MA ENERGY EFFICIENCY ADVISORY COUNCIL

→ CONSULTANT TEAM

2025-2027 DRAFT PLAN REVIEW UPDATES

▶ June 10, 2024

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COMMERCIAL & INDUSTRIAL: ADDITIONAL REFINEMENTS TO THE PLAN

ELECTRIFICATION

- **Overarching strategy to transforming markets from fossil fuel to electric technologies**
  - Players, barriers, leverage points
  - Fossil fuel dealer engagement
- **C&I Electrification targets on which plan goals are based**
- **Maximize full heating system conversions**
- **Create pull towards comprehensive approaches including weatherization, heat pumps and ventilation**
- **Integrate with network geothermal projects**

SMALL BUSINESS

- **Targeted volume of assessments**
- **Demonstrate how vendor contracts maximize participation**
- **Minimum requirements and quality control used for assessments**
- **Quantitative assessment of weatherization effectiveness**
  - Commit to weatherization as a foundational measure to fuel switching
- **Market segmentation approach**
- **Tracking and managing customer intake, outreach, follow-up, project status, complaints, project status, outstanding opportunities, etc.**

EXISTING BUILDING COMMISSIONING (EBCX)

- **Prioritize HVAC system and envelop optimization**
- **Engage evaluation to provide early, fast-feedback on offer design and uptake**

ADDITIONAL C&I REFINEMENTS

- Continue working with DOER and EEAC consultants on C&I Customer database scope and development
- Describe enhancements to existing account management approach
- Continue participation in the C&I Working Group
- Accurately track measure quantities and sizes
- Track custom and prescriptive measures separately
- Track and address customer complaints

RESIDENTIAL AND LOW INCOME: ESTIMATED IMPACTS OF RECOMMENDATIONS

INTRODUCTION & CAVEATS

- **Analysis intended to give Councilors an approximate $ and GHG impact of core Residential/Low Income recommendations**
  - Additional considerations needed to ensure PAs and LEAN have capacity to implement recommendations
- **Analysis includes estimates of incentive and implementation costs, but not interactions between recommendations**
- **Purpose is to give a sense of magnitude for each recommendation**
- **Most assumptions are taken from plan data**
- **The 2025-2027 plan still faces a budget cap of $5B and a GHG target of 1,000,000 metric tons.**
  - For many recommendations reductions in other portions of the plan would be necessary to maintain achievement of goals within the $5B budget cap

INTRODUCTION – CONTINUED

- Analysis looks at the additive impact of a recommendation – but doesn't address needed cuts to stay within budget cap
- Alternative approach would be to keep either the budget or GHG attainment constant while not addressing impacts towards the other
- A third approach would be to hold both budget and GHG achievement constant and determine changes in measure mix to achieve specific recommendation(s)

RECOMMENDATIONS ANALYZED

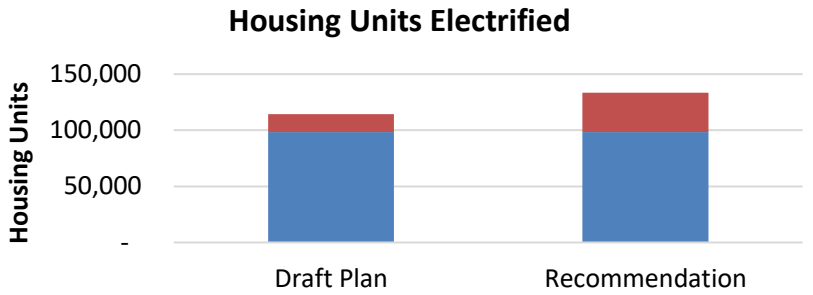
- Increasing low/moderate income (LMI) heat pumps to 35,000 households
- Heat Loan set at $200M with equity considerations
- All market rate heat pump incentives step down in line with full displacement air source heat pumps
- Increase market rate and low income weatherization (Wx) by 5% annually
- Increase LMI heat pump water heaters
- Increase Renter budgets
- Require Wx & Home Energy Assessments for all heat pumps

