STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 24-3359-INV

Investigation of the standard-offer contract between Vermont Renewable Gas, LLC and the Standard Offer Facilitator	

VERMONT RENEWABLE GAS LLC's BRIEF REGARDING ELIGIBILITY OF PROPOSED FACILITY FOR STANDARD OFFER CONTRACT

Vermont Renewable Gas, LLC ("VRG") responds to the Commission's request for briefing in its investigation regarding whether the proposed 2.2MW electric generation facility at the Saint Johnsbury-Lyndon Industrial Park ("Facility") is eligible for a standard-offer contract for a plant using methane derived from agricultural operation.

I. Summary:

On August 28, 2023, after performing a detailed review of VRG's application and supporting documents, Vermont's Standard Offer Facilitator, VEPP, Incorporated ("VEPP")[1] entered a standard-offer contract with VRG as a Farm Methane generator pursuant to 10 V.S.A.§ 8005a(d).[2] As described in the prefiled testimony of Evan Dell'Olio and Alexander Skorokhodov filed with the Commission on December 12, 2024, VRG's proposed facility uses high temperature ablative pyrolysis ("HTAP") to convert agricultural byproducts into high carbon biochar and, as part of the process, also produces methane, which is then used to generate electricity.

VEPP's decision to award a standard-offer contract to VRG is solidly grounded in a foundation of relevant statutes and Commission Orders. Further, the award advances critical

[1] Link to description of VEPP, Inc.here.
[2] Additional information about the Standard Offer Program and a list of the Commission Orders implementing the program found here.

public policy goals behind the Standard Offer Program, including providing baseload renewable energy, reducing carbon emissions, contributing to the rural agricultural economy, and producing an important product, high carbon biochar, which provides carbon storage, soil health and water quality benefits when incorporated in farm soils. VRG has expended significant capital and personnel resources to achieve these important public policy goals through development of the proposed facility, based upon reasonable reliance on VEPP's decision as the designated Standard Offer Facilitator. For all these reasons, the Commission should affirm that VRG's project meets the Standard Offer category for renewable energy plants using methane derived from an agricultural operation.

II. Background:

VRG is a combined electric generation and biochar carbon removal facility. The proposed facility will produce high-carbon biochar using a feedstock that is at least 51% material derived from agriculture. The biochar will be buried in soil to improve fertility and to store carbon. *Evan Dell'Olio Prefiled Testimony, December 12, 2024 at 4-7 ("Dell'Olio Prefiled").* The facility will also produce recovered volatiles in the form of a synthetic fuel gas containing a significant proportion of methane. *Alexander Skorokhodov Prefiled Testimony, December 12, 2024 at 6-13 ("Skorokhodov Prefiled").*

VRG applied to operate the facility pursuant to the Standard Offer Program through VEPP using the Farm Methane Application in July 2023. Following this application, VRG and VEPP engaged in a detailed exchange of information about VRG's proposed project. This exchange included a description of the HTAP technology proposed by VRG to generate methane and described the basis for determining that the proposed feedstock qualified as agricultural. After reviewing this information, VEPP concluded that the Facility is eligible to participate in

the Standard Offer Program as a Farm Methane Facility and awarded a Standard Offer Contract to VRG that was executed on August 28, 2023. *Evan Dell'Olio Prefiled at 11-13.*

VRG has since taken significant steps to advance this project including submitting of an application for a Certificate of Public Good from the Commission for a farm methane 2.2 MW electric generation facility at the Saint Johnsbury-Lyndon Industrial Park on Industrial Parkway in the Town of Lyndon. *Case No. 24-2797-PET.* The Commission has stayed consideration of that petition, pending the outcome of the present Investigation. *Order Requiring Full 30 V.S.A. § 248 Procedure, Staying Case No. 24-2797-PET, Opening an Investigation of the Standard-Offer Contract, and Requesting Information and Briefing,* Case No. 24-2797-PET and Case No. 24-3359-INV, November 7, 2024.

III. Brief Summary of Responses to Commission's Information Requests:

In accordance with the Commission's November 7, 2024 Order, VRG provided prefiled testimony of Evan Dell'Olio and Alexander Skorokhodov to respond to the Commission's information requests. The following is a brief summary of VRG's factual responses to those requests organized by the numbering used in the Commission's November 7, 2024 Order:

Question (1): Page 2 of exhibit VRG-EK-1 states that the majority (at least 51%) of the biomass feedstock used at the Facility will come from sources consistent with the definition of farming, including operations engaged in the cultivation or use of land for growing fiber, Christmas trees, maple sap, and horticultural and orchard crops. The exhibit further states that most of the material will be sourced from logging residues generated from the harvesting of trees as fiber for higher-value uses (e.g., sawlogs, pulpwood) and the management of woodlands for maple sap production. Please provide more information on the feedstock referred to as "land for growing fiber," including what type of trees or other resources are grown on this land and what percentage of the feedstock will be from this land. Please describe how the harvesting of trees as fiber is consistent with the definition of "farming" contained in 10 V.S.A. § 6001(22).

