

### Maryland's Clean Energy Program Isn't So Clean

Dirty "Renewables" Cost Maryland Money and Jobs

February 9, 2022

### Summary

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.

Although Maryland removed black liquor as an eligible resource in 2021, the other dirty sources still make up almost a quarter of the Tier I Renewable Energy Credits (RECs) retired by Maryland utilities. Yet there is no legitimate reason for Maryland electricity customers to subsidize facilities that burn wood, municipal waste, or landfill methane. These facilities spew toxic pollutants, worsen air quality, contribute to climate change, and often exacerbate pollution in Environmental Justice communities. In addition, most of these facilities are also located outside of Maryland, so they don't support workers or businesses here. Most do not even provide energy to Maryland energy providers. Providing electricity to Maryland customers isn't a requirement in the state's RPS. That's because the RPS counts renewable energy credits not electricity on the grid (see page 3. *What is a REC?*). What this means is that Maryland energy providers who buy electricity powered by coal and gas can then buy dirty energy credits and count it as renewable under Maryland's clean energy law.

PEER is calling on Governor Hogan, Senate President Bill Ferguson, and House Speaker Adrienne A. Jones to work together to get these dirty energy sources out of the **Renewable Portfolio** Standard (RPS). This would allow the state to redirect spending to clean renewable sources that create new jobs and meet consumer expectations that the premium they pay for renewable energy reduces pollution rather than subsidizing it.

Here are some examples of how Maryland clean energy program isn't so clean, and how dirty "renewables" cost Maryland residents money and jobs:

• From 2014 through 2020, Maryland power providers have spent more than \$26 million subsidizing operations of a Virginia utility by buying the RECs from its biomass facility—a source Virginia considers too dirty to qualify for its own recently-enacted RPS. (See page 9, Special Feature: *How Maryland energy customers pay to make dirty electricity cheaper for Northern Virginia Data Centers.*)



- Just three trash incinerators provided 11.8% of Tier 1 RECs in 2020, and all are major polluters—so much so that county leaders want to shutter the facilities in <u>Baltimore</u> and <u>Montgomery County</u>, while a plant in <u>Fairfax County</u>, Virginia is considered one of the top sources of pollution in the Washington, DC area.
- RECs from "other biomass gas" subsidize operations at the Blue Plains wastewater treatment plant in Washington, DC, including its sale of a toxics-laden fertilizer containing high levels of PFAS made from sewage sludge. (See page 7, Special Feature: *How the Maryland energy customers pay to underwrite the production of a toxic PFAS fertilizer in Washington, DC.*)
- The multinational paper company WestRock has earned substantial sums of money from biomass and black liquor RECs sold to Maryland from its paper mills in Virginia, even though the electricity it generates from burning these waste products is used to power its own factories. Westrock and other paper mills in Virginia, North Carolina and elsewhere are regularly cited for their air and water pollution violations, even as they earn millions of dollars from an RPS meant to support clean energy. (See page 10, Special Feature: *Paper companies: the multinational polluters on Maryland's clean energy gravy train.*)
- A Kentucky company operates a biomass cogeneration facility to power its manufacture of wood moldings and other interior finishes. A small amount of surplus electricity is sold to its local utility. A spokesman for the company was <u>quoted in the local newspaper</u> as saying the system produced net savings of about \$1.2 million in 2014 and 2015, with rates of return even higher at other times. Part of that savings comes thanks to Maryland ratepayers, who pay for the company's RECs even though they get no electricity or other benefit from the scheme.
- For years the town of Oberlin, Ohio, bought electricity from a local landfill gas facility to serve its residents, then sold the RECs to Maryland providers so it could lower rates for its own customers. Recently the landfill operator <u>decided to shut down</u> the generator, saying electricity from landfill gas can't compete economically with other sources. Now it is planning to build a new facility that, rather than produce electricity, will consume massive amounts of electricity to refine the landfill methane into pipeline quality gas it can market as "renewable natural gas"—the latest scheme to part clean energy customers from their money.

