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Vermont Public Utility Commission

Re: Petition of Vermont Renewable Gas, LLC for a certificate of public good, pursuant to 30 V.S.A. § 248, to construct and operate a 2.2 MW generation facility in Lyndon, Vermont, Case No. 24-2797-PET, Public Comment

Dear Commissioners:

Vermont Renewable Gas, LLC (“VRG”) proposes an inherently expensive and inefficient process for generating electricity at its proposed facility in Lyndon (the “Facility”). It includes using heavy equipment and vehicles to cut down and chip trees from forests and haul the wood chips to the Facility (the equipment and vehicles will no doubt be powered by high greenhouse gas emitting fossil fuels); processing and storing feedstock at the Facility; running the feedstock through a high temperature ablative pyrolysis process (“HTAP”) to generate a synthetic fuel gas; and burning the fuel gas to generate electricity. This would result in emissions of greenhouse gases and other harmful pollutants, including the hazardous air pollutants formaldehyde, acetaldehyde and 1,3 butadiene.¹

The Commission should deny the requested certificate of public good because: (1) VRG has not met its burden to present competent evidence regarding greenhouse emission impacts of the proposed Facility; and (2) the Facility presents risks of fire and explosion, including through use of an HTAP process that does not appear to be in use elsewhere, and there is no evidence of a record regarding safety. Due to the absence of such evidence, the record does not support required findings that the Facility: (1) “will not have an undue adverse effect on . . . air and water purity, the natural environment, the use of natural resources, and the public health and safety, with due consideration having been given to . . . greenhouse gas impacts.” 30 V.S.A. § 248(b)(5); and (2) will promote the general good of the state. *Id.* § 248(a)(2); Commission Rule 5.403(A)(1). The absence of a showing of need for the power that would be generated, and the absence of evidence that the Facility can generate power in a cost-effective manner also weigh against a finding that the Facility will promote the general good of the state.

Given the availability of other ways to meet the state’s needs for electricity, including wind, solar, battery storage and demand management, which are less polluting, do not present the

¹ Exhibit VRG-MH-2, Air Pollution Control Permit AOP-23-048 (June 24, 2024), P. 11 of PDF (the Facility, following imposition of HMSER, may continue to have estimated emissions of 1,3-butadiene, acetaldehyde, and formaldehyde in excess of their respective Action Levels).

same risks of fire and explosion, and are likely less costly and more efficient, the proposed Facility would not promote the general good of the State.

I. VRG Has Not Presented Competent Evidence of the Facility’s Greenhouse Gas Emission Impacts.

The record contains no quantification of the greenhouse gas emission impacts of the proposed Facility (including those from burning fuel gas to generate electricity, storing feedstock at the Facility, and upstream logging and chipping operations). Rather than provide emissions data and competent analysis of greenhouse gas impacts, such as a lifecycle assessment, VRG makes unsubstantiated claims that the Facility is “carbon free”² or “carbon negative”³ based on inappropriate reliance on a statement in a now outdated version of the Agency of Natural Resources’ *Vermont Greenhouse Gas Emissions Inventory and Forecast: Methodologies*.⁴

VRG proposes findings of fact that the facility will annually prevent 6,512 tons of carbon dioxide emissions which would otherwise result from using the mix of generating facilities supplying the ISO New England Grid.⁵ VRG reaches this figure by assigning the Facility “no net carbon dioxide emissions” based on a statement in the Agency of Natural Resources’ April 2023 version of the *Vermont Greenhouse Gas Emissions Inventory and Forecast: Methodologies* that “biogenic CO₂ is considered carbon neutral because the emissions are assumed to be re-sequestered by the regrowth of new biogenic material.”⁶ VRG also asserts and proposes a finding that this statement is consistent with “the position of the Intergovernmental Panel on Climate Change.”⁷