Answer (1): VRG will meet the Farm Methane category requirement that at least 51% of the material is farm derived by sourcing its feedstock from (A) wood fiber and wood fiber

byproducts from Christmas tree, maple sap, horticultural, and orchard crop production, (B) wood fiber from timber grown and harvested as short-rotation tree crops grown for energy production, (C) wood fiber from timber purposefully harvested from woodlots on farms and grown for energy production, and (D) wood fiber byproducts from timber grown and harvested from woodlots on farms. . *Dell'Olio Prefiled at 15-23.* All of these categories qualify as "derived from agriculture" if purchased from farmers engaged in activities defined as farming in 10 V.S.A. § 6001(22). 30 V.S.A. § 8005a(d).

Wood fiber and wood fiber byproducts of Christmas tree, maple sap, horticultural, and orchard crop production in category (A) are expressly listed in the definition of farming. 10 V.S.A. § 6001(22)(A).

Wood fiber in categories (B) and (C) listed above are also agricultural products raised to serve a variety of farm needs as well as to provide a source of income to farmers. The trees or shrubs in these categories, whether fast-growing shrub willows or poplar, or longer-lived hardwood trees, may serve as a key component of agroforestry, providing benefits such as providing shade for livestock. Hardwood trees may also provide material for on-farm use such as barns and fences. Any trees and shrubs, whether planted as windbreaks, or growing in a farm woodlot, provide important environmental quality benefits. Finally, these shrubs and trees constitute the growing of "fiber" within the definition of farming. 10 V.S.A. § 6001(22)(A). *Id.*

Wood fiber byproducts in category (D) include the tops of trees or removed branches resulting from the harvest of timber for purposes such as building materials or furniture and also qualify as "fiber" under 10 V.S.A. § 6001(22)(A). VRG does not propose to use marketable, high-quality timber that is suitable for these purposes as a feedstock and, in fact, cannot do so without jeopardizing its ability to qualify as a carbon removal facility. *Id.*

Question (2): Page 7 of Skorokhodov's testimony states that a high-temperature ablative pyrolysis system decomposes organic waste in an oxygen-free environment to produce a renewable fuel gas containing methane. Please describe the constituency of the fuel gas produced, identifying the types and percentage amounts of each gas produced, including the percentage of the fuel gas that is methane.

Question (3): Please compare the constituency of the fuel gas that would be produced by the Facility to the constituency of biogas produced by the organic decomposition of farm waste in an anaerobic digester.

Answers (2) and (3): The Project will use a high-temperature fast pyrolysis system to biodegrade the feedstock processed at the VRG facility into gas, which will then be used as a renewable fuel for the generation of electricity. The feedstock is primarily lignocellulosic. This type of material, constituting the woody cell walls of plants, is not efficiently processed using anaerobic digestion. *Skorokhodov Prefiled at 6-13.*

The gas recovered by HTAP is 27% methane, 30% carbon monoxide, and 36% hydrogen. Relatively insignificant components of other gases including carbon dioxide and nitrogen are present. *VRG-INV-AS-1-HTAP Fuel Gas Specifications; Id.*

Analyzing the relative methane content of the gases produced by VRG's HTAP technology compared to that produced by anaerobic digestion, using the dry weight of the feedstock to perform the comparison, demonstrates that VRG's process dramatically exceeds the effectiveness of anaerobic digestion of vegetation waste (five and a half times more effective) in terms of methane recovery. Using this same analysis, HTAP technology also compares favorably to the anaerobic digestion of livestock animal waste (almost twice as effective). *Exhibit VRG-INV-AS-4-Comparison of Conversion Efficiencies; Id.*

Using a volumetric comparison, HTAP has a higher yield of volatiles recovery per volume of feedstock, with 15% converted into high carbon biochar. This results in an adjusted rate of methane recovery of 42%. This level of methane recovery could be increased through

technical modifications to as much as 50%, if required, a level on par with an estimate of 60% methane generation from the anaerobic digestion of livestock animal waste. *Exhibit VRG-INV-AS-5-Recovery Efficiencies; Id.*

Question (4): Page 9 of Skorokhodov's testimony states that the Facility uses dual organics-to energy reactor vessels. In the first vessel, the self-contained high temperature occurring in the reactor vessel extracts volatiles from the organic matter in an anaerobic environment, and in the second vessel, thermos-catalytic cracking of the volatiles occurs, creating a tar-free, high-heating-value fuel gas. Please provide additional information on the high-temperature ablative pyrolysis process, including the pressures, temperatures, and energy source needed for the process.

