

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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Order entered:

**DRAFT DOCUMENT DETERMINING FIRST-YEAR OBLIGATED PARTIES AND THEIR OBLIGATIONS AND SETTING THE INTERIM CLEAN HEAT CREDIT RETIREMENT SCHEDULE (2026-2035) WITH LOW- AND MODERATE-INCOME CREDIT DISTRIBUTION**

**I. INTRODUCTION**

In Public Act 18 (2023 Vt., Bien. Sess.) (“Act 18”), the Vermont Legislature directed the Vermont Public Utility Commission (“Commission”) to develop a proposed Clean Heat Standard.<sup>1</sup> Pursuant to 30 V.S.A. § 8124, the Commission must determine which fuel dealers that register with the Commission are obligated parties.<sup>2</sup> The Commission must “establish the number of clean heat credits that each obligated party is required to retire each calendar year.”<sup>3</sup> Act 18 requires that the Commission develop proposed rules to submit to the Legislature by January 15, 2025. The final proposed rules must “contain the first set of annual required amounts for obligated parties.”<sup>4</sup> Section 8124 of Title 30 of the Vermont Statutes Annotated also requires that the Commission publish the obligated parties’ annual requirements in “plain terms.”

Section 6(f)(5) of Act 18 states: “The final proposed rules shall contain the first set of annual required amounts for obligated parties as described in 30 V.S.A. § 8124(a)(1).” On October 1, 2024, the Commission released the draft Clean Heat Standard rule. As we explained in the companion status report issued with the draft rule, “the focus of the Commission’s draft

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<sup>1</sup> For an overview of the work done to date and other information on the proposed Clean Heat Standard, please see the Commission's clean heat website at <https://puc.vermont.gov/clean-heat-standard>. A substantial portion of Act 18 is codified in 30 V.S.A. ch. 94.

<sup>2</sup> 30 V.S.A. § 8124(b)(1). Obligated parties are defined as (a) a regulated natural gas utility serving customers in Vermont and (b) for other heating fuels, the entity that imports heating fuel for ultimate consumption within the State [of Vermont], or the entity that produces, refines, manufactures, or compounds heating fuel within the State for ultimate consumption within the State. 30 V.S.A. § 8123(12).

<sup>3</sup> 30 V.S.A. § 8124(a)(1).

<sup>4</sup> Act 18, § 6(f)(5).

rule is on the responsibilities of the obligated parties that the Commission would be charged with regulating under the potential Clean Heat Standard program.”<sup>5</sup> As currently conceived, the Commission’s draft rule, in some form, would live on if the Legislature approves the Clean Heat Standard. The draft rule mentions that the Commission will determine the obligated parties and their annual obligations. The actual execution of that process is described in this document. Appended to this determination is the list of obligated parties and their clean heat credit requirements for the first year.

In addition to establishing the obligated parties and their first-year clean heat credit obligations, the Commission must set the annual clean heat credit requirements for the next 10 years.<sup>6</sup> Further, the Clean Heat Standard program must be “designed and implemented to enhance social equity by prioritizing customers with low income, moderate income, those households with the highest energy burdens, residents of manufactured homes, and renter households with tenant-paid energy bills.”<sup>7</sup> To prioritize these households, the Clean Heat Standard sets a percentage of clean heat credits that must be retired through clean heat measures serving customers with low income and moderate income.<sup>8</sup> The Legislature encouraged the Commission to frontload, to the extent reasonably possible, these equity-targeted credits “so that the greatest proportion of clean heat measures reach Vermonters with low income and moderate income in the earlier years” of the program.<sup>9</sup>

This determination fulfills these obligations under Act 18. It (1) establishes the list of year-one obligated parties, (2) sets their year-one clean heat credit requirements and explains those requirements in plain terms, (3) determines the annual clean heat credit requirements for the first 10 years of the potential Clean Heat Standard program, and (4) designates a portion of the annual credit requirements for low-income and moderate-income households. However, as we discuss in section II, below, there are substantial problems with the fuel dealer registration data that form the basis of our determinations. Accordingly, we strongly recommend against these obligations being adopted.

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<sup>5</sup> Case No. 23-2220-RULE, Draft Clean Heat Standard Rule Companion Status Report (10/1/24) at 3.

<sup>6</sup> 30 V.S.A. § 8124(a)(3).