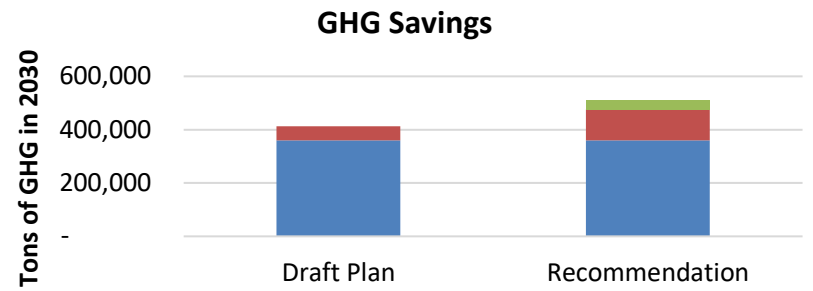
INCREASING LMI HEAT PUMPS TO 35,000 HOUSEHOLDS

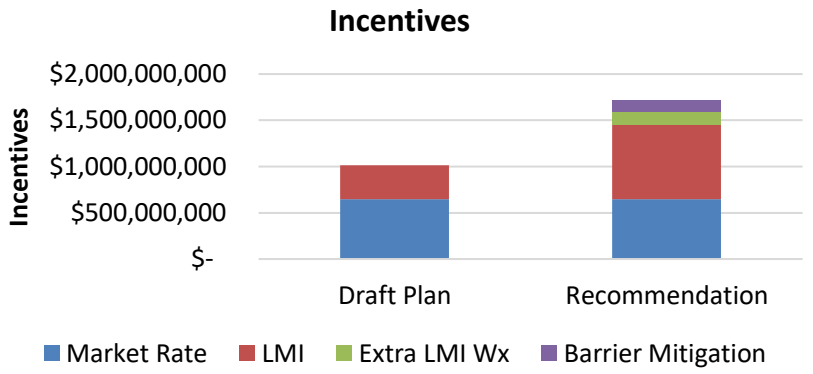
- Recommendation is to increase LMI heat pumps from current 15,854 to 35,000
- Each additional HP would require weatherization and potential barrier mitigation
- All cost and savings taken from draft plan
- Total incentives of $704M and savings of 99,700 tons of GHG
- **Customer support and marketing costs** assumption of 31% would require an additional $218M for a total of $922M

Per LMI HP cost and savings

Measure	Incentive Cost	GHG Savings (Tons in 2030)
Heat Pump	$23,000	3.34
Wx	$7,000	1.87
Barriers	$6,600	
Total	$36,600	5.21







HEAT LOANS

- Large focus on heat loans given the large ($395M) budget in the draft plan
- PAs found a calculation error in the heat pump line item leading to a new budget of $145M
- Recommendation is to have a budget of $200M with equity considerations
- New budget would reflect a $195M reduction in budget from draft plan value

HEAT PUMP INCENTIVE STEP DOWN

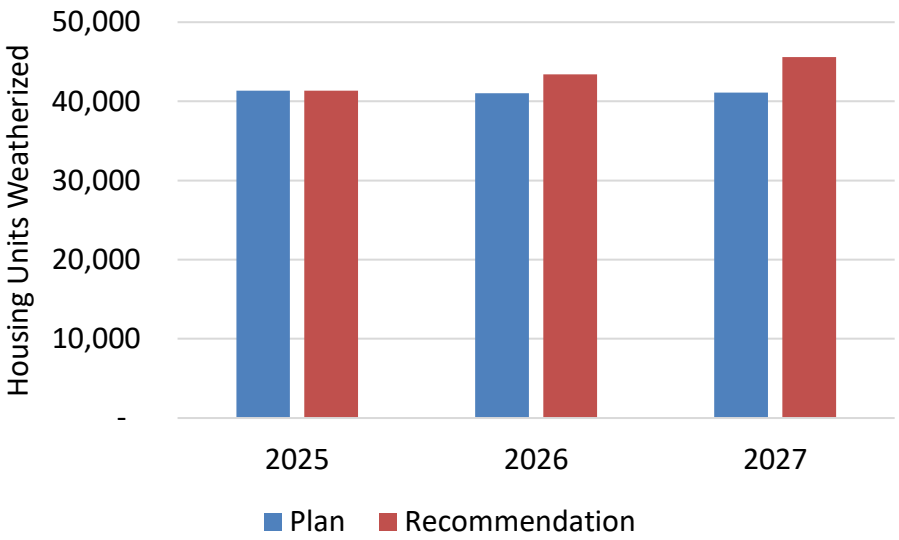
- Currently only the full displacement ASHP incentive changes as the plan progresses