Answer (4): The HTAP process operates at low pressure and high temperature in an anaerobic environment. During normal operations, the energy source for the process is the waste heat from the HTAP unit and generators, as well as electrical energy from the generators. *Skorokhodov Prefiled at 14; Exhibit VRG-INV-AS-6-HTAP Full Specifications.*

Question (5): Please describe how the pyrolysis process differs from combustion. Please address the risks of introducing accidental combustion of organic material due to contact with oxygen or high temperature, including what measures are enacted to achieve process control.

Answer (5): The process used in the HTAP system is pyrolysis, which primarily differs from combustion in that it occurs in the absence of oxygen. As described above, the process produces high carbon biochar, which is a significant carbon sink.

With regard to process control, VRG's project is designed to use high performance materials designed for the conditions of the HTAP system. Further, the system will have a mix of risk controls and sensors, including an emergency stop that is triggered if in the event that smoke or gas leakage are detected. The system also features an emergency flare for safe release of methane and flammable gases during emergencies or shutdown of the facility's generators. *Skorokhodov Prefiled at 16.* Finally, the generators used in the Facility are designed to function only on the precise mixture that the HTAP system produces, *Skorokhodov prefiled at 5,* and will

cease operating in the event that the HTAP system malfunctions.

IV. VRG's Proposed Project Qualifies as a Farm Methane Project Under the Standard Offer Program

A. VEPP's award of a Standard Offer contract to VRG was solidly grounded in Vermont statutes and Commission Orders.

Under 30 V.S.A. § 8005a(d), "plants using methane derived from an agricultural operation" are authorized to participate in the Standard Offer Program outside of the program's capacity limits. As described above, at length in the prefiled testimony, and in VRG's Petition for a Certificate of Public Good, Proposed Findings of Fact, and associated prefiled testimony and exhibits in Case No. 24-2797-PET, VRG proposes to use feedstock obtained from agricultural operations to produce methane that will, in turn, be used to generate electricity. This type of project is expressly contemplated by the plain language of the statute.

Similarly, the legislature has defined farming to include "the cultivation or other use of land for growing food, fiber, Christmas trees, maple sap, or horticultural and orchard crops", 10 V.S.A. § 6001(22)(A). There is no requirement in the statute that the energy production occur on farm for this activity to qualify as farming. VRG proposes to source at least 51% of its feedstock from farms producing materials that meet this definition and is willing to accept conditions in a Certificate of Public Good that set requirements for monitoring and reporting on its feedstock.

The Commission has previously done this analysis in the context of previous decisions associated with its *Order Number 7533, Investigation Re: Establishment of a Standard Offer Program for Qualifying Sustainably Priced Energy Enterprise Development ("SPEED") Resources*. In its *Second Order Re Implementation Issues* dated October 28, 2009, the Commission provided clarification regarding implementation of the Standard Offer program. Among the issues addressed, the Commission explained how to distinguish projects that utilize

"methane derived from an agricultural operation" from plants that utilize "biomass." The Commission determined that the agricultural methane category is not technology-based. Instead, the Commission accepted the recommendation of the Vermont Agency of Agriculture (AAFM) that eligibility for Standard Offer in this category be based on a determination that at least 51% of the feedstock for a project must come from farm sources. *Commission October 28, 2009 Order at 5*.

In its October 28, 2009 Order, the Commission also determined that the statute did not require agricultural methane systems to be located on a farm as long as 51% of the feedstock is derived from agricultural operations. *Id. at 6.* Instead, the Commission ruled that "any facility that generates methane from the use of a biomass feedstock not principally derived from agricultural or landfill operations will be placed in the biomass category". *Id. at 7 (internal citations omitted).*

In a subsequent order issued as part of the same Docket 7533, *Order Re: Farm Methane Project Eligibility* dated March 28, 2011, the Commission concluded that "the production of energy crops represents a feedstock derived from agricultural operations" based on AAFM's recommendation. *Commission March 28, 2011 Order at 3.*

The fact that VRG's HTAP system is different than anaerobic digestion does not disqualify it—the criterion that the feedstock come from agricultural operations is technology neutral. The plain language of 30 V.S.A. § 8005a(d) makes no reference to the type of technology used to derive methane from agricultural materials and the Commission reached that express conclusion in its *October 28, 2009 Order in Docket Number 7533*. The Commission's primary goal should be to give effect to legislative intent by first looking to the plain meaning of

the statute.[3] This conclusion is also logical -- different types of agricultural wastes and energy crops require different types of technology to recover methane from that organic material.

Neither does the fact that VRG's system uses lignocellulosic fiber produced on farms instead of livestock manure disqualify it – nothing in 30 V.S.A. § 8005a suggests that such a distinction has any relevance. Nor, as the Commission has already determined, does the fact that the facility is not on a farm provide a basis for disqualifying it from the Standard Offer program. Finally, VRG's proposed use of energy crops raised on a farm as feedstock is consistent with 10 V.S.A. § 6001(22) and with the *Commission's March 28, 2011 Order in Docket Number 7533*.

