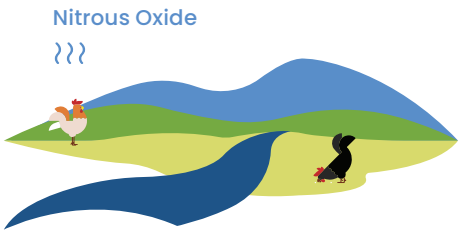
CleanBay Renewables Overview .pdf
Uploaded by: Courtney Spangler
Position: FAV

Protecting Nature. Supporting Agriculture. Energizing Our Future.

Sustainable management of waste is one of the **most significant challenges facing farming and food processing operations.**

At CleanBay Renewables Inc. we are developing a portfolio of utility-scale bioconversion facilities that use field-proven anaerobic digestion and nutrient recovery technologies to convert poultry litter into renewable natural gas (RNG) and controlled-release fertilizer. The company's first bioconversion facility will be located in Maryland. CleanBay is actively developing sites for future facilities on the Delmarva Peninsula, the Southeast, and California.



Nitrogen and phosphorus runoff

- More than **14 million tons of poultry litter** are produced in the U.S. each year.
- Uncontrolled poultry litter can release **nitrous oxide**, a greenhouse gas with **300 times the impact of carbon dioxide (CO_2).**
- Poultry litter contains **nitrogen and phosphorous**, which, if uncontrolled, **can pollute waterways and ground water.**

CleanBay's powerful solution to **reduce air, soil, and water pollution** is sustained by a **robust economic model:**

AIR QUALITY:

Reducing greenhouse gas emissions by 1,000,000 tons of CO_2 per full scale facility annually—equivalent to taking 217,480 passenger vehicles off the road each year.

PRIVATE INVESTMENT:

Increasing local and state tax bases through capital investment of over $500 million per full scale facility.

ECONOMIC DEVELOPMENT:

Creating **26 new high-paying full-time jobs** per facility, in addition to **hundreds of indirect jobs** in construction and supply-chain needs.

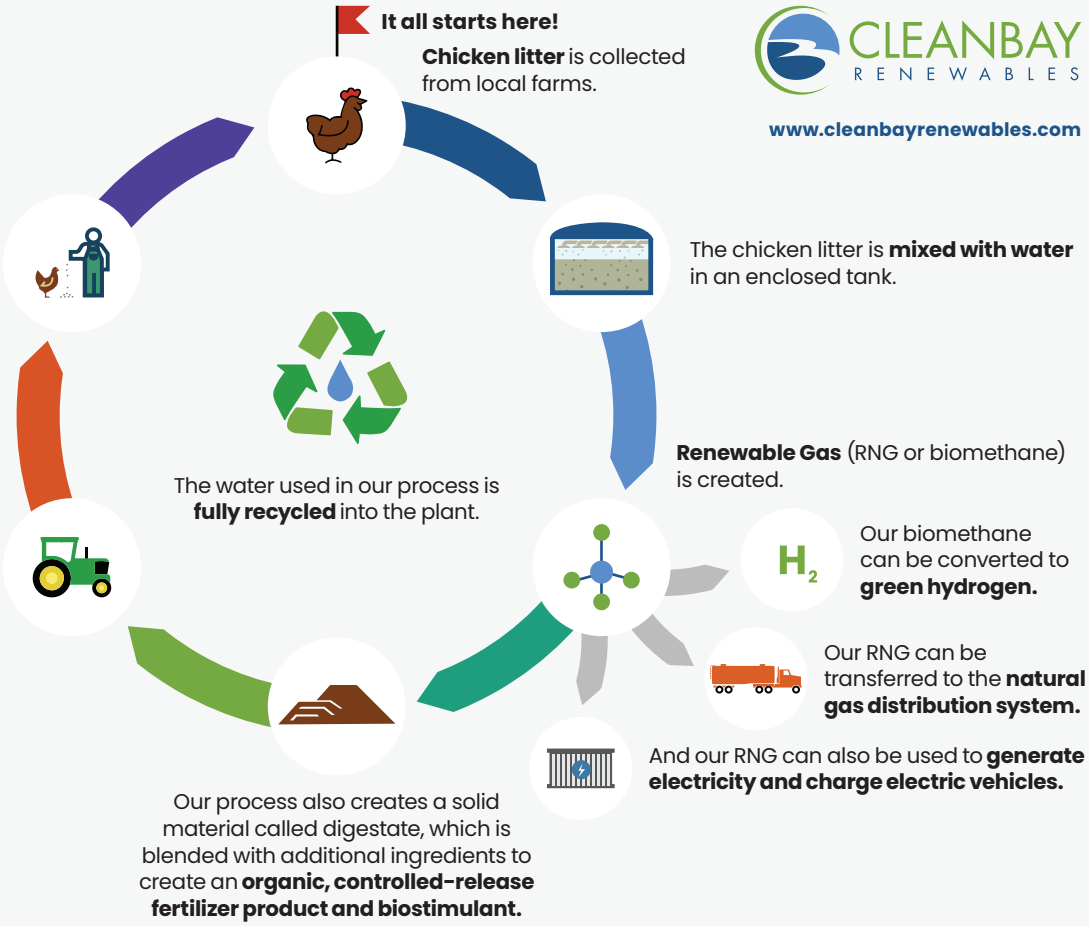
AGRICULTURE:

Enhancing farming and food operations' **environmental efforts** by providing a sustainable, circular solution for its byproducts.

OUR PROCESS

CLEANBAY RENEWABLES

www.cleanbayrenewables.com



We're solving **pressing environmental problems...**

- Farmers across the U.S. need an **economical and environmentally friendly way to dispose of the over 14 million tons of chicken litter** produced in the U.S. each year.
- Farmers need to **improve their soil health to fuel an increase in production** for an expanded population.
- Communities need an **economic boost** and want access to an **abundant, renewable energy supply.**

...While helping **farmers, local communities, and businesses.**

- Carbon pricing is increasingly recognized as an essential way to cost-effectively **transition to low-carbon economies**.
- **The world's carbon credit market is rapidly expanding** as states', companies', and countries' compliance targets must be met.
- As consumers pivot to organic foods, **demand for natural fertilizer is experiencing high growth**.

At full capacity, each facility can **recycle more than 150,000 tons of poultry litter** each year into:

750,000 MMBTu OF RNG

Providing the community with enough **renewable energy** for over 11,000 homes.

1,000,000 TONS OF CO_2 EQUIVALENT

Providing the state and businesses with new ways to **meet environmental regulations and low-carbon fuel standards.**

100,000 TONS OF FERTILIZER

Providing farmers with a controlled-release fertilizer with humic acid to **address overall soil health** and **relieve** nitrate and phosphorus **runoff.**

SB616_CleanBayRenewables_FAV.pdf
Uploaded by: Courtney Spangler
Position: FAV

726 Second Street, Suite 3B
Annapolis, MD 21403
info@cleanbayrenewables.com
410.514.6488

March 14, 2022

The Hon. Chairman Delores Kelley
The Hon. Vice Chair Brian Feldman
Senate Finance Committee
3 East, Miller Senate Office Building
Annapolis, MD 21401

Re: SB 616 – Renewable Energy Portfolio Standard – Eligible Sources

Dear Chairman Kelley and Vice Chair Feldman:

I am writing in support of parity and diversity among Tier 1 renewable sources in your consideration of Senate Bill 616 and all other renewable energy legislation. The bill maintains important Tier 1 renewable energy sources to bolster our State's Renewable Energy Portfolio Standard (RPS). To effectively address environmental challenges now, Maryland's RPS needs to include diverse solutions and resources that can start working together today and affect measurable change quickly.

There is an opportunity to promote meaningful in-state economic development by incentivizing clean renewable energy technology companies to locate and grow in Maryland. We appreciate your understanding that renewable energy diversity is an asset to our State. We ask that any legislation working to incentivize more renewable energy projects and expand the market for renewable energy credits include qualifying biomass, poultry litter-to-energy, and thermal energy from biomass, with the amended definition in SB 903. Renewable energy diversity is what is needed as we transition away from fossil fuels toward net-zero carbon goals. Our state's agricultural sector can contribute to our renewable energy mix.

CleanBay Renewables implements anaerobic digestion and nutrient recovery technologies to recycle poultry litter and create renewable energy at utility scale. It is important to consider emerging clean energy businesses like CleanBay finding solutions for agricultural byproducts in Maryland. Our closed-loop enclosed anaerobic digestion technology to recycle poultry litter is as clean as solar and wind generation, yet in addition to creating clean baseload renewable energy we also create a natural fertilizer that can replace synthetic fertilizers here and throughout the Chesapeake Bay watershed. Our technology presents Maryland with the opportunity to divert an abundant byproduct of local farms, create the sustainable and baseload energy our state needs, and improve the health of local air, soil and water.

At full capacity, each CleanBay facility can recycle more than 150,000 tons of poultry litter each year into generating 750,000 MMBTU of sustainable renewable natural gas, the amount of energy used by about 11,000 homes each year; reducing greenhouse gas emissions by up to 1,000,000 tons of CO_2 equivalent which is comparable to taking more than 200,000 passenger cars off the road each year, while providing our state and businesses with new ways to meet environmental regulations and low-carbon fuel standards; and producing 100,000 tons of organic, controlled-release fertilizer with added humic acid to address overall soil health and relieve nitrate and phosphorous runoff. Local farmers can use our fertilizer to improve soil health and increase organic food production.

When you think about ways to improve our environment and address impacts of climate change, realize that it is not just about powering our energy needs from renewable sources; we must also focus on removing or repurposing carbon, methane, nitrous oxide and other greenhouse gas emissions from our air, and finding new solutions to address age old

environmental challenges. CleanBay Renewables can provide renewable energy while also removing harmful emissions, providing natural fertilizer that can replace synthetic fertilizer, and generating jobs.

There have been state-prescribed carve outs for solar, wind and recently geothermal energy in increasing annual percentages mandating a certain portion of the RPS come from those sources of Tier 1 energy. The mandates were intended to propel those industries forward by creating favorable market conditions for investors to fund those types of renewable energy projects by giving market certainty to those investments, and it worked. However, the types of eligible Tier 1 renewable energy sources that we use as feedstock (qualifying biomass, poultry-litter-to-energy, and thermal energy from a thermal biomass system) are currently not on par with other Tier 1 sources that have a carve-out requiring a percentage of RPS be met using those specific renewable sources. Renewable Energy Credits (RECs) and clean energy incentives are market driven. Our type of renewable energy facility at utility scale can cost over $500 million to develop, will employ more than 25 full-time employees with quality, permanent, high paying jobs; and includes more than 200 construction jobs for about 18 months of site work which means area economies can be impacted in a meaningful way.

Today, many new clean energy technology businesses like ours are working on sustainable resource management and clean energy innovation in our State. Now is the time to signal to investors that newer clean energy options are also part of the solution to meet Maryland's energy consumption needs. Thank you for understanding the importance of keeping energy derived from qualifying biomass, poultry-litter-to-energy and thermal energy from a thermal biomass system with the amended definition in SB 903 in our RPS.

Sincerely,

Thomas Spangler
Executive Chairman, CleanBay Renewables

SB616-FAV-CJW-RPS-IncinerationRev.pdf
Uploaded by: Diana Younts
Position: FAV

Committee: Finance
Testimony on: SB616 - "Renewable Energy Portfolio Standards -- Eligible Sources-Waste to Energy-Derived Sources"
Organization: Takoma Park Mobilization Environment Committee Person
Submitting: Diana Younts, co-chair
Position: Favorable
Hearing Date: March 15, 2022

Dear M. Chair and Committee Members,

Thank you for allowing our testimony today in support of SB616. MLC's Climate Justice Wing is a statewide coalition of over 50 grassroots and grasstops organizations focused on getting State level climate justice legislation passed. Each bill for which we advocate is evaluated through an equity lens, with a particular focus on how disadvantaged communities are affected by the bill and the bill's climate impact.

We urge you to support the proposed bill to remove incineration from the Renewable Portfolio Standards (RPS) for three reasons: 1) burning trash is displacing clean energy in the RPS; 2) burning trash is not clean; and 3) burning trash is not healthy.

As Speaker Adrienne Jones said last year, "climate change is an existential threat" and removing [dirty energy] from the RPS is an "important first step" in addressing it. Energy from incinerators emits almost five times the greenhouse gases than energy created by black liquor (which the legislature removed from the RPS in 2021). *See* Department of Natural Resources Final RPS Report 2019, Table 2-8. And indeed, as discussed more fully below, incineration is more polluting than coal. So, it is important that incineration be removed from the RPS and that it not be allowed to be subsidized or to displace clean energy.

Incineration is Displacing Clean Energy. A shockingly large and *growing* percentage of Maryland's renewable "clean energy" comes from high-polluting energy sources. Maryland's percentage of energy from dirty sources in the tier 1 RPS *grew from 33% in 2018 to 40% in 2019*. In 2019 alone, Maryland paid over $32 million to buy renewable energy credits from dirty energy sources, a fact that is particularly

surprising in light of the fact that both Covanta and Wheelabrator are headquartered out of state. *See* Report here.

Montgomery County, where one of Maryland's incinerators is located, supports removing incineration from the RPS and is actively moving towards requiring composting (organic waste is fully 51% of what is in the waste stream). As to Baltimore, the community most affected by the unhealthy air created by the Wheelabrator incinerator – South Baltimore – has been fighting for its closure for years. As far as other interests in Baltimore who support the Wheelabrator incinerator, one has to ask: Why should all of Maryland be forced to pay for Baltimore's solid waste issues when it is being done at the cost of healthy lives for the children and parents in the surrounding community? It is time we stop closing our eyes to this problem.

Burning Trash is *Dirtier* Than Coal. Burning trash is not clean energy: to produce the same amount of energy, trash incinerators emit more greenhouse gases than coal plants do. Trash incinerators are the dirtiest way to make electricity by most air pollution measures. Even with air pollution control equipment in place, trash incinerators emit more pollution than (largely uncontrolled) coal power plants per unit of energy produced.

To produce the same amount of energy as coal power plants in Maryland, the Montgomery County incinerator -- operated by Covanta -- releases 15% more fine particulate matter, 60% more arsenic, 68% more greenhouse gasses, and 94% more nitrogen oxide (which triggers asthma), 3.5 times the amount of chromium, 11 times more lead, 21 times more cadmium, 26 times more mercury, and 50 times more hydrochloric acid than a coal plant. Incinerators release 3.1 times the amount of mercury as landfills. The Wheelabrator incinerator in Baltimore is similarly polluting.

Incinerators Are Not Healthy: Health data studied in Baltimore strongly supports that incinerators sicken Marylanders. In December 2017, the Abell Foundation, in conjunction with the Environmental Integrity Project, published a study entitled "Asthma and Air Pollution in Baltimore City." The study found that Baltimore's asthma rate is three times greater than the rest of Maryland and that the highest incidence of asthma occurred in those zip codes that are adjacent to major emitters of air pollution: 21230, in which the Wheelabrator incinerator is located, and 21226, in which has other major facilities are located. Similarly, the Dickerson trash incinerator is the single largest industrial emitter of air pollutants in Montgomery County. This facility produces approximately 740 tons of air pollutants and sends 180,000 tons of toxic ash to landfills in Virginia.

Trash incineration and other dirty energy in the RPS contributes to air pollution that harms Marylanders' health and all Maryland ratepayers subsidize that pollution to the tune of $32 million per year. Marylanders should not have to pay that price.

For these reasons, we urge you to support SB616 and remove incineration from the Renewable Portfolio Standards.

SB 616_Maryland Catholics for Our Common Home_FAV.
Uploaded by: Robert Simon
Position: FAV

Hearing before the Senate Finance Committee
Maryland General Assembly
March 15, 2022

Statement of Support (FAVORABLE)
of Maryland Catholics for Our Common Home on
SB 616, Renewable Energy Portfolio Standard – Eligible Sources –
Waste-to-Energy and Refuse-Derived Fuel

Maryland Catholics for Our Common Home (MCCH) is a lay-led organization of Catholics from parishes in the three Catholic dioceses in Maryland: the Archdiocese of Baltimore, the Archdiocese of Washington, and the Diocese of Wilmington. It engages in education about, and advocacy based on, the teachings of the Catholic Church relating to care for creation. MCCH is a voice for the understanding of Catholic social teaching held by a wide array of Maryland Catholics, but should be distinguished from the Maryland Catholic Conference, which represents the public policy interests of the bishops who lead these three dioceses.

MCCH would like to express its strong support for passage of Senate Bill 616, dealing with eligible sources for Maryland's Renewable Energy Portfolio Standard. As Catholics, we see care for God's creation as an integral part of our faith, as taught by recent Popes, including the forceful statements of Pope Francis. In his 2015 encyclical, entitled *Laudato Si': On Care for Our Common Home*,[*] Pope Francis specifically identifies the development of renewable energy as a priority: "There is an urgent need to develop policies so that, in the next few years, the emission of carbon dioxide and other highly polluting gases can be drastically reduced, for example, substituting for fossil fuels and developing sources of renewable energy." (p. 26) He also advocates for "removing from the market products which are less energy efficient or more polluting" (p. 180). The provision of renewable energy credits to sources of energy that generate emissions creates a market distortion that encourages such pollution and weakens the incentives for deploying emissions-free renewable energy sources, such as solar and wind power. In addition, facilities for these polluting energy sources (e.g., incinerators) are often sited in low-income areas, where their operations add to the inequities already borne by overburdened communities.

The provisions of Senate Bill 616 are responsive to Pope Francis's call to "integrate questions of justice in debates on the environment, so as to hear both the cry of the earth and the cry of the poor" (p. 49). The bill removes from Tier 1 of the Maryland Renewable Energy Portfolio Standard (REPS) polluting sources of energy: the incineration of municipal waste and refuse-derived fuel. These changes will increase the beneficial effect of Maryland's REPS to the environment and to all Marylanders.

Thank you for your consideration of our views and our respectful request for a **favorable** report on Senate Bill 616.

[*] The English text of the encyclical, to which the paragraph numbers in the following parentheses refer, can be found at: https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.

