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FISCAL AND POLICY NOTE
First Reader

Senate Bill 590 (Senator Lewis Young)
Education, Energy, and the Environment

Renewable Energy Portfolio Standard - Eligible Sources - Alterations (Reclaim
Renewable Energy Act of 2023)

This bill removes several energy sources from eligibility for inclusion in the State Renewable Energy Portfolio (RPS), more specifically: (1) certain forest-related and gas sources of qualifying biomass; (2) thermal biomass systems that use primarily animal manure; (3) poultry litter-to-energy; (4) waste-to-energy; and (5) refuse-derived fuel. The bill also makes several conforming changes. The bill, which applies to all RPS compliance years starting on or after January 1, 2023, may not be construed to impair an existing obligation or contract right.

Fiscal Summary

State Effect: The Public Service Commission (PSC) can implement the bill with existing budgeted resources. Revenues for any State-owned facility that uses the energy sources removed from the RPS are likely not materially affected, as discussed below. The potential effect on State electricity prices is discussed in the Additional Comments section below.

Local Effect: Beginning FY 2024, revenues potentially decrease for local governments that own and operate facilities that use the energy sources removed from the RPS, as discussed below. The potential effect on electricity prices is discussed in the Additional Comments section below.

Small Business Effect: Potential meaningful. Small businesses involved in energy generation from specified Tier 1 sources may be negatively affected, as discussed below. The potential effect on electricity prices for small businesses is discussed in the Additional Comments section below.

Analysis

Current Law: For general information on Maryland’s RPS, including a list of eligible Tier 1 sources and trends in renewable energy credit (REC) prices and sources, see the **Appendix – Renewable Energy Portfolio Standard**.

“Qualifying biomass” (for purposes of the State RPS) means a nonhazardous, organic material that is available on a renewable or recurring basis, and is waste material that is segregated from inorganic waste material and is derived from sources including:

- mill residue, except sawdust and wood shavings (*removed by the bill*);
- precommercial soft wood thinning, slash, brush, or yard waste (*removed by the bill*);
- a pallet or crate;
- agricultural and silvicultural sources, including tree crops, vineyard materials, grain, legumes, sugar, and other crop by-products or residue;
- gas produced from the anaerobic decomposition of animal waste or poultry waste (*removed by the bill*); or
- a plant cultivated exclusively for the purpose of being used as a renewable source to produce electricity.

Qualifying biomass does not include (1) old growth timber; (2) unsegregated solid waste or postconsumer wastepaper; (3) black liquor, or any product derived from black liquor; or (4) invasive exotic plant species. An electricity supplier receives credit toward meeting RPS requirements for electricity derived from the biomass fraction of biomass co-fired with other fuels.

“Poultry litter” means the fecal and urinary excretions of poultry, including wood shavings, sawdust, straw, rice hulls, and other bedding material for the disposition of manure.

A “thermal biomass system” means a system that (1) primarily uses animal manure, including poultry litter and associated bedding to generate thermal energy, and food waste or qualifying biomass for the remainder of the feedstock; (2) is used in the State; and (3) complies with all applicable State and federal statutes and regulations as determined by the appropriate regulatory authority.

State Revenues: In 2021, the State’s Eastern Correctional Institution retired approximately 15,000 RECs for the cofiring of wood and waste solids – about an average year for the facility. To the extent the plant continues to use wood and waste solids as a fuel source in future years, the facility may lose REC revenue to the extent it must sell its municipal solid waste RECs in other states where REC prices are lower or there are no

other buyers for the RECs. Overall, State revenues are not anticipated to be materially affected.

Local Revenues: Beginning in fiscal 2024, local governments that own and operate any of the specified Tier 1 energy sources (or that will own/operate such facilities in the future) must sell the associated RECs to other states for compliance in other states, rather than Maryland, if they wish to continue receiving revenue. To the extent there are no other buyers for these RECs, or other state REC prices are lower than Maryland's, local government revenues decrease. However, the net effect on any particular local government cannot be reliably estimated at this time, as prices are unknown.

Montgomery County owns a waste-to-energy incinerator. As a result, the bill's removal of waste-to-energy as an eligible source of RECs could reduce revenues. About 300,000 to 400,000 RECs from the facility have been retired for RPS compliance annually in recent years. However, because REC prices are volatile and it is unclear what, if any, revenue waste-to-energy RECs could generate in other states, the net revenue loss cannot be reliably estimated at this time.

