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Docket 24-2797 Comments

PUC, DPS, members of the public,

Mr. Kingsley's testimony and the accompanying *Biofeedstock Assessment*, rely on a misunderstanding of facility level carbon accounting systems to incorrectly conclude that the proposed wood-combustion generator produces no net CO₂. It is incorrect and inappropriate to suggest that because the forest sector in Vermont sequesters more carbon than it emits, biomass facilities thus can draw from this pool of stored carbon to claim net carbon-neutrality.

IPCC guidelines indicate that facilities must demonstrate that the facility is responsible for the creation of any carbon storage and sequestration systems the facility relies upon to offset carbon emissions. Facilities cannot rely upon carbon storage and sequestration that would occur anyway, absent the facility, to demonstrate carbon-neutrality.

In the instant case, Vermont Renewable Gas, is attempting to appropriate the storage and sequestration of CO₂ of landowners in a 25 mile radius of the proposed facility without the knowledge or consent of these landowners, and without paying any compensation to the landowners. This appropriation attempt violates the longstanding greenhouse gas accounting concept of *additionality*. IPCC guidance in **IPCC AR5 WG III, Chapter 11: Agriculture, Forestry and Other Land Use Section 11.13.4 GHG emission estimates of bioenergy production systems** (https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter11.pdf) makes this statement on additionality:

The combustion of biomass generates gross GHG emissions roughly equivalent to the combustion of fossil fuels. If bioenergy production is to generate a net reduction in emissions, it must do so by offsetting those emissions through increased net carbon uptake of biota and soils. The appropriate comparison is then between the net biosphere flux in the absence of bioenergy compared to the net biosphere flux in the presence of bioenergy production.

IPCC guidance on additionality is further explained here: **IPCC Land Use Change Forestry 5.3.2.**

Baselines and Additionality

(https://archive.ipcc.ch/ipccreports/sres/land_use/index.php?idp=0)

A fundamental component of project assessment under the AIJ program has been the determination of the extent to which project interventions lead to GHG benefits that are additional to "business as usual" (UNFCCC, 1995; UNCCCS, 1997; Baumert, 1999). The concern about additionality also appears in Articles 6 and 12 of the Kyoto Protocol. Although additionality arguments have several different components and are based on multiple sources of information, most additionality problems apply equally to projects in the energy sector as to those in LULUCF (Chomitz, 2000).

The first step in determining a project's additional GHG benefits (GHG emissions additionality) is the elaboration of a without-project baseline scenario against which changes in carbon stocks occurring in the project can be compared (see Section 5.3.2.1). It is then necessary to demonstrate that the purported GHG benefits are truly additional, not simply the result of

incidental or non-project factors such as new legislation, market changes, or environmental change (see Section 5.3.2.2).

The increase in forest growth identified by INRS is already occurring and must be treated as the baseline. In order to demonstrate that, as Kingley states, “[t]he Project produces no net CO₂ emissions,” the project must demonstrate that it is sequestering and storing as much CO₂ as it emits. **This must be increased net carbon uptake additional to the carbon already being stored in the surrounding forests.** The documents Vermont Renewable Energy have submitted provide absolutely no information about the amount of CO₂ and other greenhouse gasses the facility will produce, nor has it provided any information about upstream carbon emissions from logging activity.

INRS misquotes, misinterprets and misrepresents ANR statements on biogenic CO₂ on page 12 of its Biofeedstock Assessment. INRS cites an out-dated ANR *Methodologies for the Greenhouse Gas Inventory* to claim:

The Vermont Department of Environmental Conservation, Agency of Natural Resources has recognized the carbon neutrality of biomass, noting in the April 2023 Vermont Greenhouse Gas Emissions Inventory and Forecast¹⁷:

“[B]iogenic CO₂ [e.g., emissions from biomass combustion] is considered carbon neutral because the emissions are assumed to be re-sequestered by the regrowth of new biogenic material,” and

“Carbon dioxide from electricity generated through biomass combustion is not included [in the emissions inventory] because the CO₂ is of biogenic origin...consistent with IPCC [International Panel on Climate Change] inventory guidelines for the treatment of biogenic CO₂.”