Subsidizing out-of-state, dirty energy facilities like these is not an unintended consequence of Maryland's RPS; it is how the statute was designed to operate. For every dollar a paper company or out-of-state utility saves by selling RECs to Maryland, Maryland's ratepayers must collectively pay a dollar more on utility bills, plus whatever markups suppliers choose to include. Subsidizing pollution in the name of clean energy deceives Maryland consumers who legitimately believe they are paying to decarbonize their power supply.

Between 2008 and 2030, it is likely that Maryland ratepayers will have spent about one half a billion dollars subsidizing dirty energy sources under the state's RPS.



The dollars add up. To comply with Maryland's renewable energy requirements, state energy providers paid over \$30 million to buy "credits" from dirty energy sources in 2020 and over \$246 million since 2008 (See Appendix A, Table 2, page 12). These costs were then passed on to Maryland ratepayers, likely with huge mark ups. Public Service Commission reports also indicate that out-of-state facility owners are profiteering under this system, and that Virginia is the big financial winner. Since 2008, Maryland energy providers have paid more than \$129 million to buy dirty renewable energy credits generated in Virginia compared to about \$60 million in Maryland.

We estimate that— between now and 2030 — Maryland energy providers will spend over \$219 million to buy "dirty" RECs, allowing them to continue to buy energy produced by burning fossil fuels but claiming credit for buying renewable energy. Between 2008 and 2030, it is likely that Maryland ratepayers will have spent about on half a billion dollars subsidizing dirty energy sources under the state's RPS. See Appendix A.

### What is a REC?

RECs are not electricity; they are the added value ascribed to electricity produced from renewable resources. Crucially, they can be bought and sold separately from the electricity itself. Matching one megawatt-hour of electricity produced from a nonrenewable source with one REC representing the renewable "attributes" of a megawatt-hour of electricity produced from a qualifying source legally transform the non-renewable electricity, like electricity generated from coal and natural gas, into renewable electricity. This legal fiction is how electricity generated and used at a paper mill in Virginia produces RECs that a Maryland electricity supplier can buy to comply with the RPS, even if they are selling electricity generated from burning fossil fuels.



2020 Tier 1 Retired RECs By Fuel Source



Worse yet, records obtained by PEER show that Maryland ratepayers typically pay more for dirty energy sources like biomass than clean sources, such as wind and small hydropower (see Appendix B), and that these dirty energy facilities have terrible environmental records.

Today, the Maryland economy is under tremendous pressure from the COVID-19 pandemic, and many residents struggle to pay utility bills. Maryland <u>electricity prices</u> averaged 13.3 cents per kilowatt-hour in September 2021, a 3 percent increase from September 2020 and above the

### Table 1: Estimated Compliance Cost of Dirty RECs 2020

Facilities	Compliance Cost
Municipal Solid Waste	\$11,466,169
Black Liquor	\$12,316,128
Biomass (Woody debris and waste)	\$5,465,042
Landfill Gas	\$6,351,915
Other Biomass Gas	\$412,968
Total	\$36,013,122

Source: 2020 PSC RPS Report and REC prices by fuel source (see Appendix B)

average for other states in its South Atlantic peer group. For the reasons outline above, PEER is calling on Governor Hogan, Senate President Bill Ferguson, and House Speaker Adrienne A. Jones to work together to get these dirty energy sources out of the Renewable Portfolio Standard (RPS). This would allow the state to redirect spending to clean renewable sources that create new jobs and meet consumer expectations that the premium they pay for renewable energy reduces pollution rather than subsidizing it.



### 1. "Clean" Energy That Pollutes

Maryland's RPS requires electricity providers to buy a steadily increasing number of renewable energy credits (RECs) from facilities using renewable sources of energy. Eligible fuel sources under Maryland's Tier 1 RPS include not only wind and hydro but also municipal solid waste incineration ("waste-to-energy"), methane from a landfill or wastewater treatment plant, and "qualifying biomass," consisting of wood and waste solids. Black liquor was also an allowed fuel source until it was removed by legislation in 2021. Solar and Maryland offshore wind have separate provisions within Tier 1 and are not included in this report. In 2021, the Maryland General Assembly added geothermal energy to Tier 1, but that is not reflected in these numbers.

