

**STATE OF VERMONT  
PUBLIC UTILITY COMMISSION**

Case No. 23-2220-RULE

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| Proceeding to design the potential Clean Heat Standard |  |
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**VERMONT DEPARTMENT OF PUBLIC SERVICE COMMENTS ON TEN YEAR SCHEDULE**

On February 5, 2024, The Vermont Public Utility Commission (“Commission”) issued an Order to “begin establishing a process by which the Commission will set and adjust the schedule for the total number of credits to be retired each year over a ten-year period.”<sup>1</sup> In the Order, the Commission seeks recommendations on the process of setting and updating the ten-year schedule of requirements.<sup>2</sup> The Commission requested input on specific topics, outlined below.

**1. The process and information required to set annual requirements to meet the 2030 and 2050 Global Warming Solutions Act of 2020 requirements.**

To accurately set annual requirements for obligated parties (OPs), the Commission will need to take several steps, each of which is explained in detail in the straw proposal below. The process to develop these steps can likely be refined with further public comment and process as this case unfolds. The Department’s straw proposal is described in two “phases.”

**Phase I: Establish the amount of emissions reductions necessary from each obligated party**

*Establish the total emissions from the thermal sector for the most recent calendar year.*

This first step should establish the reference year from which emissions reductions must be achieved to meet 2030 Global Warming Solutions Act (GWSA) requirements. The most

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<sup>1</sup> Order requesting comments on process for determining annual greenhouse gas emission reduction requirements, Case No. 23-2220-RULE, Order of 2/5/24 at 1.

<sup>2</sup> Id. at 2.

recent available data from the Greenhouse Gas (“GHG”) Inventory, the required tool to account for Vermont’s emissions relative to GWSA requirements,<sup>3</sup> should be used as the logical starting point for the process. The Commission should take care to normalize for weather or outlier events affecting thermal fuel consumption in a baseline reference year.

*Establish the target emissions from the thermal sector for 2030.*

Second, the Commission must establish the target emissions for the thermal sector for 2030 (and 2050.)<sup>4</sup> This should be based on the proportional requirements of the thermal sector to meet overall GWSA requirements.<sup>5</sup>

*Estimate total reductions necessary from the thermal sector, according to the GHG Inventory.*

The first two steps will establish the magnitude of emissions reductions necessary by 2030 and 2050, as accounted for in the GHG Inventory, by simply subtracting the target emissions from the Clean Heat Standard (“CHS”) reference year. As a reference point, the Commission could then establish a flat (i.e. same requirement in each year) thermal sector requirement to meet GWSA goals. This could be a useful starting point to compare with the impact of any necessary adjustments for policy, program capability, or other reasons.

*Establish emissions reductions required of each Obligated Party.*

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<sup>3</sup> Vt. Stat. Ann. tit. 10, § 582(a).

<sup>4</sup> tit. 30, § 8124(a)(1), citing, tit. 10, § 578(a)(2) and (3) (the applicable GWSA emissions reduction targets are 40% below 1990 baseline by 2030 and 80% below baseline by 2050).

<sup>5</sup> tit 30, § 8122(a), “...obligated parties shall reduce greenhouse gas emissions attributable to the Vermont thermal sector by retiring required amounts of clean heat credits to meet the thermal sector portion of the greenhouse gas emission reduction obligations of the Global Warming Solutions Act.”

Using annual registration data detailing the amount of fuel sold, the Commission can then assign each OP its proportional share of the total thermal sector emissions, as required by Act 18.<sup>6</sup>

Phase II: Translate emissions reductions requirements into Clean Heat Credit retirement requirements.

Phase I of this proposal sets an initial pace by which emissions reductions must occur as accounted for by the GHG Inventory. Phase II describes a straw proposal for how the Commission can translate these emissions reduction requirements under GHG Inventory Accounting to a Clean Heat Credit (CHC) retirement requirement for each OP.<sup>7</sup>

*Establish Clean Heat Credit (CHC) Values*

Clean Heat Credits (“CHCs”) must be established based on the lifecycle emissions of fuels.<sup>8</sup> Thus, the Commission must establish the value in lifecycle emissions reductions of various CHC-earning measures that may be used by OPs to meet their requirements. First, the Commission should establish the lifecycle emissions value of each fuel that is used for thermal energy purposes in Vermont, including propane, fuel oil and biofuels, natural gas, renewable natural gas (from various feedstocks), and electricity. Next, the value representing lifecycle emissions, or the “measure characterization,” of each potential clean heat measure must be identified.