SB 616_CBF SUPPORT.pdf
Uploaded by: Robin Jessica Clark
Position: FAV

CHESAPEAKE BAY FOUNDATION

Environmental Protection and Restoration
Environmental Education

Senate Bill 616

Renewable Energy Portfolio Standard – Eligible Sources –
Waste–to–Energy and Refuse–Derived Fuel

Date: March 15, 2022 Position: Support
To: Senate Finance Committee From: Julieta Rodrigo, Urban & Community Resilience Manager

Chesapeake Bay Foundation (CBF) **SUPPORTS** SB 616, which makes energy derived from waste-to-energy or refuse-derived fuel ineligible for the creation of credits under the renewable energy portfolio standard. Incineration of solid waste and other refuse should not receive environmental tax subsidies because it causes significant harm to the Chesapeake Bay and represents an environmental injustice issue for our state's residents.

Incineration releases toxins that damage human and environmental health.

The Chesapeake Bay's airshed is significantly larger than its watershed, meaning that air pollution from many surrounding states ends up deposited in the Bay. Incineration results in nitrogen oxide emissions (NOx) that creates nitrogen deposition to the Bay and its rivers and streams. Nitrogen is one of the key pollutants to be reduced as part of the plan to clean-up the Bay. Thus, incineration should not be subsidized and encouraged by receiving credit under Maryland's RPS.

CBF believes it is time to phase out incentives for the use of solid waste incineration both for the nitrous oxide pollutants that become a source of nutrient pollution for the bay, but also to reduce the other air pollutants threatening vulnerable populations that live near these facilities, especially in Baltimore.

Environmental subsidies for incineration are not appropriate.

Analysis by the World Bank[1] identifies incineration as the most expensive way to deal with waste, with costs high above composting and landfills. The money to subsidize incineration comes from Maryland taxpayers. Legislation that enables incineration to receive subsidies as a renewable energy forces Maryland taxpayers to pay for a disposal method that is disproportionately harmful to their families, their communities, and the natural environment they care about. Maryland has one of the highest rates in the country for premature deaths caused by air pollution.[2] Maryland's RPS incentives should be reserved for clean energy options like wind and solar.

[1] Kaza, Silpa, et al. "What a Waste 2.0 : A Global Snapshot of Solid Waste Management to 2050." *Open Knowledge Repository*, Washington, DC: World Bank, 20 Sept. 2018, https://openknowledge.worldbank.org/handle/10986/30317.
[2] Fountain, Henry. "Calculating Air Pollution's Death Toll, across State Lines." *The New York Times*, The New York Times, 12 Feb. 2020, https://www.nytimes.com/2020/02/12/climate/air-pollution-health.html.

Maryland Office ▪ Philip Merrill Environmental Center ▪ 6 Herndon Avenue ▪ Annapolis ▪ Maryland ▪ 21403
Phone (410) 268-8816 ▪ Fax (410) 280-3513

Under Maryland's RPS, incineration only started receiving subsidies in 2011. If passed, this bill would remove incineration from the RPS, but would *not* mandate the closure of the incineration facilities within the state. Therefore, it should not affect incinerators' ability to fund their operations. As one example, BRESCO's Wheelabrator operated in Baltimore from 1985 to 2011 without the Tier 1 subsidies and still had successful business results.

Maryland should support alternatives to deal with trash.

Subsidizing incineration is not the best option to manage trash, when considering additional environmental and health impacts. Internationally recognized hierarchies for dealing with trash prioritize reducing, reusing, and recycling materials before they make it to landfill and incineration. Agencies like the Environmental Protection Agency[3], the United Nations Environment Programme[4], and the Intergovernmental Panel for Climate Change[5] recognize waste-to-energy as an option for trash management, but only when other methods of waste minimization have been fully pursued.

Many communities around the state have launched and expanded successful programs to reach these goals, such as increasing their cities' recycling efforts, adding composting facilities to reduce organic waste, and passing ordinances to reduce single-use plastic waste. These initiatives have the added benefit of promoting the local economy. As a state that leads in environmental practices, Maryland needs to invest in these programs, instead of subsidizing an inefficient, aging, and polluting practice like incineration. Maryland's 2011 decision was a "national anomaly", as Maryland "became the first state to bump trash incineration from Tier 2 to Tier 1."[6]

CBF urges the Committee's FAVORABLE report on SB 616. For more information, please contact Robin Jessica Clark, Maryland Staff Attorney at rclark@cbf.org and 443.995.8753.

---

[3] "Energy Recovery from the Combustion of Municipal Solid Waste." *EPA*, Environmental Protection Agency, https://www.epa.gov/smm/energy-recovery-combustion-municipal-solid-waste-msw.

[4] Chim, Man Mei, et al. "Waste to Energy: Considerations for Informed Decision-Making." *UNEP Document Repository Home*, United Nations Environment Programme, Jan. 2019, https://wedocs.unep.org/handle/20.500.11822/28413.

[5] "Intergovernmental Panel on Climate Change Working Group III: Mitigation Assessment Report." *IPCC*, Intergovernmental Panel on Climate Change, https://archive.ipcc.ch/ipccreports/tar/wg3/index.php?idp=123.

[6] Ewall, Mike. *Removing Trash Incineration from Maryland's RPS*. Energy Justice Network, 15 Jan. 2018, http://www.energyjustice.net/files/md/TakingOutTheTrash.pdf.

2022_SB0616_testimony.pdf
Uploaded by: Andrew Hinz
Position: FWA

Testimony of Andrew Hinz for
SB0616 – Renewable Energy Portfolio Standard – Eligible Sources – Waste–to–Energy and Refuse–Derived Fuel

Finance Committee Chair and Members,

Thank you for considering my testimony. Please vote **favorably wit amendments** for the SB0616 – Renewable Energy Portfolio Standard – Eligible Sources – Waste–to–Energy and Refuse–Derived Fuel.

I am frankly **appalled** you have not corrected this **waste, fraud, and abuse** already. The current RPS is a quarter billion boondoggle and tragic missed opportunity. Please amend the bill to remove all fuel-derived, polluting sources from the RPS and recommend enactment.

1. **Local communities where trees are harvested to generate electricity are devastated:**
   "I was covered in wood pellets while being interviewed in front of the plant. I became nauseous and my eyes and nose watered just standing at the fence alongside the plant where the residents live. Mrs. Carmella Wren-Causey has to use two different inhalers and take breathing treatments. She has lost her two beloved dogs." – Kathy Egland

- "The process is highly polluting, and a number of plants have been found to emit far more air pollution than their permits allow. The issue of siting polluting facilities in environmental justice communities is increasingly of concern to the Biden Administration." - https://environmentalpaper.org/2021/11/global-ngos-warn-cop26-that-burning-forest-wood-for-energy-sabotages-climate-action/
- "The wood pellet industry, including UK based biomass giant Drax, is cutting through U.S. forests almost at the speed of wildfires and committing human rights violations by deliberately siting their toxic wood pellets plants in low-income communities of color." - https://www.scoop.co.nz/stories/WO2111/S00127/global-ngos-warn-cop26-that-burning-forest-wood-for-energy-sabotages-climate-action.htm
- "the manufacturing of wood pellets pose significant dangers to human health from toxic levels of exposures to Particulate Matter (PM2.5), Volatile Organic Compounds (VOCs), Nitrogen Oxide (NOx), Carbon Monoxide (CO), Carbon Dioxide (CO2), methanol, formaldehyde, and noise pollution"- https://naacp.org/resources/resolution-wood-pellets-opposition
- "The pine pellet plant industry, and specifically Enviva, has a documented history of environmental violations and fines. they are known polluters and they are known to be environmental regulation violators. Undisputable fact." - https://www.wlox.com/app/2022/01/04/stone-county-residents-speak-out-against-proposed-enviva-plant-location/
- "Air pollution from wood pellet plants comes from various sources. There's the exhaust from a steady convoy of trucks. And, perhaps worst of all, the kiln that dries chipped trees to turn them into wood pellets, spewing loads of volatile organic compounds, or VOCs, that contribute to smog and ozone pollution; aggravate asthma and other lung conditions; cause cancer; and trigger itchy eyes and skin. In between, too, there are additional VOCs sent into the air when the hammermills shred trees and the pellets are fully processed. The wood pellet industry and regulators almost never account for that pollution in permitting." - https://www.huffpost.com/entry/biomass-energy-power-plants_n_61bcb6cae4b0a3722477d16a
- "Emissions calculations showed the Amite facility was emitting three times more pollution than allowed by its permit. A third facility in Louisiana — also in a low-income area — was

also in violation." - https://southerlymag.org/2021/02/25/mississippi-biomass-facility-fined-for-emitting-three-times-more-air-pollution-than-permitted/

- "Like (in) North Carolina, Enviva's current permit proposal with the Mississippi Department of Environmental Quality is equally devoid of substantive controls to protect public health and preserve quality of life." – **Kathy T. Egland, Chair, Environmental and Climate Justice Committee, NAACP National Board of Directors**

2. **Local communities where trees are burned to generate electricity are devastated:**

- "The plant is a major emitter of carbon monoxide, sulfur dioxide, particulates, hazardous air pollutants, toxic air pollutants, and a range of other potentially dangerous emissions. When combined with other air sources in the area, Robeson County has some of the worst air impacts in the state. These emissions are direct causes of severe health issues."
- "Burning these fuels (wood chips, poultry litter) is actually turning out to be dirtier than coal on a per-megawatt basis for most pollutants . . . The NCRP facility was (and still is) emitting pollutants at rates that exceeded the Clean Air Act's major source threshold, but the facility never obtained the Title V major source permit necessary to protect air quality and public health . . . NCRP has Violated emission limits for fine particulate matter, sulfur dioxide, and nitrogen oxides; Routinely failed to operate required monitoring technology; Improperly removed necessary air pollution control; Failed to conduct required emissions testing in a timely manner; Committed numerous other monitoring and recordkeeping violations . . . The facility underestimates emissions of hazardous air pollutants, which are those that Congress has listed as toxic and/or carcinogenic even in very small quantities. This means, the facility is evading even more stringent pollution control technology."- **Robeson County Cooperative for Sustainable Development, Lumber Riverkeeper, Waccamaw Riverkeeper, Winyah Rivers Alliance, Clean AIRE NC, Medical Advocates for Healthy Air, Dogwood Alliance, North Carolina Sierra Club, North Carolina Conservation Network, North Carolina Climate Solutions Coalition, Toxic Free North Carolina, Coastal Plain Conservation Group, Spruill Farm Conservation Project, the Rachel Carson Council, Partnership for Policy Integrity, Natural Resources Defense Council, Our Children's Earth, Friends of the Earth, Environmental Integrity Project.**

3. **Local communities hosting industrial extraction of methane from CAFO waste face a "subsidy rush" of unnecessary new industrial facilities:**

"In an anaerobic system the majority of the chemical energy contained within the starting material is released as methane. The process is characterized by very strong odors and only a small amount of heat is generated meaning decomposition takes much longer and doesn't reach sufficient temperatures to safely kill plant pathogens, weed and seeds. To overcome these limitations external (artificial) heat is normally added."

4. **Local communities hosting municipal incineration suffer from higher rates of asthma and cancer. I live 3 miles from one of the incinerators and must subsidize attacks on my health every time I pay my utility bill--here is a poem I wrote in 2017:**

one 800 cellular violence
oxygen honeycombs
human estuary of gas exchange
cytoplasmic veils gently vibrating
air and carbon glide through
macrophagia angle toward contagion
so we on the edge like reeds in the salty mud

breath air and music for
every second song of the universe

(in 2013 a massachusetts institute of technology study revealed the wheelabrator bresco trash incinerator has killed roughly eight thousand baltimore city residents since it began operating in 1985—destiny watford organized the curtis bay community to prevent an incinerator from being built there in 2016)

If I were presenting this testimony in person I would here ask that we all pause to honor Destiny and Shashawnda Campbell and the other members of the South Baltimore Community Land Trust and all other young people all around our state fighting for their communities and to overcome many years of BAD decisions (e.g., subsidizing the pollution of the air they must breathe every second of every day).

Here are twenty-two more reasons to stop this pernicious subsidy to polluters:

5. we are in a climate crisis
6. we cannot afford to be spending our renewable energy money on facilities that emit greenhouse gasses
7. burning trash, chicken litter, and wood waste and manufacturing methane all pollute the environment, harm nearby communities' health, and contribute to climate change
8. Maryland ratepayers are being deceived: investment of public dollars was advertised to voters and ratepayers to be for wind, solar, and geothermal (by definition, actually renewable)
9. the subsides are an egregious waste of public money working at cross-purpose to our legislated climate goals
10. Maryland ratepayers are going to be very unhappy to learn that they will have wasted half a billion dollars of their hard-earned money on waste management 'solutions' masquerading as renewable energy; they could be entitled to refunds
11. common sense is being ignored: we are wasting millions of dollars on a Virginia biomass facility that is too dirty to qualify for Virginia's own recently-enacted RPS; we are wasting money buying credits for burning "biomass gas" from DC's Blue Plains wastewater treatment plant, which makes fertilizer from sewage sludge with extremely high levels of toxic per- and polyfluoroalkyl Substances (PFAS) that is sold to the public for a profit
12. evidence shows the RPS as currently configured is NOT working: "PJM-wide CO2 emissions per MWh in 2017, the latest year available, were approximately 0.8% lower than they would have been absent the Maryland RPS, assuming all retired RECs supported resources that would not have operated otherwise."
13. the harm from the RPS as currently configured is REAL and WIDESPREAD: he pollution from combustion-based energy sources included in the RPS is so great that Maryland RPS energy sources, on average, pollute as much or more SO2 and NOx than the grid as a whole
14. air pollutants from waste incinerators increase the risk of pre-term births, cancers of the blood and lung, and emergency room visits. The process of incinerating trash creates an especially dangerous set of compounds called dioxins, declared by the World Health Organization as a known human carcinogen; dioxins are linked to diseases of the immune system, endocrine system, nervous system, and reproductive system
15. In 2015, the BRESCO incinerator in Baltimore emitted about twice as much greenhouses gasses per amount of energy produced, on average, as each of the coal plants located in Maryland

16. anaerobic digestion of factory farm waste, animal waste and other materials by methane-producing microorganisms that can only thrive in the absence of oxygen generates SIGNIFICANTLY more methane than composting the same waste
17. if we are to survive, we MUST cut methane emissions: leaks along the natural gas supply chain are significantly higher than original EPA estimates
18. biogas facilities are EXTREMELY costly, especially when compared with the alternative of composting which returns value from investment IMMEDIATELTY and sustainably—biogas manufacturing plants are not profitable without subsidies
19. digesters DO NOT mitigate the significant air quality issues associated with factory farms
20. digester digestate IS NOT any less harmful to land spread than manure
21. biomass and wood have the fastest-growing share of early deaths in the major energy-consuming sectors
22. burning wood for electricity produces as much or more pollution than fossil fuels, including coal
23. biomass facilities emit high levels of particulate matter (PM), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO2), lead, mercury, and other hazardous air pollutants
24. newly planted trees have far less benefit to the climate and local air quality than a mature tree or a fully functioning forest ecosystem
25. biomass burning carbon isn't recaptured unless and until newly planted replacement trees grow to maturity over many decades
26. 97+% of Maryland's RPS subsidies for burning woody biomass went to facilities outside of Maryland

Biomass (burning trees for electricity), Biogas (harvesting methane from the mismanaged waste of abused animals), and Municipal Trash Incineration (burning then landfilling compostable biomass, single-use plastic produced from fracked methane, and improperly sorted reusable material) share four common characteristics:

1. They are very expensive, **more expensive by far than non-polluting alternatives**, non-fuel-based true renewable sources like sun, wind, moving water, and geothermal energy
2. They **harm the local communities** where they are harvested, they harm the local communities where they are burned, and they require significantly more transportation infrastructure than non-polluting, non-fuel-based true renewable sources like sun, wind, moving water, and geothermal energy
3. They **generate far more greenhouse gases** than non-fuel-based true renewable sources like sun, wind, moving water, and geothermal energy, and our atmosphere is out of room for more greenhouse gases
4. They are **NOT scalable, viable sources of energy** (we simply can't torture enough animals, the total US potential for cafo methane is <5% of the methane currently used to generate electricity) and clearcut enough trees (biomass accounts for less than 5% of US energy production and biomass to generate electricity is less than 10% of that 5%--and our soils are being depleted of nutrients at a rate that threatens global food production) worth the infrastructure that would be required to increase their production. Sun, wind, moving water, and geothermal energy are massively scalable, with each one separately having the potential to meet all of our energy needs, without pollution.

These three waste management solutions are, according to our best current science, not even recommended alternatives for waste management. To invest in them to manage our waste is proving to be bad government. To continue to subsidize them in any way would be wasteful government. **But to subsidize them using money ratepayers were promised would go toward developing clean, truly renewable energy is, to be honest, corrupt government.**

According to the EPA composting lowers greenhouse gasses by improving carbon sequestration in the soil and by preventing methane emissions through aerobic decomposition, as methane-producing microbes are not active in the presence of oxygen. Fifty percent of the average municipal waste stream can be composted.

This is an almost **one half billion-dollar boondoggle on the ratepayers** underway here. There are simply no science-based, economics-based, or public-health based reasons to continue these subsidies. None. I challenge you to name just one. The industry 'talking points' on this issue are just that—talk devoid of science--talk that misleads, cherry picks, obfuscates, and seeks to divide constituencies by raising false, unfounded economic and public benefit claims.

Please pause to tally the number of Marylanders associated with the organizations excited to support this bill and put our investments to good work, finally. And contrast the diversity of that support with the very few industry representatives hoping to keep receiving undeserved taxpayer handouts. Contrast the science supporting this bill with the fear, uncertainty, distrust, and irresponsible public relations messages from those very, very few benefitting from this misdirected set of subsidies.

We simply cannot afford this malfeasance in terms of time to mitigate the climate emergency, money, or public health costs. I will commit myself to organizing a ratepayer boycott of the dirty RPS portion of their utility bills if you do not end this horrible waste, fraud, and abuse this session.

Again, thank you.

