updates

Electric Sector Updates

Land Sector Updates

Resilient Lands Initiative – Update

• Resilient Lands Initiative (RLI): • Status of RLI:

- An inclusive vision for land conservation & stewardship in the climate change era;
- A plan to use land conservation & stewardship to help communities reduce & prepare for the impacts of climate change;
- A guide for land conservation intended to be implemented over the next ten years;
- An Initiative that links to other relevant efforts.

- Draft RLI Plan is undergoing final review
- Implementation funding was provided in the FY22 Capital Budget for the FY22-FY25 "Pilot Phase" of the RLI
 - Some RLI policies/programs are advancing pending final Plan approval to select the most effective for expansion
 - The spending plan under development utilizes more than \$2 million to advance "pilot" urban greening, watershed land protection, and riparian planting projects.

Clean Energy Workforce Development



IMPLEMENTATION ADVISORY COMMITTEE: WORKFORCE UPDATE

October 12, 2021

MASSCEC FOCUS AREAS



WORKFORCE - EQUITY

WORKFORCE DEVELOPMENT

Prepare and support a diverse clean energy and climate solution workforce needed for Massachusetts to reach its 2050 net zero greenhouse gas emission goal



Raising awareness of industry



Support career pathways that lead to economic stability



Prepare workers to meet needs of industry



Support diverse clean energy & climate solution businesses



Cultivate a diverse pipeline of workers



CLIMATE LAW/STATE BUDGET IMPLICATIONS

The Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy, \$12M per year

Create an energy equity workforce and market development programs for:

- Individuals residing within an Environmental Justice Community
- Former workers from the fossil fuel industry
- Small business enterprises that are minority and women owned

Offshore Wind Energy Career Training Trust Fund, \$13M

- Grants to higher education and vocational-technical education institutions
- Grants to adult and community learning service providers, labor organizations, public higher education institutions and vocational-technical education institutions
- Grants to regional employment boards
- Leveraging funds to secure future federal funding to support OSW industry in MA

Workforce Development Strategy Workplan

MassCEC Effort	Description	Estimated Timeline
Existing Program Evaluation and Modification	 Establish equity focused pilots within existing program frameworks that could scale and/or inform development of new equity focused workforce development programs 	March 2021 – Ongoing
Clarify Funding	 Determine specific requirements and/or limitations on how the funding can be allocated 	May – June 2021
Needs Assessment Phase I	 Work with internal staff, targeted industry stakeholders, MassCEC Board Workforce Committee and Clean Energy & Equity Working Group to identify known/perceived clean energy workforce gaps and related workforce training needs 	May – October 2021
Workplan Approval	 Complete internal development of the Workforce Development Strategy Workplan Seek EEA feedback on the initial plan steps and revise, as necessary 	July 2021
Present Workplan to Board	Present Workforce Development Strategy Workplan to MassCEC's Board of Directors	July 2021
Create MassCEC Board Workforce Committee	 Create a new Workforce Committee of the MassCEC Board of Directors to help guide development and accelerate approval of MassCEC's workforce development strategy and related programs 	July 2021 (1 st mtg August 2021)
Create Clean Energy & Equity Workforce Working Group	 Establish Clean Energy & Equity Workforce Working Group led by MassCEC's Workforce Program Director. The Group will include a diverse range of stakeholders to provide feedback on industry engagement efforts, overall workforce development strategy, program design and related metrics. 	July – August 2021
Stakeholder Survey	 Release a detailed survey to seek feedback from stakeholders on best practices, barriers, and opportunities within clean energy workforce development DRAFT June 25, 2021 	August – September 2021

Workforce Development Strategy Workplan (cont.)

MassCEC Effort	Description	Estimated Timeline
Stakeholder Outreach	 Facilitate external outreach through small-scale meetings and targeted events to seek input on workforce strategy and gather market information 	August – September 2021
Needs Assessment Phase II	 Undertake market needs assessment to fill gaps in the Phase I Needs Assessment to better understand existing and future clean energy workforce, minority business, employer and current and former fossil fuel worker needs Based on the assessment, propose recommended areas of focus, resource allocation, and program design Frame out initial, new program designs 	December 2021 – July 2022
Confirm \$12M Funding	Anticipated receipt of \$12M annual funding	January – March 2022
Present Draft Strategy to Board	 Present draft workforce development strategy to MassCEC's Board of Directors. It is anticipated that this strategy will evolve and be refined over time 	March 2022
Launch New Programs	 Seek MassCEC Board approval of, and then launch, first cohort of new workforce programs Continue to explore and develop new programs with input from the Working Group, Board Workforce Committee, and industry stakeholders 	May 2022 – Ongoing
Report Preliminary Program Outcomes	 Report preliminary program outcomes/metrics, as available, and continue to refine existing workforce programs DRAFT June 25, 2021 	December 2022 – Ongoing

Clean Energy and Climate Plan for 2025 and 2030

Upcoming Meetings on 2025/2030 CECP

- Public (virtual) meetings scheduled for Oct. 14th (6PM-8PM) and Oct. 15th (12PM-2PM) on our approach to complete the 2025/2030 CECP by July 1, 2022.
- Meeting notification sent to >1500 people.
- Interpreters booked for English, Spanish, Portuguese, Haitian Creole, Cantonese, and Vietnamese dialogue.
- 30-minute presentation, to be recorded in 6 languages and posted on www.mass.gov/2030CECP.
- Remaining 90 minutes for public input on discussion questions.

Completing the 2025/2030 CECP

- We will continue to accept comments and questions on emissions limits and sublimits, plans to achieve them, and other related topics at <u>GWSA@mass.gov</u>
- We are committed to:
 - Developing strategies, policies, and programs that can help Massachusetts reach 50% emissions reduction by 2030, with more specificity and clearer timeline;
 - Significantly expanding discussion of equity and just transition
 - ► Improving tracking of CECP implementation on <u>www.mass.gov/gwsa</u>
- Please visit <u>www.mass.gov/2030CECP</u> for updates on the 2025 & 2030 CECP development.