The proposed facility's feedstock meets the definition of being principally derived from agricultural operations as required by 30 V.S.A. § 8005a and as that provision has been interpreted by the Commission. Further, while the statute does not specify the level of methane that needs to be produced, VRG's facility will produce methane to generate electricity at a level exceeding or on par with the amount produced by the anaerobic digestion of agricultural waste, depending on how the methane proportion is calculated. VRG asks that the Commission rule consistent with the primary statute applicable to the Standard Offer program, 30 V.S.A. § 8005a, and the legislature's definition of farming in 10 V.S.A. § 6002(22), and its well-reasoned Orders issued as part of Docket Number 7533 and find that VRG's proposed HTAP facility qualifies for the Standard Offer.

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[3] "When interpreting a statute, 'our primary goal is to give effect to the legislative intent' and to do so 'we first look to the plain meaning of the statute.'" *In re Windham Windsor Hous. Tr.*, 2024 VT 73, ¶ 5 (Vt. Nov. 15, 2024) *citing In re Vill. Assocs. Act 250 Land Use Permit*, 2010 VT 42A, ¶ 9, 188 Vt. 113, 998 A.2d 712.

B. The provisions of 30 V.S.A. § 248 and 30 V.S.A. Chapter 89 are not inconsistent with and, in fact, support finding that VRG's facility qualifies for the Standard Offer program.

1. 30 V.S.A. § 248

The language of Section 248 does not provide any indication that the legislature intended to restrict the meaning of Section 8005a(d)(1)'s language, "methane derived from an agricultural operation." The only reference to this phrase is in 30 V.S.A. § 248(q).[4] In §248(q), the legislature expressly references the requirement for a Certificate of Public Good for a "plant using methane derived from an agricultural operation." In § 248(q)(1)(B), applicable to VRG's proposal given that VRG is proposing to build its facility in an industrial park and will import at least 51% of its feedstock from farms in the region, the statute limits the Commission's jurisdiction to a plant "that does not constitute farming pursuant to 10 V.S.A. § 6001(22)(F) but that receives feedstock from off-site farms." The primary focus of this provision is to clarify that the Commission's § 248 jurisdiction does not extend to farming activities on farms that contribute feedstock to the plant, reserving that jurisdiction for AAFM. This provision does not, by its language or purpose, reach to the question of whether a technology other than anaerobic digestion can qualify as a Farm Methane facility under 20 V.S.A. § 8005a.

Instead, the reference in § 248(q)(1)(A) to an on-farm "methane digester" not being subject to Commission jurisdiction is best understood as the legislature's attempt to clarify jurisdiction over a specific activity taking place on farms, not as a limitation on the scope of the category of "plants using methane derived from an agricultural operation." Similarly, § 248(q)(4) which defines "biogas" as a gas resulting from the action of microorganisms on organic material

[4] The discussion of 30 V.S.A. § 248(q) in this section is provided only for the purpose of interpreting the relevant statutes. VRG is not seeking to have any part of its facility exempted from § 248 jurisdiction.

such as manure or food processing waste," is only applicable to § 248(q)(1)(A) relating to on-farm plants.

In contrast, § 248(q)(1)(B), relating to off-farm plants, does not reference methane digesters or use the term "biogas." The oft-cited canon of statutory construction that the legislature uses, or omits, specific language by intention is applicable here.[5] The legislature should be presumed to mean what it says, and what § 248(q)(1)(B) states is that the Commission has jurisdiction over plants using methane derived from agriculture, and nothing more. While § 248(q)(1)(B) does include the terms "effluent or digestate" when returned to the contributing farms, that reference can best be understood as reserving AAFM's authority to regulate agricultural waste management and disposal on farms.

To the extent that 30 V.S.A. § 248 is relevant at all to interpreting 30 V.S.A. § 8005a, in § 248(q)(3), the statute provides unambiguously that "this subsection shall not affect the determination, under section 8005a of this title, of the price for a standard offer to a plan using methane derived from an agricultural operation." While not directly relevant to the issue at hand, this provision is a recognition by the legislature that the provisions in 30 V.S.A. § 248 and 30 V.S.A. § 8005a should be read in tandem. If the legislature had intended to amend or clarify the definition of a Farm Methane facility under § 8005a, it could have done so but did not.

2. 30 V.S.A. § 8002(21)

Similarly, 30 V.S.A. § 8002(21), which defines "renewable energy," does not provide a basis to reinterpret the Commission's past interpretation of 30 V.S.A. § 8005a(d)(1). Under

[5] "[T]he rules of statutory construction normally demand that we accord significance to variations in legislative language. *See Russello v. United States*, 464 U.S. 16, 23, 104 S.Ct. 296, 78 L.Ed.2d 17 (1983) (differing language used in different statutory subsections held to have different meaning based on Court's presumption that '[w]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely')." *Ins. Co. of State of Pennsylvania v. Johnson*, 2009 VT 92, ¶ 9, 186 Vt. 435, 440–41, 987 A.2d 276, 280 (2009).

