

Clean Heat Standard Technical Advisory Group

Statement of the Technical Advisory Group (TAG) in response to the May 29, 2024 Straw Proposal of the Staff of the Vermont Public Utility Commission (PUC) on the topic of Pacing – Part I for the Clean Heat Standard (Act 18), 30 VSA, elements within §§8124 and §§8127.

A. Background

In April of this year, the staff of the PUC issued a revised work plan¹ for this docket. That document clarifies near-term and longer-term goals for the Pacing Task, which is to develop the overall process for setting total Clean Heat Credit retirement schedule for Obligated Parties. The first step, Pacing - Part I, is request for *process recommendations* for statute-defined elements while contributing work efforts, especially from contracted consultants and other TAG subgroups, come together for the Clean Heat Standard (CHS).

Those topics requiring early process development, even as supportive data for clean heat measures and performance targets are yet to be defined, are listed here:

- Establishing and adjusting emissions schedule (30 V.S.A. § 8127(g))
- Setting declining carbon intensity values (30 V.S.A. § 8127(f))
- Setting and adjusting the sector reduction requirements² (30 V.S.A. § 8124(a)(1))
- Setting and adjusting obligated party annual requirements (30 V.S.A. § 8124(a)(2) and (3))
- LMI² equitable distribution (30 V.S.A. § 8124(d))

In late May of this year, the staff of the PUC sought comments from the public and the TAG on a straw proposal³ with more detail for the specific processes to be employed for first four key elements of the Pacing – Part I task listed above. (Exploration of the LMI element is not taken up at this time, given its dependence upon as yet unknown estimated costs of adjusting allocations for these customer sectors to meet statute requirements.)

The TAG would like to acknowledge the PUC's incorporation into this straw proposal of pacing-related comments and input that have already come from the public and TAG discussions.

The TAG's focus is on understanding what information is needed, and when, to prepare for

- setting Clean Heat Standard emissions reduction targets,
- defining emissions reduction measures and declining carbon intensity values, and
- ultimately calculating and establishing annual requirements for clean heat credit retirement targets for Obligated Parties.

This document will address each of the straw proposal's four process steps and the underlying approaches for the choices included therein.

¹ April 19, 2024 PUC Order Communicating Work Plan

² LMI is an abbreviation for customers with low and moderate income.

³ May 29, 2024 Staff Straw Proposal for Pacing – Part 1

B. The Straw Proposal: Review and Discussion

TAG notes that these numbered items are each individual and interrelated steps toward developing input data and targets for algorithms used to establish clean heat credit quantities and timelines for retirement required of obligated parties.

1. **Process for establishing and adjusting emissions schedule**

The PUC is tasked with 1) establishing a lifecycle emissions schedule, or list of lifecycle emissions rates for heating fuels and any fuel used in a clean heat measure - including electricity and biofuels, and 2) reviewing and updating that emissions schedule every 3 years. The schedule must be based on GREET, IPCC modeling, or something of comparable analytical rigor to fit the Vermont thermal context.

Proposed approach: The Commission shall hire a technical consultant to review and update the emissions schedule pursuant to 30 V.S.A. § 8127(g) every 3 years. Updates to the schedule will be accompanied by notice of any proposed changes, the Technical Advisory Group's review, and a 30-day public comment period. Pursuant to 30 V.S.A. § 8127(g)(2) and (3), if a fuel pathway is significantly impacted as a result of local, State, or federal legal requirements, technological change, or new evidence on emissions, a regulated entity can petition the Commission to recalculate the fuel's lifecycle emission rate before the regularly scheduled update.

PACING COMMENTS:

- The TAG is generally in agreement and see this as in keeping with statute language and goals.
- Consider clarification of language, to help define "schedule" in this usage as the table and tallies of lifecycle emissions established for each clean heat measure and the associated fuels, not a timeline or trajectory.
- Consider adding language to acknowledge applicability to custom and prescriptive clean heat measures alike, with review of custom Clean Heat measures comparable to the proposal and verification steps currently applied under Energy Efficiency and Tier III programs in Vermont.
- The 3- and 10-year adjustment cycles are per statute and appropriate for keeping Clean Heat credit documentation and tracking up to date and reflecting evolving technologies, legal requirements, and any new evidence on emissions through 2050.

2. Process for setting declining carbon intensity values

“Carbon intensity value” is defined in statute as the amount of lifecycle greenhouse gas emissions per unit of energy of fuel expressed in grams of carbon dioxide equivalent per megajoule (gCO₂e/MJ).”⁴

The carbon intensity value is one parameter required for calculating the value of clean heat credits over the implementation period of the CHS. To simplify which fuels are eligible under the program, the PUC proposes a step change in the initial 5 years.