Small Business Effect: Beginning in fiscal 2024, any small businesses that own and operate any of the specified Tier 1 energy sources must sell the associated RECs to other states for compliance in other states, rather than Maryland, if they wish to continue receiving revenue. To the extent there are no other buyers for these RECs, or other state REC prices are lower than Maryland's, small business revenues decrease. However, the net effect on any particular small business cannot be reliably estimated at this time.

To the extent a small business generates revenue from supplying certain forms of biomass, poultry litter, or other waste products for use in energy generation as specified in the bill, revenues for those small businesses may decrease to the extent demand for those waste products decreases as a result of a decrease in the associated REC revenue. Further, to the extent small businesses need to divert products previously sold as inputs in energy generation elsewhere, small business expenditures may increase. The level of impact cannot be reliably estimated at this time and depends on the effect of decreased REC revenue on the demand for such inputs and the price of available alternatives for disposal.

Additional Comments: According to PSC's 2021 RPS report, biomass gas accounted for 0.6% of all Tier 1 retired RECs, wood and waste solids accounted for 3.4%, landfill gas accounted for 5.1%, and municipal solid waste ("waste-to-energy") accounted for 6.4%. Because there are likely alternative RECs available to replace eligible sources of energy removed by the bill, the impact on prices for Tier 1 RECs is likely small. The extent to which removal of the specified eligible sources increases prices depends on the prices and quantity of available replacement RECs. Most likely, the State will continue the multi-year

trend of increased reliance on wind RECs to meet RPS requirements with negligible impacts on REC prices. As a result, the bill likely has a minimal impact on compliance costs and, by extension, a minimal impact on customer electricity rates. Therefore, the impact on expenditures on electricity for State and local governments and small businesses is also anticipated to be small.

Additional Information

Prior Introductions: Similar legislation has not been introduced within the last three years.

Designated Cross File: HB 718 (Delegate Stewart, *et al.*) - Economic Matters.

Information Source(s): Public Service Commission; Department of Public Safety and Correctional Services; Maryland Department of Agriculture; Maryland Department of the Environment; Department of Natural Resources; Maryland Energy Administration; Northeast Maryland Waste Disposal Authority; Maryland Environmental Service; Caroline, Howard, and Prince George's counties; Department of Legislative Services

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Appendix – Renewable Energy Portfolio Standard

General Overview

Maryland’s Renewable Energy Portfolio Standard (RPS) was enacted in 2004 to facilitate a gradual transition to renewable sources of energy. There are specified eligible (“Tier 1” or “Tier 2”) sources as well as carve-outs for solar, offshore wind, and, beginning in 2023, new geothermal systems. Electric companies (utilities) and other electricity suppliers must submit renewable energy credits (RECs) equal to a percentage of their retail electricity sales specified in statute each year or else pay an alternative compliance payment (ACP) equivalent to their shortfall. Historically, RPS requirements have been met almost entirely through RECs, with negligible reliance on ACPs; however, as discussed further below, that was not the case in 2021. The Maryland Energy Administration must use ACPs for purposes related to renewable energy, as specified.

In 2023, the requirements are 31.9% from Tier 1 sources, including at least 6.0% from solar and 0.05% from post-2022 geothermal systems, plus 2.5% from Tier 2 sources.

Recent Significant Changes to Overall Percentage Requirements

- Chapter 757 of 2019 significantly increased the percentage requirements, which now escalate over time to a minimum of 50% from Tier 1 sources, including 14.5% from solar, by 2030.
- Chapter 673 of 2021 reduced the amount of solar energy required under the RPS each year from 2022 through 2029, while leaving the nonsolar requirement generally unchanged, before realigning with the previous requirements beginning in 2030. The Act also extended Tier 2 in perpetuity at 2.5%.
- Chapter 164 of 2021 created a carve-out for post-2022 geothermal systems in Tier 1 beginning in 2023.