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<sup>6</sup> tit. 30, § 8124(a)(2), “Annual requirements shall be expressed as a percent of each obligated party’s contribution to the thermal sector’s lifecycle CO<sub>2</sub>e emissions in the previous year. The annual percentage reduction shall be the same for all obligated parties. To ensure understanding among obligated parties, the Commission shall publicly provide a description of the annual requirements in plain terms.”

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*; Lifecycle analysis “assesses the overall greenhouse gas (GHG) impacts of a fuel, including each stage of its production and use.” See EPA definition: <https://www.epa.gov/renewable-fuel-standard-program/lifecycle-analysis-greenhouse-gas-emissions-under-renewable-fuel>.

The Commission’s technical consultant and the Potential Study consultant both include measure characterization in their scope of work.<sup>9</sup> It will be critical that both the Department’s and Commission’s work on measure characterization is coordinated. The Technical Advisory Group (TAG) should play a primary role in reviewing measure characterizations and making recommendations to the Commission on the value of certain measures, particularly where there may be conflicting estimates of associated emissions. Many measures will likely be prescriptive (applying a standard value for each installation.) However, there may also be custom measures that OPs will deliver or install that will reduce GHG emissions. The Commission will need to establish the specific process by which CHCs earned from these custom measures are approved and verified.

*Estimate a likely and reasonable sector wide “measure mix” of types of CHCs that obligated parties will pursue that will be sufficient to meet the 2030 targets*

To understand how clean heat measures that create CHCs (as measured by lifecycle emissions) impact progress toward emissions reduction requirements (as measured by the GHG Inventory), it will be necessary to assume a combination of installed measures that will be undertaken by OPs (the “measure mix”). Although it will be difficult to predict which measures OPs will opt to deliver or install in the first several years, the predicted measure mix will allow the Commission to estimate the actual emissions reductions from each CHC as accounted for by the GHG Inventory. This will be critical for setting future obligations and translating CHCs in lifecycle terms to actual reductions in terms of the GHG Inventory. The measure mix will need

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<sup>9</sup> Potential Study RFP: <https://publicservice.vermont.gov/sites/dps/files/documents/Vermont%20Clean%20Heat%20Standard%20Potential%20Study%20RFP%20August%202023.pdf>, at 8; tit. 30, § 8128(c); Commission technical consultant RFP: [https://puc.vermont.gov/sites/psbnew/files/documents/Technical\\_Consultant\\_RFP.pdf](https://puc.vermont.gov/sites/psbnew/files/documents/Technical_Consultant_RFP.pdf), at 10.

to be updated as soon as practicable after initial implementation to reflect OPs' plans and on-the-ground implementation results. The Potential Study, scheduled to be complete by September 1<sup>st</sup>, 2024, will offer a first example of what is achievable given assumed measure characterizations and measure mix based on assumed policy and program constraints. These assumptions should be reviewed by the TAG.<sup>10</sup>

*Ensure reflection of policy goals and or requirements that impact types of measures and pace by which savings may be achieved*

Setting annual credit requirements should initially be informed by the methods laid out above, however, the CHC requirements must reflect other policy goals and requirements of Act 18. For example, the quantity of liquid fuels assumed should reflect the declining allowable carbon intensity of fuels, as required by the statute.<sup>11</sup> Another example is to ensure requirements for CHCs to come from customers with low and moderate income (LMI) are reflected in the assumed measure mix.<sup>12</sup> These statutory requirements will impact the types of measures installed and the pace at which emission reduction targets may be achieved.

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<sup>10</sup> Note: Assuming a certain measure mix has significant implications for the success of a supposed market-based solution such as the Clean Heat Standard. Inefficient outcomes are likely to occur, because a regulatory/statutory directed measure mix is unlikely to be the same as that which providers ultimately undertake where on-the-ground realities related to customer behavior, workforce availability, and costs outside of a provider's control will all impact the actions taken by providers. However, given the differences in accounting, it is unclear if there are ways to avoid these inefficiencies. These costs and inefficiencies were almost certainly not considered in initial design that went into the passage of the Affordable Heat Act.