§ 8005a(b), the Standard Offer program applies only to renewable energy plants. The statute then expressly includes "plants using methane derived from an agricultural operation" within the scope of eligibility as a source of renewable energy. Section 8002(21) does not provide any clear language to the contrary. To the extent that § 8002(21) is relevant, the Commission should look to the overarching rule that "renewable energy" means "energy produced by a technology that relies on a resource that is being consumed at a harvest rate at or below its natural regeneration rate." VRG's proposed HTAP system, with its use of agricultural feedstocks, production of high carbon biochar, and use of methane and other volatile gases to produce electricity easily passes that threshold. In terms of its efficiency, the HTAP technology compares favorably to the one technology listed in § 8002(21), namely the "anaerobic digestion of agricultural products, byproducts or wastes." *Skorokhodov Prefiled* at 6-13.

Further, reading § 8002(21) in its entirety makes plain that the list of methane sources listed in § 8002(21) are the legislature's effort to distinguish methane generation produced by the decay of sewage treatment plant wastes, landfill wastes, agricultural products, byproducts and wastes, food wastes, and silvicultural wastes, on the one hand, from methane generated by the decay of all other sources of solid waste, on the other. The use of the term "anaerobic digestion" is best understood as descriptive of one way in which methane is produced from agricultural products, byproducts and waste, not the exclusive means of doing so.

Furthermore, the statute does not specifically bar other technologies from being considered renewable energy as long as not converting municipal solid waste into electric energy. For example, solar energy and wind energy are not specifically listed in the statute, yet the Commission considers those to be eligible technologies for the purposes of Vermont's Renewable Energy Standard.

In sum, this provision does not expressly or implicitly modify 30 V.S.A. § 8005a(d)(1)'s non-technology specific provision describing "plants using methane derived from an agricultural operation." The key determinant in both provisions is the source of the material used to generate the methane. VRG does not run afoul of any restriction that can be found in 30 V.S.A. § 8002(21) because it is not proposing to use solid waste apart from the "agricultural products, byproducts and wastes" – materials that are recognized as a source of renewable energy in both provisions. There is no conflict between these two provisions for the Commission to resolve and the Commission should harmonize the language of both to give both meaning.[6]

Finally, if the Commission finds that the two provisions conflict, it is a well-accepted canon of statutory construction that more specific statutes control over general statutes.[7] In this instance, Section 8002(21) is a general definition, while Section 8005a is specific to the Standard Offer Program and so should control.

3. 30 V.S.A. § 8015

Further support for the conclusion that Vermont General Assembly did not intend to exclude a system such as VRG's HTAP from treatment as a source of renewable energy can be found in the Clean Energy Development Fund provisions of Chapter 89. In § 8015(b)(5), the legislature provided a more detailed definition of renewable energy as follows:

> "Renewable energy" has the meaning established under section 8002 of this title and shall include the following: solar photovoltaic and solar thermal energy; wind energy; geothermal heat pumps; farm, landfill, and sewer methane recovery; low emission, advanced biomass power, and combined heat and power technologies

[6] "'In construing legislative intent, we must consider the entire statute, including its subject matter, effects and consequences, as well as the reason for and spirit of the law.' *Shires Hous., Inc.*, 2017 VT 60, ¶ 9, 205 Vt. 186, 172 A.3d 1215 (quotation omitted). 'To that end, laws relating to a particular subject should be construed together and in harmony if possible.' *Holmberg v. Brent*, 161 Vt. 153, 155, 636 A.2d 333, 335 (1993) (quotation omitted). Second, "where two statutes deal with the same subject matter, and one is general and the other specific, the more specific statute controls." *Town of Brattleboro v. Garfield*, 2006 VT 56, ¶ 10, 180 Vt. 90, 904 A.2d 1157." *In re C.L.S.*, 2021 VT 25, ¶ 13, 214 Vt. 379, 388, 253 A.3d 443, 449 (2021).

[7] *Id*.

> using biomass fuels such as wood, agricultural or food wastes, energy crops, and organic refuse-derived waste, but not municipal solid waste; advanced biomass heating technologies and technologies using biomass-derived fluid fuels such as biodiesel, bio-oil, and bio-gas.