In fact, ANR updated the *Inventory* and the *Methodologies* in July, 2024, and the citations provided by INRS are superseded by the more recent publication. ANR now recognizes that emissions from biomass combustion are inventoried in the LULUCF sector. The more complete quotation of ANR intent reveals that ANR recognizes that the assumption that burning biomass is carbon neutral is not accurate:

The growing recognition of the need for immediate reductions in GHG emissions has led to investigations to better understand and appropriately account for biomass combustion. As mentioned above, emissions of biogenic CO₂ are captured within carbon fluxes in the LULUCF sector and are assumed to be re-sequestered by the regrowth of new biogenic material. 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. ([Methodologies](#) Section 3.3 GWPbio)

The most recent, July 2024, *Methodologies for the Greenhouse Gas Inventory* can be found here: https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/1990-2021_GHG_Inventory_Uploads/Methodology_Vermont_Greenhouse_Gas_Emissions_Inventory_1990-2021_Final.pdf

INRS also misrepresents IPCC claims about biochar on page 13 of its Assessment. The full quotation is:

Biochar is formed by recalcitrant (i.e., very stable) organic carbon obtained from pyrolysis, which, applied to soil, can increase soil carbon sequestration leading to improved soil fertility properties. Looking at the full literature range, the global potential in 2050 lies between 1 and 35 Gt CO₂ yr⁻¹ (*low agreement, low evidence*), but considering limitations in biomass availability and uncertainties due to a lack of large-scale trials of biochar application to agricultural soils under field conditions, Fuss et al. (2018) lower the 2050 range to 0.3–2 GtCO₂ yr⁻¹. This potential is below previous estimates (e.g., Woolf et al., 2010), which additionally consider the displacement of fossil fuels through biochar. Permanence depends on soil type and biochar production temperatures, varying between a few decades and several centuries (Fang et al., 2014). Costs are 30– 120 USD tCO₂⁻¹ (*medium agreement, medium evidence*) (McCarl et al., 2009; McGlashan et al., 2012; McLaren, 2012; Smith, 2016). (Internal hyperlinked footnotes and references removed but are available at: <https://www.ipcc.ch/sr15/chapter/chapter-4/>)

Vermont Renewable Gas has provided no details on the production of its biochar so we have no way of determining how quickly its biochar will release CO₂ into the atmosphere. By applying different parameters in the pyrolysis process one can produce different ratios of greenhouse gasses and different compositions of biochar. However, regardless of the permanence of the Vermont Renewable Gas biochar, it eventually releases CO₂ and is not carbon-neutral, and, unlike the forests it replaces, biochar is not a renewable system.

Indeed, the Vermont Renewable Gas proposal in its entirety raises more questions than it answers. This project should not be fast-tracked and should not be approved for the following reasons:

- We don't know how many tons of greenhouse gasses the facility will create every year-over-year;
- The provided efficiency certification is essentially a self-certification as it only certifies the unverified documents Vermont Renewable Gas provided the engineer. Those documents provided to the engineer should be uploaded into the ePUC portal for independent verification;
- The links in footnotes three and four are broken and the public is thus unable to verify INRS assertions relying on these citations;
- INRS recognizes that some slash must remain in the forests, but offers no provisions to ensure that it does remain or explains why we should assume that 50% will remain:
Due to the need to use some slash for in-woods soil protection uses, breakage at the time of felling and skidding, ecological needs, and equipment limitations, INRS suggests that you assume that no more than 50% of logging residue is available to the market;
- No information on the composition on the biochar, no explanation on how quickly the biochar will release CO₂, or why biochar should be considered a more permanent carbon storage system than the forests from which it originates has been provided;
- Vermont Renewable Gas has not performed any carbon accounting, modeling or life-cycle emission analysis for the facility;
- The carbon released by the facility would undercut the state's greenhouse gas reduction goals because carbon released in each year of operation would not be sequestered until future years;
- When used to generate electricity, wood combustion releases approximately four times as many greenhouse gases as natural gas combustion per megawatt-hour generated;

- “Vermont's forests are potentially renewable, but are limited in geographic extent and in potential growth rate. Going forward, the extent of forest in Vermont and the region is expected to decline. Although forest growth may be achieved through judicious use of forest management techniques, there is no certainty about how much growth can be expected.” Sinclair pf. At 3. (Docket 7833)
- “The State of Vermont has legislated policy goals related to the reduction of greenhouse gas emissions in the state. Pursuant to 10 V.S.A. § 578:
It is the goal of the state to reduce emissions of greenhouse gases from within the geographical boundaries of the state and those emissions outside the boundaries of the state that are caused by the use of energy in Vermont in order to make an appropriate contribution to achieving the regional goals of reducing emissions of greenhouse gases from the 1990 baseline by:
(1) 25 percent by January 1, 2012;
(2) 50 percent by January 1, 2028;
(3) if practicable using reasonable efforts, 75 percent by January 1, 2050.
[T]he carbon released by the Project would interfere with efforts to achieve these goals because carbon released in each year of operation would not be sequestered until future years, possibly not for decades, and in the case of forest-regeneration failures, not at all.” (Docket 7833)

For the reasons above, I ask that you deny the request for certificate of public good.

Thank you

/s/ Pike Porter