

Appendix G
Avoided Energy Costs

G-1: Staff Testimony

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**By Ian G. Burnes
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1. What is the purpose of this testimony?

This testimony describes the Efficiency Maine Trust's (the Trust's or EMT's) statutory requirements, with respect to the avoided energy costs reflected in Triennial Plan V.

2. Who is introducing this testimony?

The testimony is provided by Ian Burnes, Director of Strategic Initiatives at the Trust.

3. Mr. Burnes, please state your name, title, and business addresses.

My name is Ian Burnes, and I am employed by EMT as the Director of Strategic Initiatives. My business address is 168 Capital Street, Suite 1, Augusta, ME 04330.

4. Please summarize your educational and professional experience.

I have a Bachelor of Arts Degree in Economics from Wesleyan College. I have been working at EMT since 2009. My responsibilities include the oversight of the Strategic Initiatives team that implements the EMT's customer tracking database, maintains the Technical Reference Manuals, oversees the program evaluations, and manages the Trust's resource in ISO-NE's Forward Capacity Market. Before coming to EMT, I worked at the Governor's Office of Energy Independence and Security.

5. What are the Trust's statutory requirements with respect to the avoided cost methodologies and assumptions included in the Triennial Plan?

In 2019, the Maine statute was amended to provide direction on developing and applying avoided costs. Specifically, the amended statute clarified what elements to incorporate into avoided costs when calculating maximum achievable cost-effective (MACE) energy efficiency resources.

For electric MACE, it states:

Avoided energy costs must include but are not limited to the following elements:

- (1) Retail value of electricity supply including a wholesale risk premium;
- (2) Statewide average value of avoided marginal transmission and distribution [T&D] costs;
- (3) Statewide average for line losses; and
- (4) Demand reduction induced price effects.¹

¹ 35-A MRS §10110(4)(A), as amended by Public Law, Chapter 313, 129th Maine State Legislature, First Regular Session, LD 1757, An Act To Clarify Certain Standards for the Efficiency Maine Trust's Triennial Plan, 2019.

For natural gas MACE, it states:

Avoided energy costs must include but are not limited to the retail value of natural gas supply including a wholesale risk premium and demand reduction induced price effects.²

Regarding how to find the values of these and any other elements of avoided costs, the statutory changes state:

The trust shall use, and the commission shall give deference to, values for each element of avoided energy cost from a regional avoided energy supply cost study as long as the analysis has been developed through a transparent process, with input from state agencies, public advocates, utilities or energy efficiency administrators from at least 3 other states in New England and the analysis has been published not more than 24 months prior to the trust's filing of the plan. When values specific to the State are not available in the regional study, the trust may use, and the commission shall give deference to, regional values provided in that regional study or values determined from other sources when supported by evidence in the record...³

6. How does Triennial Plan V comply with the statutory requirements relating to the source of avoided energy cost values noted above?

To comply with the statutory amendments, the Trust uses the avoided costs laid out in the *Avoided Energy Supply Components in New England: 2021 Report* (AESC 2021) (attached hereto as [Appendix G-2](#)).⁴ The AESC 2021 is the most recent version published from a regional, transparent process in which more than three other New England states participated meets the criteria required in the Maine statute. The process was led by Synapse Energy Economics, Inc. (Synapse) managing a team of subcontractors. The Synapse team developed AESC 2021 on behalf of a group of regional stakeholders including the Trust, other program administrators, utilities, regulators, and advocates from across New England. These parties all provided input to the study through a collaborative and open process. The report of the study's findings is updated periodically; AESC reported new results in 2013, 2015, 2016, 2018, and 2021. The AESC 2021 was released on March 15, 2021, within 24 months prior to the filing of Triennial Plan V.

7. Are there Maine-specific avoided energy cost values that are not available in AESC 2021? If so, does the Trust use regional values or "values determined from other sources...[and] supported by evidence in the record"?

The AESC 2021 provides a marginal avoided cost for pooled transmission facilities (PTF) and an analytical framework that individual states could use to calculate state-specific avoided cost for distribution and non-PTF transmission. The AESC 2021 does not, however, provide actual values for Maine's avoided costs for distribution and non-PTF transmission.

In 2020, the Trust contracted separately with Synapse to complete a Maine-specific study of the statewide average avoided transmission and distribution costs based on this framework. The PUC

² *Id.* at §10111(2).

³ *Id.* at §10110(4)(A) and §10111(2).

⁴ Synapse Energy Economics, Inc., *Avoided Energy Supply Components in New England: 2021 Report*, Prepared for AESC 2021 Study Group, March 15, 2021.

subsequently approved the Trust's request to incorporate the results of that study into its cost-effectiveness screening.⁵

8. What elements of avoided energy costs are included in Triennial Plan V?

Triennial Plan V includes all four of the avoided energy cost elements explicitly required by statute:

- (1) Retail value of natural gas/electricity supply including a wholesale risk premium;
- (2) Statewide average value of avoided marginal transmission and distribution costs;
- (3) Statewide average for line losses; and
- (4) Demand reduction induced price effects.