30 V.S.A. § 8015(b)(5).

This definition of "renewable energy" does not include any limitations on the types of technologies employed but uses broad references to a range of biomass technologies. This provision cannot be read to limit the use of the term "renewable energy" to limit the recovery of methane from agricultural materials to just one technology, anaerobic digestion. VRG's HTAP system clearly qualifies under this definition of "renewable energy", whether as "farm . . . methane recovery", or as "advanced biomass power, and combined heat and power technologies using wood, agricultural or food wastes, energy crops, and organic refuse-derived waste". Similar to the definition of "renewable energy" in 10 V.S.A. 8002(21), the definition in § 8015(b)(5) also differentiates and excludes the use of municipal solid waste as a source of renewable energy reinforcing that the most logical way to read 10 V.S.A. § 8002(21) is as a definition of the sources of feedstock that can be considered renewable, while excluding municipal solid waste from that definition.

4. <u>30 V.S.A. §§ 8005a(c)(2) & (d)(1)</u>

Finally, the other provision of § 8005a referencing "methane derived from an agricultural operation" is § 8005a(c)(2), which is simply the flip side of § 8005a(d)(1). Section 8005a(c)(2) specifically includes certain categories of renewable energy technologies within the Standard Offer allocations including "biomass power." The resulting definition is clear and simple: "biomass power" subject to the Standard Offer allocation is power generated with a fuel "other than methane derived from an agricultural operation or landfill." The two provisions, (c)(2) and (d), when read together merely reinforce the Commission's prior determination that the key

criteria for determining whether a plant qualifies for standard offer is whether the source of the feedstock is derived from an agricultural operation, and confirm that the specific technology used to produce the methane is not a relevant consideration.

C. VRG's Feedstocks are Agricultural and, though "Biomass," Still Qualify VRG for the Standard Offer Program Under 30 V.S.A. § 8005a(d)(1) in the Same Manner as Material Used in Anaerobic Digesters

As discussed in Section III above, VRG proposes to use materials that, while "woody" in type, are raised on farms and qualify as agricultural according to the applicable definition of farming, 10 V.S.A. § 6001(22). While this material is "biomass" as used in the dictionary and Vermont's statutes related to renewable energy, identification of this feedstock as "biomass" does not remove VRG's plant from the application of 30 V.S.A. § 8005a(d)(1) any more than does the fact that livestock and vegetative agricultural waste used as feedstock for an anaerobic digester are also considered "biomass" under those same definitions.

An interpretation of the term "biomass" to exclude organic material other than woody material does not conform to general or scientific usage. The definition of "biomass" in the Merriam-Webster online dictionary is as follows: (1) the amount of living matter (as in a unit area or volume of habitat); or (2) plant materials and animal waste used especially as a source of fuel.[8] Following the dictionary definition, VRG's facility is a biomass plant (as is an anaerobic digester). It is in this broader sense of the term that VRG's expert, Eric Kingsley, used that term in his prefiled testimony filed in the related matter of VRG's petition for a certificate of public good. *Prefiled Testimony of Eric Kingsley in Case No. 24-2797-PET.*

The term "biomass" has a controversial history in the context of energy generation in Vermont, however. As a result, this term as used in Vermont's energy policy debates is

[8] https://www.merriam-webster.com/dictionary/biomass

sometimes assigned a different meaning than the usual dictionary definition. By way of example, two biomass plants frequently discussed in public debates regarding renewable energy include the McNeil Generating Station and the Ryegate Power Station – both burn wood chips produced by trees harvested from forests and use combustion to produce heat used to drive turbines that generate electricity. These plants represent the common image of a "biomass energy plant" in Vermont's public discourse. See e.g. Burning Cash: McNeil Opponents Zero In on the Plant's Losses, Seven Days (August 14, 2024).

Neither of these plants, nor any new proposed plant designed to burn wood to generate electricity in this manner, would qualify under 30 V.S.A. § 8005a(d)(1) since these types of plants do not generate methane. Further, plants like McNeil and Ryegate that burn wood to generate electricity are a form of biomass plant fundamentally different from VRG's model, which uses woody material produced as a farm product, byproduct or waste as a fuel, uses recovered gases to generate electricity, and stores a significant portion of the carbon in a product (high carbon biochar).

The use of the term "biomass" in Vermont's laws generally accords with the dictionary definition. In 30 V.S.A. Chapter 89, relating to Renewable Energy Programs, "biomass" is defined in § 209(e)(3), relating to "thermal energy and process fuel efficiency funding" as "organic nonfossil material constituting a source of renewable energy within the meaning of section 8002 of this title." 30 V.S.A. §209(e)(3). Another variation on the definition of the term "biomass" is found in 30 V.S.A. § 8009 relating to "baseload renewable power portfolio requirement": "'Biomass' means organic nonfossil material of biological origin constituting a source of renewable energy within the meaning of subdivision 8002(21) of this title." 10 V.S.A. § 8009. These definitions, if applied outside of the specific subsections where the language is

found, would encompass agricultural materials used as a source of renewable energy. That is, the use of agricultural products, byproducts and wastes as a source of renewable energy, would not qualify for exception from the Standard Offer allocation except for the more specific provisions in 30 V.S.A. § 8005a(c)(2) and (d). These latter provisions that plainly treat "methane derived from an agricultural operation" as distinct from other forms of "biomass power" for purposes of applying the Standard Offer allocations. Any other interpretation would render 30 V.S.A. § 8005a(c)(2) and (d) superfluous[9], and require not only that VRG's HTAP system would not qualify to "remain outside the cumulative capacity" limits of the Standard Offer Program, but also that plants using anaerobic digestion technology would also be excluded.

