

To: The Honorable C.T. Wilson
Economic Matters Committee

From: Bioenergy Devco

Subject: House Bill 11, Renewable Energy Portfolio Standard – Tier 1
Renewable Source – Alterations (Reclaim Renewable Energy Act of
2022)

Date: March 4, 2022

Position: Unfavorable

Bioenergy Devco opposes House Bill 11, Renewable Energy Portfolio Standard – Tier 1 Renewable Source – Alterations (Reclaim Renewable Energy Act of 2022).

This testimony is offered on behalf of Bioenergy Development Company (BDC), an international leader in anaerobic digestion solutions with over 24 years of experience. BDC’s exceptional team of engineers, microbial experts, biologists, chemists, agronomists, construction designers and facility managers are dedicated to delivering an environmentally sound solution that creates a true source of renewable, carbon-negative energy as well as a high nutrient soil amendment.

Bill Summary: House Bill 11 alters the definition of “Tier 1 renewable source” by excluding several sources of energy, including methane from the anaerobic decomposition of organic materials, from being eligible for inclusion in the Maryland Renewable Energy Portfolio Standard. Bioenergy Devco, with its headquarters and ongoing investments in the State of Maryland, strongly opposes the repeal of methane from anaerobic digestion as a Tier 1 renewable source (Page 7, lines 14-15).

What is Anaerobic Digestion? Unlike other targeted sources of energy in House Bill 11, anaerobic digestion (AD) is a natural, completely enclosed process in which bacteria break down organic waste (e.g. food waste, manures, etc.) in the absence of oxygen. The purpose of AD is three-fold:

- Divert organic waste from our municipal solid waste stream and prevent environmental and social impacts such as GHG emissions associated with landfills and incinerators,

- Produce biogas, which can be used locally to generate heat and / or electricity in a combined heat and power plant or processed into renewable natural gas and integrated into our energy grid.
- Produce digestate, an organic soil amendment that increases soil fertility and crop yields by returning carbon and nutrients back to soil.

Biogas from AD: Biogas is an essential part of a national carbon reduction strategy because of its potential to prevent methane emissions from the management of wet wastes at landfills, farms, and wastewater treatment plants. These three sources constituted 30 percent of methane emissions and 3 percent of total U.S. GHG emissions¹.

When the source of biogas is organic waste and diverted from landfills, the biogas is deemed carbon negative. The rationale behind this is predicated on the Global Warming Potential (GWP) of each greenhouse gas². When organic waste is disposed of in landfills, it degrades and emits methane. However, when organic waste is diverted from landfills and used to produce biogas, landfill methane emissions are prevented, and CO₂ is emitted instead of methane. In these cases where methane emissions are prevented, accounting for the fact CO₂ has a 28-times lower GWP than methane, biogas reduces atmospheric greenhouse gas emissions and is, under these conditions, considered a carbon negative fuel.

Biogas can be used to power boilers or generate electricity, reducing reliance on fossil fuels and improving the resiliency of our energy system. Biogas can also be refined into renewable natural gas (RNG), which is fully interchangeable with conventional, fossil fuel-based natural. RNG has the potential to replace up to 10 percent of the natural gas used in the United States. RNG can be used as a vehicle fuel after it is converted to compressed natural gas (CNG), National Renewable Energy Laboratory estimates RNG could be used to replace 56 percent of the natural gas used to produce vehicle fuel³. There is also future application for biogas derived from this process for the production of green hydrogen to further sustainability goals for public transport.

Environmental Benefit of AD: Unlike open-air landfills and even composting facilities, AD processes organic waste in a completely enclosed system capturing and

¹ <https://www.wri.org/research/production-and-use-waste-derived-renewable-natural-gas-climate-strategy-united-states>

² https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

³ <https://www.eesi.org/papers/view/fact-sheet-biogasconverting-waste-to-energy>

containing all emissions preventing those emissions from being released into the atmosphere.

Locally, BDC is in the final stages of commissioning its first North American Anaerobic Digestion facility in Jessup, Maryland. This AD will capture 115,000 tons per year of organic materials that would otherwise be headed to landfills and incineration. The resulting 26,000 tons of carbon dioxide saved from the atmosphere each year has the same environmental impact that a forest area 56 times the size of Central Park provides.

This facility will produce an estimated 20,000 tons of rich, fertile soil amendment for agricultural and other land use and more than 275,000 MMBTU's per year of renewable energy. This translates to approximately 30,000 equivalent tons of CO₂ removed from the atmosphere. Energy produced by this facility translates to:

- Annual electricity consumption of 6,635 US households
- 1,978,417 gallons of diesel fuel
- 11 million miles of tractor trailer fuel

Implications for Renewable Energy Production and Organics Recycling

Infrastructure: One of the major functions of the Renewable Portfolio Standard is to encourage renewable energy production in the state of Maryland. The 2019 bill increased the solar carveout from 2.5% to 6% in 2020, with an increasing annual percentage carveout up to 14.5% in 2030. It also increased offshore wind from a 2.5% maximum in 2017 to a 10% maximum in 2025.

While the current renewable energy standard prioritizes wind and solar energy, it also includes a diverse range of other fuels including renewable natural gas derived from the Anaerobic Digestion (AD) process. This process not only produces renewable natural gas (RNG) but provides much needed capacity for recycling of organics and food waste. Maryland has taken significant steps towards growing organics recycling infrastructure with the passage of HB 264 in 2021, which requires any entity that generates at least 2 tons of "food residuals" each week to recycle that waste at a qualified facility. This bill created an important economic opportunity in the State driving investment not only by BDC, but others exploring opportunities for sustainable waste management and renewable energy production to the state.

Removing renewable energy derived from the Anaerobic Digestion process from Maryland's RPS will discourage production of an important renewable fuel in Maryland and stifle expansion of needed organics recycling infrastructure as the state ramps up waste diversion efforts.



For these reasons, Bioenergy Devco respectfully requests an unfavorable report on House Bill 11.

Please contact Aaron J. Greenfield at 410.446.1992, if you have any questions