<sup>7</sup> 30 V.S.A. § 8124(d)(1).

<sup>8</sup> 30 V.S.A. § 8124(d)(2).

<sup>9</sup> 30 V.S.A. § 8124(d)(3).

## **II. YEAR-ONE OBLIGATED PARTIES AND CLEAN HEAT CREDIT OBLIGATIONS**

Pursuant to 30 V.S.A. § 8124, the Commission must determine which fuel dealers that register with the Commission are considered obligated parties. The Commission must “establish the number of clean heat credits that each obligated party is required to retire each calendar year.”<sup>10</sup> This section describes the process the Commission used to determine obligated parties and their first-year obligations, in addition to highlighting the serious problems with the quality of the fuel dealer registration data on which these obligations are based. Despite these issues and to fulfill our statutory duty, the Commission lists year-one obligated parties and their clean heat credit requirements relevant to year one of this potential program in an appendix to this document.

### **A. Determining Obligated Parties**

Act 18 distinguished between entities that must register with the Commission and entities that are obligated parties under the potential Clean Heat Standard. Pursuant to 30 V.S.A. § 8124(b)(1), each entity that sells heating fuel into or in Vermont must register annually with the Commission. From this group of annual registrants, the Commission must designate obligated parties. Obligated parties are a regulated natural gas utility serving customers in Vermont or an entity that imported, produced, refined, manufactured, or compounded heating fuel for ultimate consumption within the State of Vermont.<sup>11</sup> Under the first part of this definition Vermont Gas Systems, Inc. (“VGS”), “a regulated natural gas utility,” is one of the obligated parties.

Under the second part of the definition, the Commission determined which suppliers of other heating fuels are obligated parties using reporting criteria in the Commission’s fuel dealer registration form. In this form, the Commission required registrants to answer a series of yes/no questions and requested sourcing and customer information and volume of fuel sold directly to consumers in Vermont to determine whether an entity qualified as an obligated party and the magnitude of that entity’s obligation.

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<sup>10</sup> 30 V.S.A. § 8124(a)(1).

<sup>11</sup> 30 V.S.A. § 8123(12).

Ultimately, if a fuel dealer reported that it imported fuel into the state and either sold that fuel directly to consumers or used it in some other capacity,<sup>12</sup> that fuel was presumed to meet the “ultimate consumption” in Vermont standard in statute and, therefore, determined to be an obligated party. For registrants who reported a portion or all of their fuel sales to Vermont retailers (*i.e.*, for resale), that fuel was also presumed to meet the “ultimate consumption” in Vermont standard, subject to checking the disposition of that fuel downstream (*i.e.*, confirming it was not sold outside the state). Registrants who failed to report the supplier or source of the heating fuel they sold in the state – information statutorily required by Act 18<sup>13</sup> – were also determined to be obligated parties. Registrants who reported sourcing all of the heating fuel they sold *within* the state were not identified as obligated parties because they were not the importer of the fuel that was ultimately consumed in the state.

#### **B. Determining Obligated Parties’ First-Year Credit Requirements**

To determine obligated parties’ first-year credit requirements, the Commission proceeded to implement the pacing process outlined in the order issued November 1, 2024.<sup>14</sup> The Commission determined which units of fuel would be attributed to each obligated party by matching heating fuel importers to the units that were ultimately consumed in Vermont (see fuel disposition determinations in the section above). For mixed-source scenarios, or registrants who sourced their heating fuel both in- and out-of-state, we apportioned any fuel reported to be ultimately consumed in the state by the proportion that the registrant and any in-state supplier contributed to the overall total. In other words, of the total fuel purchased to sell within the state, if a registrant imported 25% of the total and bought 75% from an in-state supplier, we assigned the fuel that was reported to be ultimately consumed in the state (*e.g.*, directly to consumers) respectively (*i.e.*, 25% to the registrant and 75% to the in-state supplier). Procedurally, after identifying the obligated gallons (or Mcf) of each individual obligated party, we converted that volume of obligated fuel to a lifecycle-based emissions total based on applying a factor (*i.e.*, the

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<sup>12</sup> Dispositions of fuel that were presumed to meet the “ultimate consumption” in Vermont standard (and thus factored into obligations by the importing entity): units of fuel sold to Vermont consumers, sold to Vermont retailers for resale, consumed for heating use, consumed for non-heating use, and stored.