It is helpful to note that the definition of "biomass" in § 8009 is included in the context of a provision defining an existing "in-state woody biomass plant commissioned prior to September 30, 2009, has a nominal capacity of 20.5 MW, and was in service as of January 1, 2011", a reference to an existing wood-burning biomass plant. Other provisions in Chapter 89 also use the term biomass in the context of "wood biomass", "woody biomass", or "forest biomass". *See* 30 V.S.A. § 8005(c) (provision related to eligibility of renewable generation that employs biomass to count the electricity produced toward distributed renewable generation and energy transformation requirements); and 30 V.S.A. 8005a(n)(standard offer eligibility for wood biomass resources). By implication, the term "biomass" is broader than just the use of woody or forest materials and can include non-woody materials such as livestock and vegetative agricultural waste.

[9] "We consider 'the whole and every part of the statute,' *Herrick v. Town of Marlboro*, 173 Vt. 170, 173, 789 A.2d 915, 918 (2001) (quotation omitted), and avoid a construction 'that would render part of the statutory language superfluous,' *In re Margaret Susan P.*, 169 Vt. 252, 263, 733 A.2d 38, 47 (1999). *In re Mountain Top Inn & Resort*, 2020 VT 57, ¶ 37, 212 Vt. 554, 238 A.3d 637, 651 (2020)

In sum, the reach of 30 V.S.A. § 8005a(d)(1) is not defined by whether the source of the feedstock is biomass, but instead, and in accordance with its plain meaning, by whether the plant uses methane derived from an agricultural operation. The fact that VRG proposes to use a variety of woody materials sourced from farms does not make it a form of biomass that requires a treatment different from that accorded to anaerobic digesters. Finally, to insist that the only form of agricultural materials eligible to qualify for the 30 V.S.A. § 8005a(d)(1) exception to the Standard Offer cumulative capacity limit are manure, or that woody materials cannot be considered derived from agriculture when grown on farms finds no basis in the statute.

Regarding the apparent ambiguity that the Commission found as a result of the fact that VRG addressed the Facility's compliance with 30 V.S.A. § 248(b)(11) relating to efficiency requirements for woody biomass facilities,[10] this same analysis applies. This section requires a demonstration of compliance with several important environmental protections for woody biomass plants. As stated in its Proposed Findings of Fact, Findings 123 and 124, attached to its Petition for a Certificate of Public Good in Case Number 24-2797-PET , however, the VRG facility will not combust woody biomass to generate electricity, and it is therefore not a woody biomass combustion facility.

At the same time, while VRG is not using combustion and qualifies for Standard Offer under § 8005a(d)(1) since it is using methane derived from agriculture, VRG is proposing to use woody biomass as the primary feedstock for the Facility. VRG can easily comply with the § 248(b)(11) criterion and, in fact, VRG desires to demonstrate that all of the material it is using as feedstock is sustainably harvested, not just the 51% of the material that is derived from agriculture. Further, VRG's submission on this criterion came after dialogue with AAFM and

[10] Commission November 7, 2024 Order at 6.

ANR, since both agencies are appropriately interested in ensuring that the Facility meets the requirements of § 248(b)(11), including air pollution control, design efficiency and forest health and sustainability. It would be ironic if VRG's desire to demonstrate that its Facility is meeting the important requirements in § 248(b)(11) was used as evidence that it does not qualify for the Standard Offer program pursuant to 10 V.S.A. § 8005a(d)(1), since the Program is, at its core, intended to incentivize investments in clean, sustainable and renewable energy sources.

To the extent that the Commission, or the relevant agencies, AAFM or Vermont Agency of Natural Resources (ANR), are concerned that VRG's plant will obtain more than 51% of its feedstock from a non-farm source, there are two regulators, one already present and one that could be imposed through a Commission-issued Certificate of Public Good. The first regulator is a form of self-regulation, in that VRG is not interested in using lignocellulosic fiber from trees that can be used for building materials or furniture or other durable goods. To do so would jeopardize VRG's ability to qualify as a carbon removal facility and to obtain the benefits of that designation. In other words, the fear that VRG is a stealth woody biomass plant along the lines of McNeil or Ryegate is based on a fundamental misunderstanding of VRG's business model. *Evan Dell'Olio Prefiled at 22-23.*

The second regulator is one that the Commission has full authority to impose, and that VRG is willing to accept or stipulate to through working with the Commission, Vermont Department of Public Service (PSD), AAFM and ANR – namely, the imposition of verification requirements to ensure that VRG is in fact source at least 51% of its feedstock from farms and that the feedstock qualifies as non-timber lignocellulosic fiber.

