To the members of.....

The Hudson Valley Air Quality Coalition urges the Ulster County Legislature and UCRRA to pause any consideration of an anaerobic digestion facility until the County has completed and publicly-released a Zero Waste Implementation Plan (ZWIP). HVAQ members are concerned about the potential air quality implications of this facility.

Our concerns include those already raised by others:

- The facility would rely on mixed-waste inputs, risking contamination of compost and soil amendments.
- Contracts could include long-term “put-or-pay” obligations, locking the County into decades of disposal and limiting future waste reduction.
- The plan includes injecting biomethane into the existing fracked-gas system, raising environmental and climate concerns.
- High costs could divert funding away from proven Zero Waste strategies like reduction, repair, reuse, recycling, and composting.
- Without a completed ZWIP, Ulster County risks overbuilding expensive infrastructure that could undermine its Zero Waste goals.

In addition, HVAQ has the following concerns:

1. Anaerobic digestion shares the following harms with incineration:

-Combustion is an end result.

-For-profit companies are responsible for monitoring and reporting their own emissions to the NYS DEC.

2. Anaerobic digesters produce biogas, which is then treated to make “renewable natural gas” (RNG) and diverted into the natural gas pipeline, and ends in combustion. Putting into place infrastructure that perpetuates combustion is in opposition to the goal of NY's CLCPA to implement clean energy technologies to reduce emissions to protect the environment and communities' health.

Some of the emissions covered in CLCPA’s required analysis of solid waste management facilities:

“The GHG emissions required include carbon dioxide equivalents, methane, nitric oxide, and particulate matter 10 microns and 2.5 microns (CO2e, CH4, N2O, PM10, and PM2.5). The co-pollutant emissions required include:

All of the chemicals listed as hazardous air pollutants [Part 200.1(ag)] and;

The high-toxicity air contaminants listed in Part 212-2.2 Table 2, which was added for those compounds not in the hazardous air pollutants list.”

https://waldenenvironmentalengineering.com/how-will-the-clcpa-impact-solid-waste-management-facilities/#:~:text=What%20is%20a%20CLCPA%20analysis,the%20hazardous%20air%20pollutants%20list.

There are several pollutants noted in biogas combustion which affect health and the environment, among them nitrogen oxides, CO2, and siloxanes.

"As it was described by Macor and Benato (2020a), biogas is on average 10 times more toxic than natural gas in terms of dioxins and furans toxicity, and exhausts three times more NOx emissions than the natural gas standard. SOx emissions contributed about 6% of the imposed biogas human health toxicity."

https://pmc.ncbi.nlm.nih.gov/articles/PMC9589174/#:~:text=Accordingly%2C%20if%20biogas%20is%20not,to%20build%2Dup%20or%20accumulate.

-Siloxanes:

https://www.epa.gov/system/files/documents/2024-01/lmop_rng_document.pdf

"RNG typically has higher concentrations of pollutants such as metals, siloxanes and

Halocarbons"

-NitrogenOxides:

"Low levels of nitrogen oxides in the air can irritate your eyes,

nose, throat, and lungs, possibly causing you to cough and

experience shortness of breath, tiredness, and nausea.

Exposure to low levels can also result in fluid build-up in the

lungs 1 or 2 days after exposure. Breathing high levels of

nitrogen oxides can cause rapid burning, spasms, and

swelling of tissues in the throat and upper respiratory tract,

reduced oxygenation of body tissues, a build-up of fluid in

your lungs, and death."

https://www.atsdr.cdc.gov/toxfaqs/tfacts175.pdf

3. Impurity-removal technologies designed to convert biogas to RNG are expensive, with costs increasing with the efficiency of the technology. Implementation can run counter to the profit goals of energy companies.

4. Even when these mitigation technologies are employed, emissions still remain, in particular nitrogen oxides.

5. Injecting RNG into pipelines can result in leaks of methane into the air, and methane is one of the major GHG listed in the CLCPA:

https://metec.colostate.edu/emissions-from-landfill-renewable-natural-gas-rng-plants-in-the-central-usa/#:~:text=Results:,3rds%2C%20to%20%E2%89%880.6%25.

6. The pyrolysis (heating) of the solid waste as a pre-treatment produces air pollutants:

“The process of pyrolysis, while effective in reducing emissions, generates a diverse range of pollutants influenced by various factors….variables can influence emissions of PM, NOx, VOCs, CO, CO2, and other hazardous compounds, necessitating careful monitoring and process optimization to minimize environmental risks while producing biofuels and biochar.”

https://www.mdpi.com/2071-1050/16/3/1169#Funding

7. Plants such as these carry the risk of fires and explosions, which, in addition to safety risks, pose a risk to air quality and health:

"Risk of fires and explosions: The danger of fire and explosion is especially significant near digesters and gas reservoirs (Majolaine, 2020). Explosions can occur in the digester if air mixes with the methane that a digester produces, air can seep into the digester during maintenance and tank draining."

https://extension.psu.edu/safety-around-anaerobic-digesters#:~:text=Risk%20of%20fires%20and%20explosions,during%20maintenance%20and%20tank%20draining.

For these reasons, HVAQ urges the UCRRA and Ulster County to institute a pause on consideration of an anaerobic digestion facility so that a Zero Waste Implementation Plan can be completed and released.

Respectfully,

Hudson Valley Air Quality Coalition