Measure Type	Plan			Recommendation		
	2025	2026	2027	2025	2026	2027
Full Displacement ASHP ($ per housing unit)	$10,000	$9,000	$8,000	$10,000	$9,000	$8,000
Partial Displacement ($ per outdoor unit)	$2,000	$2,000	$2,000	$2,000	$1,800	$1,600
GSHP/AtW HP ($ per housing unit)	$15,000	$15,000	$15,000	$15,000	$13,500	$12,000

- Recommendation is to decrease all HP incentives in line with the full displacement ASHP incentive
- This would reduce HP budgets by $21M
- Could have adverse impact on demand for HPs

MARKET RATE WEATHERIZATION INCREASES

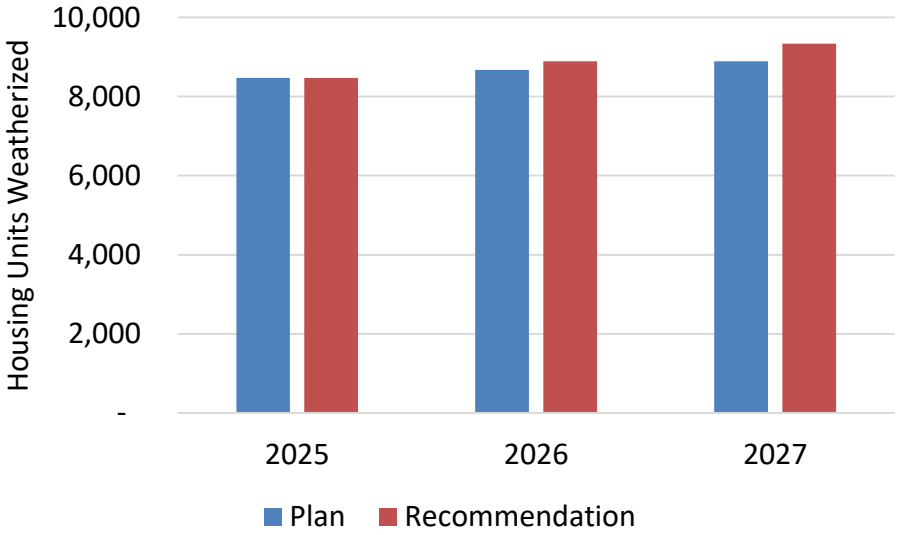
- Recommendation is to increase weatherization by at least 5% per year
- Requires at least 6,845 additional units
- At cost of $3,400 and GHG savings of 0.93 tons per household gives a total impact of $23.4M and 6,300 tons of GHG



- With **customer support and marketing costs** of 31% gives total recommendation cost of $30.6M