This statement-which as is discussed below is not included in ANR’s more recent Methodologies Documents issued in July 2024 and July 2025- is not consistent with the position of the Intergovernmental Panel on Climate Change (“IPCC”). Under the IPCC’s Guidelines for National Greenhouse Gas Emission Inventories, carbon dioxide released through biomass combustion is excluded from national inventory reporting in the energy sector because it is

² See Prefiled Testimony of Evan Dell’Olio, 8/26/2024, Page 11 (“The Project also delivers on the CEP’s goal of obtaining 75 percent of Vermont’s total energy needs from carbon-free sources by 2032”); *id* at 12 (stating that the Project is “a valuable addition to Vermont’s carbon-free energy portfolio”); *id* at 13 (project will generate “electricity in line with the CEP’s long-term goals of carbon free energy. Please see the testimony of Eric Kingsley concerning the carbon free nature of the electricity generated by the Project.”)

³ See Prefiled Testimony of Evan Dell’Olio, 11/3/2025, Pages 4-5 (describing biochar that will be produced by the facility as “a carbon negative soil amendment”); *id* at 9 (describing proposed Facility as using a “carbon negative approach”).

⁴ See Prefiled Testimony of Eric Kingsley, August 26, 2024 (“Kingsley Testimony”), Page 9.

⁵ VGS’ Proposed Findings of Fact and Conclusions of Law, 10/1/2026 (“VGS Proposed Findings”), Page 24, Proposed Findings 73-74.

⁶ *Id.*, Proposed Finding 73; Kingsley Testimony 9; Exhibit VRG-EK-1, Page 12, relying on *Vermont Greenhouse Gas Emissions Inventory and Forecast: Methodologies* (April 2023), at 23.

⁷ VGS Proposed Findings, Page 24, Proposed Finding 74; Kingsley Testimony 9; Exhibit VRG-EK-1, Page 12.

reported elsewhere- in the Agriculture, Forestry, and Other Land Use (AFOLU) sector.⁸ The IPCC did not adopt this methodology because it has determined that burning biomass is carbon neutral; rather the IPCC adopted this as a reporting convention to avoid double counting. In the words of the IPCC:

Q2-10. According to the IPCC Guidelines CO2 Emissions from the combustion of biomass are reported as zero in the Energy sector. Do the IPCC Guidelines consider biomass used for energy to be carbon neutral?

A: The overall IPCC approach to estimating and reporting bioenergy greenhouse gas emissions at the national level requires complete coverage of all IPCC sectors, including the AFOLU and Energy sectors. All CO2 emissions and removals associated with biomass are reported in the AFOLU sector. Therefore, CO2 emissions from biomass combustion used for energy are only recorded as a memo item in the Energy sector; these emissions are not included in the Energy sector total to avoid double counting. The approach of not including these emissions in the Energy Sector total should not be interpreted as a conclusion about the sustainability, or carbon neutrality of bioenergy.

...

Thus, the IPCC Guidelines do not automatically consider or assume biomass used for energy as "carbon neutral", even in cases where the biomass is thought to be produced sustainably.⁹

ANR's 2023 Methodologies document, immediately after the statement relied on by VRG- "biogenic CO2 is considered carbon neutral because the emissions are assumed to be re-sequestered by the regrowth of new biogenic material"- acknowledges that the statement is problematic, stating:

One of the difficulties with this assumption is that when biomass is combusted, much of the carbon stored in that material is emitted directly to the atmosphere as CO2. That pulse of CO2 then remains in the atmosphere for as long as it takes for new vegetation to regrow and store that same amount of carbon. The longer the vegetation takes to regrow the longer that pulse of CO2 remains in the atmosphere and contributes to the warming of the planet.¹⁰

⁸ Intergovernmental Panel on Climate Change, Task Force on National Greenhouse Gas Inventories, Frequently Asked Questions, Q 2-10, <https://www.ipcc-nggip.iges.or.jp/faq/faq.html>.

⁹ *Id.* (emphasis added).