<sup>13</sup> 30 V.S.A. § 8124(b)(2).

<sup>14</sup> See Case No. 23-2220-RULE, Order of 11/1/24 at 13.

technical consultant's fuel-specific lifecycle emission rate) to the total volume of obligated units. Based on the overall total of lifecycle emissions generated by *all* obligated units of fuel, we then calculated each obligated party's proportional contribution to this total. This proportional contribution was then applied to the lifecycle-based baseline year of emissions (*i.e.*, the lifecycle-translated 2023 baseline year of the residential-commercial-industrial ("RCI") sector of the Vermont Greenhouse Gas Inventory ("Inventory")), leading to the assignment of a proportional amount of baseline-year emissions to each obligated party. The percent decrease required to meet Global Warming Solutions Act ("GWSA") emission reduction requirements in the Inventory was then applied to each obligated party's assignment of emissions, identifying the required reduction in lifecycle-based CO<sub>2e</sub> for each entity. These units were then translated into metric tons of CO<sub>2e</sub> to arrive at the obligations in terms of clean heat credits.

**C. Clean Heat Obligations in Plain Terms**

The Commission has provided first-year clean heat obligations in terms of clean heat credits in an appendix to this document. Each clean heat credit is valued at 1 metric ton of CO<sub>2e</sub>. Upon final completion of the program's technical reference manual ("TRM"), obligated parties will be able to reference this document to determine what measure mix could achieve the obligation assigned (if they intend to directly engage in satisfying some or all of their clean heat credit obligation). As an example, if an obligated party is assigned to obtain and retire 25 clean heat credits in year one, the current draft of the TRM indicates that this amount could be earned by installing two 3.5 ton (42,000 Btu/h) single-family residential air-source ducted heat pump systems (specifically homes in which this would fully displace existing oil heat) and delivering 7,251 gallons of 20% biodiesel ("B20") sourced from soybean oil (displacing fuel oil #2). For the installations, while they would generate only a portion of their carbon reductions in year one, those measures would continue to earn credits for the estimated lifetime of the measure (in this case, the next 16 years).

**D. Major Problems with Fuel Dealer Registration Data**

The Commission considers transparency about the flaws in the fuel dealer registration data to be as important as the obligations themselves. While it is not unusual for the initial round of an entirely new process with newly regulated entities to be imperfect, in the event the

potential Clean Heat Standard is enacted, the Commission has serious concerns that Act 18 necessitates the use of this flawed data to determine an element of the program that may have considerable consequence — first-year clean heat credit obligations. The Commission cannot endorse the use of these data for the reasons outlined below.

There are three known problems with the fuel dealer registration data. First, there are entities that sold heating fuel into or in Vermont that did not register with the Commission. While there may be future opportunities to investigate and track down these entities in future years, the Commission did not have the resources to pursue unregistered but likely required-to-register entities in this initial registration year. Under-registration has the effect of distorting our understanding of the heating fuel imported and sold in Vermont and thus our calculation of the total fuel by which individual obligated party's year-one obligation is determined.

Second, there are entities that registered but did so incompletely or inaccurately. A non-trivial number of entities withheld critical information (*e.g.*, the volume of fuel bought or sold, or the identity of suppliers or customers) that made it difficult or impossible to determine the status of an entity's obligation. Other entities may have misunderstood some of the questions on the registration form that resulted in illogical sourcing of fuel (*e.g.*, reportedly sold fuel in the state but did not import, produce, refine, manufacture, compound, or purchase the fuel in-state — resulting in a question mark as to how the fuel came to be in the state). Inaccurate or incomplete reporting also distorts the overall calculation of obligated fuel in the economy.

Third, for some registrants, there appears to have been ambiguity about what constitutes “heating fuel” in statute (as highlighted in the Commission's enforcement order issued on September 17, 2024):

Finally, the definition of “heating fuel” in Act 18 is broad and ambiguous. Heating fuel is defined as “fossil-based heating fuel, including oil, propane, natural gas, coal, and kerosene.”<sup>15</sup> The stated purpose of the Clean Heat Standard is to “reduce greenhouse gas emissions attributable to the Vermont thermal sector.”<sup>16</sup> The statute further defines “thermal sector” as “ha[ving] the same meaning as the ‘Residential, Commercial and Industrial Fuel Use’ sector as used in the Vermont Greenhouse Gas Emissions Inventory and Forecast” but excludes “nonroad diesel or any other transportation or other fuel use categorized elsewhere in the Vermont

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<sup>15</sup> 30 V.S.A. § 8123(11).

