MA ENERGY EFFICIENCY ADVISORY COUNCIL

→ CONSULTANT TEAM

WORKSHOP #4: WORKSHOP DEVELOPMENT AND RESIDENTIAL EXISTING BUILDINGS

▶ **December 15, 2020**

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EEAC EQUITY WORKING GROUP: *PROCESS OVERVIEW AND WORKFORCE DEVELOPMENT RECOMMENDATIONS*

▶ **12.15.2020**

EQUITY WORKING GROUP (EWG) MEMBERS

Name	Position
Maggie McCarey	DOER
Alexis Washburn	DOER
Cindy Arcate	Representing Massachusetts Non-Profits
Charlie Harak	Representing Organized Labor
Cammy Peterson (Chair)	Representing Commonwealth Cities/Towns
Mary Wambui (Chair)	Representing Residential Consumers
Jo Ann Bodemer	Attorney General's Office
Amanda Formica	National Grid
Ruth Georges	Eversource
Stephanie Terach	Liberty Utilities
Margaret Downey	Cape Light Compact
Brian Beote	Action Inc.
James Collins	ABCD
Elizabeth Chant	EEAC Consultant
Margie Lynch	EEAC Consultant
Eugenia Gibbons	Healthcare Without Harm/Green Justice Coalition
Caitlin Peale Sloan	Conservation Law Foundation
Cindy Luppi	Clean Water Action/GJC

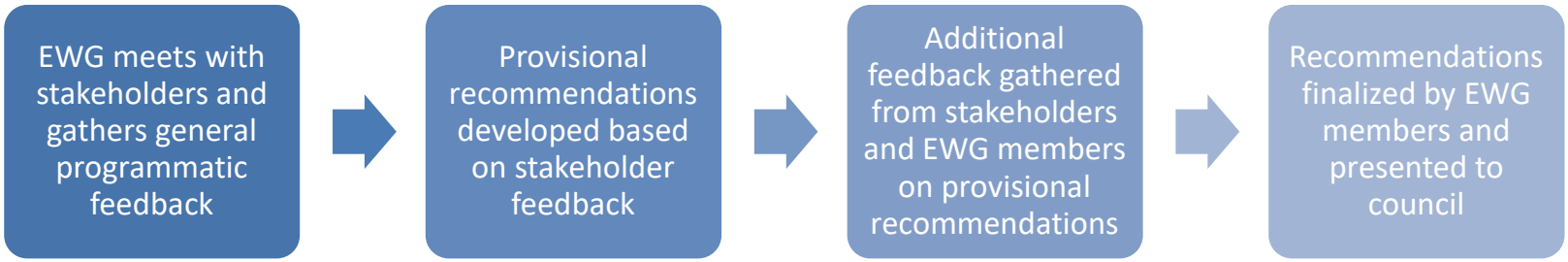
UPDATES

- **The EWG has engaged with over 52 stakeholders to date representing the following stakeholder groups: state and local governmental offices, energy efficiency industry-support organizations, community-based organizations and non-profits, renters, tenant organizations, landlords, community colleges, vocational high schools, and weatherization providers.**
- **EWG recommendations for topics other than workforce development will be presented during workshop #5.**

Topics
Renters and landlords
Moderate Income
Limited English Proficiency
Workforce Development
Commercial, small business
Community partnerships

WFD STAKEHOLDER FEEDBACK PROCESS

- **EWG meetings have been structured to include topic-based stakeholder sessions.**
- **14 stakeholders joined the workforce development discussion.**
- **Stakeholders were asked to share what is working well with the programs and where improvements could be made.**
- **Stakeholders later provided additional feedback on provisional recommendations via an online survey.**



INCREASE TRACKING AND REPORTING

- **Establish goals and benchmarks to increase diversity of workforce in 2022-2024.**
- **Track and regularly report key indicators of workforce diversity.**

INCREASE THE DIVERSITY OF THE WORKFORCE SUPPORTING MASS SAVE

- **Assess and revise vendor solicitation processes.**
  - Include certified MBEs and WBEs in all RFP, RFQ, and RFI distribution lists.
  - Require bidders to make measurable financial commitments to do business with one or more diverse businesses on all procurement opportunities with a value greater than $150,000.
- **Identify and remove barriers to increase Disadvantaged Business Enterprise (DBE) participation.**
- **Set minimum standards for formal diversity, equity, and inclusion policies for all Mass Save contracted vendors.**