March 14, 2022
Andrew Hinz
1427 Park Avenue
Baltimore, Maryland 21217

SB616 Renewable Energy Portfolio Standard - Favora

Uploaded by: Dave Arndt

Position: FWA

Testimony for SB616

Finance Committee

March 15, 2022

Position: Favorable with Amendments

Submitted by: Dave Arndt

Dear Chair and Members of the Committee,

As a resident of Baltimore, MD, I am writing to express my strong support of SB616 with amendments which will make sure that our subsidies for renewable energy through the Renewable Portfolio Standard are going toward actual renewable energy. We are in a climate crisis, and we cannot afford to be spending our renewable energy money on facilities that emit greenhouse gasses - now is the time to double down Maryland's commitment to truly renewable energy and subsidize only facilities that are emissions-free.

Trash incineration should never have been included in Tier 1 of the RPS. Trash incinerators pollute more than coal per unit of energy produced, and emit significant quantities of greenhouse gasses and local harmful air pollution: much of their energy comes from burning plastic, a fossil fuel. In the original design of the RPS program, incinerators were included in the Tier 2 category that was to phase out in 2019, but in 2011 as community pressure was mounting against two new proposed incinerators in Baltimore and Frederick, the industry got itself added to Tier 1. Ultimately, the community opposition won, and neither facility was built, but $36 million in RPS subsidies still goes to incineration each year.

Other types of burning waste or manufacturing methane must come out of the RPS for the same exact reasons as trash incineration. Burning chicken litter, and wood waste and manufacturing methane all pollute the environment, harm nearby communities' health, and contribute to climate change: a bad investment of public dollars that every Maryland utility ratepayer contributes to. Every Renewable Energy Credit that goes toward a facility that emits greenhouse gasses is a Renewable Energy Credit taken away from a facility that does not - an egregious waste of public money.

Because of the inclusion of these polluters in the Renewable Portfolio Standard, Maryland ratepayers paid over $246 million since 2008 to buy Renewable Energy Credits from facilities that emit greenhouse gasses. The Public Employees for Environmental Responsibility estimates that if nothing changes, those costs will mount to half a billion dollars subsidizing polluters by 2030. Please support HB11 so that those dollars can go toward supporting wind, solar, hydro, and geothermal power - not greenhouse gas emissions.

The Baltimore region ranks among the worst in the U.S. for air pollution. Baltimore has two active trash incinerators and decades of pollution from both active and decommissioned industrial factories. A study by the Chesapeake Bay Foundation in 2017 found air quality in the region was ranked moderate or worse one of every three days, according to the EPA's Air Quality Index. The same study notes poor air quality triggers asthma and can cause other health issues. Little wonder then that children in Baltimore City have asthma at twice the rate of the rest of the country, and the hospitalization rate for pediatric asthma is one of the highest in the nation, as a 2017 report by the Environmental Integrity Project showed.

The private-equity-owned Bresco/Wheelabrator incinerator—recently rebranded, or greenwashed, as WIN Waste Innovations—is alongside six communities of color and low-income communities, which fits a pattern of environmental and social injustice around the world. The Bresco incinerator has been burning around 700,000 tons of waste every year for 35 years and is the city's single worst air polluter. The Chesapeake Bay Foundation study found that the illness and ailments caused by air polluted by the incineration alone cost $55 million a year in health damages to residents. This is just one of the heavy costs dumped on Black and poor residents by a private corporation. Because Maryland classifies incineration as recycling, Bresco receives state subsidies for renewable energy–nearly $10 million over the past six years. In addition, Baltimore pays an extra $52 per ton to burn trash.

Community Impact

When I do Composting Workshops at schools, I ask if they are affected by asthma and cancer. The response is that 98% of the students have asthma, and several of their family members have cancer. At this point, to illustrate the effects to me, the teacher opens a desk drawer, and pulls out a storage bag full of inhalers. Most of these schools can't field a youth athletic team due to the students having compromised respiratory issues.

Subsidizing dirty energy is a bad deal for Maryland.

- In 2020, about 25% of Maryland's Renewable Energy Credits came from polluting energy sources that are still a part of the RPS, such as municipal solid waste burned to produce electricity and woody biomass or debris burned in power plants and paper mills. An additional 11% of Renewable Energy Credits went to black liquor, which the General Assembly deleted from the RPS in 2021 - now it's time to finish the job.
- Maryland RPS program spends millions of dollars on a Virginia biomass facility that is too dirty to qualify for Virginia's own recently-enacted RPS.
- Maryland allows credits for burning "biomass gas" from DC's Blue Plains wastewater treatment plant, which makes fertilizer from sewage sludge with extremely high levels of toxic per- and polyfluoroalkyl Substances (PFAS) that is sold to the public for a profit.
- Most RPS facilities are located outside of Maryland provide no energy to Maryland energy suppliers. Trash incinerators in Maryland provide less than 1% of all of Maryland's electricity. There loss would not be noticed in Maryland.
- Emissions from dirty energy sources in the RPS overwhelm emission reductions from truly renewable energy. In its 2019 report reviewing the RPS in response to 2017's HB1414, the Maryland Department of Natural Resources found that our state's RPS "has played a small role" in emissions reductions, and had nothing to do with most of the reductions in CO2 emissions we have seen in the past two decades. As of 2017, grid-wide CO2 emissions per megawatt hour , "PJM-wide CO2 emissions per MWh in 2017, the latest year available, were approximately 0.8% lower than they would have been absent the Maryland RPS, assuming all retired RECs supported resources that would not have operated otherwise." Under the status quo, Maryland's RPS is not doing enough to drive down greenhouse gas emissions.

- In its 2019 report reviewing the RPS in response to 2017's HB1414, the Maryland Department of Natural Resources found that the pollution from combustion-based energy sources included inthe RPS is so great that Maryland RPS energy sources, on average, pollute as much or more SO2 and NOx than the grid as a whole - pollutants that significantly contribute to asthma and other health hazards.

Subsidizing trash incineration and landfill gas tilts the playing field against healthier, cheaper waste management.

- When the RPS was created in 2004, trash incineration was in "Tier 2" of the RPS and received lower subsidies than the actually renewable energy in Tier 1, and those smaller subsidies were to be phased out by 2019. It wasn't until 2011, in response to intense industry pressure, that incineration was made permanently a part of the same subsidized category as wind and solar.
- New trash incinerators were proposed for Baltimore City and Frederick and Carroll Counties, but residents campaigned and prevented them from being built because of the enormous pollution burden and economic costs they would have brought. In Baltimore City and Montgomery County, home of Maryland's remaining incinerators, residents are actively campaigning to close them as well.
- To produce the same amount of energy, Maryland's two subsidy-receiving incinerators emit higher levels of mercury, lead, nitrogen oxides (NOx), carbon monoxide (CO), and carbon dioxide (CO2) than Maryland's coal plants. In 2015, the BRESCO incinerator in Baltimore emitted about twice as much greenhouses gasses per amount of energy produced, on average, as each of the coal plants located in Maryland.
- In 2020, the most recent data available, 61.5% of Maryland's RPS subsidies for trash incineration went to an incinerator outside of Maryland in Lorton, VA.
- Artificial subsidies make incinerators seem artificially cheaper compared to methods of managing our waste that produce neither pollution nor energy: like composting, repurposing, and source reduction. Although trash incineration and producing methane from waste receive RPS subsidies for producing energy despite their pollution impacts, composting is better for the environment than either. According to the EPA: "composting lowers greenhouse gasses by improving carbon sequestration in the soil and by preventing methane emissions through aerobic decomposition, as methane-producing microbes are not active in the presence of oxygen." 50% of the average municipal waste stream can be composted.

Subsidizing methane production locks Maryland into leaking greenhouse gas emissions and pollution from poultry factory farms

- In the anaerobic digestion of factory farm waste, animal waste and other materials are fed into a digester where it is broken down by specialized methane-producing microorganisms that can only thrive in the absence of oxygen. Chicken waste is a dry solid, and doesn't normally emit significant amounts of methane outside of the conditions of a digester.

- No matter the source, burning methane produces CO2. Furthermore, it is an even more potent greenhouse gas in and of itself when it leaks into the atmosphere - a huge and undercounted problem. Studies show that in 2015, leaks along the natural gas supply chain were approximately 60% higher than the U.S. Environmental Protection Agency inventory estimate. [Earthjustice paper, page 5, research paper]

- Since the construction of biogas facilities is extremely costly, they are generally not profitable without subsidies and incentives. (FWW Fact Sheet) The inclusion of biogas in our RPS provides an unwanted financial incentive to add new greenhouse gas emitting technology to our grid under the guise of renewable energy - on the public's dime.

- Sending animal waste to a digester creates methane but does nothing to mitigate the significant air quality issues associated with factory farms. Additionally, the anaerobic digestion process leaves behind a toxic digestate that must still be disposed of. Studies have shown that the effluents include highly concentrated amounts of nitrogen(ammonia) and phosphorus that when spread on fields causes increase stream and Chesapeake Bay pollution

- The production of methane from organic matter through anaerobic digestion has been used as an excuse for expanding and entrenching dangerous LNG infrastructure.

- The poultry industry is good for making profits for Perdue/Tyson. By the way Tyson reported fiscal 2021 profit of $3 billion, a 48% gain from the previous year. Perdure reported sales revenue of $8 billion. What we need is something that could: strengthening state enforcement and oversight of an industry that produces over 600 million pounds of manure ever year in Maryland while earning billions of dollars in revenues.

Burning woody biomass turns carbon sinks into climate problems

- A recent Harvard School of Public Health Study found that biomass and wood have the fastest-growing share of early deaths in the major energy-consuming sectors; burning wood for electricity produces as much or more pollution than fossil fuels, including coal. Biomass facilities emit high levels of particulate matter (PM), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO2), lead, mercury, and other hazardous air pollutants.

- Although trees regenerate, newly planted trees have far less benefit to the climate and local air quality than a mature tree or a fully-functioning forest ecosystem. Burning trees releases CO2 into the air immediately, and the carbon isn't recaptured unless and until newly planted replacement trees grow to maturity over many decades.

- In 2020, the most recent data available, 97.3% of Maryland's RPS subsidies for burning woody biomass went to facilities outside of Maryland.

For all of these reasons and many more, please support SB616 with amendments and end "renewable energy" subsidies for greenhouse gas emitting energy sources in Maryland.

Thank you.

Dave Arndt

Retired Chemical Engineer and Climate, Environmental and Social Justice Advocate

SB616 Testimony of Deborah Cohn.pdf
Uploaded by: Debbie Cohn
Position: FWA

Testimony on: SB 616 "Renewable Energy Portfolio Standard – Eligible Sources – Waste-to-Energy and Refuse-Derived Fuel"
Committee: Finance
Position: Support with Amendments
Hearing Date: March 15, 2022

As a Washington Gas and PEPCO customer, I SUPPORT SB616, which would make waste-to-energy or refuse-derived fuel ineligible for the creation of credits under the renewable energy portfolio standard, WITH AMENDMENTS. Energy derived from qualifying biomass, methane from the anaerobic decomposition of organic material, certain fuel cells, poultry litter-to-energy, and thermal energy from a thermal biomass system should also be made ineligible for the creation of renewable energy credits.

Removing all of these energy sources from the definition of "Tier 1 renewable source" would preclude energy generated from these sources from counting toward meeting the state's renewable energy portfolio standard (RPS) and would free utility customers from having to subsidize dirty energy.[1] **Importantly, it would not prohibit generation of energy from these sources and thus would not inherently destabilize the reliability energy of the grid or raise energy prices for consumers.** All of these energy sources would still be available to Maryland utility customers and to the grid as long as the energy sources remain economically competitive or necessary without ratepayer subsidies.

Maryland Greenhouse Reduction Goals: Maryland currently is required to reduce greenhouse gas (GHG) emissions by 40 percent from 2006 levels by 2032 and envisions reducing these emissions by up to 90% from 2006 levels by 2050.[2] The General Assembly is considering amending current law to reduce GHG emissions by 60 percent from 2006 levels by 2032 and accelerating additional reductions.[3]

To achieve these goals requires decarbonizing our electricity grid. A recent report on Montgomery County's draft Building Energy Performance Standards ("BEPS") for existing commercial buildings (including multi-family housing) by Steven Winter Associates, Inc. quantifies the overwhelming importance of a green grid.[4] The report quantifies on-site fossil fuel emissions under two BEPS targets. It then considers separately at the impact of a decarbonized electricity grid.

The report first quantifies on-site fossil fuel emissions from two BEPS targets – (i) an energy efficiency ("EE") target emphasizing efficient use of energy but permitting fossil fuel emitting sources for space and water heating, and (ii) a zero net carbon ("ZNC") target which adds to energy efficiency electrifying space and water heating. Both targets deal with site energy efficiency utilization. The report concludes that a BEPS program could reduce on-site fossil fuel emissions by **46%** (EE target) or **86%** (ZNC target).

The report then switches from on-site energy efficiency to building sector GHG emissions. It indicates that building sector GHG emissions can be reduced by three factors: (i) improved energy efficiency, (ii) replacing fossil-fuel space and water heating with electric appliances. and (iii) decarbonization of the electricity grid. The first two factors impact on-site energy use intensity. The last does not.

The report separately quantifies (i) reductions in GHG emissions connected with programs to increase on-site energy efficiency without any changes to the electricity grid, (ii) reduction in GHG emissions from

[1] MD Code, Public Utilities, §7-704(a)(1).
[2] MD Code, Environment, §§2-1202(4); 2-1204.1; 2-1205.
[3] S.B. 135; S.B. 528; H.B. 708.
[4] https://www.montgomerycountymd.gov/green/Resources/Files/energy/Montgomery%20County%20Performance%20Ordinance%20-%20Building%20Energy%20Performance%20Standards%20Report%20-%20final.pdf. The technical report is also available for download from the DEP BEPS website.

decarbonizing the grid without any increases in on-site energy efficiency, and (iii) reduction in GHG emissions when combining both strategies.

The report shows that if the electricity supply is maintained at today's level of CO_2-e emissions/kWh, the EE target would provide total GHG reductions of only **19%** and the ZNC target would provide total GHG reductions of only **26**%-a far cry from the *on-site* fossil fuel reductions of **46% or 86%.**

Greening the electricity grid alone, without any BEPS regulation, would reduce CO_2-e emissions/kWh from the existing commercial building stock by a whopping **70%.**

Adding increased site energy use intensity (BEPS) to greening the grid could result in an **83%** reduction under the EE standard and a **94%** reduction with electrification of space and water heating.

Clearly, we must decarbonize the state's electricity grid to meet our GHG reduction targets. To do that we must quickly and significantly increase GHG emissions-free energy sources. Methane, regardless of how it is produced, emits GHG when leaking from pipes and when combusted to produce heat. Eliminating ratepayer subsidies of dirty energy sources under the RPS will facilitate creating a cleaner energy grid over time and thus contribute to meeting the State's decarbonization targets. Increasing truly green sources of electricity takes time, so we must start now to incentivize more geothermal, wind, and solar and remove subsidies from strategies that inherently emit GHG.

Maryland's Renewable Portfolio Standard, established in 2004, sets goals for Maryland's transition to renewable energy and determines which energy sources can be used to meet that target. Currently, the RPS includes as renewable energy many energy sources that create unhealthy local air pollution and emit greenhouse gases. This undermines the original intent of the RPS, which is to use ratepayer subsidies for Tier 1 "renewable" energy to accelerate Maryland's transition to clean renewable energy.

Renewable Energy Is Not Necessarily Clean Energy: Many energy sources deemed "renewable" under Maryland law[5] produce substantial amounts of greenhouse gases. **Thus, not all energy sources defined as "renewable" under Maryland law are emissions free, *i.e.*, "clean" renewable energy.** Many renewable sources are dirty sources. Indeed, **almost 25% of the renewable energy** credits (RECs) purchased by Maryland utilities are generated from sources that produce GHG emissions, including landfill gas, anaerobic digestion of chicken litter, trash incinerators, and biomass.[6]

> **Methane from Landfills**: Decomposition of organic material in an anaerobic landfill generates methane, an extremely potent landfill gas.[7] Most landfills use gas capture systems that typically capture 75 percent of landfill gas. **Landfills that sell methane to pipelines tend to manage the landfill to produce more gas.** As a result, the landfill operates less efficiently, causing more methane to escape than with flaring.[8] Subsidizing methane sale thus encourages increased methane production and emissions.
>
> **Anaerobic Digestion of Chicken Litter**: Anaerobic digestion of chicken litter to generate methane can emit higher levels of GHG and toxic chemicals than coal plants, and the pipelines that transport this gas inevitably leak additional methane into the air.[9] Moreover, turning biomass

[5] MD Code, Public Utilities, §7-701(s).

[6] Report issued by The Public Employees for Environmental Responsibility (PEER Report). https://www.marylandmatters.org/wp-content/uploads/2022/02/PEER-Report-Maryland-RPS-2.4.22-Final-w-links1.pdf

[7] Landfill gas can be reduced by diverting organics from the waste stream, particularly through composting of yard trim and food waste.

[8] See links to resources on landfill gas emissions in the top and sidebar at www.energyjustice.net/lfg and recommendations for better landfill management in the Zero Waste Hierarchy at www.energyjustice.net/zerowaste/hierarchy

[9] https://foodandwaterwatch.org/wp-content/uploads/2021/03/fs_1510_md-poultry-incineration-web.pdf

into methane does not eliminate the chicken litter. Rather, it concentrates the litter in a water slurry that gets spread on agricultural fields and leaks concentrated forms of nitrates into the Chesapeake Bay, thereby injuring several Maryland businesses and their workers that depend on a clean, healthy Chesapeake Bay.