PEER reviewed 12 years of compliance records to determine how large a role dirty sources play in the Maryland Renewable Portfolio Standard (RPS), and what these are costing customers. Public Service Commission records reveal in 2020 these dirty sources made up almost 35% of all RECs used to meet the Tier 1 renewable energy goals. Even without black liquor, that number would have been 23.3%, and there is no guarantee that black liquor will be replaced by clean sources going forward.

Nearly all the biomass facilities are located outside of Maryland, and most provide no electricity to the grid. U.S. <u>EPA records show</u> many of these facilities have poor environmental Burning wood for electricity produces as much or more pollution than fossil fuels, including coal.

compliance records, further undercutting the claim of "clean" energy. All the dirty sources sell RECs that electricity suppliers would have otherwise bought from sellers of clean renewables like wind. Moreover, the RPS requires providers to acquire increasing numbers of RECs every year. The costs get passed on to their customers, driving up utility bills.

### Biomass (Wood & Wood Waste)

Most of the biomass RECs used for compliance with the Maryland RPS come from paper companies, all of them outside of Maryland. Paper companies burn their waste products—black liquor and wood waste—to power onsite operations, not to put electricity onto the grid. Yet, the paper companies can sell the RECs associated with this energy to power providers to meet state RPS requirements.

Paper companies save money by burning their waste products instead of using other disposal methods, but nothing about this practice is clean. EPA records show the paper companies that have supplied biomass and black liquor RECs to Maryland over the years have extremely poor records of pollution and environmental noncompliance.



For example, a paper mill in Covington, Virginia, owned by paper giant WestRock, regularly ranks as the largest emitter of toxic air pollution in Virginia, according to EPA data collected by the <u>Virginia Sierra Club</u>, putting it ahead of every coal plant in the state. The resource center <u>Good Jobs First</u> reported that WestRock has paid almost \$28 million in fines since 2000 for offenses including wage and hour violations, environmental violations, labor relations violations, employment discrimination and workplace safety and health violations.

Paper companies operating in other states repeat this pattern. One North Carolina paper mill operated by Canadian company Domtar repeatedly violated environmental laws for over a decade.

Another source of biomass RECs sold to Maryland is a Virginia power plant owned by Northern Virginia Electric Cooperative (NOVEC), which uses the electricity to supply its own customers. Selling the RECs represents savings for NOVEC's Virginia customers, paid for by Maryland customers. (See page 9, Special Feature: *How Maryland energy customers pay to make dirty electricity cheaper for Northern Virginia Data Centers.*)

Burning wood for electricity produces as much or <u>more pollution than fossil fuels</u>, including coal. 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. These pollutants have serious impacts on human health, causing illnesses including asthma, heart disease, lung disease and cancer.

While trees are a renewable resource, experts have concluded that burning them for energy is <u>not a climate solution</u>. 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.

### **Municipal Solid Waste | Incineration**

Burning garbage—municipal solid waste (MSW) or incineration—for electricity is equally problematic from an environmental standpoint, as these facilities are major emitters of <u>toxic air</u> <u>pollution</u>. Maryland's two incinerators, the BRESCO facility in Baltimore and the Dickerson facility in Montgomery County, <u>emit 17 times more mercury, 5 times more nitrogen oxides, and</u> <u>twice as much carbon monoxide</u> per unit of energy than Maryland's largest coal plants. The Covanta plant in Lorton, Virginia, which sells its RECs to Maryland, is one of the biggest polluters in the Washington, DC area and is responsible for <u>75% of the air pollution</u> in Fairfax County. In the case of both Maryland facilities, local leaders are so concerned about air pollution that they

want to shut the incinerators down. Allowing the facilities to profit from REC sales means local clean air advocates face an uphill battle.



Subsidizing incineration also makes it harder for communities to implement more environmentally-friendly, but potentially more expensive, approaches to waste disposal, such as composting and recycling.

# Special Feature: How the Maryland energy customers pay to underwrite the production of a toxic PFAS fertilizer in Washington, DC.

