Department of Legislative Services

Maryland General Assembly
2024 Session

FISCAL AND POLICY NOTE
Enrolled - Revised

Senate Bill 783 (Senator Elfreth, *et al.*)

Education, Energy, and the Environment and Budget and Taxation — Economic Matters

Public Utilities - Solar Energy Systems and Programs, Maryland Strategic Energy Investment Fund, and Prevailing Wage (Brighter Tomorrow Act)

This bill requires the Public Service Commission (PSC) to establish the Small Solar Energy Generating System Incentive Program, establishes the Customer-Sited Solar Program in the Maryland Energy Administration (MEA), modifies solar property tax incentives, and makes other related changes. **The bill generally takes effect June 1, 2024. Customer-Sited Solar Program provisions take effect July 1, 2024, and terminate June 30, 2027. Net metering provisions take effect January 1, 2025. Property tax provisions apply to taxable years beginning after June 30, 2024.**

Fiscal Summary

State Effect: No effect in FY 2024. Special fund expenditures for PSC increase by $515,900 in FY 2025 and by at least $256,600 annually thereafter; special fund revenues for PSC increase correspondingly. Special fund revenues and expenditures for the Strategic Energy Investment Fund (SEIF) may decrease beginning in FY 2025 but are not otherwise materially affected, as discussed below. Annuity Bond Fund (ABF) revenues may decrease beginning in FY 2025. Any decrease may require either (1) an increase in the State property tax rate or (2) a general fund appropriation to cover debt service on the State's general obligation (GO) bonds. The effect on electricity prices is discussed in the Additional Comments section below. **This bill establishes a mandated appropriation (of existing, reallocated funds) in FY 2026 and 2027.**

Local Effect: Local property tax revenues decrease, potentially significantly, beginning in FY 2025. Local finances may be affected by a reallocation of SEIF funds from FY 2025 through 2027. Local finances and operations are not otherwise materially affected. **This bill imposes a mandate on a unit of local government.**

Small Business Effect: Meaningful.

Analysis

Bill Summary: Generally, the bill (1) requires PSC to establish the Small Solar Energy Generating System Incentive Program, under which eligible solar systems may generate certified solar renewable energy credits (SRECs) that have a compliance value of 150% of noncertified SRECs; (2) extends the duration of all renewable energy credits (RECs) for purposes of the State Renewable Energy Portfolio Standard (RPS) to five years; (3) increases the maximum generating capacity for specified net-metered facilities and allows an eligible customer-generator participating in meter aggregation to receive excess generation from more than one generating system; (4) authorizes MEA to use up to 10% of solar alternative compliance payments (ACPs) for administration of SEIF; (5) establishes the Customer-Sited Solar Program in MEA; (6) generally requires each county and municipality to implement specified solar permitting software; (7) establishes prevailing wage requirements for specified solar systems; (8) establishes requirements for home improvement contracts for rooftop solar installations; and (9) establishes and modifies solar property tax incentives.

Where not otherwise specified, provisions take effect June 1, 2024, and are permanent.

Public Service Commission-related Provisions

Small Solar Energy Generating System Incentive Program

PSC must establish a Small Solar Energy Generating System Incentive Program. Under the program, a solar energy generating system that meets specified requirements and is certified by PSC generates "certified SRECs," which have a compliance value of 150% for electricity suppliers to put toward meeting the solar carve-out for the State RPS. The total amount of in-State generating capacity for certified systems under the program may not exceed (1) 300 megawatts for systems with a generating capacity of less than 20 kilowatts and (2) 270 megawatts for systems with a generating capacity between 20 kilowatts and 5 megawatts.

To be eligible for certification, a solar energy generating system must:

- be located in the State;
- be eligible for inclusion in meeting the State RPS;
- have a generating capacity of no more than 5 megawatts;
- be placed in service between July 1, 2024, and January 1, 2028, inclusive; and
- be a system with a generating capacity of (1) no more than 20 kilowatts; (2) no more than 2 megawatts, if the system is used for aggregate net metering; or (3) between

20 kilowatts and 5 megawatts, if the system is located on a rooftop, a parking canopy, or a brownfield.

The bill specifies the process for the owner of a solar energy generating system to apply to PSC for certification under the program. At the time of certification, the owner must pay PSC a one-time per-system fee of up to $50, or up to $200, depending on the system size. PSC must use the fees to pay for costs associated with administering the program.