¹⁰ *Vermont Greenhouse Gas Emissions inventory and Forecast, Methodologies* (April 2023), Page 23. [Methodology Vermont Greenhouse Gas Emissions Inventory 1990-2020 Final.pdf](#).

Perhaps recognizing the folly of its statement that “biogenic CO₂ is considered carbon neutral,” ANR did not include this statement in its July 2024 or July 2025 Methodologies documents.¹¹

The IPCC Guidelines referenced by VRG and relied on by ANR are Guidelines for National Greenhouse Gas Emission Inventories. They call for estimating emissions from various sectors and for developing an inventory for tracking progress in reaching greenhouse gas emission reduction goals. The Guidelines do not displace the need for project specific evaluation of greenhouse gas emission impacts when new sources are proposed or modified. VRG should not be permitted to rely on a statement in ANR’s former Greenhouse Gas Emission Inventory documents to avoid a project specific analysis of greenhouse gas emission impacts, especially a statement lifted out of context, revisited by ANR and not included in its more recent Inventory documents, and which appears to be at odds with ANR’s thinking on the subject. ANR acknowledges that biogenic carbon dioxide emissions from wood “are real and impactful.”¹² Those impacts should be considered by the Commission in determining whether the proposed Facility would promote the general good of the State.

In addition to CO₂ emissions from burning synthetic fuel gas, VRG provides no assessment of the greenhouse gas emissions from harvesting and chipping wood, transporting wood chips to the Facility, and storing feedstock at the Facility.¹³

VRG also proposes a finding that “Regeneration in the woodshed is in excess of removals.”¹⁴ This provides no support for VRG’s claim that its process is carbon neutral or carbon negative. VGS defines the “woodshed” as including private timberlands within a 25 mile-radius of the Facility. Exhibit VRG-EK-1, at 4-7. This obviously includes an area much larger than the specific lands from which forest biomass for the project would be obtained. Any claim by VRG that forest growth outside the areas that are harvested to provide feedstock for its

¹¹ See, eg., *Vermont Greenhouse Gas Emissions Inventory and Forecast, Methodologies EXPANDED* (July 2025), Page 26, https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/_Methodology_Vermont_Greenhouse_Gas_Emissions_Inventory_1990-2022_FINAL.pdf?_gl=1*14j6e3v*_ga*MTcyMzEzMTA3OC4xNzc0NTI2NjM2*_ga_V9WQH77KLW*cze3ODI5OTc4OTMkbzQ1JGcxJHQxNzgyOTk3OTA0JGo0OSRsMCRoMA. ANR endeavors to update the *Inventory* and accompanying *Methodologies* document each year. The 2026 documents have apparently been delayed due to inability to get information from EPA.

¹² *Vermont Greenhouse Gas Emissions Inventory and Forecast, 1990 -2022* (July 2025), Page 26, https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/_Vermont_Greenhouse_Gas_Emissions_Inventory_Update_1990-2022_20251024.pdf?_gl=1*1kmcux8*_ga*MTcyMzEzMTA3OC4xNzc0NTI2NjM2*_ga_V9WQH77KLW*cze3ODMwMTM5NDgkbzQ3JGcxJHQxNzgzMDEzOTU4JGo1MCRsMCRoMA.

¹³ VRG indicates that biomass fiber will be stored at the Facility in quantities that allow several consecutive days of operation Testimony of Evan Dell’Olio, 8/26/2024, Page 13.

¹⁴ VGS Proposed Findings ¶74.

Facility can be credited against the Facility's carbon dioxide emissions would be specious.¹⁵ Such forest growth is already absorbing and sequestering carbon from other sources.