What Could Getting to 50% in 2030 Look Like?

	Gross GHG	Emissions (I	MMTCO ₂ e)	GHG	Key areas to push to 50% emissions reduction					
Sector	1990	2017 2030 (45%)		Reductions from 2017	economy-wide by 2030					
Buildings	23.8	19.7	10.3	9.4	To be explored through Commission on Clean Heat and MA-DPU-20-80.					
Transportation	30.5	30.5	22.5 - 22.7	7.8 - 8	Enhanced mode shifting creating opportunities to limit light-duty vehicle fleet growth.					
Electricity	28.2	13.6	8.5 - 9.4	4.2 - 5.1	2021 Climate Law increased RPS and created MLP GGES.					
Non-Energy & Industrial	12.0	9.2	7.8 - 9.7	(0.5)* - 1.4	Federal action on HFCs, complemented by additional action from MassDEP.					
Total Gross Emissions	94.5	73.0	49.1 - 52.1	20.9 - 23.9	50% Emissions Limit: 47.3 MMTCO ₂ e					
% Reduction from 1990	-	23%	45% - 48%		(1.8 – 4.8 MMTCO ₂ e additional reductions)					

*Negative reduction indicates an increase -- this reflects partial mitigation of emissions growth.

Preliminary Timeline of Clean Energy and Climate Plan

Teels	(* denotes public meetings)	2021								2022											
Task		5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Clean Energy and Climate Plan (CECP)																					
Upda	te energy pathways analysis																				
Assess macroeconomic and jobs impacts																					
Develop CECP for 2025 & 2030							*					*									
Set limits and sublimits for 2025 & 2030																					
Submit 2025/2030 CECP to Legislature																					
Set si	ublimits and develop CECP for 2050															_	*		*		
Natu	ral and Working Lands (NWL)																				
Exter	nd forest carbon analysis																				
NWL	inventory improvements																				
Deve	lop NWL Plan as part of 2025/2030 CE	CP and	l 205	0 CE(СР			*		*	*					*		*			
Set N	WL baseline & NWL goals for 2025, 20	30, 20	50																		
Com	nission on Clean Heat																				
Deve	lop E.O. establishing Commission																				
Conv	ene Commission																				
Develop Clean Heat Recommendations							*			*											

Preliminary Timeline of Related Initiatives

Task	2021								2022											
1922	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Environmental Justice																				
Develop EJ Strategy										*										
Update MEPA environmental impact regs						*														
Develop Cumulative Impact Assessment regs				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Power Sector																				
Offshore Wind 83C Round 3 RFP (1,600 MW)																				
Submit OSW long term contracts for DPU approval																				
Assess technical potential of solar																				
Wholesale market reform																				
Transportation Sector																				
Develop TCI-P model rule																				
Expand EV incentives & charging infrastructure	ć						*			*			*							
Develop recommendations on mode shift and	land	use																		
Buildings Sector																				
Develop GHG goal for 2022-2024 EE Plan																				
DPU considers EE plan with GHG value								*												
Develop specialized Stretch Energy Code regs							*													
Implement Stretch Energy Code municipal opt-in																				
Develop Appliance Efficiency Standards regs				*																
Utilities develop reg. proposal on gas future																				

Input on Related Initiatives

Visit <u>www.mass.gov/2030CECP</u> for more information on ways to provide input on key initiatives that feed into the 2025/2030 CECP, including:

Clean Heat Commission

- Specialized Stretch Energy Codes
- Forest carbon goals and policies
- Environmental Justice Strategy
- Environmental Impact Review of Development Projects
- Cumulative Impact Assessment for Certain Permits and Approvals

Targets for 2022

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

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

Input on Emissions Accounting and Tracking

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



Estimates

Input on Categories of Emission Sublimits

- PROPOSAL: Set emissions sublimits for 2025 and 2030 for the following sectors to be consistent with current statewide greenhouse gas emissions inventory:
 - Electric power (includes electricity use in residential, commercial, industrial, and transportation)
 - ► Transportation fuel use
 - Residential onsite fuel use
 - Commercial onsite fuel use
 - Industrial onsite fuel use
 - Industrial processes
 - Methane leaks from natural gas distribution and service

- Categories in the 2021 Climate Law:
 - Electric power
 - Transportation
 - Commercial and industrial heating and cooling
 - Residential heating and cooling
 - Industrial processes
 - Natural gas distribution and service
 - "any other sector or source the secretary may designate"

Discussion Questions

- 1. What are your concerns with EEA setting limits on gross emissions while tracking and lowering net emissions through goal setting and policy development?
- 2. Do you support EEA setting emissions sublimits to be consistent with the categories already in the statewide greenhouse gas emissions inventory? If not, what are your concerns?
- 3. Do you support EEA finalizing the Interim 2030 CECP to be the Clean Energy and Climate Plan for 2025 and 2030? If not, what are your concerns?

Input on these questions can also be submitted to gwsa@mass.gov by Dec. 24, 2021.

Feedback on IAC and IAC work group meetings

IAC Contribution to 2025/2030 CECP

- Sector-specific policy discussions in IAC work group meetings
 - Work group recommendations on the Interim 2030 CECP
 - Additional policy considerations for the 2025/2030 CECP
 - Flesh out policy details and sources of funding
- Full IAC meetings on:
 - IAC work groups report out
 - Cross-sectoral topics and issues for the 2025/2030 CECP
 - Interim 2030 CECP implementation progress

Other IAC Business

Public Comments