<sup>16</sup> 30 V.S.A. § 8122(a).

Greenhouse Gas Emissions Inventory and Forecast.”<sup>17</sup> The Vermont Greenhouse Gas Inventory includes “. . . greenhouse gas emissions from the Residential/Commercial and Industrial Fuel Use sector . . . related to the use of fossil fuels for space heating, water heating, and cooking, in residential, commercial, and industrial buildings.”<sup>18</sup> Based on the statutory definitions and the thermal sector definition from the Vermont Greenhouse Gas Emission Inventory and Forecast, the Legislature has defined “heating fuels” to be fossil-based heating fuels without regard to end use.<sup>19</sup>

Although the Commission provided this guidance in September, the initial registration asked registrants to use their best judgment when reporting fuel sold in or into Vermont. This ambiguity likely caused some registrants to underreport the fuel they sold and caused other would-be registrants to fail to register, mistakenly believing that the fuel they sold was outside the scope of this new registration requirement. All three of these issues affect the validity of the data and ultimately the clean heat credit obligations that were based on it.

There is also an issue of completeness with the overall number of registrations we have received to date. The Commission received 110 registrations by the end of the grace period: February 29, 2024.<sup>20</sup> Registrations received between March 1, 2024, and this fall, principally in response to the Commission’s enforcement order that was issued on September 17, 2024, have *not* been processed and are not included in this initial tally of obligations.<sup>21</sup> This omission of late registrations alone should invalidate these first-year obligations as reported.

The Commission is unable to resolve these issues with access to the State’s fuel tax data for three primary reasons. First, the fuel tax data itself is subject to noncompliance and may not capture all entities or all fuels that are subject to pay it. Second, the fuel tax is paid at the final sale of delivered fuel in the state (*i.e.*, units sold for resale are not subject to the tax). The Clean Heat Standard obligates entities that import/produce/manufacture/compound heating fuel, many of whom sell heating fuel for resale in the state and thus do not pay the fuel tax. The

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<sup>17</sup> 30 V.S.A. § 8123(13).

<sup>18</sup> Vermont Agency of Natural Resources Climate Action Office, “Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990-2020,” April 2023 at 13, available at [https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/Vermont\\_Greenhouse\\_Gas\\_Emissions\\_Inventory\\_Update\\_1990-2020\\_Final.pdf](https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/Vermont_Greenhouse_Gas_Emissions_Inventory_Update_1990-2020_Final.pdf).

<sup>19</sup> Case No. 23-2220-RULE, Order of 9/17/24 at 3.

<sup>20</sup> The current distribution of credits also includes potential duplicate credit assignments if the registrant did not notify the Commission of one registration superseding an earlier registration.

<sup>21</sup> 66 registrations have not yet been processed. This number is inclusive of any duplicative or corrective registrations that were filed between March and October of this year.

Commission is unable to trace fuel upstream to the relevant importer of the heating fuel using the fuel tax data. Third, fuel regulated by the fuel tax and fuel regulated by this program are not entirely overlapping. As outlined in the Commission's enforcement Order, the intersection of the definitions of heating fuel and thermal sector in Act 18 necessitates regulation of all fossil-based heating-fuel sales of oil, propane, natural gas, coal, and kerosene, regardless of end-use.<sup>22</sup> For these three reasons, the State's fuel tax data is not a resource that can resolve the issues identified above.

While this determination fulfills our duty to establish the first set of required amounts for obligated parties pursuant to Section 6(f)(5), the cited issues and lack of available resolution lead the Commission to strongly recommend against using these determinations.

### **III. TEN-YEAR CLEAN HEAT CREDIT OBLIGATIONS**

This section explains the Commission's methodology for determining the annual clean heat credit requirements for the first 10 years of the potential Clean Heat Standard program. In implementing the process outlined in the pacing process order issued on November 1, 2024, the Commission first established the thermal sector baseline with which to anchor the trajectory of emission reductions. In this initial trajectory, that meant using aggregate fuel tax data from 2023 and extrapolating other non-tax data RCI inputs to arrive at a baseline representative of the RCI sector from last year.<sup>23</sup> This projected emissions total from 2023 was then weather-normalized by adjusting for the relative number of heating degree days ("HDD") last year versus the average number of HDD over the last five years. This percentage change was then applied to the 2023 total.