The science is well-established that it takes decades to centuries for forest regrowth to offset the emissions from forest biomass.¹⁶ The payback period depends in part on the feedstock.¹⁷ It appears that a significant portion of the Facility's feedstock will be derived from whole trees and roundwood, which have a relatively long payback period.¹⁸ VRG characterizes its feedstock as including "logging residues – the tops and branches, as well as cull material, generated from the harvesting of trees for higher value uses (e.g., sawlogs, pulpwood)"¹⁹ Cull material includes whole trees and roundwood of suitable size for higher value uses, but which are not suitable for such uses due to defects.²⁰ Elsewhere, VRG states that the feedstock will include "low-grade roundwood."²¹

VRG seeks to leave the impression its feedstock will be primarily "residues" or waste generated as a result of logging for sawlogs and pulpwood. However, evidence submitted by VRG indicates that "low grade products," as opposed to high grade products (sawlogs), "often are 65-85% of the volume harvested from non-industrial private lands in the area."²² VRG further asserts that tops and branches are equivalent to 28% of roundwood harvests for softwoods and 33% of roundwood harvests for hardwoods.²³ It therefore appears that a substantial majority of the feedstock will be derived from so called "low grade" whole trees or roundwood which have a relatively long payback period.

In sum, VRG has inappropriately relied on the fiction that power generation from forest biomass removal is carbon neutral to avoid presenting a meaningful analysis of the Facility's greenhouse gas emission impacts. Further, the evidence in the record suggests that those impacts

¹⁵ See Phillip Duffy, William Moomaw, John Sterman and Juliette N. Rooney-Varga, *Burning wood is not a solution to climate change*, The Hill (5/5/20) (rejecting argument that expansion of forests in the United States and some other nations offsets the carbon dioxide that would be released from increased use of wood energy), <https://thehill.com/opinion/energy-environment/496021-burning-wood-is-not-a-solution-to-climate-change/>

¹⁶ See Comments of Partnership for Policy Integrity, filed in this matter on May 15, 2026, Page 3 and sources cited therein.

¹⁷ See, *id.*; Gunn, et al, *Scientific Evidence Does Not Support The Carbon Neutrality of Woody Biomass*, A Review of Existing Literature 2, 4. <https://acrobat.adobe.com/link/spaces/urn:aaid:sc:VA6C2:e8822034-72a2-45b9-924f-97ea132683ef>.

¹⁸ See Gunn, et al, *supra* note 17, at 4. (A meta-analysis of 245 case studies generated a mean payback period of 102 years for roundwood, 74 years for whole trees, 18 years for residues, 14 years for stumps and 75 years for mixed feedstocks).

¹⁹ Exhibit VRG-EK-1, 8/26/2024, at 2.

²⁰ See, <https://ctforestry.cahnr.uconn.edu/woodland-manage/>; <https://www.mass.gov/info-details/glossary-of-forestry-terms-for-landowners>.

²¹ Exhibit VRG-ED-2nd Supp-1, VRG Wood-Chip Procurement & Harvesting Plan, 4/22/26, at

²² Exhibit VRG-ED-11, 8/11/2026.

²³ Exhibit VRG-EK-1 at 7.

will be substantial. VRG has failed to meet its burden to present evidence supporting a positive finding on the § 248(b)(5) criteria- which requires consideration of greenhouse gas impacts- and supporting a finding that the project would promote the general good of the state.

II. The Record Does Not Contain Evidence of a Safety Record for the Equipment Proposed for the Facility.

A high temperature pyrolysis plant such as that proposed for the Lydonville Facility presents risks of catastrophic fire and explosion. Where, as here, wood chips are the proposed feedstock there are risks of fire and explosion involving both wood fines²⁴ and the combustible gases generated during the pyrolysis process. The pyrolysis process would generate hydrogen, carbon monoxide and methane, all of which are combustible.²⁵ The risks are exacerbated by the very high temperatures at which the proposed pyrolysis at the Facility would occur. VRG has not presented evidence of a safety record for the process equipment it proposes for the Facility. As this may be the first use of the pyrolysis process equipment, a safety record for such equipment may not exist.