D. VRG's HTAP System is Exactly the Type of Innovative Renewable Energy Technology that Promotes Vermont's Energy and Climate Goals While Supporting Farmers and Vermont's Rural Agricultural Economy.

VRG's proposed facility will, once completed, serve a number of significant and overlapping public policy goals as captured in the 2022 Vermont Comprehensive Energy Plan (CEP).[11] *Evan Dell'Olio Prefiled Testimony, August 26,' 2024 filed in VRG Petition for a Certificate of Public Good in Case No. 24-2797-PET. at 11-14.* A brief summary of those goals include the following:

- Contributing to Vermont's goal of 45 percent of Vermont's total energy needs from renewable sources by 2035;
- Contributing to Vermont's goal of obtaining 75% of Vermont's total electricity needs from carbon-free sources by 2032; and
- Adding an important and rare source of baseline electricity service, improving system reliability, including during the winter months.

Id.

VRG's Facility will also contribute to the goals of Vermont's 2021 Climate Action Plan,[12] as follows;

- Implementing farm-based energy sources;
- Developing markets of low-grade wood fiber that can produce biofuels;
- Connecting farmers, foresters, and land workers to renewable energy generation;
- Producing high carbon biochar for use as an agricultural soil amendment;
- Using local wood and agricultural products to reduce Vermont's carbon footprint;
- Supporting implementation of agroforestry and silvopasture practices that integrate woody vegetation in agricultural production, and for edge of field practices that increase herbaceous and woody vegetation on farms.

Id.

The breadth of the benefits of VRG's proposed Facility are a result of the fact that it is, at

[11] 2022 Vermont Comprehensive Energy Plan
[12] 2021 Vermont Climate Action Plan

once, both a carbon removal project as well as an electric generation project. As a carbon removal project, the Facility will result in the removal of carbon dioxide from the atmosphere and storage in a stable form as high carbon biochar – a form of "reverse coal mining". *Dell'Olio Prefiled at 5-7.*[13] In order to qualify as a carbon removal facility, and to be able to obtain carbon removal certificates, the facility must also capture all volatile gases to generate electricity in addition to producing high carbon biochar. *Id. at 7-9.* The result will be significant contributions to both Vermont's energy and climate goals.

In addition to the energy and climate benefits of this Facility, and as described in Evan Dell'Olio's Prefiled Testimony in this Investigation, the biochar itself offers many environmental, agricultural and economic benefits. In addition to high carbon biochar's propensity to lock in carbon, when incorporated into soils, it can also

- lower emissions of greenhouse gases from agricultural fields,
- improve soil health, structure, water retention and nutrient availability,
- reduce soil acidity and bind pollutants in contaminated soils, and
- provide water quality benefits by binding nutrients and reducing erosion and runoff; and,
- prevent phosphorous runoff from causing algal blooms on Vermont's lakes, ponds, rivers and streams.

Id. at 9-11.

The benefits of this project also reach to supporting Vermont's farmers in the following ways:

- Improving soil productivity through the addition of high carbon biochar;
- Aligning with the goal or organic farmers seeking sustainable, chemical free soil amendment in the form of high carbon biochar;
- Increasing decomposition rates in manure pits through the addition of high carbon biochar while reducing odors;
- Providing a pathway for managing woody biomass waste, which can be converted

[13] See also *Prefiled Testimony of Erik Kingsley in Case No. 24-2797-PET at 10-11* and *Exhibit VRG-EK-1* referenced in his testimony.

into high carbon biochar and energy instead of being burned or left to decompose; and

- Providing new economic opportunities in the Northeast Kingdom by the creation of a high carbon biochar production and energy generation facility, creating technical production jobs as well as jobs associated with collecting and processing the feedstock material from across the region.

Id. at 10-11.

In sum, this project will provide an unusually rich mix of energy system, climate, environmental and rural economic benefits that are highly consonant with the purposes for which the Standard Offer program were created. VRG's eligibility for the Standard Offer program is essential to the development of this innovative technology with significant benefits for farmers and Vermonters.

V. Conclusion and Request

For all of the reasons above, VRG requests that the Commission uphold VEPP's determination that VRG qualifies for the Standard Offer program as a Farm Methane Facility outside of the cumulative capacity of Standard Offer allocations pursuant to 10 V.S.A. § 8005a(d)(1) because it uses methane derived from agricultural operation as a source of fuel to generate electricity.

Dated at Montpelier, Vermont this 23rd day of January, 2025

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