The [Appendix G-3](#) spreadsheet (Triennial Plan V Avoided Energy Cost Data Set) shows the elements of the avoided costs and the values, or value sets, associated with those elements provided by the AESC 2021 that the Trust will incorporate into Triennial Plan V. Those elements are summarized below:

1. Avoided Retail Cost of Electric Energy

- a. See Appendix G-3, kWh Prices Tab, Columns C-F for the four costing periods of Winter Peak, Winter Off-Peak, Summer Peak, and Summer Off-Peak
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, FCM bid assumption = 100%, Appendix B, Columns AK-AN

2. Avoided Retail Cost of Electric Capacity

- a. See Appendix G-3, Capacity Prices Tab, Column C
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, FCM bid assumption = 100%, Appendix B, Column BG

3. Wholesale Energy Demand Reduction Induced Price Effect (DRIPE)

- a. See Appendix G-3, kWh Prices Tab, Columns G-J for the costing periods of Winter Peak, Winter Off-Peak, Summer Peak and Summer Off-Peak
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, FCM bid assumption = 100%, Appendix B, Columns P-S

4. Wholesale Capacity DRIPE

- a. See Appendix G-3, Capacity Prices Tab, Column D

⁵ State of Maine Public Utilities Commission, "Efficiency Maine Trust Request for Approval of Fourth Triennial Plan for Fiscal Years 2020-2022," Docket No. 2018-00321, Order on Significant Change, April 14, 2021.

- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, FCM bid assumption = 100%, Appendix B, Column BI

5. Wholesale Reliability

- a. See Appendix G-3, Capacity Prices Tab, Column E
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, FCM bid assumption = 100%, Appendix B, Column BM

6. Avoided cost for Pooled Transmission Facilities (PTF)

- a. See Appendix G-3, Capacity Prices Tab, Column F
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, FCM bid assumption = 100%, Appendix B, Column BO

7. Maine Specific Distribution Annualized

- a. See Appendix G-3, Capacity Prices Tab, Column G
- b. Source: Commission Approved updated T&D cost, page 3, mid-point

8. Maine Specific Transmission Annualized

- a. See Appendix G-3, Capacity Prices Tab, Column H
- b. Source: Commission Approved updated T&D cost, page 3, mid-point

9. Maine Specific Non-PTF Annualized

- a. See Appendix G-3, Capacity Prices Tab, Column I
- b. Source: Commission Approved updated T&D cost, page 3, mid-point

10. Avoided Retail Natural Gas

- a. Residential
 - i. See Appendix G-3, Other Fuel and Water Prices Tab, Column C
 - ii. Source: AESC 2021 Report, Appendix C, Some Margin NNE tab, Column E
- b. Commercial
 - i. See Appendix G-3, Other Fuel and Water Prices Tab, Column D

- ii. Source: AESC 2021 Report, Appendix C, Some Margin NNE tab, Column H

11. Gas DRIPE

- a. Residential
 - i. See Appendix G-3, Other Fuel and Water Prices Tab, Column E
 - ii. Source: AESC 2021 Report, Appendix C, DRIPE ME tab, Column F
- b. Commercial
 - i. See Appendix G-3, Other Fuel and Water Prices Tab, Column F
 - ii. Source: AESC 2021 Report, Appendix C, DRIPE ME tab, Column I

12. Avoided Cost of Heating Oil

- a. Residential
 - i. See Appendix G-3, Other Fuel and Water Prices Tab, Column G
 - ii. Source: AESC 2021 Report, Appendix D, Avoided Pet-Costs Tab Column C
- b. Commercial
 - i. See Appendix G-3, Other Fuel and Water Prices Tab, Column H
 - ii. Source: AESC 2021 Report, Appendix D, Avoided Pet-Costs Tab, Column D

13. Oil Zone-on-Zone DRIPE

- i. See Appendix G-3, Other Fuel and Water Prices Tab, Column I
- ii. Source: AESC 2021, Appendix D, DFO_home DRIPE Tab, Column F

14. Avoided Cost of Kerosene

- a. Residential
 - i. See Appendix G-3, Other Fuel and Water Prices Tab, Column J
 - ii. Source: AESC 2021 Report, Appendix D, Avoided Pet-Costs tab, Column L
- b. Commercial

- i. Appendix G-3, Other Fuel and Water Prices Tab, Column K
- ii. AESC 2021 Report, Appendix D, Avoided Pet-Costs tab, Column N

15. Avoided Propane

- a. Appendix G-3, Other Fuel and Water Prices Tab, Column L
- b. AESC 2021 Report, Appendix D, Avoided Pet-Costs tab, Column M

16. Avoided Wood

- a. Seasoned Cord Wood
 - i. Appendix G-3, Other Fuel and Water Prices Tab, Column M
 - ii. AESC 2021 Report, Appendix D, Avoided Pet-Costs Tab, Column J
- b. Residential Pellet Wood
 - i. Appendix G-3, Other Fuel and Water Prices Tab, Column N
 - ii. AESC 2021 Report, Appendix D, Avoided Pet-Costs tab, Column K

