



PA Update

July 14, 2021

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Agenda



1. Update on Residential Lighting
2. Follow-Up on Public Comment Topics
 - a. Ground Source Heat Pumps
 - b. Solar Thermal
3. Cape Light Compact Update on CVEO
4. Appendix – Additional Follow-Up on Public Comment Topics
 - a. Social Value of GHG Reductions



Update on Residential Lighting

Update on Residential Lighting



- PAs submitted an *Update on Residential Lighting Measures for the 2019-2021 Energy Efficiency Plans* to the Council and DPU on June 30, 2021.
 - The Update provided notice to DPU and Council on PAs' intentions to end certain incentives for residential lighting, along with context on the lighting market, evaluation results, and likely federal regulatory changes.
 - PAs coordinated with the Council's consultants and DOER on the framework for exiting the residential lighting market.
 - Phase out determinations were made prior to the DPU Guidelines that require 90 days notification prior to removing a measure – however, if Council or DPU requires a notice period or other changes, PAs will take the necessary actions to support the measures

Residential Lighting Measures



- Upstream:
 - *Reflector Bulbs:* PA support for reflector bulbs in non-Hard to Reach channels ceased after December 31, 2020; support for these bulbs in HTR channels was discontinued after June 30, 2021.
 - *A-Line Bulbs Exit Strategy:* Support for A-line bulbs in all market channels was discontinued after June 30, 2021.
 - *Specialty Bulbs:* Support for specialty bulbs will be discontinued after December 31, 2021 in all market channels.
- Direct Install: PAs will continue to offer direct installation of lighting measures in market rate Residential Coordinated Delivery through December 31, 2021.
- Residential New Construction: PAs discontinued incentives for the installation of lighting measures in low-rise projects after December 31, 2020 following code changes.



Follow-up on Public Comment Topics

Ground Source Heat Pump Offer



- GSHPs are an inherent element in the PAs' promotion of electrification.
- PAs reviewed GHSPs in 2020 and 2021 and met several times with the New England Geothermal Professional Association (NEGPA).
- The new residential offer went live in May 2021.
 - The rebate is \$2,000/ton, max \$15k for customers replacing oil/propane central heating.
- PAs will carry this offer into the next three-year plan.
 - GSHP goals and values are included in the BC models for 2022-2024.
 - PAs will update Plan text to include language about GSHPs.
- GSHPs are available in C&I on a custom basis; incentives via midstream are also offered at \$75 per ton.

Ground Source Heat Pump TRM



- PAs performed an evaluation review to update values related to GSHP.
 - The final report, titled Ground Source Heat Pump eTRM Measure Review, was released on March 5, 2021 and shared with NEGPA.

- The 2022-2024 Plan Version TRM will reflect the findings/considerations of the evaluation report.
 - This will include adding a new TRM entry specific to GSHP, rather than grouping with ASHP.
 - Different event types will be considered; retrofit measures that replace existing systems that are not GSHP may be classified as custom measures.
 - Measure life will be extended.

Solar Thermal (Solar Domestic Hot Water (“SDHW”))



- Residential: all PAs offer HEAT Loan for SDHW, only CLC currently offers a rebate, with infrequent uptake
 - All PAs reviewed for residential retail single family homes this year and SDHW did not screen as cost-effective for any of the different fuel baselines (BCRs of 0.3 to 0.8) – PAs will review again if new information makes cost-effectiveness more likely.
 - PAs reviewing possibility of cost-effective application for multi-family buildings.
 - Solar assisted heat pump water heating is included in the Plan.
- C&I: offered via the custom pathway. The PAs use this pathway to screen the project for cost-effectiveness and determine appropriate incentives.
 - Solar thermal measures are installed infrequently; these measures are often not as lucrative as solar PV, which PAs see as more popular with customers.

Cape Light Compact - CVEO

Cape & Vineyard Electrification Offering (CVEO)



- Cape Light Compact (CLC) is seeking passage of a resolution in support of CVEO from the EEAC
- CLC initially proposed CVEO as part of 2019-2021 energy efficiency plan; DPU did not approve; requested additional consideration of stakeholder concerns and required EEAC approval of redesign prior to resubmittal.
- Deploys three technologies as a package: cold climate heat pumps; solar photovoltaic (PV) systems; battery energy storage systems (BESS)
- Focuses on equity: low-income customers are being left behind in terms of electrification, solar, and BESS due to high upfront costs

CVEO Objectives



- Serve **250** total non-gas heated participants, tiered services by income: 150 low-income (up to 60%), 100 moderate income (61-80%)
 - Enhanced incentives for all three measures by leveraging third-party ownership of PV + BESS, Federal ITC, depreciation, SMART, ConnectedSolutions, Clean Peak Standard, APS

Income Level (SMI)		Customers			Heat Pumps	Solar PV + Storage
		2022	2023	Total		
Low-Income	<=60%	100	50	150	100% of cost covered (EE funds)	100% of cost covered (EE Funds and non-EE funds)
Moderate Income	61-80%	66	34	100	100% of cost covered (EE funds)	75+% of cost covered (EE funds and non-EE funds) \$5,000 customer contribution cap
Total Participants		166	84	<u>250</u>		

Revised Budget



	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>Total</u>
Heat Pumps	\$3.4M	\$2.0M	\$0	\$5.4M
PV + Storage	\$3.7M	\$2.4M	\$0.5M	\$6.7M
Total	\$7.1M	\$4.4M	\$0.5M	\$12.0M

The Compact estimates CVEO will leverage over \$8M in non-energy efficiency funds.

In April 2020, the EEAC voted in support of a CVEO budget of \$10.4M for 2020-2021. The budget increase is primarily the result of decreased SMART revenue and increased ConnectedSolutions participation and incentives.

Savings and Cost-Effectiveness



	2022	2023	2024	2022-2024
Savings				
Participants	166	84		250
Annual MWh	983	355	(39)	1,299
Lifetime MWh	28,108	12,138	(39)	40,207
Annual MMBTU	16,963	8,135	(354)	24,744
Lifetime MMBTU	351,891	174,683	(354)	526,221
Summer kW	1,786	2,315	2,150	6,251
Winter kW	(138)	(84)	-	(221)
Annual CO2 Metric Tons	897	467	(6)	1,358
Cost-Effectiveness				
Benefits (\$M)	20.2	10.9	0.7	31.8
TRC Costs (\$M)	7.7	4.4	0.5	12.6
Net Benefits (\$M)	12.5	6.5	0.2	19.2
Benefit-Cost Ratio	2.6	2.5	1.4	2.5
CLC Budget (\$M)	7.1	4.5	0.5	12.0

CVEO measures only. In 2024, CVEO customers continue participating in ConnectedSolutions.

Appendix: Additional Topics from Public Comment

Social Value of GHG Emissions Reductions



- In accordance with the Climate Act, in the April draft Plan, the calculation of program benefits for cost-effective included calculations of the social value of greenhouse gas emissions reductions.
 - The April Plan included over \$2 billion in statewide benefits over the three-year term from the social value
- The social value was determined in the regional Avoided Energy Supply Cost study.
- PAs will review the social value with the study vendor to confirm that the original value is still appropriate.

Thank you

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