**HB 511**

# Department of Legislative Services

Maryland General Assembly
2023 Session

## FISCAL AND POLICY NOTE
**First Reader**

House Bill 511 (Delegate Queen)
Economic Matters

**Renewable Energy Portfolio Standard – Solar Energy – Compliance Fees**

This bill increases the solar alternative compliance payment (ACP) under the State Renewable Energy Portfolio Standard (RPS) to 6 cents per kilowatt-hour ($60 per megawatt-hour) beginning in 2025. Under current law, solar ACPs decrease from 6 cents per kilowatt-hour each year after 2024, reaching 2.25 cents per kilowatt-hour ($22.50 per megawatt-hour) in 2030 and later. Other ACPs – nonsolar Tier 1, Tier 2, and industrial process load – are unchanged.

## Fiscal Summary

**State Effect:** The Public Service Commission can handle the bill's requirements with existing budgeted resources. Special fund revenues for the Strategic Energy Investment Fund (SEIF) increase by $4.7 million in FY 2026, $17.1 million in FY 2027, $39.5 million in FY 2028, and significantly thereafter, due to increased ACPs. Use of the additional ACP revenue by the Maryland Energy Administration (MEA) is discussed below. The effect on State expenditures for electricity is discussed in the Additional Comments section below.

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

**Small Business Effect:** Potential meaningful.

## Analysis

**Bill Summary/Current Law:** Changes to Solar ACPs, in the context of annual RPS percentage requirements, are shown in **Exhibit 1**.

**Exhibit 1**
**Solar Alternative Compliance Payments**
**Curent Law vs. the Bill**

| | Percentage of Retail Sales | | Solar Alternative Compliance Payments[1] | |
|---|---|---|---|---|
| Year | Tier 1 Total[2] | Solar | Current Law | The Bill |
| 2022 | 30.10% | 5.50% | $60.00 | $60.00 |
| 2023 | 31.90% | 6.00% | $60.00 | $60.00 |
| 2024 | 33.70% | 6.50% | $60.00 | $60.00 |
| 2025 | 35.50% | 7.00% | $55.00 | **$60.00** |
| 2026[3] | 38.00% | 8.00% | $45.00 | **$60.00** |
| 2027 | 41.50% | 9.50% | $35.00 | **$60.00** |
| 2028 | 43.00% | 11.00% | $32.50 | **$60.00** |
| 2029 | 47.50% | 12.50% | $25.00 | **$60.00** |
| 2030+ | 50.00% | 14.50% | $22.50 | **$60.00** |

[1] Amounts have been converted to dollars per megawatt-hour.
[2] Includes the carve-outs for solar, offshore wind, and post-2022 geothermal and reflects Tier 1 only.
[3] New offshore wind capacity is required beginning with at least 400 megawatts in 2026, increasing to at least 800 megawatts in 2028, and to at least 1,200 megawatts in 2030.

Source: Department of Legislative Services

Revenues from ACPs accrue to SEIF. Solar ACP revenues may be used only to make loans and grants to support the creation of new solar energy sources in the State that are owned by or directly benefit low-income residents of the State.

For general information on Maryland's RPS, including recent solar renewable energy credit (SREC) prices and resulting compliance costs related to the solar carve-out, see the **Appendix – Renewable Energy Portfolio Standard**.

**State Fiscal Effect:** MEA advises that it anticipates receiving about $50.0 million annually in solar ACP revenue over the next several years, which generally means that MEA expects an annual SREC shortfall. Revenues are assumed to be essentially flat because, although the current solar ACP schedule declines in price, the shortfall of SRECs is anticipated to increase, resulting in a greater need to utilize ACPs instead of SRECs. Under the bill, ACPs are increased, without reducing the solar RPS percentage

requirements, which increases SEIF revenues from ACPs. Based on the timing of such changes, the effect begins in fiscal 2026.