From this adjusted baseline, we then linearly projected the next 10 years of emission reductions with the 2030 GWSA target met in 2029, and later years linearly tied to meeting

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<sup>22</sup> Case No. 23-2220-RULE, Order of 9/17/24. The only exceptions to this universe of fossil-based heating fuel are those identified in the definition of "thermal sector" in Act 18: "'Thermal sector' has the same meaning as the 'Residential, Commercial and Industrial Fuel Use' sector as used in the Vermont Greenhouse Gas Emissions Inventory and Forecast *and does not include nonroad diesel or any other transportation or other fuel use categorized elsewhere in the Vermont Greenhouse Gas Emissions Inventory and Forecast.*" [emphasis added] 30 V.S.A. § 8123(13).

<sup>23</sup> As we have explained before, there is a significant lag in the official state Inventory — figures for each sector, including the RCI sector, are typically available after three years — meaning official 2023 emissions will likely be available in 2026.

2050's obligation in 2049.<sup>24</sup> This in-boundary trajectory was then reconciled to lifecycle-based emission totals by applying a factor (*i.e.*, the technical consultant's fuel-specific lifecycle emission rate) to the inputs making up the baseline RCI emissions. The sum of these lifecycle-based inputs was then representative of the lifecycle-based 2023 baseline year. We then applied the same rate of decrease as required in the Inventory-based calculations in the lifecycle-based trajectory. This resulted in the lifecycle-based emissions limits (and total credit requirements) for each of the next 10 years.<sup>25</sup>

Given the variability in fuel sales and any one entity's share of emissions in the market from year to year, we are not identifying obligated party credit obligations beyond year one. Even so, and in order to "support the ability of the obligated parties to plan for the future,"<sup>26</sup> if an obligated party's share of the overall emissions of the heating fuel industry remains relatively consistent in future years, the obligated party can estimate approximately what its annual obligation will be in years 2-10 based on the overall emission reductions required and percentage decrease required in each year presented below. For instance, if an obligated party's share of total lifecycle emissions (in the fuel dealer registration data universe) is 10%, it would be assigned 10% of that year's emissions reduction requirement (*e.g.*, 10% of .298, or .0298 MMT). Knowing the percentage reduction required by all obligated entities in any of the next 10 years (*e.g.*, 8.76% in year-one), an entity can calculate its share of clean heat credit requirements by applying that percentage to its share of the overall reduction required (*e.g.*, 8.76% of .0298, or .0026 MMT). The unit conversion to clean heat credits would then be multiplied by 1,000,000 to arrive at the entity's obligation (*i.e.*, 2,610.48 credits in this instance). This is all to say, if an obligated party's share of emissions in the industry remains within close range of its year-one percentage, it should be able to estimate what its annual obligation would be in future years through the process outlined above.

The table below outlines the Commission's projections for the next 10 years of emission reductions required to be achieved by this potential program. The GWSA goal that must be met by January 1, 2030 (requiring achievement in 2029) explains the stark contrast of emission

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<sup>24</sup> 2030 and 2050 goals will be based on the RCI sector's share of emissions in reference year 2018 as directed by the Vermont Climate Council.

<sup>25</sup> See Case No. 23-2220-RULE, Order of 11/1/24 at 12.

<sup>26</sup> 30 V.S.A. § 8124(a)(3)

reductions (and thus credit retirement) needed in the initial years versus years 2030-2050. If the Clean Heat Standard is enacted, the Commission would revisit this projection every three years to extend the requirements by three years and assess whether reductions were achieved in the thermal sector (revising the pace if needed) in line with 30 V.S.A. § 8124(a)(3).<sup>27</sup>

Decade Projection of Sector-wide Emission Reduction Requirements <sup>28</sup>			
Year	Required reductions of lifecycle-based emissions (MMT)	Required clean heat credit retirements	Sector-wide percentage decrease required
2026	0.3338	333,792.36	8.76%
2027	0.3338	333,792.36	9.60%
2028	0.3338	333,792.36	10.62%
2029	0.3338	333,792.36	11.88%
2030	0.0824	82,405.87	3.33%
2031	0.0824	82,405.87	3.44%
2032	0.0824	82,405.87	3.57%
2033	0.0824	82,405.87	3.70%
2034	0.0824	82,405.87	3.84%
2035	0.0824	82,405.87	3.99%