Limited Applicability to Municipal Electric Utilities and Electric Cooperatives

As RPS percentage requirements have grown over time, legislation has been enacted to limit the effect on municipal electric utilities and electric cooperatives. Tier 1 percentage requirements for municipal electric utilities are limited to 20.4% in total beginning in 2021, including at least 1.95% from solar energy and up to 2.5% from offshore wind. Municipal electric utilities are also exempt from Tier 2 after 2021. Electric cooperatives are exempt

from future increases to the solar carve-out beyond 2.5%, and the RPS does not apply to Choptank Electric Cooperative.

Renewable Energy Credits

Generally, a REC is a tradable commodity equal to one megawatt-hour of electricity generated or obtained from a renewable energy generation resource. In other words, a REC represents the “generation attributes” of renewable energy – the lack of carbon emissions, its renewable nature, etc. A REC has a three-year life during which it may be transferred, sold, or redeemed. REC generators and electricity suppliers are allowed to trade RECs using a Public Service Commission (PSC) approved system known as the Generation Attributes Tracking System, a trading platform designed and operated by PJM Environmental Information Services, Inc., that tracks the ownership and trading of RECs.

Eligible Sources

Tier 1 sources include wind (onshore and offshore); solar (photovoltaic and certain water-heating systems); qualifying biomass; methane from anaerobic decomposition of organic materials in a landfill or wastewater treatment plant; geothermal; ocean, including energy from waves, tides, currents, and thermal differences; a fuel cell that produces electricity from specified sources; a small hydroelectric plant of less than 30 megawatts; poultry litter-to-energy; waste-to-energy; refuse-derived fuel; thermal energy from a thermal biomass system; and raw or treated wastewater used as a heat source or sink for heating or cooling. Tier 2 includes only large hydroelectric power plants.

Chapter 673 of 2021 excluded black liquor, or any product derived from black liquor, from Tier 1 beginning in 2022.

Trends in Compliance Costs, Renewable Energy Credit Prices, and Resources Used

Compliance costs for electricity suppliers totaled \$409.8 million in 2021: \$332.7 million for 15.2 million RECs; and \$77.1 million in ACPs. Costs and RECs are shown in **Exhibit 1**. This continues a multi-year trend of increasing compliance costs and, generally, average REC prices.

In 2021, wind (50.8%), solar (13.2%), black liquor (12.5%), small hydroelectric (8.0%), and municipal solid waste (6.4%) were the primary energy sources used for Tier 1 RPS compliance. This continues a multi-year trend of increasing reliance on wind and solar energy. Maryland facilities generated 5.0 million RECs in 2021: approximately 2.9 million Tier 1 RECs; and 2.1 million Tier 2 RECs. Many RECs can be used for compliance in both Maryland and other surrounding states, although there are geographic and energy source restrictions.

Exhibit 1
RPS Compliance Costs and REC Prices
2017-2021

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Compliance Costs (\$ Millions)					
Tier 1 Nonsolar RECs	\$50.0	\$56.4	\$79.3	\$99.8	187.3
Tier 1 Solar RECs	21.3	27.4	55.2	122.9	144.4
Tier 2 RECs	0.7	1.0	0.06	0.4	1.0
ACPs	<u>\$0.1</u>	<u>\$0.1</u>	<u>\$7.7</u>	<u>\$0.1</u>	<u>\$77.1</u>
Total	\$72.1	\$84.9	\$142.3	\$223.2	409.8
Average REC Price (\$)					
Tier 1 Nonsolar	\$7.14	\$6.54	\$7.77	\$8.24	\$14.36
Tier 1 Solar	38.18	31.91	47.26	66.10	72.59
Tier 2	0.48	0.66	1.05	1.06	6.45

ACP: alternative compliance payment
REC: renewable energy credit
RPS: Renewable Energy Portfolio Standard

Note: Numbers may not sum to total due to rounding. The vast majority of ACPs in 2021 (\$76.9 million out of \$77.1 million in total) were due to a shortfall of solar RECs.

Source: Public Service Commission

Related Studies Reports

PSC must submit an RPS compliance report to the General Assembly each year. The most recent report, which contains historical data through 2021, can be found [here](#).

The Power Plant Research Program (PPRP) in the Department of Natural Resources has frequently been required to conduct RPS studies. PPRP submitted a final report on a comprehensive RPS study in December 2019, which can be found [here](#). PPRP also submitted a related required study on nuclear energy at that time, which can be found [here](#). A supplemental study on the overall costs and benefits of increasing the RPS to a goal of 100% by 2040 is due by January 1, 2024.