Trash incineration: In addition to generating CO_2, trash incineration releases other air pollutants, including dioxin, mercury, lead, nitrogen oxides, carbon monoxide, small particulate matter and sulfur dioxide, all of which significantly impair public health.[10];[11] Moreover, trash incineration did not receive renewable energy incentives until 2011, well after the incinerators in Maryland were in operation. Hence, as made clear in the House Economic Matters hearings on March 4, 2022, Tier 1 subsidies of trash incineration merely prop up an existing polluting energy source, wasting limited ratepayer subsidies on existing dirty energy sources rather than incentivizing new clean energy sources.[12]

Woody biomass: Burning woody biomass results in an immediate release of carbon and eliminates a long-term carbon sink. Indeed, burning wood for electricity produces as much or more pollution than fossil fuels, including coal.[13] In addition, biomass generating plants emit high levels of particulate matter, nitrogen oxides, carbon monoxide, sulfur dioxide, lead, mercury and other hazardous air pollutants that cause asthma, heart disease, lung disease and cancer.[14] Although new trees can be planted, their ability to sequester carbon increases only gradually over many years.[15]

Ratepayers should not be required to subsidize dirty energy sources under the RPS. Doing so is inconsistent with the purpose of Tier 1 under the RPS and with Maryland's GHG emission

---

[10] https://www.peer.org/maryland-clean-energy-program-has-big-dirty-component/; https://www.who.int/ipcs/assessment/public_health/dioxins/en/; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5637250/; American Lung Association, "Sulfur Dioxide," Feb. 12, 2020. www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/sulfur-dioxide

[11] Sulfur dioxide aggravates asthma, causing wheezing, shortness of breath, chest tightness and other problems, especially during exercise or physical activity. American Lung Association, "Sulfur Dioxide," Feb. 12, 2020. www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/sulfur-dioxide; Small particulate matter can cause eye, nose, throat and lung irritation, affect lung function and worse medical conditions such as asthma and heart disease, with studies suggesting that long-term exposure may be associated with chronic bronchitis, reduced lung function and increased mortality from lung cancer and heart disease. https://www.health.ny.gov/environmental/indoors/air/pmq_a.htm#:~:text=How%20can%20PM2.5%20affect,nose%20and%20shortness%20of%20breath; Of the various pollutants emitted by trash incineration, no safe dose has been established for dioxins, lead, mercury and small particulate matter. "No evidence of dioxin cancer threshold," *Environmental Health Perspectives* 2003 Jul; 111(9): 1145–1147; www.ncbi.nlm.nih.gov/pmc/articles/PMC1241565/; "Lead in the environment: No safe dose," Harvard University excerpt of *The Lancet* (Sept. 11, 2010); www.hsph.harvard.edu/news/multimedia-article/lead/ "Mercury Exposure and Children's Health," *Current Problems in Pediatric and Adolescent Health Care*, 2010 September; 40(8): 186–215.www.ncbi.nlm.nih.gov/pmc/articles/PMC3096006/; World Health Organization, "Ambient (outdoor) air pollution," May 2, 2018;www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health

[12] Indeed, in the hearings held March 4, 2022 on HB11 in the House Economic Matters Committee a spokesperson for Covanta, which runs the Montgomery County incinerator, was asked why it was testifying in favor of trash incineration remaining in Tier 1. Because Montgomery County owns that incinerator, the proceeds of the sale of RECs from that generator are paid to Montgomery County, not to Covanta. Covanta, however, operates the incinerator in Lorton, Virginia. Virginia law precludes Covanta from selling those RECs to utilities in Virginia. So Covanta sells those RECs to Maryland utilities. Indeed, Maryland utilities purchase more RECs from the Lorton incinerator than from either the Montgomery County or Baltimore incinerators. As a result, Maryland ratepayers permit lower energy costs for Virginia residents by subsidizing the Lorton incinerator. A representative of the Baltimore incinerator admitted under questioning that it uses the revenues from its sale of RECs to Maryland utilities to help pay for the costly improvements it must make to its dirty incinerator under a recent settlement agreement. So Maryland ratepayers are subsidizing reducing the detrimental health impacts of an inherently dirty producer of electricity rather than subsidizing inherently clean wind, solar or geothermal.

[13] PEER Report at 6.

[14] PEER Report at 6.

[15] According to an article in *Mongabay*, https://news.mongabay.com/2019/05/tall-and-old-or-dense-and-young-which-kind-of-forest-is-better-for-the-climate an international team of researchers found in 2014 that a typical tree's growth continues to accelerate throughout its lifetime. The team recorded growth measurements from multiple trees representing over 400 tree species from tropical, subtropical and temperate regions across six continents. They found that the growth rate for most species "increased continuously" as they aged. https://www.nature.com/articles/nature12914

reduction goals. Since 2008, when the RPS was created, Maryland utilities have paid over $246 million of ratepayer money to purchase RECs, primarily from out-of-state companies, to satisfy Maryland's renewable energy requirements. Maryland utilities paid over $30 million to purchase these credits in 2020 alone.[16] In many cases, out-of-state companies that generate the RECs that get sold to Maryland utilities use the electricity to power their own operations and do not even put electricity on the grid. For example, most of the biomass RECs that Maryland utilities purchase are generated from out-of-state paper mills that burn black liquor and wood waste to power their own operations.[17] Other biomass gas RECs are purchased from the Blue Plains wastewater treatment plant in Washington, D.C which produces fertilizer containing high levels of PFAS, so-called "forever chemicals".[18] In other words, Maryland ratepayer money is creating out-of-state jobs rather than local jobs, not even providing electricity to Maryland businesses and residents, and subsidizing some of the dirtiest industries rather than the wind, solar, small hydro and geothermal energy that consumers understandably believe they are subsidizing. Maryland ratepayers should not be forced to subsidize GHG-emitting energy sources. Instead, ratepayers should subsidize only clean, emissions free energy sources.

In summary, subsidizing dirty energy sources that emit greenhouse gases undermines Maryland's goal of significantly reducing these emissions quickly. Therefore, I respectfully request a favorable report on SB616 **with amendments** that would not only make waste-to-energy or refuse-derived fuel, **but also qualifying biomass, methane from the anaerobic decomposition of organic material, certain fuel cells, poultry litter-to-energy, and thermal energy from a thermal biomass system** ineligible for the creation of credits under the renewable energy portfolio standard.

[16] PEER Report at 3 and 10.
[17] PEER Report at 5.
[18] PEER Report at 2.

SB616_CleanWaterAction_FWA.pdf
Uploaded by: Emily Ranson
Position: FWA

Clean Water Action
Testimony On SB616
Senate Finance Committee
March 15, 2022

Position: FAVORABLE WITH AMENDMENTS

Dear Chair and Members of the Committee,

Clean Water Action and the Reclaim Renewable Energy Coalition strongly support SB616 to remove trash incineration from Maryland's Renewable Portfolio Standard, with amendments to remove other energy sources that emit greenhouse gasses from the RPS as well. Trash incineration does not belong in the Renewable Portfolio Standard: it is not sustainable or renewable; harms the health of nearby communities through its emissions of carcinogens and neurotoxins; and pollutes more greenhouse gasses per unit of energy than coal, the dirtiest of fossil fuels. Deleting trash incineration from the RPS is an absolutely necessary step to make the Renewable Portfolio Standard more environmentally just and fiscally responsible, following the demands of communities across Maryland - from Frederick and Carroll Counties, to Montgomery County, to Baltimore City twice over - that have fought and are fighting trash incinerators. We applaud the sponsors and supporters of SB616 for their action on this important environmental justice issue.

Burning other types of waste, from chicken litter to wood products, and manufacturing methane all pollute the environment, harm nearby communities' health, and contribute to climate change: a bad investment of public dollars to which every Maryland utility ratepayer is required to contribute. Every Renewable Energy Credit that goes toward a facility that emits greenhouse gasses is a Renewable Energy Credit taken away from a facility that does not: an egregious waste of public money. And right now, communities on the Eastern Shore are actively fighting against new factory farm methane plants: let's not go down the road with factory farm methane that we went down with trash incineration. Let's get that industry out of the RPS from the start.

To face the climate crisis, especially in light of this month's IPCC report that says that our current mitigation efforts are not enough to stave off climate disasters, we must ensure that our subsidies for renewable energy through the Renewable Portfolio Standard are going toward actual renewable energy. We cannot afford to be spending our renewable energy money on facilities that emit greenhouse gasses - now is the time to double down Maryland's commitment to truly renewable energy and subsidize only facilities that are emissions-free.

Because of the inclusion of these polluters in the Renewable Portfolio Standard, Maryland ratepayers paid over $30 million to buy Renewable Energy Credits from facilities that emit greenhouse gasses in 2020, and over $246 million since 2008. The Public Employees for Environmental Responsibility estimates that if nothing changes, those costs will mount to half a billion dollars subsidizing polluters by 2030. Please support SB616 with amendments expanding

it to cover more polluters in the RPS, so that those dollars can go toward supporting wind, solar, hydro, and geothermal power - not greenhouse gas emissions.

Since we have worked for many years to support communities across Maryland that have fought or are fighting against trash incinerators and to develop Zero Waste infrastructure like compost facilities, we would like to bring the committee's attention to reasons why trash is not a renewable resource and why incinerating or manufacturing fuel from trash is not renewable energy and should not be included in the Renewable Portfolio Standard.

1. **RPS subsidies for trash incineration were originally intended to sunset in 2019.**

In 2004, Maryland passed legislation to create our Renewable Portfolio Standard. When the legislation creating Maryland's Renewable Portfolio Standard passed in 2004, trash incineration was included as a Tier 1 energy provider. As a tier two energy provider, these subsidies were supposed to stay stagnant at 2.5% of the market with an eventual phase out in 2019 - a recognition that trash incineration is not as desirable or valuable as truly renewable energy like wind and solar power. However, in 2011, the incinerator industry mounted an intense effort to move trash incineration to Tier 1 as two new proposed incinerators were on the horizon in Maryland: one in Frederick serving Frederick and Carroll Counties, and a second one in South Baltimore. The two proposed incinerators were ultimately rejected by the communities they targeted, due to the high pollution levels and high financial burden the incinerators would have brought. However, trash incineration remained in the RPS as a legacy of those failed projects, in the more highly subsidized, permanent Tier 1 category.

2. **The trash incinerators currently receiving RPS subsidies were built and operated before the RPS was created.**

Two Maryland incinerators currently receive RPS subsidies, and both were built and operated well before the RPS was created and they became eligible for subsidies, either in Tier 1 or Tier 2. Baltimore City's BRESCO incinerator was built in 1985, and Montgomery County's incinerator at Dickerson was built in 1995. Both operated for many years before the RPS was created and they became eligible for RPS subsidies, and removing the subsidies is not a bait and switch on the part of the state - both facilities were built to be profitable without subsidies. These incinerators can operate without Maryland's RPS subsidies and will still be allowed to sell their energy and to charge for burning trash. All this legislation does it stop giving them the extra subsidy of the Renewable Energy Credits, which they did not have when they were built, and in the original design of the RPS program were not destined to have now.

3. **Subsidies for trash incineration have not created new Maryland jobs, while subsidies for truly renewable energy have created thousands of Maryland jobs.**

Since no new trash incinerators have been built in Maryland since the Renewable Portfolio Standard was created - thanks to local opposition to new facilities based on the climate change and local air quality impacts of the incinerators that were proposed, as well as the enormous costs that would have been imposed on the counties - the subsidies given to trash incineration have not created new jobs for Maryland residents, since the jobs at the incinerators existed before the RPS was created.

In contrast, RPS subsidies for offshore wind alone - let alone the other truly renewable sources of energy - have already created thousands of jobs in Maryland. According to the Maryland Energy Administration, "Maryland's total offshore wind market (Round 1 and Round 2) stands at 2,022.5 MW which should provide enough electricity to power about 600,000 average homes. These projects are estimated to create more than 12,000 direct full time equivalent (FTE) jobs during the development and construction phase and more than 3,000 direct FTE jobs during the 20 - 30 year operations and maintenance phase. These projects will support Maryland's growing offshore wind supply chain and result in at least $1.5 Billion of in-state expenditures including investments of $40 million for port infrastructure, $76 million for steel fabrication, $150 million for monopile foundation manufacturing, $140 million for subsea cable manufacturing, and $100+ million for a turbine tower manufacturing. Both project developers have committed to small, minority, woman, and veteran owned business participation goals of 15 percent (US Wind) and 29 percent (Ørsted) during project development." The RECs that represent truly renewable, emissions-free energy create vastly more jobs than exist in incineration, and every Maryland REC should go toward expanding these energy sectors even further.

And although RPS subsidies cannot go directly toward more environmentally friendly methods of waste disposal that do not create energy, it is noteworthy that those methods are also better job creators than trash incineration is. According to the Institute for Local Self-Reliance, per ton of waste processed in Maryland, composting already "employs two times more workers than landfilling, and four times more workers than incineration. On a per-capital-investment basis, for every $10 million invested, composting facilities in Maryland support twice as many jobs as landfills and 17 more jobs than incinerators." A similar study projected that within three years of increased recycling rates, "Baltimore could have 500 new direct jobs in this sector of the city's economy;" overall, recycling and composting yield five to ten times more jobs than trash incineration. Likewise, for every 10,000 tons of materials that are managed through reuse programs, 75 to 250 jobs are created. When Maryland ultimately transitions to more environmentally-friendly methods of waste disposal, more jobs will be created.

4. **Trash incineration harms the climate, harms the health of nearby communities, and does not meet the goals of the RPS program**

When incinerators burn trash, they emit more greenhouse gasses per unit of energy generated than even coal, the dirtiest of fossil fuels. In 2015, the Wheelabrator Baltimore incinerator emitted roughly double the amount of greenhouses gasses per unit of energy produced, on average, by each of the 7 coal plants located in Maryland. The Dickerson trash

incinerator in Montgomery County produces 500,000 tons of greenhouse gasses that contribute to climate change. Much of the thermal output and therefore electricity produced by incinerators comes from plastic waste, meaning that trash incinerators are ultimately burning fossil fuels. Plastic is a petroleum product.

The process of incinerating trash creates an especially dangerous set of compounds called dioxins, declared by the World Health Organization as a known human carcinogen; dioxins are also linked to diseases of the immune system, endocrine system, nervous system, and reproductive system. Air pollutants from waste incinerators have also been shown to increase the risk of preterm births, and lung and blood cancers.

5. **Subsidizing energy production from trash incineration and landfill methane distracts from the true climate solution: composting.**

Organic waste decomposing in landfills creates methane, a potent greenhouse gas with an especially large role in driving near-term climate change. All large landfills in the United States are required to install systems to capture this gas and prevent it from entering the atmosphere as methane; Maryland is currently in the middle of a regulatory process to improve the state's regulations on methane emissions from landfills. Within this context, subsidizing landfill-gas-to-energy projects through the Renewable Portfolio Standard creates a perverse incentive that may lead to *increased* methane production. "The Danger of Corporate Landfill Gas-to-Energy Schemes and How to Fix It" published by Recycling Works!, Sierra Club, and the International Brotherhood of Teamsters describes this problem. Since landfill-gas-to-energy systems need a certain rate of methane flow to function properly, installing one and relying on it for energy can give landfill operators cause to recirculate leachate and take other measures to promote organic waste decomposition, making the system more cost-effective to operate by increasing the amount of methane being produced. Meanwhile, greenwashing methane produced by landfills as "renewable" can blunt calls for local governments to divert organic waste and develop robust composting infrastructure, even though composting is far more effective at fighting climate change.

Composting involves the aerobic decomposition of organic waste, the same waste that turns into methane in the anaerobic conditions of a landfill or digester. Composting does not produce atmospheric methane: as the EPA describes,

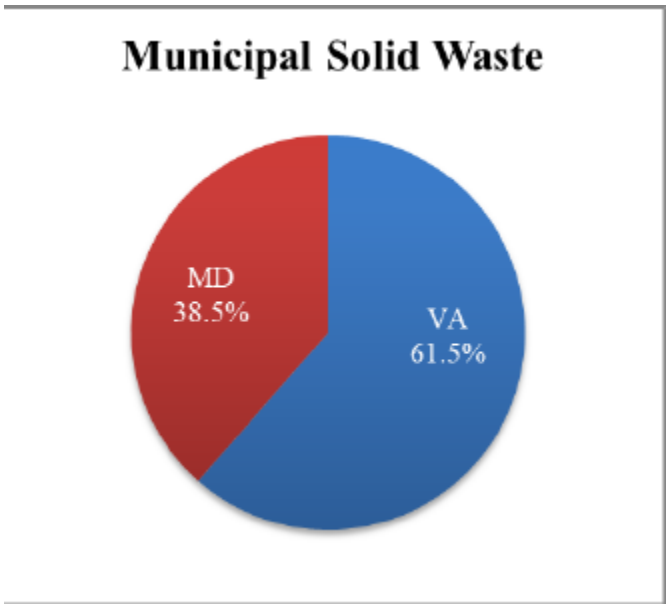
> *composting lowers greenhouse gasses by improving carbon sequestration in the soil and by preventing methane emissions through aerobic decomposition, as methane-producing microbes are not active in the presence of oxygen.*

Even though composting is a superior solution to the problem that landfill-gas-to-energy purports to solve, there is no equivalent program to subsidize composting infrastructure in the way Maryland's RPS currently subsidizes landfill-gas-to-energy. Instead, Maryland's RPS

subsidies currently incentivize the methods of waste disposal that are worst for the environment, and leave the solutions that truly fight climate change out.

6. **The vast majority of RPS subsidies related to trash go to facilities outside of Maryland.**

According to the Public Service Commission's "Renewable Energy Portfolio Standard Report for Calendar Year 2020" (the most current available data), 61.5% of Maryland's RPS subsidies for trash incineration went to an incinerator outside of Maryland in Lorton, VA.



Conclusion

Trash is not a renewable resource, as it consists of organic waste that could be composted, plastic waste made from fossil fuels, and other materials made of finite resources. Energy created from trash is not renewable energy, and subsidizing energy production from trash incentivizes methods of waste management that are worst for the environment over those that are the best, and withholds subsidies from the truly renewable, emissions-free energy that we need: wind, solar, hydro, and geothermal power.

On the whole, subsidies for energy sources that emit greenhouse gasses are holding Maryland's RPS from being truly effective at fighting climate change. In its 2019 report reviewing the RPS in response to 2017's HB1414, the Maryland Department of Natural Resources found that our state's RPS "has played a small role" in emissions reductions, and had nothing to do with most of the reductions in CO2 emissions we have seen in the past two decades. As of 2017, grid-wide CO2 emissions per megawatt hour , "PJM-wide CO2 emissions per MWh in 2017, the latest year available, were approximately 0.8% lower than they would

have been absent the Maryland RPS, assuming all retired RECs supported resources that would not have operated otherwise." Maryland's RPS is not doing enough to drive down greenhouse gas emissions - and it's even worse for local air pollution. Maryland RPS energy sources, on average, pollute as much or more SO2 and NOx than the grid as a whole - pollutants that significantly contribute to asthma and other health hazards. Maryland cannot stand one more year of subsidizing a "renewable" energy program that creates so much pollution.