<sup>11</sup> tit. 30, § 8127(f), "To be eligible as a clean heat measure, a liquid or gaseous clean heat measure shall have a carbon intensity value as follows: (A) below 80 in 2025; (B) below 60 in 2030; and (C) below 20 in 2050, provided the Commission may allow liquid and gaseous clean heat measures with a carbon intensity value greater than 20 if excluding them would be impracticable based on the characteristics of Vermont's buildings, the workforce available in Vermont to deliver lower carbon intensity clean heat measures, cost, or the effective administration of the Clean Heat Standard."

<sup>12</sup> tit. 30, § 8124(d)(2), "Of their annual requirement, each obligated party shall retire at least 16 percent from customers with low income and an additional 16 percent from customers with low or moderate income. For each of these groups, at least one-half of these credits shall be from installed clean heat measures that require capital investments in homes, have measure lives of 10 years or more, and are estimated by the Technical Advisory Group to lower annual energy bills."

The Equity Advisory Group (EAG) should play a significant role at this stage of OP obligation development, where policy priorities may be evaluated. For example, the Commission should consider whether LMI customers should receive benefits earlier in the process (i.e. be the first to receive measures that create CHCs.) That policy priority would need to be balanced with expected cost impacts of the program. In that example, if credit requirements for LMI customers are frontloaded in the earlier years to maximize clean heat measure adoption amongst the LMI population of Vermont, then the annual credit requirements for OPs in later years may need to be re-forecast up or down to ensure future GWSA requirements are met depending on the measure mix that was utilized to serve the LMI population in the early years.<sup>13</sup>

*Set a reasonable trajectory for achievement of emissions reductions via CHC's by obligated parties*

With the above steps completed, the Commission should then seek to set a trajectory for thermal sector-wide emissions reductions. This may be a linear trajectory or may start slower and ramp to greater reductions given program constraints such as workforce availability, cost, and statutory requirements described above. Act 18 bases obligations on GWSA emissions reduction targets but provides flexibility in the defining rates of emissions reductions.<sup>14</sup> Compliance does not require an exact alignment of obligations with a fixed rate of implementation, and the statute allows for rates to be set higher or lower as long as 2030 and 2050 GWSA targets are met.<sup>15</sup>

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<sup>13</sup> Additionally, pursuant to § 8124(d)(4), if the commission decides to change the percentage requirements established in § 8124(d)(2) either up or down, the subsequent yearly credit requirements for OPs would need to be adjusted accordingly to meet targets as described in 10 V.S.A. § 578(a)(2)(3).

<sup>14</sup> tit. 30, § 8121; tit. 30, § 8124(a)(1), providing for emissions reductions “at a pace sufficient... to achieve... emission reductions consistent with” the GWSA’s 2030 and 2050 targets; tit. 30, § 8124(d)(3) (indicating Commission discretion in modifying obligations, discussing the potential of prioritization of low and moderate income measure implementation.) “The Commission shall, to the extent reasonably possible, frontload the credit requirements for customers with low income and moderate income so that the greatest proportion of clean heat measures reach Vermonters with low income and moderate income in the earlier years.”

<sup>15</sup> *Id.*

Setting the sector-wide trajectory should be an iterative process along with the emissions trajectory created for individual OPs, as described in the Phase I of this proposal.

*Assign share of total needed CHC's to each obligated entity for each year through 2030.*

With the pace of sector-wide CHCs established, the Commission will then need to allocate a CHC requirement to each OP. This can be done using registration data and allocating required CHCs on a proportionate basis to each OP's emissions in the baseline reference year.

*Estimate trajectory for 2050.*

Finally, the Commission should apply a linear trajectory from 2030 to 2050, which will fill out the remainder of the ten-year schedule required by statute.<sup>16</sup> This will provide a preliminary estimate of requirements that will help OPs plan for the medium-long term. The trajectory can be updated periodically to comply with GWSA requirements.<sup>17</sup>

## **2. The information, input, and public process that should go into the triennial update and extension of the ten-year schedule**

The Commission should use any newly available lifecycle emissions data from thermal end use fuel consumption in Vermont for its triennial update to “the pace of clean heat credit requirements for future years.”<sup>18</sup> The most current ANR GHG Inventory estimates of thermal sector emissions will also be necessary for adjusting requirements up or down. Additionally, credit retirement and all reported emissions reduction data from OPs and DDAs will be necessary to confirm progress made towards GWSA goals. A new estimated measure mix,

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<sup>16</sup> tit. 30, § 8124(a)(3).