One category of RECs sold to Maryland utilities is called "other biomass gas." One facility dominates this category: DC Water's Bailey Bioenergy Facility at the Blue Plains Advanced Wastewater Treatment Plant. There, sewage sludge is "cooked" to produce enough electricity to power one-third of Blue Plains' energy needs. The spent solids are then marketed as a fertilizer called Cured Bloom Soil Conditioner, which is sold in hardware stores and sold throughout the greater Washington DC area.

Although no electricity goes onto the grid, Blue Plains is able to sell to Maryland utilities the RECs associated with the biogas it burns. Between 2018 and 2020, Blue Plains earned an estimated almost \$2 million from Maryland ratepayers, who got nothing in return.

But, as it turns out, the biggest losers are the farmers, gardeners and schools who bought the fertilizer. A May, 2021 <u>report</u> from the Sierra Club and the Ecology Center of Michigan highlighted alarming levels of toxic per- and polyfluoroalkyl substances (PFAS), known as "forever chemicals," found in fertilizers made from sewage sludge. Of the nine sludgebased fertilizers analyzed in the United States, the highest levels of contamination by far were found in Cured Bloom Soil Conditioner.



### 2. Undermining Clean Energy Goals

Black liquor, biomass, landfill gas and municipal solid waste all undercut the purpose of Maryland's RPS to promote clean energy by subsidizing dirty facilities. In its <u>2019 report</u>, the Maryland Department of Natural Resources found that Maryland RPS sources actually had worse pollution profiles for SO2 and NOx than non-RPS generation in the years since 2010, due to the eligibility of black liquor, municipal solid waste and landfill gas.

Meanwhile, the report found the RPS contributed to a decline in Maryland's electric sector carbon emissions of less than one percent.

In 2020, after prodding by environmental organizations, including PEER, Maryland's General Assembly removed black liquor as an eligible source. Regrettably, it left the other dirty sources intact.



Figure 2. Cumulative Cost for Black Liquor, Biomass, Municipal Solid Waste, Landfill Gas, and Other Biomass Gas



The COVID pandemic adds particular urgency to this issue now because of the <u>clear</u> <u>association</u> of air pollution with higher COVID mortality. A December 2020 <u>study</u> found that air pollution contributed to 18% of COVID-19 deaths in the United States. The association has especially dire consequences for Maryland's subsidies for out-of-state dirty energy sources mean fewer clean energy jobs in the state and higher energy prices for Maryland ratepayers.

minorities. As compared to non-Hispanic White people, <u>CDC data</u> show Black, Hispanic and Indigenous people have about twice the risk of death from COVID. For Black Americans, the disparity is especially clear; although Black people are no more likely to contract the coronavirus than White people, they are 2.6 times more likely to require hospitalization, and 1.9 times more likely to die.

# Special Feature: How Maryland energy customers make dirty electricity cheaper for Northern Virginia Data Centers

Northern Virginia Electric Cooperative operates a 49.9 MW biomass facility in South Boston, Virginia. The plant burns waste wood from logging operations to produce electricity for NOVEC's customers in Northern Virginia.

The Virginia Clean Economy Act, passed in 2020, explicitly excludes biomass facilities like NOVEC's from qualifying as renewable energy sources for purposes of the state's new RPS. That doesn't stop NOVEC from <u>bragging</u> on its website that its South Boston facility provides it with renewable energy. In reality, NOVEC sells the RECs from its biomass plant—and with them, the right to claim this renewable energy for itself. NOVEC likes to have its cake and eat it, too, but its claims are at best misleading and at worst putting it at risk of having its RECs <u>disqualified</u> from most markets.

NOVEC's customers should be concerned, but the primary victims of this duplicity are Maryland electricity customers. Between 2014 and 2020, NOVEC sold an estimated total of \$26,213,619 worth of biomass RECs to Maryland electricity providers to meet the RPS.

As a member-owned cooperative, NOVEC passes these earnings to its customers in the form of lower rates. Among these customers are many of the data centers that make Northern Virginia the data center capital of the world. Low-cost electricity is one of the draws for these enormous consumers of energy. In this way Maryland customers pay to make Virginia a more inviting location for data centers.