Under the assumption of significant ACP revenue each year under current law, special fund revenues for SEIF increase significantly beginning in fiscal 2026 due to increased ACPs. Based on information provided by MEA, the estimated incremental ACP revenue totals $4.7 million in fiscal 2026, $17.1 million in fiscal 2027, and $39.5 million in fiscal 2028.

While not *required* by the bill, SEIF expenditures are assumed to increase in future years as MEA uses the funds for their only allowable purpose under current law: to make loans and grants to support the creation of new solar energy sources in the State that are owned by or directly benefit low-income residents of the State. SEIF revenues and expenditures further increase beyond available ACP revenues to the extent that MEA provides loans, instead of grants, and those loans are repaid. In addition to those programmatic expenses, SEIF expenditures may further increase for additional MEA staff to distribute the additional ACP revenue.

The effect on State expenditures for electricity is discussed in the Additional Comments section below.

**Small Business Effect:** Small solar installation businesses potentially benefit from higher SREC prices beginning in 2025 due to increased ACPs. Higher SREC prices are an incentive to build additional solar. Conversely, higher SREC prices will affect electricity prices paid by all small businesses, as discussed below in the Additional Comments section.

**Additional Comments (Electricity Prices):** Increasing solar ACPs increases the maximum potential solar compliance cost under the State RPS, as show in **Exhibit 2**. The amount increases each year with the size of the solar carve-out and the difference in ACPs, ultimately exceeding $325.0 million annually by 2030. Based on these potential costs, the effect is potentially significant/meaningful for State and local governments and small businesses beginning in fiscal 2025 (as SREC prices stay elevated). The State government uses about 1.5 million megawatt-hours of electricity each year.

**Exhibit 2**
**Maximum Potential Compliance Costs, Solar Carve-out**
**Current Law vs. the Bill**

| | Current Law | The Bill | Difference | $/Megawatt-hour |
|---|---|---|---|---|
| 2025 | $231,000,000 | $252,000,000 | $21,000,000 | $0.35 |
| 2026 | 216,000,000 | 288,000,000 | 72,000,000 | 1.20 |
| 2027 | 199,500,000 | 342,000,000 | 142,500,000 | 2.38 |
| 2028 | 214,500,000 | 396,000,000 | 181,500,000 | 3.03 |
| 2029 | 187,500,000 | 450,000,000 | 262,500,000 | 4.38 |
| 2030+ | 195,750,000 | 522,000,000 | 326,250,000 | 5.44 |

RPS: Renewable Energy Portfolio Standard
SREC: solar renewable energy credit

Note: Maximum compliance cost is estimated using the percentage each year that must come from solar under the RPS and the maximum theoretical price of each SREC (ACP) under current law and the bill. Energy use is assumed to be 60 million megawatt-hours annually. The average residential household uses 1 megawatt-hour of electricity per month.

Source: Department of Legislative Services

The Department of Legislative Services notes the following for additional context:

- As discussed above, MEA expects solar ACP revenue of about $50.0 million annually for the next several years, meaning that MEA expects an annual SREC shortfall. SREC prices under such conditions should generally trend near or at ACP.
- The 2021 RPS compliance data showed an average SREC price of $72.59 that year, compared to an ACP of $80. Electricity suppliers also paid $76.9 million in solar ACPs that year. The SREC price increase was a continuation of a multi-year trend that coincided with increased solar RPS percentage requirements.
- Conversely, 2021 was a localized high-water mark for the solar carve-out – 7.5% – before reductions under Chapter 673 of 2021 began to apply in 2022. Compliance data for 2022 is not available. The solar carve-out will not exceed 7.5% until 2026; all the while, new solar capacity will continue to be built.

## Additional Information

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

**Designated Cross File:** SB 357 (Senator Klausmeier) - Education, Energy, and the Environment.

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

**Fiscal Note History:** First Reader - February 9, 2023
js/lgc

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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**

| | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| **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 | $0.1 | $0.1 | $7.7 | $0.1 | $77.1 |
| **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.