<sup>17</sup> *Id.*

<sup>18</sup> *Id.*

informed by on-the-ground practices will need to be created, and any adjustments to measure characterizations will need to be accounted for as well.

In addition to the new information related to emissions accounting described above, The Commission should seek consultation with subject matter experts on the CHS TAG and utilize relevant emissions models to inform the triennial update. Findings from the Commission's biennial assessment of harmful consequences pursuant to § 8127(h) should also inform the update.<sup>19</sup> Review of the recommendations made to the Commission by, and consultation with, the Equity Advisory Group (EAG) during the development and implementation phase of the CHS should also inform the update.

The Commission should further use the triennial update as an opportunity to comply with the principles of the Vermont Environmental Justice Law.<sup>20</sup> In its triennial update, the Commission should examine financial impacts of the CHS, in particular, any undue adverse financial impacts on Vermonters as a whole or on specific demographic groups that have occurred as a result of annual requirements pursuant to § 8124(a)(3). The Commission may use the good cause adjustment method provided in § 8124(a)(4) to minimize "adverse financial impacts."

In determining appropriate modification of obligations via triennial updates the Commission should compare obligations of previous years with the credits that were retired over

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<sup>19</sup> tit. 30, § 8127(h), "The Commission shall biennially assess harmful consequences that may arise in Vermont or elsewhere from the implementation of specific types of clean heat measures and shall set standards or limits to prevent those consequences. Such consequences shall include environmental burdens as defined in 3 V.S.A. § 6002, public health, deforestation or forest degradation, conversion of grasslands, increased emissions of criteria pollutants, damage to watersheds, or the creation of new methane to meet fuel demand.

<sup>20</sup> tit. 3, § 6001, "The purpose of this chapter is to identify, reduce, and eliminate environmental health disparities to improve the health and well-being of all Vermont residents."

the same period. The Commission should also consider obligation feasibility, general market and economic conditions, improvements in available emissions related data, and market modeling precision.

Finally, the Commission should open a non-contested public proceeding for triennial updates and modification of the ten-year emissions retirement schedule. However, the Commission should also facilitate broader public engagement to ensure Vermonters can participate in the proceeding and are informed about the CHS's positive and negative impacts. Press releases, informational webinars, polling, focus groups, and community events are all options for communicating CHS policies and impacts to the Vermont public.

### **3. The process for considering good-cause temporary adjustments of the annual requirements, and what types of information would be needed.**

Good-cause adjustments to annual requirements should be made where either found necessary by the Commission, or as requested by an OP.<sup>21</sup> Such a request should come in the form of a petition to the Commission and allow for the opportunity for comment. The Act provides for up to three-year emissions retirement schedule adjustments based on “changes in technology or evidence of emissions.”<sup>22</sup> The Act also provides for noncompliance payment waiver when factors beyond OP control prevent performance.<sup>23</sup> These factors should include impossibility, impracticality, or determination of a negative societal benefit once measure costs are established and well understood.

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<sup>21</sup> tit. 30, §§ 8124(d)(4), 8124(f)(3).

<sup>22</sup> tit. 30, § 8127(g)(3).

<sup>23</sup> tit. 30, § 8124(f)(3)(A).

These scenarios should be extended to provide prospective annual requirement flexibility if factors outside of the control of the parties make performing obligations or satisfying emissions reduction requirements of the GWSA impractical. If an OP requests a prospective adjustment to its annual requirement because it anticipates it will be unable to perform due to factors outside of its control, and the OP made a good faith effort in planning to meet its obligation, the Commission should grant the request.<sup>24</sup>

Good faith in planning to meet an obligation can be shown by demonstrating undue hardship, including: economic forces impacting the market that significantly alter expectations from an annual plan (e.g. a significant recession), or unavailability of workforce to implement measures. OPs should file information about their plan to meet annual requirements with the Commission, including what measures were implemented, the resources devoted to implementing the plan, all associated records verifying any earned clean heat credits, and detailed market information as to why the obligation cannot be met. It should be a high bar to modify obligations. Not planning properly, not investing sufficiently, or not taking steps to meet requirements with sufficient time (e.g. not attempting to hire until late in the obligation year) should not be considered reasons to change an OP's requirements.