INCREASE THE DIVERSITY OF THE WORKFORCE SUPPORTING MASS SAVE

- **Create a detailed list of all training opportunities available through or supported by Mass Save and make that list easily available to stakeholders and on the Mass Save website.**
- **Create targeted support for workforce and contractor development efforts in Environmental Justice communities with historically low participation in Mass Save.**

ATTRACT AND TRAIN YOUNG AND DIVERSE PERSONS FOR PARTICIPATION IN THE ENERGY EFFICIENCY WORKFORCE

- **Expand outreach & education about career opportunities to include stronger partnerships with vocational and technical high schools and community colleges.**
- **Fund internships, apprenticeships, pre-apprenticeships, and externships.**

WORKFORCE DEVELOPMENT

Adam Jacobs, EEAC Consultant Team

▶ 12.15.2020

MA WORKFORCE DEVELOPMENT SPENDING

Table 1 – Mass Save Spending on Workforce Development, by Sector and Fuel, 2013-2019[7]

Year	Total Planned Workforce Spending	Total Actual Workforce Spending	Actual Spending as % of Planned	Total Mass Save Actual Spending	Workforce Development Spending as % of Total Mass Save Actual Spending
2013	$692,757	$168,429	24%	$574,433,324	0.029%
2014	$749,771	$116,977	16%	$592,858,403	0.020%
2015	$754,446	$263,448	35%	$743,501,415	0.035%
2016	$1,000,842	$224,502	22%	$740,729,451	0.030%
2017	$940,217	$385,401	41%	$739,379,853	0.052%
2018	$907,051	$404,462	45%	$826,373,036	0.049%
2019	$1,166,276	$1,220,934	105%	$900,953,574	0.136%

CONSULTANT TEAM WORKFORCE DEVELOPMENT RECOMMENDATIONS

1. **Deliver targeted training for emerging and/or critical technologies including building automation systems and heat pumps.**
2. **Complete an independent Mass Save workforce study with a first report to be completed by September 2022.**
3. **Expand investments in workforce development including but be not limited to funding apprenticeships and internships, training and upskilling for incumbent workers, and outreach to draw new and diverse workers into the Mass Save ecosystem. Target an increase in workforce development spending to 2% of total annual budget by the end of 2022-2024 plan period.**

RESIDENTIAL EXISTING BUILDINGS

HEAT PUMPS AND ELECTRIFICATION

1. **Establish separate, higher heat pump unit goals to reflect EEAC priorities. Goals should be broken out by all heat pumps, whole house conversions, partial displacement, and heat pump water heaters.**

HEAT PUMPS AND ELECTRIFICATION

2. **Bolster program support and market promotion of heat pump technologies for primary heating including the addition of incentives and HEAT Loan eligibility for ground-source heat pumps by January 2022:**
   a. Enhance HVAC contractor technical competencies for heat pump system selection, design, installation and maintenance
   b. Co-deliver with other energy efficiency and active demand management measures

FOSSIL FUEL HEATING INCENTIVES: BACKGROUND/CURRENT STATUS

- **The PAs' programs for residential space and water heating rely heavily on savings from fossil fuels including oil, propane, and natural gas.**
- **The vast majority of space and water heating incentives come from retail channels.**
- **For baseline and other reasons, the timing is ripe for a transition away from this historical reliance.**
- **Removing marginal fossil fuel savings options helps encourage larger savings opportunities.**
  - Heat Pumps and Heat Pump Water Heaters are superior options to Oil/Propane in many cases, but face barrier of contractor/customer default to stay on existing fuel.

REBATES ONLY WHEN REPLACING NON-CONDENSING GAS & PROPANE HEATING

- **Cease support (incentives and HEAT Loans) for replacing condensing gas or propane boilers and furnaces**
- **Homes with condensing equipment unlikely to backslide due to side-wall venting vs. chimney**
  - Baseline for a home with side-venting is likely over 95 AFUE
- **Most new natural gas space heating equipment is already highly efficient**
  - >80% of new furnaces and >60% of new boilers are condensing, with nearly all at high levels of efficiency
  - Assume that distribution of propane heating equipment is similar to natural gas
- **Low income/moderate income program/population needs may be different**

CEASE SUPPORT FOR OIL-FIRED HEATING EQUIPMENT (INCENTIVES AND HEAT LOANS)