### 3. Hurting Maryland's Economy

Maryland's subsidies for out-of-state dirty energy sources mean fewer clean energy jobs in the state and higher energy prices for Maryland ratepayers.

The biggest beneficiary of this loophole is Virginia. Until 2020, when wind RECs made Illinois the top supplier of Maryland RECs, Virginia supplied the most RECs to Maryland year after year. What put Virginia into first place was the number of black liquor, biomass and MSW RECs sold by companies in the state.

Although the cost of the RPS to individual customers is small, the dollars add up. The PSC reports that suppliers paid a total of \$223,166,704 for RECs in 2020, up from \$134,545,520 in 2019. Nearly half of that—almost \$100 million—represents non-solar Tier 1 RECs, overwhelmingly purchased from out of state.

Even with the removal of black liquor starting in 2021, Virginia is positioned to remain ahead of all other states in the sale of dirty RECs to Maryland.

Buying dirty RECs from out of state displaces purchases of RECs from clean sources and sources within Maryland.

# Special Feature: Paper companies: the multinational polluters on the REC gravy train

In the years since 2008, the major suppliers of biomass and black liquor RECs to Maryland have been paper companies. Even when Maryland's only paper mill was still operational in 2019 it supplied only a tiny percentage of Maryland's RECs. The rest came from multinational corporations operating paper mills in other states, yet earning millions of dollars for RECs paid for by Maryland customers.

In 2020, Virginia and North Carolina together provided 94.1% of the woody biomass RECs and 73% of the black liquor RECs used for the Maryland RPS. Of the biomass RECs, more than half came from paper mills, as did all of the black liquor RECs.

Paper mills have generated power by burning wood waste and black liquor for the better part of a century. Doing this saves money for the companies by providing electricity for their operations and lessening their waste disposal problem, so it's not a practice that needs subsidizing by clean energy buyers. Moreover, burning these waste products creates a stew of <u>toxic air pollutants</u> that include sulfur oxides, nitrogen oxides, particulate matter, arsenic and lead, and as much carbon pollution as coal.



### **Special Feature: continued**

The top seller of paper company biomass and black liquor RECs to Maryland is WestRock, a Georgia-based multinational corporation with several mills in Virginia. Yet, WestRock is not a good neighbor. Its facility in Covington, Virginia, regularly ranks as the largest emitter of toxic air pollution in Virginia, according to EPA data, ahead of every coal plant in the state. The resource center <u>Good Jobs First</u> reported that WestRock has paid almost \$28 million in fines since 2000 for offenses including wage and hour violations, environmental violations, labor relations violations, employment discrimination and workplace safety and health violations.



### 4. RPS reform means economic opportunity and more clean energy

Maryland could achieve the equivalent of a major new jobs program without new spending simply by removing dirty sources from RPS eligibility. The millions of dollars currently flowing from Maryland customers to polluting industries would be redirected to clean energy sources and other climate programs, stimulating demand for new projects and creating <u>well-paying jobs</u> in the clean energy sector. Time is too short, and the climate math is too rigorous, for us to rely on costly and false solutions like those contained in Maryland's clean energy program to address the climate crisis.

Facilities	Black Liquor	Incineration	Woody Biomass	Landfill Gas	Other Biomass Gas	Total Dirty RECs
Virginia	\$77,577,937.84	\$15,690,037.61	\$32,425,943.11	\$4,150,326.90	\$43,326.62	\$129,887,564.08
Maryland	\$6,994,546.73	\$50, 858,553.41	\$509,840.87	\$2,313,641.08		\$60,676,582.10
North Carolina	\$17,574,883.38		\$4,396,866.12	\$252,599.52		\$22,224,349.02
Tennessee	\$11,160,424.38		\$1,744,833.49	\$30,786.69		\$12,936,044.56
Pennsylvania	\$8,668,332.00		\$207,622.89	\$4,911,871.36	\$53,829.18	\$13,841,655.43
Ohio	\$8,951,494.42		\$663,469.57	\$2,492,595.29	\$37,104.00	\$12,144,663.28
Michigan	\$123,336.46	36.46 \$409,130.86 \$861,927.61		\$1,394,394.93		
Kentucky	linois	\$628,429.90	\$1,306,456.98		\$1,934,886.88	
Wisconsin			\$4,950.88			\$37,370.52
Illinois				\$5,295,220.34		\$5,295,220.34
Delaware				\$617,215.71		\$617,215.71
New Jersey				\$963,783.49		\$963,783.49
						\$241,953,730.34