17. Avoided Water

- a. See Appendix G-3, Other Fuel and Water Prices Tab, Column O
- b. Source: Per the Third Triennial Plan Settlement Value, representing a mix of water from wells and utilities

18. Gasoline

- a. Appendix G-3, Other Fuel and Water Prices Tab, Column P
- b. AESC 2021 Report, Appendix D, Avoided Pet-Costs tab, Column O

19. Gasoline Zone-on-Zone DRIPE

- a. Appendix G-3, Other Fuel and Water Prices Tab, Column Q
- b. AESC 2021, Appendix D, Gasoline_DRIPE tab, Column F

20. Retail Incremental Non-Embedded GHG Cost of Compliance: Electric Measures

- a. See Appendix G-3, Cost of Carbon Tab, Columns C-F for the four costing periods of Winter Peak, Winter Off-Peak, Summer Peak and Summer Off-Peak

- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, Appendix G, Columns L-O

21. Non-Embedded GHG Cost of Compliance: Natural Gas Measures

- a. See Appendix G-3, Cost of Carbon Tab, Column H
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, Appendix G, Column W

22. Non-Embedded GHG Cost of Compliance: Heating Oil Measures

- a. See Appendix G-3, Cost of Carbon Tab, Column I
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, Appendix G, Column Z

23. Non-Embedded GHG Cost of Compliance: Kerosene Measures

- a. See Appendix G-3, Cost of Carbon Tab, Column J
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, Appendix G, Column AI

24. Non-Embedded GHG Cost of Compliance: Propane Measures

- a. See Appendix G-3, Cost of Carbon Tab, Column K
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, Appendix G, Column AJ

25. Non-Embedded GHG Cost of Compliance: Wood Measures

- a. See Appendix G-3, Cost of Carbon Tab, Column L
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, Appendix G, Column AG

26. Non-Embedded GHG Cost of Compliance: Gasoline Measures

- a. See Appendix G-3, Cost of Carbon Tab, Column M
- b. Source: AESC 2021 Report, Counterfactual #3, Region = Maine, Appendix G, Column AL

9. Why did the Trust choose to include an avoided cost of carbon in Triennial Plan V and not in prior Triennial Plans?

Factoring the non-embedded cost of carbon into the Trust’s calculations of cost-effectiveness reflects the principles of the National Standard Practice Manual for Distributed Energy Resources (NSPM for DERs), Maine policy, and the input of comments received from stakeholders. According to the NSPM for DERs, one of the nine fundamental principles of benefit-cost analysis is that “a jurisdiction’s primary cost-effectiveness test should account for the jurisdiction’s applicable policy goals.”⁶ In recent years, Maine’s policy goals have placed increased focus on the urgency and importance of reducing carbon emissions to mitigate the risk of harmful impacts from climate change. The codification of aggressive carbon reduction requirements by 2030, the establishment of renewable energy standards for electricity supply, the tightening of building energy codes, and the setting of beneficial electrification goals for the installation of heat pumps and the purchase of new electric vehicles are but a few of the more notable manifestations of this trend in Maine policy since the last Triennial Plan.⁷ More detail and targets related to carbon mitigation are provided in *Maine Won’t Wait*, the climate action plan produced in 2020 by the Maine Climate Council.⁸ The Trust arrives at this approach to carbon having also considered the comments submitted through the stakeholder process employed to develop the plan. The Acadia Center, Natural Resource Council of Maine, Northeast Clean Energy Council, Northeast Energy Efficiency Partnerships, Inc., and Vermont Energy Investment Corp. (VEIC) were unanimous in their recommendation that the Trust’s new plan factor external costs of carbon into the cost-effectiveness analysis. The views of these commenters were synthesized by VEIC, which wrote: “Perhaps the most important change to the cost-effectiveness test would be to bring it in alignment with the state’s greenhouse gas reduction laws and targets by including an appropriate value for avoided emissions.”⁹

10. Does this conclude your testimony?

Yes.

⁶ National Energy Screening Project, *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources*, August 2020, pp. 2-4.

⁷ See, e.g., Public Law, Chapter 476, 129th Maine State Legislature, First Regular Session, An Act To Promote Clean Energy Jobs and To Establish the Maine Climate Council, 2019; Public Law, Chapter 306, LD 1766, An Act To Transform Maine’s Heat Pump Market To Advance Economic Security and Climate Objectives, 2019; Public Law, Chapter 313 (2019), An Act To Clarify Certain Standards for the Efficiency Maine Trust’s Triennial Plan; and Public Law, Chapter 365, An Act To Support Electrification of Certain Technologies for the Benefit of Maine Consumers and Utility Systems and the Environment, 2019.

⁸ Maine Climate Council, *Maine Won’t Wait: A Four-Year Plan for Climate Action*, December 2020.

⁹ Vermont Energy Investment Corp., Responses to the Efficiency Maine Trust’s Request for Information on its Triennial Plan V, April 4, 2021, p. 7.