Proposed approach: The Commission will establish and publish carbon intensity values in compliance with 30 V.S.A. § 8127(f). On January 1, 2025, the Commission will adopt a step change in carbon intensity values – adopting the threshold limit of “below 80 in 2025” and “below 60 in 2030” with no rate of decline in in-between years. In preparation for establishing carbon intensity values on January 1, 2030, for the years 2031-2050, the Commission will offer an opportunity for public input to help inform the step change or rate of decline proposed during that period.

PACING COMMENTS:

- The TAG recognizes that using a step change for declining carbon intensity values for the initial period of CHS implementation between 2025 and 2030 provides a simple and predictable target for the marketplace, and might have value in the years that follow as well, perhaps continuing in 5-year increments. We appreciate that PUC incorporates opportunity for public input, and the ability to apply insight gained over the initial years of implementation to the carbon intensity values applied in future years.
- Consider adding language to clarify that per cited statute section, declining carbon intensity values discussed here apply to “liquid and/or gaseous clean heat measures”; wood fuels and electricity are not impacted by these adjustments to carbon intensity values.
- Our understanding of the proposed approach defines the carbon intensity values from a 2025 starting point (below 80) through 2029, then below 60 starting in 2030. While statute defines a value below 20 for 2050, PUC has left open for exploration what the trajectory will be in those later years of CHS implementation, between 2031 and 2050.
- As noted in PUC justification and our notes earlier, this carbon intensity value is one of several data inputs for valuing and calculating the Clean Heat Credits that will be tracked and retired through the course of implementation through 2050.
- It will be helpful to clarify further that this step change is different from the trajectory for emissions reduction and point out that there is value in prioritizing lower CI-value fuels early in the process. As written the proposal effectively creates a declining CI requirement that lags the emissions reduction requirement. As a hypothetical, significantly lagging measures would receive credits but could contribute inadequate emissions reductions to keep pace with the RCI sector requirement. If the majority of the measure mix was significantly lagging measures the sector requirement would not be met. Alternatively, the rate of CI reduction could lead the rate of RCI emissions reductions. In this “leading” case all fuel measures would be both creditable contribute to meeting the RCI pace of emissions reductions. A leading CI requirement would be more stringent than a lagging CI requirement and could result in higher compliance costs.

⁴ 30 V.S.A. § 8123(1)

3. Process for setting and adjusting the sector's emissions reduction requirements

Proposed approach: The Commission will determine the pace required of the Clean Heat Standard to meet the Vermont thermal sector's proportional greenhouse gas emission reductions obligated by the Global Warming Solutions Act (GWSA) in compliance with 30 V.S.A. § 8122. The Commission will, with assistance from the Technical Advisory Group, reconcile the reductions necessary in the Greenhouse Gas (GHG) Inventory to lifecycle-based emissions that can then be translated into clean heat credits.

The Commission proposes the following:

1. **Establish a baseline** to anchor the trajectory of emissions reductions. [based on the reporting done in the GHG inventory, compiled by ANR.]
2. From the established baseline, **linearly project the next 10 years of emissions reductions**, with the 2030 obligation met in 2029 and later years linearly tied to meeting 2050's obligation in 2049.
3. **Reconcile the [GHG] inventory's in-boundary (i.e. within Vermont's borders) emissions totals to lifecycle-based emissions totals.**
4. **Use the same rate of decrease** as required in the inventory-based calculations [GWSA] **in the lifecycle-based trajectory.**
5. Use the results of the triennial potential study to **determine whether it is appropriate to adjust the decade trajectory** to something other than a linear decrease in emissions.

PACING COMMENTS:

Topic 1.

- The TAG agrees with the approach to establish a baseline year that is weather-normalized and recommends that it be linked to the year of most recent fuel tax data.
- Vermont fuel tax data is available in the year following the reporting period, rather than the State GHG inventory which is published three years after the reporting period. Note that the fuel tax data should be adjusted for nonroad diesel and other transportation fuels, and potentially other adjustments as applicable.

Topic 2.

- TAG agrees with the approach to at least initially establish linear projections for the 10-year periods called out in statute.
- Consider clarifying language to explain how first leg would be 2025-2030, then continue on in 10-year trajectories to project progress toward 2050 obligations by December 31, 2049.
- The TAG appreciates that this step involves explanation that it is addressing the trajectory for the GWSA GHG Inventory emissions reductions totals.
 - The *next* step is to incorporate the life-cycle based emissions limits.
 - It is important to note that current GHG inventory analysis will be evolving to be based on fossil fuels sales tax data. The TAG recommends monitoring trends and adjusting as needed if the gap between calculations based on the current inventory data resources and those from the tax data results widens over time.