#### Table 2: Cost of Dirty RECs by State and Fuel Source (2008-2020)



### Appendix A

The cost of dirty RECs from 2008 to 2030 was calculated using the cost of RECs from 2008 to 2020 from black liquor, incinerator, woody biomass, landfill gas and other biomass gas as report by the Maryland Public Service Commission. The estimated costs from 2021-2030 of dirty RECs were developed by using the price for RECs in 2020 and the number of RECs from incinerators, woody biomass, landfill gas and other biomass gas and other biomass gas and multiplying it by 10.

Estimated individed of ALC Detween 2021 and 2030 using 2020 rightes	חבושפעו בטבו אוום	UZUZ BINEN UCUZ L	Ligures					
	Incineration	Incineration Woody Biomass LFG		Other Biomass	Other Biomass Totals EST RECs 2021-30 Cost* 2021-2030 Costs 2008-2020	Cost* 2021-2030	Costs 2008-2020	Total 2008-2030
Maryland	5,529,790	143,870	524,510 NA	NA	6,198,170	6,198,170 \$ 51,072,920.80 \$	\$ 60,676,582.09	\$111,749,502.89
Maryland 2020	552,979	14,387	52,451	NA				
Virginia	8,820,860	3,957,470	1,743,920	NA	14,522,250		\$ 119,663,340.00 \$ 129,887,572.08	\$249,550,912.08
Virginia 2020	882,086	395,747	174,392	NA				
Pennsylvania	NA	NA	2,704,130	15,140	2,974,543	\$ 24,510,234.32 \$	\$ 11,243,425.15	\$ 35,753,659.47
Pennsylvania 2020	NA	NA	270,413	1,514				
North Carolina	NA	1,021,480	NA	NA	1,021,480	\$ 8,416,995.20 \$		22,224,349.02 \$ 30,641,344.22
North Carolina 2020	NA	102,148	NA	NA				
Kentucky	NA	117,660	494,120	NA	611,780	\$ 5,041,067.20	ş	1,934,886.88 \$ 6,975,954.08
Kentucky 2020	NA	11,766	49,412	NA				
Tennessee	NA	106,920	NA	NA	106,920	\$ 881,020.80	\$ 12,936,044.56	\$ 13,817,065.36
Tennessee 2020	NA	10,692	NA	NA				
Ohio	NA	NA	559,590	46,380	605,970	\$ 4,993,192.80	\$ 12,871,850.03	\$ 17,865,042.83
Ohio 2020	NA	NA	55,959	4,638				
Michigan	NA	NA	187,470	NA	187,470	\$ 1,544,752.80	\$ 1,394,394.93	\$ 2,939,147.73
Michigan 2020	NA	NA	18,747	NA				
Wisconsin	NA	NA	NA	NA				
Wisconsin 2020	NA	NA	NA	NA				
District of Columbia	NA	NA	NA	454,690	454,690	\$ 3,746,645.60	\$ 1,928,828.34	\$ 5,675,473.94
District of Columbia 2020	NA	NA	NA	45,469				
						¢ 219 870 169 52	\$ 219 870 169 52 \$ 355 097 933 08	\$474 968 107 60



#### Appendix B





Appendix B (continued)

Ms. Mercola December 7, 2021 Page 2

If you have any questions or concerns regarding the Commission's response to your MPIA request, please contact Assistant General Counsel Amy McCarthy at <u>Amy.McCarthy@maryland.gov</u>.

Sincerely,

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Andrew S. Johnston Executive Secretary



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