Please pass SB616 with amendment to remove greenhouse-gas-emitting sources of energy from the RPS, so that every Maryland ratepayer dollar for renewable energy can go toward energy that is truly renewable.

Thank you,

Emily Ranson
Maryland Director
Clean Water Action

act Testimony On SB616.pdf
Uploaded by: Gabrielle Ross
Position: FWA

Assateague Coastal Trust – PO Box 731, Berlin, MD 21811 – 410-629-1538

House Economic Matters Committee
Testimony On SB616
Senate Finance Committee
March 15, 2022

Position: FAVORABLE WITH AMENDMENTS

Dear Chair and Members of the Committee,

I am writing to express my support of SB616 with amendments to also remove every other energy source that emits greenhouse gasses from the RPS. We strongly support removing trash incineration from the Renewable Portfolio Standard: it is not sustainable or renewable; harms the health of nearby communities through its emissions of carcinogens and neurotoxins; and pollutes more greenhouse gasses per unit of energy than coal, the dirtiest of fossil fuels. We encourage you to amend SB616 to also remove other sources of energy that emit greenhouse gasses from the Renewable Portfolio Standard.

To face the climate crisis, especially in light of this month's IPCC report that says that our current mitigation efforts are not enough to stave off climate disasters, we must ensure that our subsidies for renewable energy through the Renewable Portfolio Standard are going toward actual renewable energy. We cannot afford to be spending our renewable energy money on facilities that emit greenhouse gasses - now is the time to double down Maryland's commitment to truly renewable energy and subsidize only facilities that are emissions-free.

Trash incineration should never have been included in Tier 1 of the RPS. Maryland's trash incinerators pollute more than Maryland's coal plants per unit of energy each produces, and emit significant quantities of greenhouse gasses and local harmful air pollution: much of their energy comes from burning plastic, a fossil fuel. In the original design of the RPS program, incinerators were included in the Tier 2 category that was to phase out in 2019, but in 2011 as community pressure was mounting against two new proposed incinerators in Baltimore and Frederick, the industry got itself added to Tier 1. Ultimately, the community opposition won, and neither facility was built, but $36 million in RPS subsidies is still wasted on incineration each year.

Burning other types of waste, from chicken litter to wood products, and manufacturing methane all pollute the environment, harm nearby communities' health, and contribute to climate change: a bad investment of public dollars that every Maryland utility ratepayer contributes to. Every Renewable Energy Credit that goes toward a facility that emits greenhouse gasses is a Renewable Energy Credit taken away from a facility that does not: an egregious waste of public money.

In the anaerobic digestion of factory farm waste, animal waste and other materials are fed into a digester where it is broken down by specialized methane-producing microorganisms that can only thrive in the absence of oxygen. Chicken waste is a dry solid and doesn't normally emit significant amounts of methane outside of the conditions of a digester. Here are a few points that big industry will not tell you about digestors:

- No matter the source, burning methane produces CO2. Furthermore, it is an even more potent greenhouse gas in and of itself when it leaks into the atmosphere - a huge and undercounted problem.

- Sending animal waste to a digester creates methane but does nothing to mitigate the significant air quality issues associated with factory farms. Additionally, the anaerobic digestion process leaves behind a digestate that must still be land applied. This digestate is phosphorus rich- a nutrient that is already saturated in our farm fields.

- The production of methane from organic matter through anaerobic digestion has been used as an excuse for expanding and entrenching dangerous LNG infrastructure.

- Taxpayers will be responsible for damages on the roads and highways from increased truck use not to mention hauling manure in excess amounts.

- Having subsidies for manure to energy facilities only creates incentives for more CAFO's on the Eastern Shore, polluting our air and waters that are already greatly impacted. Digestors have to be continuously fed in order to return a profit- Eastern shore residents do not want to see anymore factory sized CAFOs being built.

Because of the inclusion of these polluters in the Renewable Portfolio Standard, Maryland ratepayers paid over $30 million to buy Renewable Energy Credits from facilities that emit greenhouse gasses in 2020, and over $246 million since 2008. The Public Employees for Environmental Responsibility estimates that if nothing changes, those costs will mount to half a billion dollars subsidizing polluters by 2030. Please support SB616 ***with amendments*** expanding it to cover all polluters in the RPS, so that those dollars can go toward supporting wind, solar, hydro, and geothermal power - not greenhouse gas emissions.

For all of these reasons and many more, please support SB616 with amendments and end "renewable energy" subsidies for all greenhouse gas emitting energy sources in Maryland. Thank you.

Sincerely,

Gabrielle Ross, Assateague Coastkeeper
Assateague Coastal Trust

sb616.pdf
Uploaded by: Gwen DuBois
Position: FWA

SB616 Renewable Energy Portfolio Standard – Eligible Sources – Waste–to–Energy and Refuse–Derived Fuel
Senate Finance Committee
Hearing March 15, 2022

FAV (WITH AMENDMENTS)

Chesapeake Physicians for Social Responsibility supports of SB616 because it would stop subsidizing polluting energy sources that are currently subsidized through the Renewable Portfolio Standards (RPS) and that are making Marylanders sick.
SB616 would exclude waste–to–energy, refuse–derived fuel, relating to the renewable energy portfolio standard.

Chesapeake Physicians for Social Responsibility (CPSR) is statewide evidenced-based, organization of over 900 physicians. other health professionals and supporters, that addresses the existential public health threats: nuclear weapons, the climate crisis and the issues of pollution and toxics' effect on health as seen through the intersectional lens of environmental, social and racial justice. As an organization founded by physicians, we understand that prevention is far superior to treatment in reducing costs; death, illness, injury, and suffering.

Incineration must come out of the RPS portfolio and should never have been there in the first place. Waste-to-energy incineration is more polluting and produces more C02 per unit of energy than even coal fire power plants.[1] Why should ratepayers pay for an inefficient, climate forcing, health compromising incineration just because it is called "renewable."

DC's Blue water waste treatment facility, an RPS Tier 1 waste to energy incinerator cited by Sierra Club report is source of material used for fertilizer that is contaminated with PFAS.[2]

---

1 https://web.archive.org/web/20131217055632/http://www.environmentalintegrity.org/documents/FINALWTEINCINERATORREPORT-101111.pdf

2 https://www.sierraclub.org/sites/www.sierraclub.org/files/PFA-Garden-Sludge-Report.pdf and https://peer.org/maryland-renewable-energy-programs-dirty-rip-off/

Baltimore's BRESCO municipal waste incinerator was identified as the single largest industrial polluter in Baltimore in 2017.[3] It emits mercury, dioxin, nitrogen oxides and is an important source of the fine and ultrafine particulate matter (PM2.5). One year's direct and indirect health costs from PM2.5 in Maryland was estimated to be nearly $22 million.[4] In 2016, it was the 5th largest stationary source of nitrogen oxides (NOx) emissions in the State.[5] Incinerators, including BRESC0 release several times more mercury per unit energy as Maryland's largest coal fire power plants.[6]

There are other dirty energy sources that should come out of the RPS and we ask that SB616 be amended to remove them from ratepayer subsidy under RPS. For example, biomass generating plants emit high levels of particulate matter (PM), nitrogen oxides (NOX), carbon monoxide (CO), sulfur dioxide (SO2), lead, mercury, and other hazardous air pollutants.[7]

One form of biomass generation is anaerobic decomposition which generates methane a more potent greenhouse gas emitter than Co2. [8] It makes no sense to call any source of energy clean that produces significant greenhouse gases if we are trying to mitigate the climate crisis with the RPS.

Poultry waste to energy emits pollutants that include: dioxins, nitrogen oxides, and sulfur dioxide.[9]

Though we may be reducing C02 approximately 0.8% with the current RPS, how well are we reducing methane and we are not doing such a good job reducing air pollutants such as nitrogen oxides and sulfur dioxide.[10]

HEALTH EFFECTS of POLLUTANTS that are emitted from waste-to-energy sources that do not belong in the RPS

1) PM2.5: Hundreds of articles" have established an association between PM2.5 and poor health outcomes, including asthma, ischemic heart disease, lung cancer and all-cause mortality especially in urban populations.[11] These very small particles combine with carcinogenic chemicals and heavy metals and can deliver them, once inhaled, deep into the lungs and cross into the bloodstream where they are carried around the body and cause damage. Heavy metals attached to fine particulate matter have been found to travel up to the frontal lobe in animals and raise the possibility that they may be a factor in degenerative brain diseases in humans like

[3] https://www.baltimoresun.com/news/environment/bs-md-trash-incineration-20171107-story.html
[4] https://www.cbf.org/document-library/cbf-reports/thurston-wheelabrator-health-impacts-2017.pdf
[5] https://www.who.int/water_sanitation_health/medicalwaste/en/smincinerators4.pdf
[6] https://web.archive.org/web/20131217055632/http:/www.environmentalintegrity.org/documents/FINALWTEINCINERATORREPORT-101111.pdf
[7] https://peer.org/wp-content/uploads/2021/01/1_28_21-Maryland-Dirty-Energy-Report-Final.pdf
[8] https://www.epa.gov/anaerobic-digestion/basic-information-about-anaerobic-digestion-ad

[9] https://journals-sagepub-com.proxy1.library.jhu.edu/doi/abs/10.2190/NS.21.1.g
[10] https://dnr.maryland.gov/pprp/Documents/FinalRPSReportDecember2019.pdf
[11] https://www.nejm.org/doi/full/10.1056/NEJMe1706865

Parkinson's and Alzheimer's disease.[12] Recent studies have found a positive association between historic pm2.5 levels and mortality from Covid-19.[13]

2)Nitrogen Oxides (NOX): Increase in nitrogen oxide levels are associated with worsening of asthma, emergency room visits and hospitalization. Nitrogen oxide is an important component of ozone. Ozone pollution can put active children who play outside at increased risk of developing asthma.[14] This is important in Baltimore where we have more than double the emergency room and hospitalization rates for asthma as the rest of Maryland.[15] Reducing NOX emissions is an important way to reduce ozone pollution. Both ozone and nitrogen oxide have been associated with increased mortality.[16] Nitrogen dioxide and fine and very fine particulate matter (PM2.5) have been associated with reduced lung function in children and most importantly with improvement in lung function when levels of these two pollutants are reduced. [17]

3)DIOXIN: Dioxin is created in the smokestack and is one of the most notorious families of toxic substances.[18] It has been designated by the World Health Organization as a known human carcinogen: capable of causing cancer. [19] It is considered one of the "dirty dozen" persistent organic pollutants because of its long half-life. It accumulates in the environment where animals graze, it gets concentrated up the food chain where we are on top. It is concentrated in our body fat as we eat: meat, fish and dairy products. In addition to being a carcinogen, it is linked to diseases of the immune system, endocrine system, nervous system and reproductive system.[20]

4)SULFUR DIOXIDE: Children exposed to S02 pollution may have breathing problems as they get older, make more emergency room visits for asthma treatment, and may get more respiratory illnesses than other children.[21] It contributes to particulate matter pollution which of course has very serious health effects.[22]

5)MERCURY: It gets into streams and lakes and is concentrated in fish which we then eat. Mercury is toxic to the developing brain of fetuses, infants and children and is associated with abnormalities in cognition, thinking, memory, and language that can be severe if exposure is significant.[23]

6)LEAD: Lead is associated with hypertension and cardiovascular disease in adults and in children in causes neurological deficits including loss of cognitive function, reduced IQ,

---

[12] https://www.jstor.org/stable/j.ctt5vjr8g https://www.cbf.org/document-library/cbf-reports/thurston-wheelabrator-health-impacts-2017.pdf
[13] https://projects.iq.harvard.edu/covid-pm/home
[14] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(02)07597-9/fulltext
[15] https://www.environmentalintegrity.org/wp-content/uploads/2017/12/Baltimore-Asthma.pdf
[16] https://www.hsph.harvard.edu/news/press-releases/permissible-concentrations-air-pollution-mortality-risk/
[17] https://www.nejm.org/doi/full/10.1056/NEJMoa1414123
[18] https://phys.org/news/2014-09-unforeseen-dioxin-formation-incineration.html
[19] https://www.who.int/ipcs/assessment/public_health/dioxins/en/
[20] https://www.who.int/water_sanitation_health/medicalwaste/en/smincinerators4.pdf (page 28)
[21] https://www.atsdr.cdc.gov/toxfaqs/tfacts116.pdf
[22] https://www.epa.gov/so2-pollution/sulfur-dioxide-basics
[23] https://docs.house.gov/meetings/IF/IF02/20190521/109556/HHRG-116-IF02-Wstate-LandriganMDMScP-20190521.pdf

attention deficit, anti-social behavior. There is no safe level of lead and the damage can be irreversible.[24]

7)PFAS: PFAS in the blood of nearly the entire population in developed countries, with health effects reported globally". It crosses the placenta and is found in breast milk. It is very slow to degrade and is considered a "forever chemical" for that reason. High certainty health effects include: kidney cancer, liver damage, alteration in thyroid hormone levels, high cholesterol (increase serum total cholesterol and the fraction we usually associate with heart disease, low birth weight, reduced immune response including reduced response to vaccines after exposure in utero.[25]

These are just a few of the notorious elements of the toxic stew emitted in the air from waste-to-energy sources considered Tier 1 by the RPS but also from the other sources, biogas and poultry-waste-to-energy mentioned above.

Chesapeake Physicians for Social Responsibility supports SB616 with amendments to remove biogas, and poultry-to-waste sources of energy in addition to removing waste-to-energy incineration from the Maryland RPS. We will save ratepayers money and more importantly we will protect their health and the environment.

Gwen L. DuBois MD, MPH
President Chesapeake Physicians for Social Responsibility
gdubois@jhsph.edu

[24] http://ugspace.ug.edu.gh/bitstream/handle/123456789/31420/The Lancet Commission on pollution and health.pdf?sequence=1
[25] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7906952/

Cleghorn Testimony SB 616.pdf
Uploaded by: J. Stephen Cleghorn
Position: FWA

TO: Senator Delores G. Kelley
Finance Committee

RE: SB 616: “Renewable Energy Portfolio Standard – Eligible Sources – Waste-to-Energy and Refuse-Derived Fuel

Position: FAVORABLE WITH AMENDMENTS

Testimony of J. Stephen Cleghorn, PhD
Baltimore volunteer coordinator, Maryland Catholics for Our Common Home

Dear Chair Kelley and Senators of the Finance Committee:

I am a member of Maryland Catholics for Our Common Home (MCCH), a group of lay and religious Maryland Catholics advocating for care of the Earth, our common home. This means that we advocate also for care of the poor who are harmed most and first by environmental degradation and climate change. Today I am registering a FAVORABLE WITH AMENDMENT opinion on SB 616.

Since 2019, ever since the Maryland General Assembly passed the Clean Energy Jobs Act, I have been involved in trying to correct a wrong in that Act – which was that it retained trash burning and other dirty energy sources as Tier 1 renewable energy sources. That was a compromise to get the good, clean energy parts of the Act passed. Since then, I have come out to the streets and marches in support of community led groups like the South Baltimore Land Trust to end public subsidies for dirty, dangerous energy. That’s me in the middle of a group of activists, holding up my sign, as we conducted a die-in at the Wheelabrator Baltimore Refuse Energy Systems Co. (BRESCO) incinerator in Baltimore. We were dramatizing that people living under the plume of that smokestack suffer the highest rates of asthma in the city and that 36% of all industrial air pollution in Baltimore comes from BRESCO — the most of any stationary source in the city.

In addition to removing trash incineration, we in Baltimore recognize and stand in solidarity with the communities on the Eastern Shore fighting new factory farm biogas - another polluter that must be removed from the RPS. With so many alternatives available now for truly clean energy generation, it makes much more sense to use renewable energy subsidies for expanding that supply rather than building new dirty energy infrastructure, and so I hope you will consider amending SB616 to remove factory farm biogas

Now is the time to move beyond protests and marches to legislation, and only our legislators can do that. So, I ask you to please consider the points below from Clean Water Action and report out a FAVORABLE WITH AMENDMENT recommendation for SB 616. Thank you so much for the important work you do and for considering my testimony in your decision.

Sincerely,

J. Stephen Cleghorn, PhD
4000 N. Charles Street – Unit 804
Baltimore, MD 21218

From Clean Water Action:

- *Trash incineration should never have been included in Tier 1 of the RPS.* Trash incinerators pollute more than coal per unit of energy produced and emit significant quantities of greenhouse gasses and local harmful air pollution: much of their energy comes from burning plastic, a fossil fuel. In the original design of the RPS program, incinerators were included in the Tier 2 category that was to phase out in 2019, but in 2011 as community pressure was mounting against two new proposed incinerators in Baltimore and Frederick, the industry got itself added to Tier 1. Ultimately, the community opposition won, and neither facility was built, but $36 million in RPS subsidies still goes to incineration each year.

- *Other types of burning waste or manufacturing methane must come out of the RPS for the same exact reasons as trash incineration.* They all emit greenhouse gasses, pollute and harm the health of their neighboring communities, are disproportionately located in communities already overburdened by pollution, and prop up industrial systems from which we must transition in order to combat climate change. If Maryland does not eliminate ratepayer subsidies of all trash incineration and methane producing industrial processes, PEER (Public Employees for Environmental Responsibility) estimates that by 2030 Maryland ratepayers will have wasted $500,000,000 by subsidizing polluters, money that could have been spent encouraging truly clean, renewable energy supplies.

- *Every vote to retain any polluter in or add any polluter to the RPS is a bad vote.* We must hold legislators accountable for every vote they take on any bill or amendment that would add or retain any polluting energy source in the RPS.

SB0616_FoodWaterWatch_Hawkins_FWA
Uploaded by: Lily Hawkins
Position: FWA

FOOD & WATER ACTION
Fight like you live here.