Topic 3.

- This reconciliation/translation will likely be a complex algorithm, and cannot be defined until GREET or equivalent analysis resource is selected and customized for Vermont, carbon intensity values are established by fuel type and paced for decline over time, clean heat measure characterizations and measure mix data and potential study values are available from active consultant efforts underway.

- A linear trajectory is likely the best first approach, though there are pros and cons to either front- or back-loading the trajectory, depending on how the PUC would like to prioritize performance and reporting across the implementation periods. Trajectories for subsequent 10-year periods will be informed by results and insights gained during the first few years of CHS implementation.
- The Step 3.c of the straw proposal specifically identifies using the emissions factors identified in the ANR lifecycle-based supplement to determine the upstream emissions of each fuel type. The TAG recommends instead using the emissions schedule, pursuant to 30 V.S.A. § 8127(g) and as discussed in the first section of the straw proposal, to determine the lifecycle emissions of each fuel type. Using the PUC-approved emissions schedule will support a lifecycle accounting methodology consistent across the clean heat standard requirements, credit valuation, and reporting.

Topic 4.

- The TAG agrees with applying the same rate of GHG emissions decrease (trajectory or slope) to the life-cycle based emissions trajectory required to meet CHS targets. As noted above, this will cover the first period, 2025-2030, then 10-year periods – reviewed for potential adjustment every 3 years – to 2050.

Topic 5.

- The TAG comments that it is important to note that topics 4 and 5 in this proposed process are different. This stage recognizes the impact of measure mix and biofuels and as well as their evolution over time.
- Consider adding language to clarify that incorporation of the CHS elements not included in the GWSA analyses may result in two differing trajectories for the GHG emissions and the CHS lifecycle-emissions based targets.

4. Process for setting and adjusting obligated party annual requirements

Proposed approach: The Commission will “establish the number of clean heat credits that each obligated party is required to retire each calendar year.” An obligated party’s annual credit requirements will “be expressed as a percent of each obligated party’s contribution to the thermal sector’s lifecycle CO₂e emissions in the previous year. The annual percentage reduction shall be the same for all obligated parties.”

1. After calculating lifecycle emission limits for the entire sector (see previous sections), the **year-by-year reductions will need to be translated to credits and distributed to obligated entities.**
2. Using the lifecycle emission rates developed by the technical consultant, **convert fuel sales reporting** from the previous year **into a lifecycle emission total** for all fuel reported and for each obligated party;
3. **Calculate each obligated party’s proportional contribution** to the total emissions reported.
4. **Assign each obligated party’s proportional contribution** to the lifecycle-based baseline year;
5. **Apply the percent decrease required by the lifecycle trajectory;** a. Example: If the lifecycle-based emissions trajectory requires a 10% decrease across the sector in year one, a 10% reduction of Company A’s .6 MMT equates to a 0.06 MMT of CO₂e reduction in year one;
6. **This reduction in CO₂e emissions is the obligated entity’s proportion of emission reduction that must be translated to clean heat credits;**
7. **Assign a decade’s worth of credit requirements** based on the percent decrease required in the lifecycle-based inventory limits; a. Every 3 years, the Commission will use the latest inventory and fuel sales reporting data to recalibrate lifecycle emission limits and percent reductions required.
8. When updating and extending the decade projection of credit requirements **every 3 years**, the **Commission will consider external factors that may affect the clean heat credit market.**

PACING COMMENTS:

- The TAG is generally in agreement with the process above as extracted from statute.
- More data needed to understand how this across-the-board flat % figure works out for the smaller obligated parties.
- The PUC has noted potential fundamental conflict with statute language that bases credit requirements based on the thermal sector emissions “*in the previous year*”.
 - The GHG inventory is generally up to three years behind the current calendar year.
 - Thermal sector tax and emissions data will likely be available by February of the following year, though unclear if that is aggregated tax data or broken out by fuel type.
 - TAG has not come to consensus yet on whether to recommend a statute amendment or whether CHS can clarify/stipulate a definition for “...the previous year”.
 - If the fuel tax data alternative is selected as an effective proxy for the inventory, or is adopted by the inventory itself, this issue can be resolved. It is unclear if the Commission or ANR through some supplemental document to the inventory or very-preliminary results has discretion to “deem” fuel tax data values those used in the Inventory’s “previous year”.