Clean Heat Standard Technical Advisory Group

Subgroup on Draft TRM

September 26, 2024 Meeting Minutes

Attendees

- Members of the Subgroup present
  - Matthew Bakerpoole, Vermont Department of Public Service
  - Luce Hillman, University of Vermont
  - Ken Jones, individual
  - Michelle Keller, Fraktalas Energy
  - Casey Lamont, Burlington Electric Department
  - Sam Lehr, Coalition for Renewable Natural Gas
  - Emily Levin, NESCAUM
  - Emily Roscoe, Efficiency Vermont
  - Floyd Vergara, Clean Fuels Alliance America
  - Rick Weston, individual
  - Brian Woods, Vermont Agency of Natural Resources

Agenda & Actions

- Opening the Meeting

[Meeting commenced at 9:30 am ET.]

- Discussion

[Group discussed Opinion Dynamics deliverables (emissions table, characterization of clean fuels and installed measures) and developed feedback and questions for OD. The meeting resulted in the attached memo to share with Opinion Dynamics.]

- Closing the Meeting

[The meeting adjourned at 11:50 am ET.]

Meeting Recording: https://www.youtube.com/watch?v=qyJqI4wVO1w

MEMO

To: Deirdre Morris, VT PUC
Fr: TAG Subgroup on Opinion Dynamics' Draft TRM
RE: Questions and Comments for OD
Dt: September 27, 2024

INSTALLED MEASURES

TAG subgroup members request that OD consider adding to Installed measures the following additional measures:

- New construction
- Wood stoves replacing fossil fuels
- window heat pumps (e.g., for apartment buildings)[1]
- Comprehensive weatherization measure (WAP service type project)
- Inside pools (commercial)
- Liquid biofuel fired conversion of furnace or boiler (adaptation to existing appliance)
- Commercial HP clothes dryers with electricity as a baseline condition

TAG subgroup members had the following questions regarding installed measures in the TRM:

- Are "wood stoves" referring to advanced pellet stoves? Noted that the codes and standards section references EPA-certified woodstoves, which some members believe is flawed.[2]
- How are we handling changes in federal codes and standards? E.g., If new HP efficiency standards are passed, how does that change the baseline or the deemed savings? Is it right to assume that all HPs installed after that point will meet the new standard?

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[1] From Gradient and Midea. See also attached short summary from a recent Building Decarbonization Coalition webinar. One notable aspect of this technology is its application to renters, since these units fit in a window, can be used in a small apartment, and can be taken with the renter if and when they move. NYC Housing Authority is currently doing a large pilot of these technologies as part of its Clean Heat for All Challenge. Emily Levin thinks EVT is also looking at this technology and perhaps developing a pilot, so they may be able to provide some insight.

[2] Reference in TRM: "All new wood heating appliances offered for sale in the US are required to meet New Source Performance Standards (NSPS)[1] promulgated by the US EPA. The NSPS requires that appliances meet specified particulate matter emission limits, revised most recently in 2020. The NSPS does not prescribe minimum efficiencies but requires manufacturers to have the efficiency tested and certified by an accredited laboratory. The EPA maintains a certified wood heater database where certified emissions and efficiency values are listed by make and model. (https://cfpub.epa.gov/oarweb/woodstove/index.cfm?fuseaction=app.about)...

- Ductless air source and air to water heat pumps savings are different from current EVT TRM savings. EEU and Tier3 TRM will not change until 2025 or 2026, which will mean a mismatch in the near-term. How will this be handled?
- Are the assumptions (e.g., eligibility criteria, measure life, and savings) aligned with EVT TRM?
- Is the information required for tracking progress aligned with EVT and WAP programs?
- Is there a heat pump option to replace rooftop fossil fuel thermal appliances?
- What will custom measures be used for?
    - A member suggested that bespoke measures for mixed biofuels be avoided, and recommended using a more standardized approach for simplicity.
- RE: heat pump water heaters (HPWH)– Who determines whether a standard electricity water heater replaced by a HPWH will be considered as a credible measure? A member Identified inconsistency in the TRM approach.
- RE. Table 7: Average Heating Efficiency. A baseline efficiency for commercial and industrial electric clothes drying or elsewhere of 3.66 is too high and appears to assume a present heat pump adoption of 100%. Please explain.
- For building thermal shell measures (i.e. air sealing and insulation) a baseline assumption of total air leakage or zero insulation is not appropriate. Mean building quality characteristics can be taken from the 2020 and 2021 market assessments. Use of either the median or one standard deviation below the median building quality would be more appropriate. See:
    - Commercial and industrial:
    - publicservice.vermont.gov/sites/dps/files/documents/VT Market Assessment Report 2021 FINAL.pdf
    - Residential: https://publicservice.vermont.gov/sites/dps/files/documents/VT_2020_SF_EX_Baseline_Final_Report_Jan242023.pdf
- How are costs determined? [3]
- Will the actual cost of a measure be reported or will it be tracked based on TRM cost estimates?
- Have cost estimates based on historical costs been updated to reflect actual inflation rates

DELIVERED FUELS – LIQUID & GASEOUS

Subgroup members had the following questions on delivered fuels:

[3] NESCAUM is currently developing a trove of data on installation costs for residential heat pump water heaters and air-source heat pumps that might be useful for OD to reference. The report, Heat Pump Water Heaters in the Northeast and Mid-Atlantic: Costs and Market Trends, is already published and NESCAUM will be publishing a similar report for HVAC heat pumps within the next few weeks. Emily Levin can share a draft if OD is interested in looking at preliminary cost data.

- RE. Program data tracking recs: A member suggested additional data be required, so that renewable attributes for fuels regulated under other programs is reported when delivered so ownership of the credit can be tracked.
- Is LUC treated consistently for wood and liquid fuels, i.e., is it either included or excluded for both?
- Why is biodiesel CI from corn feedstock lower than from waste-based feedstock e.g. cooking oil?
- Please provide inputs and assumptions to GREET, e.g., screenshot of GREET input spreadsheets.
- Are T&D losses applied to liquid fuels going through pipelines or being delivered by trucks to reflect leakage or spills? [4]

DELIVERED FUELS - WOOD

- Please explain Inconsistent treatment of wood biomass vs other biofuels made from waste products. If wood fuel is from waste feedstock, then the upstream production emissions should not be included.
- It appears that the OD is using .32 global warming potential (GWP) bio factor, which was included as an example in 2023 ANR inventory. A member noted that this value is not part of official 2023 inventory and was not referenced in 2024 inventory. This value should be reviewed if it is being used for wood biomass, including pellets or chips, particularly if the assumption is that these fuels come from waste.
- Is OD using purpose grown forests (not waste or white pine) rather than the calculator to estimate Cis for wood biomass fuel?
- What does the term "Lumber wood waste" mean? This is not a term used elsewhere.

DELIVERED FUELS – ELECTRICITY

- How is "system average emission rates" used in the calculation of VT electricity CI?
- How was the 4% T&D adder for line losses developed and used? Other studies estimate electricity line losses to be between 9-18%.

[4] A member referenced the TRM: "Carbon intensity adders for delivery of fuels to end user and transmission and distribution loss factors are required to calculate carbon reductions from many measures in this document. Table 2 presents those values for reference."