LOW INCOME WEATHERIZATION INCREASES

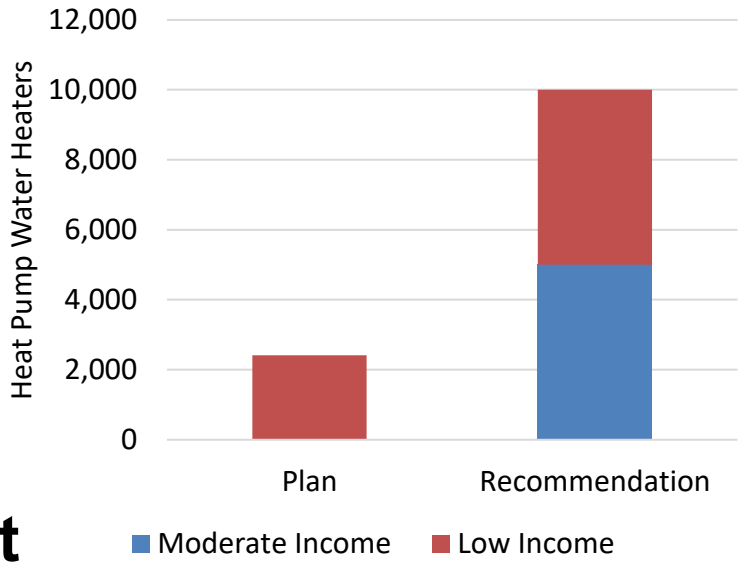
- Recommendation is to increase weatherization by at least 5% per year
- Requires at least 662 additional units
- At cost of $7,100 and GHG savings of 1.87 tons per household gives a total impact of $4.7M and 1,200 tons of GHG



- Could require an additional $1.7M in barrier mitigation
- With **customer support and marketing costs** of 31% gives total recommendation cost of $8M (barrier mitigation depending)

LMI HEAT PUMP WATER HEATERS

- Recommendation is to increase low- and moderate-income heat pump water heaters to 5k each (10k total)
- Currently there are no moderate income HPWH incentives
- Average cost of $4,080 with 0.79 tons of GHG savings gives a total recommendation impact of $31M and 6,000 tons of GHG
- Assuming 31% **customer support and marketing costs** gives total cost of $40.5M



INCREASE RENTER BUDGET

- **Recommendation is to shift $200M from market rate owner incentives to 100% coverage market rate & moderate income renter incentives for heat pumps, HPWHs, and Wx**

Measure Category	Market Rate Incentives ($)	Market Rate Savings (tons GHG)	Allocation to Renters ($)	Decrease in Savings due to Shift (GHG)	# of additional measures at 100% incentives	Increased Savings due to more renter measures (GHG)	Net savings impact (GHG)
Heat Pumps	$648,390,039	360,145	$117,881,949	-65,477	5,120	17,105	-48,372
HPWHs	$22,671,537	41,018	$4,121,848	-7,457	1,010	802	-6,656
Weatherization	$429,005,131	118,513	$77,996,203	-21,546	10,888	10,075	-11,471
Total	**$1,112,768,619**	**519,676**	**$200,000,000**	**-93,402**	**17,018**	**27,982**	**-66,499**

- **This shift results in a net decrease in measure production and savings – totaling a loss of 65,500 tons of GHG**

REQUIRE WX & HEA FOR ALL HEAT PUMPS

- Recommendation is to require a HEA & weatherization for all heat pumps, not just full displacements
- There are 43,000 partial displacements planned for 2025-2027
- In 2023 62% of partial displacements were not weatherization verified
- At a typical unit cost of $3,400 for Wx, $300 for the HEA, and 0.93 tons of GHG of savings, this recommendation would result in $100M in costs and 24,900 tons of GHG in savings

COST REDUCTIONS

- **Expectation is that the PAs will examine all costs in the plan to find any redundant or unnecessary costs and identify opportunities to increase savings and equitable outcomes, including from:**
  - Service redundancies with existing program services from new customer supports (e.g., Statewide Contact Center and language access)
  - Reducing non-incentive costs such as Program Planning and Administration and Sales, Technical Assistance and Training cost categories
  - PA differences in cost assumptions
  - Data errors
- **Consultants will continue our own analysis to identify cost reductions and will continue discussions with the PAs, AGO, and DOER**

THANK YOU

QUESTIONS?