- **Savings opportunities for oil heating upgrades limited by Federal appliance standards**
- **And by the very limited availability of products at higher efficiencies**
  - Only 27 ENERGY STAR boilers and furnaces (out of 481) have efficiencies over 88% (federal standard is 86% for boilers and 83% for furnaces)
- **Address early retirement opportunities, particularly in multifamily, as custom measures**
- **Low/moderate income program needs may be different**

WATER HEATING: PHASE OUT DELIVERED FUEL INCENTIVES TO FOCUS ON HIGHER SAVINGS FROM GAS AND HEAT PUMP WATER HEATERS

- **Limited savings opportunities for oil-fired equipment**
  - Only indirect water heaters off a boiler are currently supported
  - Electric heat pump water heaters (HPWHs) are cost effective, generate greater net MMBtu savings/unit, and provide customer savings
- **Heat pump water heaters are cost-effective and provide the highest savings opportunity for oil/propane customers, but need more customer awareness**
- **Most recent natural gas water heater installs are for less efficient storage water heaters, some (many?) of which are program eligible**
  - Restrict incentives and HEAT Loans to more efficient on-demand tankless and condensing storage natural gas water heaters

FOSSIL FUEL HEATING INCENTIVES

3. **Limit fossil fuel space heating incentives only to technologies and installations where clear cost-effective savings remain.**
   a. Incentivize only non-condensing to condensing fossil fuel systems by January 2022, using a phased approach if necessary to support an orderly market transition.
   b. Cease support for oil-fired heating equipment as of January 2022; handle as custom measure, especially for multifamily buildings.

FOSSIL FUEL HEATING INCENTIVES

4. **Phase out fossil fuel water heating incentives.**
   a. Cease incentives and HEAT Loans for oil and propane water heating equipment by January 2023, using a phased approach if necessary to support an orderly market transition.
   b. Cease incentives and HEAT Loans for storage and indirect natural gas water heaters as of January 2022, but retain for more efficient tankless and condensing gas systems.

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HOME MVP – CUSTOM APPROACH TO INTEGRATING WEATHERIZATION AND HEAT PUMPS

Ian Finlayson, DOER

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2018-2020 HOME MVP PILOT: CUSTOM PROGRAM COMBINING HEAT PUMPS AND WEATHERIZATION

Custom pilot Design:

- Led by qualified & trained contractors (HPCs & HVAC mostly)
- Standardized audit software calibrated with actual bills
- Flexible incentives based on savings (e.g. $90/MMBtu/year) + HEAT loan option
- Any measure/product that saves energy eligible and open pricing
- Home Scorecard integrated into audit and incentive calculation

Results to date:

- 460 homes renovated (500+ by end of year)
- High rate of electrification: 63% included heat pump conversions
- Deep Savings: Average home went from 154 to 104 MMBtus/year (50 Mmbtus/year saved)
- High Demand: Incentives reduced Feb 2020 and program applicants curtailed in June 2020
- 1/3 Mass Save customers (2/3 MLP customers)

HOME MVP PILOT – IS THERE DEMAND FOR A CUSTOM OPTION TO COMPLEMENT RCD PROGRAM?

- **Current RCD works for most customers/contractors but not all situations**
  - E.g. foam in attics & cathedral ceilings, or rockwool insulation
  - Fit in-between RCD weatherization and Mass Save Renovations and Additions (R&A) program, or replace R&A with a broader offer.
- **Value to better integrating weatherization with heating upgrades**
  - Mass Save delivery of heating and weatherization mostly separate (except for LEAN)
  - Significant benefits to combining weatherization & heat pumps to right-size systems
- **Home MVP demand was high, despite no marketing, Covid-19, and lowered incentive to ~$100/mmbtu in 2020**
  - Custom program is a big portion of C&I savings, why not offer a lower-costs savings but more flexible $/MMBtu residential option

RESIDENTIAL COORDINATED DELIVERY (RCD)

5. **Supplement current RCD program with new, custom performance-based offer modeled after DOER's Home MVP pilot.**

RESIDENTIAL COORDINATED DELIVERY (RCD)

6. **Implement state of art communication and data management practices to increase effectiveness of customer interactions, including but not limited to:**
   - Review/refresh Mass Save and PA websites
   - Carry through updated messaging strategies to customer emails, social media, and other communication channels
   - Improve the home energy audit report
   - Improve behavior reports
   - Enhance use of technology

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THANK YOU

Questions?

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