A certified system must continue to be eligible to generate certified SRECs for 15 years after the date of certification by PSC, or January 1, 2025, whichever is later, after which the system is eligible to generate noncertified SRECs as long as the system meets the requirements as a Tier 1 renewable resource.

By January 1, 2025, PSC must begin determining the eligibility of solar energy generating systems to be certified under the program. By July 1, 2026, PSC must implement a revised system to review and ensure RPS compliance.

An electricity supplier may apply certified SRECs toward RPS compliance starting with the 2025 compliance year. Notwithstanding any other law, PSC must allow electricity suppliers to demonstrate compliance with the 2025 RPS compliance year by submitting information between July 1, 2026, and December 31, 2026, using the revised system developed above. Under PSC regulations, compliance reports are due by April 1 of the year following the RPS compliance year, so the bill provides a one-time delay of three to nine months.

PSC must include information regarding the status of the program in its annual RPS report to the General Assembly.

Renewable Energy Credit Duration Extended

The maximum duration of a REC for purposes of the State RPS is extended from three years to five years. Other general requirements related to RECs remain unchanged.

Net Metering Capacity Increases

The generating capacity of a net-metered facility that is meter aggregated under § 7-306.3 of the Public Utilities Article, which only applies to certain customer-generators, may not exceed 5 megawatts.

Notwithstanding the generating capacity limits established for the State's net metering law, an eligible customer-generator participating in meter aggregation under § 7-306.2 (community solar) or § 7-306.3 (certain customer-generators) of the Public

Utilities Article may receive excess generation from more than one generating system, including if the combined generating capacity of all net-metered facilities that are meter aggregated exceeds 5 megawatts.

These provisions take effect January 1, 2025.

Maryland Energy Administration-related Provisions

Authorization to Use Solar Alternative Compliance Fees for Administrative Costs

Up to 10% of the proceeds received by SEIF from compliance fees paid by electricity suppliers for failure to meet the solar RPS requirement must be credited to an administrative expense account for costs related to the administration of the fund.

Customer-Sited Solar Program

The Customer-Sited Solar Program is established in MEA to (1) increase deployment of customer-sited solar energy generating systems and (2) provide grants to eligible customer-generators that have installed solar energy generating systems with or without energy storage.

By January 1, 2025, MEA must establish application and income verification procedures for the program and award grants from the program. Subject to specified application requirements, the program may provide a grant to an income-verified eligible customer-generator (as defined under current law) with a low- to moderate-income, in an amount equal to $750 per kilowatt of nameplate capacity for a solar energy generating system, up to a maximum of $7,500 per system. "Low- to moderate-income" means a household with an annual household income at or below 150% of the average median income for the State.

A third party may apply for a grant on behalf of an eligible customer-generator with proof of consent from the eligible customer-generator and be assigned a grant by the eligible customer-generator to act on behalf of the eligible customer-generator. A solar energy generating system must be installed within 180 days after a grant is reserved by MEA for an eligible customer-generator.

MEA must develop a consumer protection policy, as specified, in consultation with representatives of the customer-sited solar industry. The policy must be easily accessible on MEA's website and social media platforms.

Beginning in fiscal 2025, at least 20% of solar ACP revenues received by SEIF must be used to provide grants to support the installation of new solar energy generating systems

under the program. Solar ACP revenues collected but unused from a previous year must be used before revenues allocated for the current year. MEA must reallocate to other authorized uses any revenues that are not used within three fiscal years after collection. A conforming change is made to the authorized uses of solar ACP revenues received by SEIF.

These provisions take effect July 1, 2024, and terminate June 30, 2027.

Solar Permitting Software for Local Governments

Generally, by August 1, 2025, each county and municipality must implement "solar permitting software" for features supporting the tracking and approval of residential building permits for solar energy systems, energy storage systems, main electric panel upgrades, and main electric panel derates.

"Solar permitting software" means (1) the most recent version of a web-based platform, developed by the National Renewable Energy Laboratory, that provides a standard portal for receiving and processing residential solar energy system and residential energy storage system permit information or (2) automated software that functions to support the tracking and approval of residential building permits for the purposes described above.

A county or municipality may not be required to comply with the requirement to implement solar permitting software if (1) it does not require a permit for residential solar energy systems or residential solar energy systems paired with a residential solar energy storage system or (2) as determined by MEA, the automated software is no longer updated or maintained.

MEA must delay the initial implementation or suspend the requirements for implementing solar permitting software if there are insufficient State or federal funds available to MEA to provide financial or technical support to local governments implementing the software.