#### IV. LOW- AND MODERATE-INCOME DISTRIBUTION

This section describes the Commission’s process for designating a portion of the annual credit requirements for low-income and moderate-income households (“LMI”). The Commission intends to retain the statutory minimum of each category in the first year of obligations.<sup>29</sup> This distribution requires each obligated party to retire at least 16% of its credits through clean heat measures serving customers with low income and an additional 16% through measures serving customers with moderate income. At least one-half of each of these

<sup>27</sup> The Commission would need to assess reductions in the *projected* thermal sector data (*i.e.*, aggregated fuel tax data) given that the Inventory runs on a three-year lag.

<sup>28</sup> These figures may change slightly with the final emission factors provided by the technical consultant.

<sup>29</sup> 30 V.S.A. § 8124(d)(2).

designations must also be met by measures that are considered qualified capital investments, a group of measures not yet designated by the Technical Advisory Group.<sup>30</sup>

This decision is an acknowledgment that increasing the distribution of credits serving LMI households increases the cost of the program, as the necessary incentive levels would need to be higher. Because it is not feasible for all LMI households to participate in the program's early years – and those not able to participate would face higher heating costs as a result of front-loading LMI participation – an increased LMI requirement could potentially cause more harm than good. The Equity Advisory Group, statutorily charged with this consideration, agreed that there are costs and benefits with front-loading credits to LMI households and that there is “insufficient information to determine whether front-loading the LMI targets in the earliest years of the program is ‘reasonably possible’.”<sup>31</sup>

While the Commission will be able to adjust this distribution in future years if the program goes into effect, retaining the statutory minimum in at least the first year would allow the Commission access to real program data that may suggest a different distribution is achievable, while also allowing the credit market to mature and adjust to the priorities of the program.

## V. CONCLUSION

This determination fulfills several of the Commission's obligations under Act 18 — identifying year-one obligated parties and their clean heat credit requirements, explaining those requirements in plain terms, determining the annual clean heat credit requirements for the first 10 years of the potential Clean Heat Standard program, and designating a portion of the annual credit requirements for clean heat measures provided to low- and moderate-income households. However, as identified in this document, these determinations are not without caveats. While significant efforts have been made to identify obligated parties and their year-one credit

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<sup>30</sup> 30 V.S.A. § 8124(d)(2) (“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. Examples shall include weatherization improvements and installation of heat pumps, heat pump water heaters, and advanced wood heating systems. The Commission may identify additional measures that qualify as installed measures.”).

<sup>31</sup> EAG Memo on LMI CHS Credit Frontloading, 8/9/24, at 4.

requirements, we strongly recommend against these obligations being adopted due to serious flaws in the registration data.

*Notice to Readers: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Commission (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: [puc.clerk@vermont.gov](mailto:puc.clerk@vermont.gov))*

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**Appendix<sup>32</sup>**

The following table outlines the obligated parties and their respective clean heat credit requirements for year one. The second column provides regulated entities with their proportional share of the total lifecycle emissions reported in the fuel registration data. As outlined in section III of this document, this percentage can be used to estimate future year obligations if an obligated party's share of emissions in the industry remains within close range of this year-one percentage.

<b>Obligated parties</b>	<b>Proportional contribution to total lifecycle emissions in fuel registration data</b>	<b>Obligation in Clean Heat Credits</b>
Al's Plumbing, Heating and Fuels LLC	0.000046	15.41
Apollo Industries, Inc.	0.000079	26.48
Apollo Industries, Inc.	0.000081	27.14
Barrows and Fisher Oil Company	0.003347	1,117.19
B-A-R-T Energy, LLC	0.002734	912.50
Black Rock Coal, Inc.	0.000055	18.20
Blairs Discount Fuel	0.000603	201.31
Blue Flame Gas Co. Inc.	0.004791	1,599.31
Bob's Fuel Company, LLC	0.000623	207.91
Braymer Fuels Inc	0.000124	41.39
C Bean Transport Inc	0.001142	381.23
C N Brown Company	0.000734	245.13
C V Oil Co	0.006695	2,234.85
Champlain Valley Plumbing and Heating	0.036159	12,069.72
Ciardelli Fuel Company	0.000003	1.13
Columbia Petroleum Transportation	0.000323	107.92

<sup>32</sup> These figures may change slightly with the final emission factors provided by the technical consultant.