A good-cause modification that is granted by the Commission could have the same effect as a waiver of noncompliance payments under § 8124(f)(3), avoided obligations would need to be added to one or more future years. Where possible, notice of modification should be provided

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<sup>24</sup> § 8124(d)(4).

at least 120 days before the Commission determination of Default Delivery Agent (“DDA”) credit costs to avoid inefficient planning decisions on the part of OPs.<sup>25</sup>

Finally, if the Commission finds the emissions reduction schedule of the GWSA can be readily met, and doing so would not further increase associated costs, the Commission should consider marginally increasing obligations to provide credit market stability in the event emissions reductions may become difficult to achieve in future years.<sup>26</sup> If the Commission initiates a modification of the retirement schedule outside of a triennial update, the proposed modification should follow the same procedures as those used in triennial updates.<sup>27</sup>

**Additional related topics that the Commission seeks comment on include:**

**4. Sources of information that could inform these decisions;**

The Commission’s credit retirement schedule should be informed by ANR’s pending lifecycle analysis and their GHG Inventory. Other sources of lifecycle analysis should also be considered, such as the Department of Energy’s Argonne National Laboratory GREET model and any necessary or appropriate technical modifications to that model. The Commission should also utilize the Potential Study once available. The Commission should also collect and review data on impacts to disadvantaged and/or energy burdened communities in Vermont.

**5. Sources of supplemental information/data that could help provide context for pacing decisions, including the initial schedule and updates;**

The Department has no suggestions at this time.

**6. The appropriate type and timing of input from the Technical and Equity Advisory Groups (AGs)**

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<sup>25</sup> tit. 30, § 8125(3)(d).

<sup>26</sup> An acceptable increase in associated cost could be measured and defined by the Commission as a percent increase in cost per million British Thermal Unit (MMBTu) delivered.

<sup>27</sup> § 8124(a)(3-4).

The Affordable Heat Act specifies that the Equity Advisory Group (EAG) will cease to exist once the commission issues rules implementing the CHS.<sup>28</sup> The loss of the EAG's institutional and procedural knowledge will be to the detriment of future proceedings. The Commission should consult with the Environmental Justice Advisory Council (EJAC) and Interagency Environmental Justice Committee (IEJC) in the development and implementation of the CHS to carry forward EJ principles even after the EAG ceases to exist.<sup>29</sup> Stakeholder engagement, beyond formal working groups, should also inform policy decisions.

Regardless of the process the Commission uses in establishing the initial CHS rules, triennial updates, or good cause requirement modifications, the Commission should consult with the Advisory Group(s) (TAG, EAG, EJAC, IEJC) both prior to the notice of the rule and during the development of the rule. This consultation would ensure the Commission receives broad stakeholder perspectives and reduce the likelihood of inequitable outcomes.

The TAG should consult on all technical matters under the Commission's consideration. It is unlikely that the TAG itself will originate significant work on its own. However, it holds the expertise to gain perspective on decisions regarding modeling assumptions and methodology as it relates to setting and updating obligations, and characterizing measure that will create CHCs.

#### **7. Other design elements or considerations that should be included in the process for making pacing decisions.**

The Department has no suggestions at this time.

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<sup>28</sup> tit. 30, § 8129(c), "The Equity Advisory Group shall cease to exist when the initial Clean Heat Standard rules are adopted."

<sup>29</sup> tit. 3, § 6006(a)(1)(A-B).

## Conclusion

The straw proposal outlined above for setting obligations, its proposals for process, and its sources of information, are intended to serve as a starting point for the development and refinement of the CHS. This process would be further aided by opportunities for robust public input. The Department appreciates the Commission's consideration in adopting this proposal and looks forward to further discussion on these topics.

Dated at Montpelier, Vermont this 16<sup>th</sup> day of February 2024.

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