1616 P Street, NW
Suite 300
Washington, DC 20036
T +202.683.2500
F +202.683.2501
foodandwateraction.org

Lily Hawkins
Food & Water Action Maryland Organizer
lhawkins@fwwatch.org
Committee: Senate Finance
Testimony on: SB 616
Position: FAVORABLE
Hearing Date: March 15, 2022

Dear Chair Kelly and Vice-Chair Feldman,

I'm here today representing the Reclaim Renewable Energy Coalition, made up of more than 20 groups from around the state, and Food & Water Watch, on behalf of nearly 45,000 members in Maryland. We would like to express our support with amendments for SB616.

We strongly support removing trash incineration from the Renewable Portfolio Standard: it is not sustainable or renewable; harms the health of nearby communities through its emissions of carcinogens and neurotoxins; and pollutes more greenhouse gasses per unit of energy than coal, the dirtiest of fossil fuels. We encourage you to amend SB616 to also remove other sources of energy that emit greenhouse gasses from the Renewable Portfolio Standard.

Today I'd like to highlight the need to amend Sb616 so it removes methane from anaerobic digestion of factory farm waste from the RPS. This is a newer technology that threatens communities and ecosystems on the Eastern Shore if allowed to remain in the RPS. We still have a chance to prevent a boom in this dangerous technology that will potentially cost ratepayers millions of dollars, so as avoid a similar situation to where we are now with trash incineration.

No matter the source, burning methane produces CO2. Furthermore, it is an even more potent greenhouse gas when it leaks into the atmosphere. Studies show that in 2015, leaks along the natural gas supply chain were approximately 60% higher than the U.S. Environmental Protection Agency inventory estimate. [Earthjustice paper, page 5, research paper]

However, energy companies and the agricultural industry are greenwashing when they sayany non-fossil-fuel methane is "renewable" despite its climate impacts. Since the construction of

biogas facilities is extremely costly, they are generally not profitable without subsidies and incentives. (FWW Fact Sheet) Its inclusion in our RPS provides an unwanted financial incentive to add new greenhouse gas emitting technology to our grid under the guise of renewable energy - on the public's dime.

In the anaerobic digestion of factory farm waste, animal waste and other materials are fed into a digester where it is broken down by specialized methane-producing microorganisms that can only thrive in the absence of oxygen. Since factory farms produce unmanageable volumes of waste, digester facilities are often touted as a solution to the environmental issues that waste creates. However, this is a false promise - sending animal waste to a digester creates methane but does nothing to mitigate the significant air quality issues associated with factory farms. Additionally, the anaerobic digestion process leaves behind a digestate that must still be disposed of. Problematically, the nutrients in this digestate can be rendered more water soluble than those in unprocessed chicken litter, and yet it is often spread on fields as fertilizer, where it runs off into the Chesapeake Bay. (FWW Issue Brief).

In addition to not solving the problem of excess waste, the production of methane from organic matter through anaerobic digestion has been used as an excuse for expanding and entrenching dangerous LNG infrastructure (Energy and Policy Institute). During a MD Board of Public Works meeting on July 1, 2020, several witnesses used the increasing availability of so-called "Renewable" Natural Gas (RNG) as reason why the Eastern Shore Pipeline should be permitted despite concerns from environmental advocates (Video Recording 1:35, and 1:43). Simply put, more anaerobic digestors will mean more pipelines and other infrastructure.

For these reasons, we respectfully requests that you pass HB616 Favorably with amendments to remove factory farm biogas and other dirty energy sources from the RPS along with incineration.

Sincerely,

Lily Hawkins

Maryland Organizer

Food & Water Action

(202) 683-2480

Renewable Natural Gas: Same Ol' Climate Polluting Methane, Cleaner-Sounding Name

As corporations seize more control of our food and energy systems, our planet gets increasingly saturated with their toxic byproducts. Increasingly worried about their image as people demand meaningful climate action, corporations have tried to assuage the public with technological Band-Aid fixes like "renewable" natural gas. In reality, this is just a greenwashed, cleaner-sounding name for biomethane, or processed biogas that can be delivered in pipelines.[1] In this way, "renewable" natural gas is a symptom of the systems that are forcing climate change.

Biomethane is being misleadingly touted as a clean source of energy, and its supporters market it as renewable. By relying on symptoms for climate change to be the cure, we simply perpetuate the underlying problem. For one, biogas is primarily comprised of methane (the same greenhouse gas that makes up fracked natural gas). It includes waste methane from landfills, sewage treatment plants and factory farm livestock manure.[2]

Biomethane proponents include natural gas companies, investor-owned utilities, industry trade groups like the American Gas Association, and Big Ag.[3] These champions have an incentive to invest in and support biomethane because it can utilize existing fossil-fueled gas infrastructure while propping up factory farms.[4] This is a win-win for energy companies because biomethane could either diversify their portfolios or keep their assets from becoming stranded. Concerningly, biomethane encourages the continued buildout of leaky gas infrastructure that locks in climate chaos.

Debunking "Pro-Climate" Claims

Supporters claim that the primary benefit of biomethane is that it reduces fossil fuel consumption and helps allay climate change.[5] But for biomethane to provide meaningful change, it relies on the improbable condition that no methane will be emitted to the atmosphere during the conversion of biogas to biomethane.[6] And a 2020 study determined that "renewable" natural gas systems are prone to leakage.[7]

Studies have shown that methane can be released at biogas facilities through the process of "upgrading" it to biomethane, pressure relief valves, ventilation processes, leaky infrastructure, and more.[8] A 2019 study looked at 23 manure-based agricultural biogas plants in Denmark — eight of which manufactured biomethane — and found that 0.4 to 14.9 percent of the production total (methane) leaked from their systems. The average plant lost 4.6 percent.[9]

A 2018 Food & Water Watch report found that although biogas is literally comprised of methane, every state with a Renewable Portfolio Standard considers waste gas from landfills and sewage treatment plants to be renewable energy; 25 states classify biogas from factory farms as renewable.[10] Biomethane simply replaces one form of the climate pollutant for another.

"Renewable" Natural Gas is Way Too Expensive

The cumulative costs associated with treating biogas, bringing it to market and all the necessary interconnected facilities pose challenges to the economic viability of these projects.[11] Research has indicated that replacing fossil fuels with biomethane is "not likely to be commercially feasible without large subsidies."[12] Likewise, anaerobic digestors (the infrastructure that converts waste into biogas) cost millions. These expensive facilities are dependent upon significant public funding and incentives.[13] Some costs are offset by taxpayer-subsidized handouts; others are simply passed down to utility ratepayers.[14] In 2018, California invested over $70 million toward 42 new dairy biogas digester projects.[15] These grants, coupled with other incentives,[16] encouraged the construction of dairy digesters across the state.

Digestors produce neither clean nor safe energy because of methane combustion emissions, leaks, accidental manure spills and explosions.[17] It would make more sense to actually decarbonize the grid by moving to wind and solar. For one, biomethane is significantly more expensive to fuel homes and businesses than traditional fossil fuel gas.[18] Secondly, technology exists to support a transition to 100 percent clean, renewable energy, backed up by storage and transmission, at prices lower than current energy costs.[19]

The Factory Farm Nexus

Biomethane from anaerobic digesters props up factory farms that produce a colossal amount of manure due to the large concentrations of animals. The technology converts gas from factory farm manure (and other wastes like sewage sludge or food waste) into biogas, which is promoted for onsite electricity generation or for being sold to the grid.[20] Some leaders are championing for anaerobic digesters as a remedy for managing factory farm waste.[21] But digesters do not solve animal waste problems, and they do not reduce phosphorus or nitrogen levels in manure. Manure still needs to be managed through practices such as field application.[22]

Smaller, pasture-based dairies can manage manure onsite by applying it as fertilizer on their cropland at sustainable rates. However, factory farms typically produce more manure than can be used onsite. Overapplication of dairy manure can cause runoff, polluting waterways with nutrients like nitrogen and phosphorus. [23]

Increasingly, Big Ag is partnering with energy companies, locking us into two polluting business models. For example, in August 2018 SoCalGas began accepting biomethane that originated from an anaerobic digestion facility (which was already used to fuel roughly 400 waste hauling trucks). And in February 2019, SoCalGas announced that it had begun to inject biomethane from a dairy digester into its natural gas system.[24]

PHOTO CC-BY © SOMENERGIA COOPERTIVA / FLICKR.COM

Anaerobic digestion facilities support factory farms that produce a colossal amount of manure due to large concentrations of animals.

Oregon's first anaerobic digestor began operating in 2019; it is one of the largest in the nation, and feeds gas into the grid.[25] That same year Dominion entered into a $500 million joint venture with pork producer conglomerate Smithfield to turn manure into biomethane; (Dominion's natural gas transmission and storage assets have since been acquired by a Warren Buffet company in a nearly $10 billion deal.)[26] Dominion also partnered with Vanguard Renewables in a $200 million nationwide effort to convert dairy manure into biomethane. Projects have also been planned for New Mexico, Colorado, Nevada, Utah and Georgia.[27]

In Delaware, Biogas Dev Co (BDC) entered into a 20-year contract with Perdue Farms to construct a $7 million anaerobic digestion system for biomethane.[28] BDC, a global company backed by private equity, also teamed up with Chesapeake Utilities to flood its natural gas system with "renewable" natural gas.[29] This is the first time Chesapeake Utilities has looked to add biomethane to their network.[30] The plan also includes pouring millions of dollars into gas tanker trucks to carry the biomethane to the 500-mile Eastern Shore Natural Gas pipeline network in Maryland.[31]

Other Sources of So-Called "Renewable" Natural Gas

Waste methane from landfills is another primary source of "renewable" natural gas. Like dairy biogas, landfill gas can be used onsite (or close by) for direct heating, or it can be processed and upgraded into biomethane to be used in transportation or injected directly into the pipeline network.[32] Landfills are the leading source of biomethane in the U.S., and about 560 operational landfill gas projects are spread throughout the country.[33]

At landfills, natural anaerobic decomposition happens as waste breaks down, which releases methane. Its reuse is being promoted because any infrastructure that uses fossil fuel natural gas, can also use landfill gas. To tap it, punctured pipe wells are drilled into the garbage every acre or so. The wells connect to a header pipe that has a vacuum that sucks gas out. Unused landfill gas is burned off (flared).[34]

While landfills pose the problem of fugitive methane emitted into the atmosphere during trash decomposition, repurposing it into pipeline-grade combustible gas isn't the solution. In fact, it further entrenches us into more dirty infrastructure and continued fossil fuel reliance.

For example, in California, the proposed Glendale Biogas Renewable Generation Project is a biogas generation project that Glendale Water & Power (GWP) has been plotting

PHOTO CC-BY © SOMENERGIA COOPERTIVA / FLICKR.COM

The Scholl Canyon Landfill near Eagle Rock — a Los Angeles community beset by a history of poor air quality and pollution-related health problems and casualties — is the target site of the Glendale Biogas Renewable Generation Project. As part of a larger plan to repower and upgrade the city's Grayson Power Plant, the Glendale Project would help lock Angelenos into climate-destroying infrastructure.

to build at the city-owned Scholl Canyon Landfill near Eagle Rock — a Los Angeles community beset by a history of poor air quality and pollution-related health problems and casualties.[35] The Glendale Project is part of a larger plan to repower and upgrade the city's Grayson Power Plant,[36] locking Angelenos into climate-destroying infrastructure.

"Renewable" natural gas can likewise originate from municipal solid waste, sludge from wastewater treatment plants, food waste[37] or be manmade. Power-to-gas and artificial photosynthesis processes can create biomethane. These processes involve transforming water into hydrogen, then combining hydrogen with carbon dioxide. Absurdly, these technologies rely on renewables.[38] (Though, when power-to-gas doesn't use real renewable energy — like wind and solar — it typically utilizes dirty energy sources under the guise of "renewable.")

Conclusion: We Need Real Solutions and Real Renewables

Biomethane is indistinguishable from fossil methane and fracked gas. States must strengthen and eliminate dirty energy sources like biomethane from their renewable portfolios. Counting waste methane from factory farms, landfills, sewage treatment plants and more as "renewable" simply bolsters the natural gas industry and maintains the nation's leaky gas infrastructure — a major emitter of methane. Expensive "renewable" natural gas will simply help prolong fossil fuel dependence and delay the shift to genuinely clean, renewable energy needed to reduce greenhouse gas emissions, while propping up polluting factory farms.

A real solution would be transitioning to 100 percent clean, renewable energy by 2030 through an investment in a New Deal-scale green energy public works program that fosters a rapid transition to real zero-emission clean energy (like solar and wind) accompanied by widescale deployment of energy efficiency. Technology for a large-scale transition to renewables has existed for over 20 years and is cheaply available now[39] — we just need the political will to see it through.

Endnotes

1 Haines, Deanna. SoCalGas/SDG&E. "Getting the facts on renewable natural gas." Presented at 2nd Annual AGA-EPA Natural Gas STAR/ Methane Challenge Renewable Natural Gas Workshop & Exhibit. Fort Worth, Texas. October 23, 2018 at 13.

2 Tanigawa, Sara. Environmental and Energy Study Institute (EESI). "Biogas: Converting Waste to Energy." October 2017 at 1; U.S. Environmental Protection Agency (EPA). "How does AD work?" Available at https://www.epa.gov/anaerobic-digestion/basic-information-about-anaerobic-digestion-ad. Accessed April 2019.

3 SoCalGas. "Biogas and renewable natural gas." Available at https:// www. socalgas.com/smart-energy/renewable-gas/biogas-and-renewablenatural-gas. Accessed December 2017; American Gas Association. "Securing a Role for Renewable Gas." August 31, 2010 at 1 to 4; Bates, Michael. "Bioenergy, Chesapeake Utilities partner to supply RNG." *NGT News*. June 5, 2020; Goldstein, Nora. "Smithfield Foods goes big on biogas." *BioCycle*. January 4, 2019.

4 Grubert, Emily. "At scale, renewable natural gas systems could be climate intensive: The influence of methane feedstock and leakage rates." *Environmental Research Letters*. Vol. 15, No. 8. August 2020 at 1; Russell, Pye et al. MJB & A. "Renewable Natural Gas. The RNG Opportunity for Natural Gas." April 2017 at 1; Food & Water Watch (FWW). "Biogas From Factory Farm Waste Has No Place in a Clean Energy Future." July 2019.

5 Paolini, Valerio et al. "Environmental impact of biogas: A short review of current knowledge." *Journal of Environmental Science and Health*, Part A. Vol. 53, No. 10. 2018 at 899.

6 Grubert (2020) at 1, 5 and 10.

7 *Ibid*. at 5 and 10.

8 Scheutz, Charlotte and Anders M. Fredenslund. "Total methane emission rates and losses from 23 biogas plants." *Waste Management*. Vol. 97. September 2019 at 38.

9 *Ibid*. at 42.

10 FWW. "Cleanwashing. How States Count Polluting Energy Sources as Renewable." July 2018 at 8.

11 Russell (2017) at iii, 7 and 8.

12 Jaffe, Amy Myers et al. UC Davis, Institute of Transportation Studies. "The Feasibility of Renewable Natural Gas as a Large-Scale, Low Carbon Substitute." June 2016 at 11.

13 EPA AgStar. "Funding On-farm Anaerobic Digestion." September 2012 at 1.

14 Lucas, Jim. Southern California Gas. Sempra Energy. "Renewable natural gas and interconnecting to the SoCalGas pipeline." PR1118.1 Working Group Meeting. October 24, 2017 at 6, 9, 11 and 14.

15 California Department of Food and Agriculture (CDFA). Dairy Digester Research and Development Program. "Report of Funded Projects (2015-18)." January 2019 at 3.

16 Ashton, Adam and Andrew Sheeler. "Turning poop into power: California dairies appeal for more state climate change money." *Sacramento Bee*. May 29, 2019.

17 Flesch, Thomas K. et al. "Fugitive methane emission from an agricultural biodigester." *Biomass and Bioenergy*. 2011 at 3927; Verburg, Steve. "Blast destroys roof of troubled biodigester near Waunakee." *Wisconsin State Journal*. August 6, 2014.

18 Cagle, Susie. "US gas utility funds 'front' consumer group to fight natural gas bans." *Guardian*. July 26, 2019.

19 FWW. "Cracked: The Case For Green Jobs Over Petrochemicals In Pennsylvania.» September 2020 at 6.

20 Tanigawa (2017) at 1; EPA. (April 2019); Michigan Department of Agriculture et al. "Frequently asked questions about anaerobic digesters (ADs): Operation advantages and funding opportunities." ND at 3.

21 Michigan Department of Agriculture et al. (ND) at 2 to 3.

22 *Ibid*. at 6; Liebrand, Carolyn Betts and K. Charles Link. USDA Rural Development. "Cooperative Approaches for Implementation of Dairy Manure Digesters." Research Report 217. April 2009 at 4; Informa Economics. "National Market Value of Anaerobic Digester Products." Prepared for the Innovation Center for U.S. Dairy. February 2013 at 51; Carreira, R. I. "How far can poultry litter go? A new technology for litter transport." *Journal of Agricultural and Applied Economics*. December 2007.

23 Long, Colleen M. et al. "Use of manure nutrients from concentrated animal feeding operations." *Journal of Great Lakes Research*. Vol. 44, Iss. 2. April 2018 at introduction.

24 SoCalGas. [Press release]. "Renewable natural gas now flowing into SoCalGas pipelines from Calgren dairy digestor pipeline cluster." February 14, 2019

25 Iogen Corporation. [Press release]. "Iogen: Dairy manure RNG project begins operations in Oregon." December 4, 2019.

26 "$500M Dominion-Smithfield venture taking manure and making it into renewable gas." *PowerEngineering*. October 25, 2019; Walton, Rod. "Berkshire Hathaway strikes $10bn deal with Dominion Energy for natural gas assets." *Power Engineering International*. July 8, 2020.

27 Dominion Energy. "Dominion Energy, Vanguard Renewables partner on dairy RNG." *Biomass Magazine*. December 11, 2019.

28 Tabeling, Katie. "Chesapeake Utilities, Bioenergy DevCo reach renewable energy deal." *Delaware Business Times*. June 4, 2020; "Chesapeake, new operator of Perdue plant launch program to covert chicken droppings into natural gas," *Delaware Business Times*. June 4, 2020.