Maryland Department of Labor-related Provisions

Prevailing Wage Requirements for Solar Energy Generating Systems

The developer of a solar energy generating system with a generating capacity of more than 1 megawatt must ensure workers are paid at least the State prevailing wage rate. This requirement must be construed to apply only prospectively and may not be interpreted to have any effect on or application to the development of a solar energy generating system.

Home Improvement Contracts for Solar Energy Generating System Installations

Unless a customer has waived the requirement after being informed of the costs and risks, a home improvement contract for the installation of a solar energy generating system on the roof of a building must include the installation of a barrier that meets industry standards to prevent wildlife intrusion and damage to the system or the underlying roof.

Tax Incentives for Solar Energy Generating Systems

Community Solar – Extended Eligibility Period and Larger Project Size for Existing Personal Property Tax Exemption

The date by which a community solar generating system must be approved by PSC under the Community Solar Energy Generating Systems Program in order to be eligible for a personal property tax exemption is extended from December 31, 2025, to December 31, 2030. The maximum eligible system size is increased from 2 megawatts to 5 megawatts. Otherwise, the system must still meet other existing requirements in current law.

Specified Nonresidential Solar on Rooftops or Parking Facility Canopies – New Exemption from Valuation or State or Local Property Taxes

Specified nonresidential solar energy generating systems that are constructed on the rooftops of buildings or on parking facility canopies are not subject to valuation or to State or local property taxes.

This provision applies only to a system approved by PSC under § 7-207 (Certificate of Public Convenience and Necessity (CPCN)) or § 7-207.1 (CPCN exemption) of the Public Utilities Article on or after July 1, 2024.

Specified Parking Facility Canopies – New Optional Reduced Local Real Property Assessment

The governing body of a county or municipality may reduce or eliminate, by law, the percentage of the assessment of any real property that is subject to the county or municipal property tax if the real property includes a parking facility on which a solar energy generating system has been constructed on its canopy.

The local government must submit a copy of the law to the State Department of Assessments and Taxation (SDAT); if the copy is received by May 1, the change becomes effective for the following taxable year. SDAT may adopt implementing regulations for these provisions.

These provisions apply only to real property that includes a parking facility on which a system has been approved by PSC under § 7-207 (CPCN) or § 7-207.1 (CPCN exemption) of the Public Utilities Article on or after July 1, 2024.

Current Law:

Renewable Energy Portfolio Standard and Solar Energy Shortfall

Unlike most other sources of renewable energy, solar is eligible for inclusion in meeting the State RPS only if the source is connected with the electric distribution grid serving Maryland. Information on the ongoing solar shortfall can be found in the fiscal 2025 operating budget analysis for MEA prepared by the Department of Legislative Services (DLS).

For information on the State RPS, see the **Appendix – Renewable Energy Portfolio Standard**.

Strategic Energy Investment Fund

In General

Chapters 127 and 128 of 2008 created the Maryland Strategic Energy Investment Program and the implementing SEIF to decrease energy demand and increase energy supply to promote affordable, reliable, and clean energy. SEIF is funded through the proceeds from the auction of carbon allowances under the Regional Greenhouse Gas Initiative, and the fund also receives ACP revenues generated under Maryland's RPS.

Alternative Compliance Payment Revenues

The State RPS requires that renewable sources generate specified percentages of Maryland's electricity supply each year (including specified percentages that must be derived from solar energy). Utilities and other electricity suppliers must submit RECs equal to these percentages in each year or else pay an ACP equivalent to the shortfall, including an ACP associated with any shortfall from the percentages that must be derived from solar energy (a "solar ACP"). ACP revenues are deposited into SEIF and, aside from ACPs related to post-2022 geothermal sources, may be used only to make loans and grants to support the creation of specified new renewable energy sources (and specifically new solar energy sources, in the case of solar ACPs) in the State that are owned by or directly benefit specified communities. Statute does not provide for an allocation of ACP revenue for administrative expenses.

Building Permits

Every county in Maryland has a building permit office, the primary function of which is to issue a permit that gives the right to perform specific work on a designated site or project. The permit office sends an inspector to each ongoing project to ensure that work on the project complies with applicable codes. Noncompliance with established standards is normally addressed between the inspector and the licensed individual, who is expected to bring the project up to code. If the individual does not remedy the problem, the inspector may report the violation to the applicable licensing board.