In response to Interrogatories served by Intervenors, VRG objected to and refused to provide information in response to requests for information about other Facilities at which the technology proposed for the Facility has been in use.²⁶ These requests included the question- “Are there any plants in the world that are running using this specific pyrolysis technology to make electricity and biochar?”²⁷ Intervenors objected to and did not respond to this question.²⁸

A Clean Energy Technologies filing with the Securities and Exchange Commission states that CETY has the exclusive license and right to sell High Temperature Ablative Pyrolysis Reactors named HTAP 10 and HTAP 5.²⁹ It further states: “We believe the first project where we expect to implement the HTAP 10 technology is with Vermont Renewable Gas to develop a

²⁴ See <https://dustsafetyscience.com/combustible-dust-wood-industry/> (describing hazard and providing examples of past incidents); <https://www.cdc.gov/niosh/firefighters/programs/pdfs/f202607.pdf> (recent lumber mill silo fire in Maine killed 2 firefighters and critically injured 13 others). VRG proposes that chipped feedstock will pass through a shredder to pre-size it to pieces of 30 millimeters or less, then a hammer mill will grind down the feedstock to a reduced size of 2.5 millimeters or less, then the feedstock will be dried consistently to 5% moisture content and stored in two buffer silos. Prefiled Testimony of Alexander Skrokhodov, 8/26/2024, at 8-9.

²⁵ Order Nullifying Standard-Offer Contract, Case No. 24-3359-INV, 9/19/2025, at 8-9.

²⁶ VRG’s Responses to First Set of Information Requests from Steve Dolgin, Ernest and Madeline Hastings and John Lang, Responses to Q.Intervenors, 1-5, 1-6, 1-7, and Q.Intervenors.61.

²⁷ *Id.*, Response to Q.Intervenors.61.

²⁸ *Id.*

²⁹ CETY Form 10k for Fiscal Year Ended December 31, 2025, at 10.

<https://www.sec.gov/Archives/edgar/data/1329606/000149315226027409/form10-k.htm>.

biomass renewable energy processing facility. The project is planned for a location in Lyndon, Vermont”³⁰

III. The Absence of a Showing of Need for the Project and the Absence of Evidence that the Facility Can Generate Power in a Cost-Effective Manner Also Weigh Against a Finding that the Facility is in the Public Interest of the State.

There has been no showing of a need for the power that would be generated by the Facility.

Nor is there evidence in the record that the Facility will produce power in a cost-effective manner. VRG objected to and refused to provide information in response to requests for information about whether its business model is “viable without federal and/or state subsidies and grants,”³¹ and “what cost of electricity does VRG need to contract to sell its power to make the plant economically viable.”³² With regard to its plans for its first plant using its HTAP process in the United States, the CEO of CETY has stated:

[W]e were looking for locations where they were offering incentives.

That’s a prerequisite because these solutions are very expensive and very hard to economically justify without having any sort of incentive or long-term power purchase agreement in place.³³

For these reasons, the Commission should deny the requested certificate of public good or request supplemental information from VRG before making its decision.

Respectfully submitted,

/s/ Nicholas F. Persampieri

³⁰ *Id.* at 12. It also notes that CETY HTAP systems (presumably other than the HTAP 10 Reactor) have been installed at 7 sites for use in waste to energy applications. *Id.* at 11. The 7 sites are not identified in the SEC filing, were not disclosed to Intervenors in response to their discovery requests and are not identified in the record for this proceeding.

³¹ VRG’s Responses to First Set of Information Requests from Steve Dolgin, Ernest and Madeline Hastings, and John Ling, 12/23/2025, Response to Q.Intervenors.53.

³² *Id.*, Response to Q.Intervenors.56.

³³ Waste Dive, *Clean Energy Technologies, newly public, is working to scale pyrolysis in the United States* (June 2, 2023), <https://www.wastedive.com/news/kam-mahdi-clean-energy-technologies-cety-pyrolysis-rng/651851/>.