29 Delaware Business Times (2020); Tabeling (2020); "Bioenergy DevCo secures US $106 million to grow North American AD market." *Bioenergy International*. August 13, 2019.

30 Tabeling (2020).

31 *Ibid*.

32 Russell (2017) at 2.

33 *Ibid*.; EPA "Project and landfill data by state." Available at https:// www.epa.gov/lmop/project-and-landfill-data-state. Accessed June 2020.

34 LeFevers, Daniel. Waste Management. "Landfill Gas to Renewable Energy." Presented at EESI Hill Briefing. April 26, 2013 at 4.

35 Hendrickson, Bill. "Burning of methane at Scholl Canyon raises questions anew." *Boulevard Sentinel*. November 30, 2018; Scauzillo, Steve. "Methane burn-off at Scholl Canyon Landfill angers Pasadena, Glendale and La Cañada Flintridge residents." *Pasadena Star-News*. April 11, 2019; Brown, Deb et al. American Lung Association. "State of the Air 2019." 2019 at 4, 6 to 7 and 19 to 20; Danelski, David. "Los Angeles area's air quality the deadliest in the nation, researchers say." *Press-Enterprise*. August 11, 2016.

36 Stantec Consulting Services Inc. Prepared for City of Glendale Water and Power. "Final Environmental Impact Report, Grayson Repowering Project." March 1, 2018 at 3.1.

37 Tomich, Matthew and Marianne Mintz. Energy Vision. Argonne National Laboratory. "Waste-to-Fuel: A Case Study of Converting Food Waste to Renewable Natural Gas as a Transportation Fuel." ANL/ ESD-17/9. August 2017 at v.

38 Russell (2017) at 2.

39 FWW. "Fracking's Bridge to Climate Chaos." January 2020 at 12.

FOOD & WATER WATCH

FOODANDWATERWATCH.ORG

info@fwwatch.org

202.683.2500 (DC) • 510.922.0720 (CA)

SB616_FIN_RPS_FWA_HoCoCA.pdf
Uploaded by: Liz Feighner
Position: FWA

HoCoClimateAction.org
Howard County, Maryland

Testimony in SUPPORT of – SB616 - Renewable Energy Portfolio Standard – Eligible Sources – Waste–to–Energy and Refuse–Derived Fuel
Hearing Date: March 15, 2022
Bill Sponsor: Senator Hough
Committee: Finance
Submitting: Howard County Climate Action
Position: Favorable With Amendments

HoCo Climate Action is a 350.org local chapter and a grassroots organization representing almost 1,400 advocates, and a member of the Climate Justice Wing of the Maryland Legislative Coalition.

We support SB616, Waste-to-Energy and Refuse, with amendments, as we strongly support removing trash incineration from the Renewable Portfolio Standard. Trash incineration should not receive clean energy subsidies for numerous reasons: It is not sustainable or renewable; it emits carcinogens and neurotoxins; it harms the health of nearby communities; and it produces more greenhouse gasses per unit of energy than coal, the dirtiest of fossil fuels. Trash incineration is not the only dirty energy source in the RPS, however, so we strongly encourage you to amend SB616 to also remove other sources of climate-damaging energy.

According to the scathing and blunt assessment of the Maryland Clean Energy Report 2022 published by PEER.org: “In 2020, dirty energy sources made up nearly 35% of Maryland’s ‘clean energy’ under the state’s Tier 1 Renewable Portfolio Standard (RPS). These dirty sources include municipal solid waste burned to produce electricity; methane gas collected from landfills and burned in electric generators; black liquor, a sludgy byproduct of the pulping process that paper mills burn to power their operations; and woody biomass, woody debris or residue burned in power plants and paper mills.” Thankfully, the General Assembly removed black liquor from the RPS in 2021, but Maryland needs to quit wasting rate payers’ money and finally stop subsidizing dirty sources of energy, whether burning chicken manure or plastics.

In addition, most of the subsidies from Maryland ratepayers go to dirty out-of-state sources of energy, robbing Maryland of clean-energy jobs. Since 2008, Maryland ratepayers have sent $108 million in subsidies to Virginia alone. These subsidies also go to facilities that repeatedly violate environmental laws. In essence, Marylanders help these companies to generate dirty energy and pay their fines.

Beyond the climate-polluting gasses, many dirty energy sources produce a host of other toxic gasses and pollutants. Incineration is the most notorious offender, but others include poultry litter(manure)-to-energy, woody biomass incineration, methane from anaerobic digestion, and landfill-gas-to-energy. Some argue that these industries are necessary for waste processing, but often lower-waste or zero-waste alternatives exist. One of the worst side effects is that dirty energy subsidies siphon off incentives for non-polluting and renewable energies.

We urge a FAVORABLE vote with amendments for SB616 so that RPS Tier 1 subsidies can go toward supporting wind, solar, hydro, and geothermal power, rather than climate-harming energy sources.

HoCo Climate Action
HoCoClimateAction@gmail.com -
Submitted by Liz Feighner, Steering and Advocacy Committee, Columbia MD
www.HoCoClimateAction.org

SB616.pdf
Uploaded by: Sharon Davlin
Position: FWA

Testimony On SB616

Senate Finance Committee
March 15, 2022

Position: FAVORABLE WITH AMENDMENTS

Dear Chair and Members of the Committee,

I am a resident of District 42/42A and a Maryland ratepayer who is sick of paying for dirty energy. I write to express my support for SB616 with amendments to also remove other dirty energy sources from the Renewable Portfolio Standard (RPS). I strongly support removing trash incineration from the RPS. It is not sustainable or renewable. It harms the health of nearby communities through its emissions of carcinogens and neurotoxins, and emits more greenhouse gasses per unit of energy than coal, the dirtiest of fossil fuels. We encourage you to amend SB616 to also remove other sources of energy that emit greenhouse gasses from the RPS.

Trash incineration should never have been included in Tier 1 of the RPS. Maryland's trash incinerators pollute more than Maryland's coal plants per unit of energy each produces, and emit significant quantities of greenhouse gasses and local harmful air pollution. Much of their energy comes from burning plastic, a fossil fuel. In the original design of the RPS program, incinerators were included in the Tier 2 category that was to phase out in 2019. But in 2011 community pressure mounted against two new proposed incinerators in Baltimore and Frederick and the incinerator industry got itself added to Tier 1. Ultimately, the community opposition won and neither facility was built. But $36 million in RPS subsidies still goes to incineration each year.

The inclusion of polluters in the RPS means that in 2020 Maryland ratepayers paid over $30 million to buy RECs from facilities that emit greenhouse gasses and over $246 million since 2008. The Public Employees for Environmental Responsibility estimates that if nothing changes, those costs will mount to half a billion dollars subsidizing polluters by 2030.

There is no way that subsidizing dirty energy makes sense for Maryland residents.

- Maryland's RPS program spends millions of dollars on a Virginia biomass facility that is too dirty to qualify for Virginia's own recently-enacted RPS.
- Maryland allows credits for burning "biomass gas" from DC's Blue Plains wastewater treatment plant, which makes fertilizer from sewage sludge with extremely high levels of toxic per- and polyfluoroalkyl Substances (PFAS) that is sold to the public for a profit.
- Most RPS facilities are located outside of Maryland and provide no energy to Maryland energy suppliers.

Dirty energy subsidies burdens ratepayer with higher bills and contribute to multiple adverse health impacts. Please support SB616 with amendments to cover all polluters in the RPS. Tier 1 dollars should go toward supporting wind, solar, hydro, and geothermal power – not greenhouse gas emissions.

Sincerely,

Sharon Davlin
District 42/42A

SB616_EJN_Compton_FWA.pdf
Uploaded by: stephanie compton
Position: FWA

3/15/22
Testimony Supporting with amendments SB616- Senate Finance Committee
Stephanie Compton
2936 Wyman Pkwy
Baltimore, MD 21211

Position: SUPPORT WITH AMENDMENTS

Dear Chair and Members of the Committee,

As a resident of District 43 and Maryland Ratepayer, I am writing to express my strong support of SB616, which will make sure that our subsidies for renewable energy through the Renewable Portfolio Standard are going toward actual renewable energy. We are in a climate crisis, and we cannot afford to be spending our renewable energy money on facilities that emit greenhouse gasses - now is the time to double down Maryland's commitment to truly renewable energy and subsidize only facilities that are emissions-free, i.e. wind and solar.

Trash incineration should never have been included in Tier 1 of the RPS. Trash incinerators pollute more than coal per unit of energy produced, and emit significant quantities of greenhouse gasses and local harmful air pollution: much of their energy comes from burning plastic, a fossil fuel. In the original design of the RPS program, incinerators were included in the Tier 2 category that was to phase out in 2019, but in 2011 as community pressure was mounting against two new proposed incinerators in Baltimore and Frederick, the industry got itself added to Tier 1. Ultimately, the community opposition won, and neither facility was built, but $36 million in RPS subsidies still goes to incineration each year.

Other types of burning waste or manufacturing methane must come out of the RPS for the same exact reasons as trash incineration. They all emit greenhouse gasses, pollute and harm the health of their neighboring communities, are disproportionately located in communities already overburdened by pollution, and prop up industrial systems that we must transition away from in order to face climate change. In particular, manufacturing methane and feeding it into our pipeline system is currently being used to justify continuing and expanding pipelines. If nothing changes, PEER estimates that MD will have spent half a billion dollars by 2030 subsidizing polluters through the RPS, money that could have gone toward truly renewable energy.

The legislature should not leave communities facing acute fights against new polluters behind. New factory farm waste digesters have been proposed across the Eastern Shore, and communities are engaged in local-level fights against new facilities now - just like Baltimore City, Frederick County, and Carroll County were 10-15 years ago. These facilities must be taken out of the RPS to support the local fights against harmful pollution going on right now.

Thank you for listening.

Stephanie Compton

RPS (Hough) FWA.docx.pdf
Uploaded by: Taylor Smith-Hams
Position: FWA

March 15, 2022

Renewable Energy Portfolio Standard – Eligible Sources – Waste–to–Energy and Refuse–Derived Fuel (SB616)
Position: FAVORABLE WITH AMENDMENT

Dear Chairperson Kelley and Members of the Finance Committee:

Blue Water Baltimore is a nonprofit organization with a mission to restore the quality of Baltimore's rivers, streams, and Harbor to foster a healthy environment, a strong economy, and thriving communities. **We write today in support of Renewable Energy Portfolio Standard – Eligible Sources – Waste–to–Energy and Refuse–Derived Fuel (SB616)** with amendments to also remove every other energy source that emits greenhouse gasses from the Renewable Portfolio Standard.

We strongly support removing trash incineration from the Renewable Portfolio Standard (RPS): it is not sustainable or renewable; harms the health of nearby communities through its emissions of carcinogens and neurotoxins; and pollutes more greenhouse gasses per unit of energy than coal, the dirtiest of fossil fuels. We encourage you to amend SB616 to also remove other sources of energy that emit greenhouse gasses from the RPS.

To face the climate crisis, especially in light of this month's IPCC report that says that our current mitigation efforts are not enough to stave off climate disasters, we must ensure that our subsidies for renewable energy through the Renewable Portfolio Standard are going toward actual renewable energy. We cannot afford to be spending our renewable energy money on facilities that emit greenhouse gasses - now is the time to double down on Maryland's commitment to truly renewable energy and subsidize only facilities that are emissions-free.

Trash incineration should never have been included in Tier 1 of the RPS. Maryland's trash incinerators pollute more than Maryland's coal plants per unit of energy each produces, and emit significant quantities of greenhouse gasses and local harmful air pollution: much of their energy comes from burning plastic, a fossil fuel. In the original design of the RPS program, incinerators were included in the Tier 2 category, which was supposed to phase out in 2019. But in 2011 as community pressure was mounting against two new proposed incinerators in Baltimore and Frederick, the industry successfully lobbied to be added to Tier 1. Ultimately, the community opposition won, and neither facility was built, but $36 million in RPS subsidies is still wasted on incineration each year.

Burning other types of waste, from chicken litter to wood products, and manufacturing methane all pollute the environment, harm nearby communities' health, and contribute to climate change: a bad investment of public dollars that every Maryland utility ratepayer contributes to. Every Renewable Energy Credit that goes toward a facility that emits greenhouse gasses is a Renewable Energy Credit taken away from a facility that does not: an egregious waste of public money. And right now,

communities on the Eastern Shore are actively fighting against new factory farm methane plants: let's not go down the road with factory farm methane that we went down with trash incineration. Let's get that industry out of the RPS from the start.

Because of the inclusion of these polluters in the Renewable Portfolio Standard, Maryland ratepayers paid over $30 million to buy Renewable Energy Credits from facilities that emit greenhouse gasses in 2020, and over $246 million since 2008. The Public Employees for Environmental Responsibility estimates that if nothing changes, those costs will mount to half a billion dollars subsidizing polluters by 2030. Please support SB616 with amendments expanding it to cover all polluters in the RPS, so that those dollars can go toward supporting wind and solar - not greenhouse gas emissions.

For all of these reasons and many more, please support SB616 with amendments and end "renewable energy" subsidies for all greenhouse gas emitting energy sources in Maryland. Thank you.

Sincerely,

Taylor Smith-Hams
Advocacy & Outreach Senior Manager

SB616 - Win Waste One Pager.pdf
Uploaded by: Caitlin McDonough
Position: UNF

Wheelabrator TECHNOLOGIES | WIN WASTE INNOVATIONS

Wheelabrator Technologies is now WIN Waste Innovations

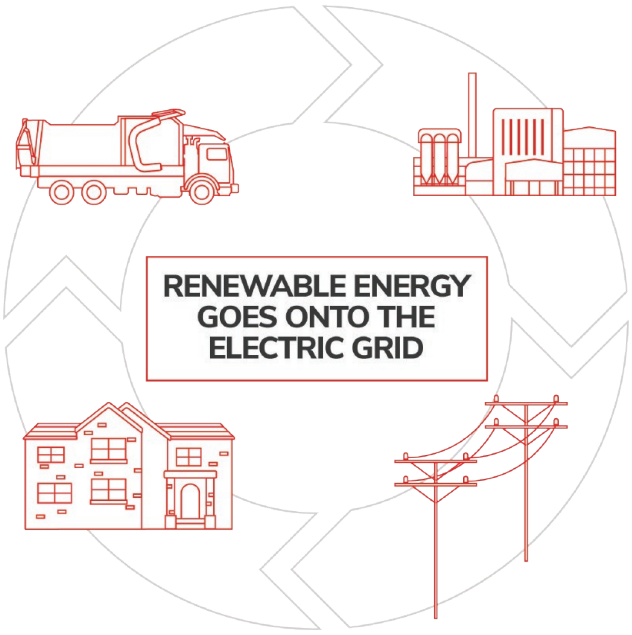
WIN Waste Innovations in Baltimore is . . .

Renewable Energy: WIN Waste converts nearly 700,000 tons of waste into 330,000+ megawatts of renewable energy each year, enough to power 34,000+ homes through a highly efficient combustion process that meets strict federal and state standards.

Recycling: WIN Waste recovers from the waste stream and recycles 12,000+ tons of metals that would otherwise be landfilled.

Economic Impact: WIN Waste pays its 72 full-time employees living wages—hourly compensation starts at $18.40/hr. and averages $34.20/hr.—and contributes $9 million+ in payroll tax revenue.

Sustainable Waste Management: WIN Waste reduces greenhouse gas emissions—one ton of carbon for every ton of waste processed—by diverting waste from landfills, offsetting tractor trailer trips to get it there and reducing the need for energy from fossil fuels.



> "Waste-to-energy is the better alternative to landfilling for managing MSW that is not recyclable, a reality explicitly recognized by the waste management hierarchy recommended by both the U.S. Environmental Protection Agency and the European Union."
>
> **MARCO J. CASTALDI, PH.D.**
> *The Scientific Truth about Waste-to-Energy*
> *Chemical Engineering Department, The City College of New York City University of New York*

And in 2022, WIN Waste Will Be More

WIN Waste is investing $40 million+ in air-quality controls that will place its Baltimore facility among the lowest-emitting waste-to-energy facilities in the nation—and world. The upgrades begin in early 2022.

EMISSION	UNITS	USEPA	MONTGOMERY COUNTY FACILITY LIMITS	WHEELABRATOR BALTIMORE	
				CURRENT	2022-2023
NOx	ppm	205	105	145	**105**
SO2	ppm	29	29	29	**18**
Dioxins	ng/dscm	35	30	35	**15**
Mercury	ug/dscm	50	50	50	**15**
Cadmium	ug/dscm	35	35	35	**25**
Lead	ug/dscm	400	400	400	**250**

Wheelabrator TECHNOLOGIES | WIN WASTE INNOVATIONS

Wheelabrator Technologies is now WIN Waste Innovations

We Can BMore

WIN Waste is fully committed to being the best waste management, environmental, economic and community partner for Baltimore that it can be. We are identifying every opportunity to engage members of the community in our own conservation efforts, and to support, learn from and invest in theirs.

Together, We Can BMore.

