

Department of Legislative Services  
 Maryland General Assembly  
 2022 Session

FISCAL AND POLICY NOTE  
 First Reader

House Bill 864 (Delegate Boyce)  
 Economic Matters

Renewable Energy Portfolio Standard - Renewable Energy Credits - Solar Energy Sources

This bill permits out-of-state solar energy sources to sell renewable energy credits (RECs) to satisfy the nonsolar Tier 1 State Renewable Energy Portfolio Standard (RPS) requirements, while continuing to restrict eligibility to fulfill the Tier 1 solar carve-out requirements to only in-state solar sources. Specifically, the bill allows solar energy sources that do not connect with the electric distribution grid serving Maryland to qualify for Tier 1 RECs to satisfy Tier 1 requirements under the State’s RPS beginning with compliance years starting on or after January 1, 2022. Requirements for the Tier 1 solar carve-out are unchanged; solar energy sources still must connect with the electric distribution grid serving Maryland to be eligible to satisfy the Tier 1 solar carve-out.

Fiscal Summary

**State Effect:** Special fund expenditures for the Public Service Commission (PSC) increase by \$56,100 in FY 2023; future year expenditures reflect annualization and inflation. Special fund revenues increase correspondingly. The potential effect on State expenditures for electricity is discussed in the Additional Comments section below.

(in dollars)	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
SF Revenue	\$56,100	\$65,300	\$67,100	\$68,800	\$70,600
SF Expenditure	\$56,100	\$65,300	\$67,100	\$68,800	\$70,600
Net Effect	\$0	\$0	\$0	\$0	\$0

Note:() = decrease; GF = general funds; FF = federal funds; SF = special funds; - = indeterminate increase; (-) = indeterminate decrease

**Local Effect:** The potential effect on local expenditures for electricity is discussed in the Additional Comments section below. Revenues are not directly affected.

**Small Business Effect:** Potential meaningful, as discussed in the Additional Comments section below.

## Analysis

**Current Law:** Maryland’s 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 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. The Maryland Energy Administration must use ACPs for purposes related to renewable energy, as specified.

In 2022, the requirements are 30.1% from Tier 1 sources, including at least 5.5% from solar, and 2.5% from Tier 2 sources. For more information, including the historic costs of RPS compliance, see the **Appendix – Renewable Energy Portfolio Standard**.

Under current law, only in-state solar sources are permitted to sell RECs to satisfy both Tier 1 and Tier 1 solar carve-out portions of the RPS. Generally, to be eligible for RECs, a Tier 1 or 2 renewable source must be located in the Pennsylvania, New Jersey, and Maryland Interconnection (PJM) area, in an adjacent control area where electricity is delivered into the PJM region, or on specified areas of the outer continental shelf of the Atlantic Ocean. Further, solar energy, geothermal, poultry litter-to-energy, waste-to-energy, and refuse-derived fuel Tier 1 energy sources must be connected with the electric distribution grid servicing Maryland to be eligible for inclusion in meeting RPS. Energy from a Tier 1 renewable source is eligible for inclusion in meeting RPS regardless of when the generating system or facility was placed in service. If the owner of a solar generating system in this State chooses to sell solar RECs from that system, the owner must first offer the credits for sale to an electricity supplier or electric company that must apply them toward compliance with the RPS.

**State Fiscal Effect:** PSC advises that it requires ongoing administrative staff support to handle the increase in REC applications for additional solar energy sources resulting from the bill’s changes. Accordingly, PSC special fund expenditures increase by \$56,054 in fiscal 2023, which accounts for the bill’s October 1, 2022 effective date. This estimate reflects the cost of hiring one administrative specialist to handle the additional applications and related responsibilities. It includes a salary, fringe benefits, one-time start-up costs, and ongoing operating expenses.

Position	1.0
Salary and Fringe Benefits	\$46,648
Other Operating Expenses	<u>9,406</u>
<b>Total FY 2023 PSC Expenditures</b>	<b>\$56,054</b>

Future year expenditures reflect a full salary with annual increases and employee turnover as well as annual increases in ongoing operating expenses. Special fund revenues increase correspondingly from assessments imposed on public service companies.

**Additional Comments:** Holding other factors constant, increasing the supply of Tier 1 RECs by expanding eligibility of solar sources should reduce the price of Tier 1 RECs. However, the degree to which expanded eligibility for Tier 1 RECs reduces prices will depend on the exact number of additional RECs added to the market as a result of the bill, which cannot be reliably estimated at this time. Any overall reduction in REC prices will proportionally reduce compliance costs and, ultimately, customer rates. Lower customer rates will, in turn, reduce electricity expenditures for State and local governments as well as small businesses.

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### **Additional Information**

**Prior Introductions:** None.

**Designated Cross File:** None.

**Information Source(s):** Maryland Energy Administration; Office of People's Counsel; Public Service Commission; Department of Legislative Services

**Fiscal Note History:** First Reader - March 1, 2022  
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# Appendix – Renewable Energy Portfolio Standard

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## *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. The Maryland Energy Administration (MEA) must use ACPs for purposes related to renewable energy, as specified.

In 2022, the requirements are 30.1% from Tier 1 sources, including at least 5.5% from solar, and 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 an additional 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); 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; and thermal energy from a thermal biomass system. Eligible solar sources include photovoltaic cells and residential solar water-heating systems commissioned in fiscal 2012 or later. 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. Chapter 691 of 2021 included raw or treated wastewater used as a heat source or sink for heating or cooling in Tier 1 beginning in 2021.

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

Electricity suppliers retired 14.3 million RECs at a cost of \$223.2 million in 2020, as shown in **Exhibit 1**. This continues a multi-year trend of increasing compliance costs and, generally, average REC prices. Notably, the solar carve-out (\$122.9 million) cost was higher than the remaining Tier 1 requirement (\$99.8 million) – the first time since 2011.

In 2020, wind (56.7%), municipal solid waste (11.8%), black liquor (11.5%), and small hydroelectric (8.5%) were the primary energy sources used for Tier 1 RPS compliance. This continues a multi-year trend of increasing reliance on wind energy. Maryland facilities generated 4.3 million RECs in 2019: approximately 2.7 million Tier 1 RECs and 1.7 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.

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**Exhibit 1**  
**RPS Compliance Costs and REC Prices**  
**2016-2020**

	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
<b>Compliance Costs (\$ Millions)</b>					
Tier 1 Nonsolar	\$88.2	\$50.0	\$56.4	\$79.3	\$99.8
Tier 1 Solar	45.6	21.3	27.4	55.2	122.9
Tier 2	<u>1.4</u>	<u>0.7</u>	<u>1.0</u>	<u>0.06</u>	<u>0.4</u>
<b>Total</b>	<b>\$135.2</b>	<b>\$72.0</b>	<b>\$84.8</b>	<b>\$134.5</b>	<b>\$223.2</b>
<b>Average REC Price (\$)</b>					
Tier 1 Nonsolar	\$12.22	\$7.14	\$6.54	\$7.77	\$8.24
Tier 1 Solar	110.63	38.18	31.91	47.26	66.10
Tier 2	0.96	0.47	0.66	1.05	1.06

REC: renewable energy credit

RPS: Renewable Energy Portfolio Standard

Note: Numbers may not sum to total due to rounding.

Source: Public Service Commission

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*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 2020, 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.

Chapter 164 of 2021 required MEA to staff a new Geothermal Energy Workgroup and complete a technical study on the potential impact of expanding and incentivizing the use of geothermal heating and cooling systems in the State. The Act required a related report to be submitted to the General Assembly by December 1, 2021.