Home Improvement Contracts

The Maryland Home Improvement Commission (MHIC) in the Maryland Department of Labor licenses and regulates home improvement contractors and salespersons, subject to specified requirements for licensure and ongoing licensee behavior. MHIC also administers a guaranty fund for the purpose of reimbursing homeowners for actual losses due to the errors and omissions of licensed contractors and their subcontractors, salespersons, and employees.

Each home improvement contract must meet specified requirements, such as including information on the scope of the home improvement to be performed and the agreed-upon price. A signed copy of the contract must be provided to the homeowner prior to work beginning. Statute does not specify any contract requirement that is similar to the provision in the bill related to the installation of a barrier for rooftop solar.

A home improvement contractor may not (1) abandon or fail to perform, without justification, a home improvement contract or (2) deviate materially from plans or specifications without the consent of the owner.

Solar Property Tax Incentives

Community Solar

A community solar energy generating system that is placed in service after June 30, 2022, and has been approved by PSC on or before December 31, 2025, is exempt from the county and municipal personal property tax through the life cycle of the system if the system (1) provides at least 50% of the energy it produces to low- to moderate-income customers at a cost that is at least 20% less than the amount charged by the electric company that serves the area where the community solar energy generating system is located and (2) is used for agrivoltaics or is installed on a rooftop, brownfield, parking facility canopy, landfill, or clean fill.

State and local governments must grant a 50% property tax credit for a brownfield, landfill, or clean fill on which a specified community solar energy generating system is installed.

Certain Solar Energy Property Generally Not Subject to State or Local Real Property Tax

Solar energy and geothermal heating and cooling systems installed in a building without a conventional heating and cooling system may not be assessed for property tax purposes at more than the value of a conventional heating and cooling system. If a solar energy or geothermal heating and cooling system is installed in addition to a conventional system in a building, the combined system may not be assessed at more than the value of a conventional system. With the exception of those provisions, solar energy property is not subject to State or local real property tax.

"Solar energy property" means equipment that is installed to use solar energy or solar thermal electric energy to generate electricity to be used in a structure or supplied to the electric grid, or provide hot water for use in a structure.

Optional Local Property Tax Credit for Solar Energy Devices

Counties and municipalities are authorized to grant tax credits against county or municipal property taxes for the use of a solar energy, geothermal energy, or qualifying energy conservation device in a structure for the purposes of heating and cooling, electricity generation, or the provision of hot water. The law allows local governments to establish definitions of solar energy devices, geothermal energy devices, and qualifying energy conservation devices in determining eligibility for the credit.

Net Metering

Net energy metering is the measurement of the difference between the electricity that is supplied by an electric company and the electricity that is generated by an eligible customer-generator and fed back to the electric company over the eligible customer-generator's billing period. PSC must require electric utilities to develop and make net metering tariffs available to eligible customer-generators. Generally, the generating capacity of an eligible customer-generator for net metering may be up to 2 megawatts, or up to 5 megawatts for a community solar energy generating system. Eligible energy sources are solar, wind, biomass, micro combined heat and power, fuel cell, and certain types of hydroelectric. There is a statewide net-metered capacity limit of 3,000 megawatts.

State Fiscal Effect: Significant individual effects of the bill are discussed separately below. Any effects not discussed are assumed to be generally minimal and absorbable within existing budgeted resources.

Public Service Commission

PSC advises that it requires one program manager to handle the incremental workload associated with the Small Solar Energy Generating System Incentive Program. PSC also advises that it requires contractual services of approximately $400,000 in fiscal 2025 and $150,000 annually thereafter for information technology development and subsequent program maintenance. While a system must be placed in service between July 1, 2024, and January 1, 2028, inclusive, in order to be eligible for certification, the information technology must still be maintained and the program itself is permanent. Therefore, this estimate assumes costs are ongoing.

Accordingly, special fund expenditures for PSC increase by $515,894 in fiscal 2025, which accounts for a 30-day startup delay. This estimate reflects the cost of hiring one program manager to oversee the incentive program. It includes a salary, fringe benefits, one-time start-up costs, ongoing operating expenses, and an initial programming expense.

Position	1.0
Salary and Fringe Benefits	$105,368
Programming Costs	400,000
Other Operating Expenses	10,526
Total FY 2025 PSC Expenditures	**$515,894**

Future year expenditures reflect a salary with annual increases and employee turnover as well as annual increases in ongoing operating expenses and ongoing contractual costs of $150,000 annually.