- WIN Waste hires local, Black-owned businesses that employ returning citizens to help clean up litter and keep trash from our streets and waterways
- WIN Waste deploys Green Ambassadors to faith communities every week to strategize around how to address the illegal dumping and littering that devalue our neighborhoods
- WIN Waste invests nearly $1 million a year directly in programs to clean and green communities and support neighborhoods:
  - » City of Refuge Victory Garden to expand garden's reach and support partnership with Grow Home to create new jobs for Brooklyn youth
  - » Sponsor the Oasis Teens Environmental cleanup crew at Urban Oasis
  - » RE Harrington & Sons Apprenticeship Training Center technology fund
  - » My Father's Plan for youth street-cleaning stipends
  - » Friends of Carroll Park cut flower program for youth workforce development
  - » Coldstream Montebello for illegal dumping cleanup support
  - » Downtown Partnership's Gwynda Trash Wheel to support conversion of waterway litter to renewable energy
  - » Mack Lewis Foundation for STE(A)M education program and laptops
  - » Ark Church for food pantry building renovation and food storage

- WIN Waste coordinates, sponsors and staffs community cleanups and in 2020-21 helped remove 1,200,000 lbs. of trash from neighborhoods across the city

Poppleton • Mount Clare • McElderry Park • Belair-Edison • Oliver • Broadway East • Hollins Roundhouse Park • Mount Clare Rosemont Neighborhood • Ellwood Park • Upton • Brooklyn • Curtis Bay • Westport • Druid Heights • Pigtown • Cherry Hill

Starting in 2021, WIN Waste is committing $750,000 a year to cleaning, greening and training Baltimore

SB616 - Win Waste Testimony in Opposition.docx .pd
Uploaded by: Caitlin McDonough
Position: UNF

TO: The Honorable Delores Kelley, Chair
Members, Senate Finance Committee

FROM: Caitlin McDonough

DATE: March 15, 2022

RE: **OPPOSE** – Senate Bill 616 – *Renewable Energy Portfolio Standard – Eligible Sources – Waste-to-Energy and Refuse-Derived Fuel*

On behalf of Win Waste Innovations and our Baltimore facility (Win Waste), we submit this letter of **opposition** to Senate Bill 616 because it removes waste-to-energy as a Tier 1 renewable energy source from the Renewable Energy Portfolio Standard (RPS). Such a change would have a significant negative impact on Win Waste, our customers such as the City of Baltimore and Baltimore County, and the State's ability to reach its own renewable energy goals.

Win Waste is an integral part of Maryland's energy, environmental, and economic infrastructure, providing sustainable waste management for the City of Baltimore and Baltimore County. Every day, we divertwaste from landfills to safely convert nearly 700,000 tons of post-recycled waste from area homes and businesses into 330,000 (net) megawatt hours of clean, renewable baseload electricity – enough topower ~34,000 Maryland homes, while reducing landfilling, lowering greenhouse gases (GHG) and recycling ~12,000 tons of metals that would also otherwise be landfilled. Last year, Win Waste's renewable energy generation offset the need for ~718,100 barrels of oil, ~209,300 tons of coal or 2,800 million cubic feet of natural gas. Energy-from-waste reduces GHG by approximately 1 ton for every three tons of waste processed. In addition, Win Waste generates "green steam" for downtown Baltimore's heating and cooling system, which services 255 businesses, including the M&T Bank Stadium, home of the Baltimore Ravens. Over 50 percent of the steam delivered to these local businesses is produced by converting post-recycled household waste into energy at Win Waste. Renewable steam from Win Waste reduces Baltimore's total GHG by approximately 47,000 tons per year – the equivalent of removing 8,400 cars from the road.

Energy-from-waste has been endorsed by the U.S. Environmental Protection Agency as the preferred method to landfilling for waste disposal. In fact, it's embraced by the European Environmental Agency, the Center for American Progress, the World Economic Forum, the Intergovernmental Panel on Climate Change, Kyoto Protocol's Clean Development Mechanism, and the United Nations Environment Programme, among many others. Thirty-one states, the District of Columbia, and two territories have defined energy-from-waste as renewable energy in various state statutes and regulations, includingrenewable portfolio standards. Moreover, Baltimore City's 2020 "Less Waste, Better Baltimore" Master Plan recommends continued utilization of energy-from-waste because the alternative of long-haul trucking is "a cost-prohibitive and environmentally degrading option." As such, Maryland would become a national outlier by removing waste-to-energy from the renewable portfolio standards.

Win Waste will invest more than $40 million in air quality controls to ensure that, by 2023, the Baltimore facility will have some of the lowest emissions limits of any energy-from-waste facility anywhere in the United States. It will also continue to aggressively invest in maintenance for all areas of the facility to

ensure its continued high reliability, safety and efficiency well into the future. The company will also continue to invest in new technologies and equipment to ensure the facility operates within strict state and federal guidelines designed to protect the environment and public health. **Moreover, Win Waste has committed to making $750,000 in annual contributions for the next decade to Baltimore City community and environmental initiatives.**

In their December 2017 report, the Environmental Integrity Project, funded by the Abell Foundation, reported that "on-road vehicles are the largest contributor to the air pollution that people breathe in Baltimore…because vehicle tailpipes…do not disperse pollution as widely as taller smokestacks." They also reported that "there is not a significant association between city zip codes with the highest emissions of criteria pollutants from stationary facilities and the zip codes with the highest asthma rates." A 2020 study by the Abell Foundation confirms that social determinants of health are a primary driver of asthma in Baltimore City.It found, "The link between environmental exposures and asthma symptom burden is clear: Children are more likely to experience asthma exacerbations if they live in areas with high rates of housing code violations or if they are exposed to high levels of allergens or environmental triggers in the home. Research indicates that morethan 84% of homes of children with asthma in Baltimore City contain detectable levels of mouse allergens in bedroom dust and air samples."

As reflected in the December 2019 Report of the Maryland Power Plant Research Program, Figure ES-11, Win Waste's Baltimore facility is an important economic engine to the region – providing jobs, economic stimulus in the form of capital investments and the purchase of goods and services, local property taxes, and we remain actively engaged in a series of community, environmental, economic initiatives spending tens of millions in the region annually. Maryland-based energy-from-waste sources (*i.e.* MSW in Figure ES-11), more so than any other Maryland-based source by a multiple of at least 3, are used to comply with the RPS.

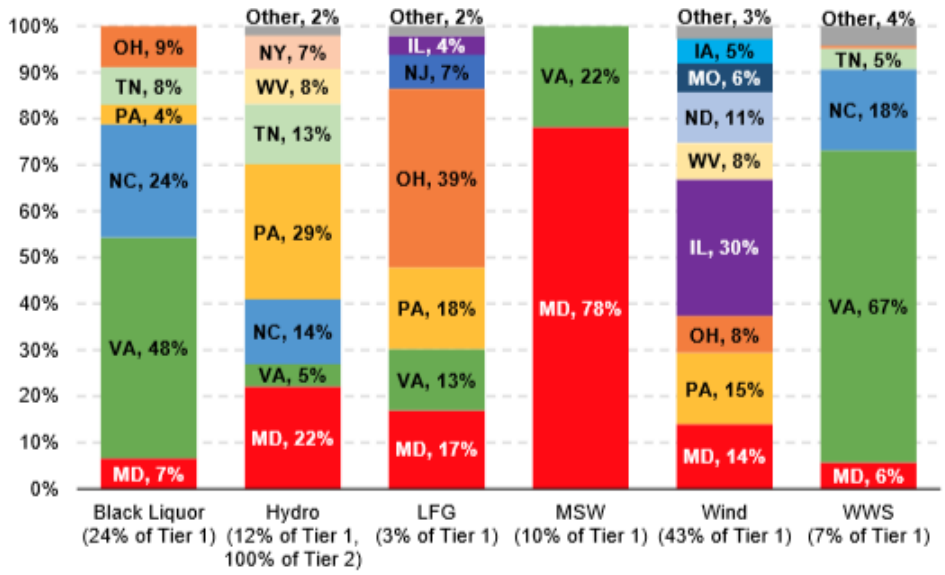


Figure ES-11. Percentage of RECs Generated in Each State Used for Compliance with the Maryland RPS, by Fuel Source (2017)

Source: Maryland PSC 2018 *Renewable Energy Portfolio Standard Report*.

Note: The percentages under each fuel category reflect each fuel type's share of Maryland RPS compliance for 2017.

As you consider Senate Bill 616, we hope you will recognize the tremendous environmental and economic benefits Win Waste provides to Maryland. The elimination of energy-from-waste as a Tier 1 renewable energy source will adversely affect the continued viability of Win Waste, but also Maryland's ability to meet its high RPS goals. Renewable energy credits help the facility continue to provide affordable and dependable disposal services to the City and the County, while promoting and supporting recycling, diverting waste from landfills, and reducing GHG. We urge the Senate Finance Committee to give Senate Bill 616 an unfavorable report.

For more information call:
Caitlin McDonough
(410) 366-1500

HB616.pdf
Uploaded by: Frazier Blaylock
Position: UNF

Frazier Blaylock

Senior Director

Government Relations

Covanta

4960 Fairmont Avenue #605

Bethesda, MD 20814

Testimony by Frazier Blaylock
Before the Maryland Economic Matters Committee
In Opposition to SB616
March 15, 2022

Good afternoon, my name is Frazier Blaylock and I represent Covanta, the largest operator of waste-to-energy (WTE) facilities in the United States, which has provided safe, cost-effective trash disposal and the generation of clean, renewable energy in Maryland since 1995.

I am here today to express our opposition to SB616, which would remove waste-to-energy (WTE) from Tier 1 of Maryland's Renewable Portfolio Standard (RPS). The elimination of waste-to-energy as a Tier 1 renewable source would ignore the many benefits these facilities bring to their communities, and the environment and treat it unfairly in the competitive energy and disposal markets.

WTE is a clean, local, renewable, efficient, and economical form of baseload energy production and post-recycled waste disposal that helps Maryland divert waste from landfills while producing energy to reduce our reliance on fossil fuels. These plants can be located close to population centers where trash is generated, and thus avoid the long-haul truck traffic associated with most landfill sites. In the case of Montgomery County, the trash is railed from Shady Grove to Dickerson.

The process of converting waste into energy is a key part of an integrated materials management plan that focuses on waste reduction, reuse, recycling, and recovery of energy.

The revenues, employment, and labor earnings derived from managing waste, producing energy, and recycling metals are the direct economic benefits of WTE.[1] Employees at WTE plants are technically skilled and are compensated at a high average wage. WTE facilities provide stable, long-term, well-paying jobs, while simultaneously infusing dollars into local economies through the purchase of local goods and services.

A study of WTE technologies by the Joint Institute for Strategic Energy Analysis for the U.S. Department of Energy concluded that WTE is a "refined, clean, well-managed application for energy production."[2] WTE meets the two basic criteria for establishing what a renewable energy resource is—its fuel source (trash) is *sustainable* and *indigenous*. WTE facilities recover valuable energy from trash after efforts to "reduce, reuse, and recycle" have been implemented by households and local governments.

The facilities we operate are internationally recognized as GHG mitigation tools, even after accounting for our stack emissions of fossil-based CO2. The IPCC called waste-to-energy a "key GHG mitigation measure." We do this by diverting degradable organics from landfills, the 3rd largest source of methane globally and in the United States, displacing grid connected fossil-fuel fired electrical generation, and recovering metals for recycling. Alongside recycling, WTE has been a cornerstone of Europe's efforts to reduce GHG emissions from the waste management sector.

Our GHG benefits relative to landfilling have been recognized by California's air and waste regulatory agencies, U.S. EPA scientists, Columbia University's Earth Engineering Center, U.S. EPA, the Obama Administration's Clean Power Plan, the World Economic Forum, and the Joint Institute for Strategic Energy Analysis ("NREL"). EPA scientists, in a prominent peer reviewed paper, concluded WTE facilities reduce GHG emissions relative to even those landfills equipped with energy recovery systems.[3] EfW facilities generate carbon offsets credits under both the Clean Development Mechanism (CDM) of the Kyoto Protocol and voluntary carbon offset markets.[i,ii]

---

[2] Joint Institute for Strategic Energy Analysis. 2013. Waste Not, Want Not: Analyzing the Economic and Environmental Viability of Waste-to-Energy (WTE) Technology for Site-Specific Optimization of Renewable Energy Options. Technical Report NREL/TP-6A50-52829.

The benefits of diverting waste out of landfills to recycling and energy recovery are clearer than ever. Across a series of recent studies employing direct measurement of methane plumes via aircraft downwind of landfills, actual measured emissions from landfills have averaged twice the amount reported in GHG inventories, including Maryland's.

Furthermore, Maryland's inventory downplays methane's role in the climate, using an outdated methane GWP. Today, scientists recognize methane as a potent short-lived climate pollutant that is more than 30 times stronger than CO_2 over 100 years, and 80 times stronger over 20 years, when all of its impacts are considered.[iii] States currently leading on climate, like New York and California, have adopted methane's 20-year GWP in planning and legislation.

To remove WTE from Tier one and yet leave landfill gas in Tier 1 is counter to the US and EU waste hierarchies and counter to Maryland's goal of reducing the GHG's that contribute to climate change.

For the reasons stated in this testimony, Covanta opposes SB616 . Thank you for your consideration of these remarks, I am glad to answer any questions.

---

[i] Clean Development Mechanism: *Large-Scale Consolidated Methodology: Alternative waste treatment processes, ACM0022*. Available at: https://cdm.unfccc.int/methodologies/PAmethodologies/approved

[ii] Verified Carbon Standard Project Database, http://www.vcsprojectdatabase.org/ See Project ID 290, Lee County Waste to Energy Facility 2007 Capital Expansion Project VCU, and Project ID 1036 Hillsborough County Waste to Energy (WtE) Facility 2009 Capital Expansion Unit 4.

[iii] The IPCC concluded that "it is likely that including the climate-carbon feedback for non-CO_2 gases as well as for CO_2 provides a better estimate of the metric value than including it only for CO_2." See p714 & Table 8-7 of Myhre, G. *et al.* (2013) *Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., *et al.* (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf

Testimony SB-616 W2E 2022.pdf
Uploaded by: Larry Kasecamp
Position: UNF

LARRY KASECAMP
Legislative Director

TOM CAHILL
Assistant Director

JOHNNY WALKER
Secretary

MARYLAND STATE LEGISLATIVE BOARD
SMART TRANSPORTATION DIVISION

ANNAPOLIS OFFICE
176 Conduit St., Suite 206
Annapolis, MD 21401-2597

PH: 301-697-2695
utusldmd@gmail.com

March 15, 2022

The Honorable Delores Kelley and
Members of the Senate Finance Committee

RE: SB616 – OPPOSE

As State Legislative Director for the Transportation Division of the International Association of Sheet Metal, Air, Rail and Transportation Worker's I am urging your committee to deliver an unfavorable report on SB616, " *Renewable Energy Portfolio Standard – Eligible Sources – Waste–to–Energy and Refuse–Derived Fuel."*

Our members are employed by CSX in providing rail service to Covanta, the waste-to-energy facility in Montgomery County. We understand there are hundreds other union and non-union workers employed in the operations of this and other waste-to-energy facilities throughout the state. We believe these jobs are at risk if this legislation to eliminate waste-to-energy from Maryland's Renewable Energy Portfolio Standard (RPS) is passed into law.

We had been involved in the issue of eliminating biomass from the RPS for several years. When testifying on the legislation, we always proclaimed that the jobs associated with the industries that would be affected by that legislation were at risk. The supporters of the legislation always took the position that the jobs were not at risk as the industry would continue to operate afterward.

Of course, no one can predict the future, but one must look no farther than what happened to the Verso Paper Mill that was in Allegany County Maryland. After being constantly attacked year after year by legislation to eliminate their ability to receive credits for generating electricity under the RPS, this wayed heavily in their decision to close the plant and move production to other facilities in other states where they were not under constant attack.

The result was the loss of over 800 direct union jobs in the plant that paid excellent wages and had great health care and pension benefits. All told, over 3000 jobs were lost when considering the ancillary jobs associated with the production facility. This has been a severe blow to the economy of Allegany County.

We understand renewable energy policies are important and are related to addressing climate change. But sometimes the goals of these legislative efforts result in unintended consequences. Closing of the Verso Paper Mill is an example. The lateral movement of the production line did not result in less making or use of biomass, nor did it lessen the amount of exhaust into the air. It just took place in another state who benefited from the increase in jobs.

In addition, it was reported that part of the production line equipment was sold to a company in Poland for their use in their production of paper. The demand for the product does not go away just because the plant closes. I would venture to say that Poland does not have the same air quality standards as Maryland, which then results in the opposite affect desired.

Until the state takes responsibility for the jobs they are responsible for eliminating with their policies, we cannot support legislation such as SB616. These facilities and the jobs associated with their processes are middle class family sustaining jobs that pay good wages and benefits that cannot be replaced easily, if at all. Moreover, they provide economic benefits for communities through suppliers, service providers, educational resources, and tax payments.

We therefore urge your committee to give SB616 an unfavorable report!

Thank you for your consideration.

Sincerely,

Lawrence E. Kasecamp
MD State Legislative Director
SMART Transportation Division

SB0616_UNF_NWRA_Renewable EPS - Eligible Sources.p

Uploaded by: Pam Kasemeyer

Position: UNF

wasterecycling.org

Maryland-Delaware Solid Waste Association
a chapter of the
National Waste & Recycling Association℠
Collect. Recycle. Innovate.

TO: The Honorable Delores G. Kelley, Chair
Members, Senate Finance Committee
The Honorable Michael J. Hough

FROM: Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman

DATE: March 15, 2022

RE: **OPPOSE** – Senate Bill 616 – *Renewable Energy Portfolio Standard – Eligible Sources – Waste-to-Energy and Refuse-Derived Fuel*

The Maryland Delaware Solid Waste Association (MDSWA), a chapter of the National Waste and Recycling Association, is a trade association representing the private solid waste industry in the State of Maryland. Its membership includes hauling and collection companies, processing and recycling facilities, transfer stations, and disposal facilities. MDSWA and its members **oppose** Senate Bill 616 which seeks to remove waste-to-energy and refuse-derived fuel as Tier 1 sources in Maryland's Renewable Energy Portfolio Standard.

Waste-to-energy is not only a renewable source of energy, it is regarded by the U.S. Environmental Protection Agency as a reliable and responsible method of waste disposal, and is subject to stringent state and federal air, water, and solid waste regulations. As the Association representing the entire private solid waste industry, we are deeply concerned about how this bill will affect the waste-to-energy facilities in the State of Maryland and the jurisdictions that rely on them for management of their solid waste. For example, WIN Waste Innovations, formerly Wheelabrator Technologies, operates a waste-to-energy facility servicing the City of Baltimore, Baltimore County, and numerous commercial clients. It processes up to 2,250 tons of post-recycled waste each day, resulting in 64 megawatts of clean electricity, while also providing steam for downtown Baltimore's heating and cooling system.

Removing waste-to-energy would be a step backward toward increasing the availability of renewable energy in Maryland and would negatively impact the jurisdictions for which waste-to-energy is a critical component of their solid waste management infrastructure. As such, an unfavorable report is requested.

For more information call:
Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman
410-244-7000