LLC		
Cota & Cota Inc.	0.020833	6,953.86
Cota Propane	0.003233	1,079.07
Country Fuels LLC	0.001369	456.82
D & D Oil, Inc.	0.004825	1,610.57
D&C Transportation Inc.	0.027994	9,344.11
Dead River Company LLC	0.030689	10,243.71
Dennis K. Burke Inc.	0.011792	3,935.93
Desjarlais Inc	0.001345	448.83
Eastern Propane Gas Inc.	0.001847	616.38
Factor Gas Liquids Inc	0.006605	2,204.72
Fitch Fuel Company	0.000611	203.80
Fox Fuel LLC	0.000004	1.32
Fyles Bros Inc	0.010933	3,649.34
George Propane Inc	0.000031	10.48
Gillespie Fuels and Propane, Inc.	0.005246	1,751.16
Global Companies LLC	0.017503	5,842.39
Global Montello Group Corp.	0.002656	886.43
Gunvor USA LLC	0.002065	689.41
Guy E Nido Inc	0.005196	1,734.49
Hannaford (Ahold Delhaize)	0.000012	4.15
HB Energy Solutions Inc	0.004254	1,419.91
HL Fuel Co Inc	0.001469	490.34
HL Fuel Co Inc	0.001831	611.19
Hometown Hardware and Supply	0.000042	13.99
Hometown Hardware and Supply	0.000018	5.85
Hop Energy LLC	0.008078	2,696.53
Irving Oil Terminals Inc.	0.050073	16,713.92
Jackman Fuels Inc.	0.004604	1,536.63

James Plumbing Heating Oil Co, Inc.	0.002451	818.26
Johnson Energy Inc.	0.003867	1,290.84
Kiros Energy Marketing ULC	0.041248	13,768.22
Lake Champlain Coal Co. Inc	0.000723	241.17
Lipton Inc.	0.000169	56.52
Local Fuel Co., Inc	0.000548	183.07
Main Brothers Oil Co, Inc	0.000196	65.27
McCuin Fuels Inc.	0.000896	299.11
Meridian Liquids Partners Inc.	0.003244	1,082.93
Mike Greene Plumbing & Heating, LLC	0.001565	522.35
Miles Lumber Company	0.004730	1,578.93
Mirabito Holdings, Inc.	0.009785	3,266.00
Morse Fuels LLC	0.000256	85.36
NG Advantage LLC	0.000053	17.83
NGL Supply Co. Ltd.	0.023783	7,938.61
NGL Supply Wholesale, LLC	0.077782	25,962.99
Oil Supply Corp	0.004528	1,511.56
Onsite Septic Solutions, LLC	0.002709	904.36
Packard Fuels LLC	0.003781	1,262.03
Preite Oil LLC	0.000149	49.71
R.E. Hinkley Co., Inc	0.001408	469.94
R.L. Vallee Inc.	0.000040	13.24
Ray Energy Corp.	0.022450	7,493.80
Robert Greene Inc	0.006948	2,319.07
Roberts Energy, LLC	0.011452	3,822.67
Roberts Energy, LLC	0.002546	849.77
Rowley Fuels Inc	0.003967	1,324.30
Rutland Gas & Oil, Inc.	0.002910	971.25

S.B. Collins, Inc	0.014739	4,919.76
Sam's Service Center & U-Save Fuels, Inc.	0.000068	22.80
Sandri Energy LLC	0.002806	936.61
Santa Energy	0.001237	412.90
Simple Energy Partners LLC	0.009877	3,296.85
Sprague Operating Resources LLC	0.002666	889.73
Stewart's Shops Corp	0.000026	8.82
Suburban Propane LP	0.011343	3,786.22
Suburban Propane LP	0.017133	5,718.99
Trono Oil and Gas Co., Inc.	0.004479	1,495.02
Valero Marketing & Supply Company	0.185808	62,021.33
Vermont Gas Systems, Inc.	0.228827	76,380.63
Walter E. Jock Oil Co., Inc.	0.000605	201.85
West Oil Company, Inc.	0.003504	1,169.55