Generally, PSC is funded through an assessment each fiscal year on the public service companies that it regulates. Under the bill, PSC also is expected to collect certification fees from solar energy generating systems. Whether the revenue from such fees is sufficient to cover PSC's administrative costs in a particular fiscal year is unknown and largely depends on the number and timing of small systems that are certified, and the associated fee, which may be up to $50. Nevertheless, this estimate assumes that certification fees offset revenues generated from the standard assessment.

Accordingly, special fund revenues for PSC increase correspondingly from certification fee revenue and assessments imposed on public service companies. To the extent that PSC collects certification fees in excess of its administrative costs, the amount otherwise assessed on public service companies decreases.

Maryland Energy Administration

Solar Alternative Compliance Fee Revenues

As discussed above, there is an ongoing solar shortfall for purposes of the State RPS, which has led to historically high ACPs in calendar 2021 and 2022. The vast majority of ACPs in those years were due to a shortfall of SRECs. ACP revenue accrues to SEIF and must be used by MEA for specified purposes. The bill creates a process that will generate additional SRECs for up to 570 additional megawatts of solar capacity built in the State over the next several years. Those additional SRECs will reduce solar ACPs beginning as early as fiscal 2025, although the overall effect is unknown.

Authorizing up to 10% of solar ACP revenue to be credited to an administrative expense account for costs related to the administration of SEIF does not, by itself, affect overall SEIF finances. The one-time delay in RPS compliance reporting is not anticipated, by itself, to materially affect SEIF finances.

Accordingly, special fund revenues and expenditures for SEIF decrease beginning in fiscal 2025 to the extent that solar ACPs are reduced under the bill.

Customer-Sited Solar Program

The Customer-Sited Solar Program is not expected to have a material net effect on overall State finances since the bill expressly reallocates portions of SEIF's solar ACP funding to fund grants under the program and does not increase SEIF's overall funding obligations. The reallocation is discretionary in fiscal 2025 and mandated in fiscal 2026 and 2027 (a mandated appropriation must be enacted prior to July 1 of the year before the fiscal year to which the mandate first applies).

This analysis assumes that personnel and other administrative costs associated with the program can be covered by the authorized reallocation of solar ACP funding to an administrative expense account for costs related to the administration of SEIF (since grants under the program are funded by SEIF). The reallocation of solar ACP funding, however, may substantially impact existing and/or planned programs.

MEA expects to need additional personnel to administer the program, based on the capacity of existing staff and the scope of the program. MEA expects to need one program manager, one financial specialist, and four contractual energy specialists, at a cost of $482,064 in fiscal 2025. As mentioned above, these costs along with any other administrative costs of the program are assumed to be covered by the funding authorized under the bill to be reallocated to an administrative expense account for costs related to the administration of SEIF. The personnel costs shown below account for the provision's July 1, 2024, effective

date and include salaries, fringe benefits, one-time start-up costs, and ongoing operating expenses.

Regular Positions	2.0
Contractual Positions	4.0
Salaries and Fringe Benefits	$436,908
Other Operating Expenses	45,156
Total FY 2025 New MEA Personnel Costs (Supported by Existing, Reallocated Funds)	**$482,064**

Future year costs (supported by existing, reallocated funds), which total $425,632 in fiscal 2026 and $444,298 in fiscal 2027, reflect (1) salaries with annual increases and employee turnover; (2) annual increases in ongoing operating expenses; and (3) termination of the positions on June 30, 2027, consistent with the program's termination date. While this analysis assumes the positions terminate with the program, presumably one or more of the positions may continue, since the need to administer the solar ACP funding, and the authorization to use up to 10% of solar ACP revenue for administrative expenses, continue after the program terminates.

The personnel costs do not include any health insurance costs that could be incurred for specified contractual employees under the State's implementation of the federal Patient Protection and Affordable Care Act.

Annuity Bond Fund

ABF revenues may decrease beginning in fiscal 2025 as a result of the bill's property tax exemption on specified nonresidential solar on rooftops or parking facility canopies. DLS does not have additional information on the magnitude of the potential decrease at this time, although generally, CPCNs and CPCN exemptions apply to facilities that are larger than 2 megawatts. Solar facilities of that capacity are multiple acres in size.

Debt service payments on the State's GO bonds are paid from the ABF. Revenue sources for the fund include State property taxes; premium from bond sales; and repayments from certain State agencies, subdivisions, and private organizations. General funds may be appropriated directly to the ABF to make up any differences between the debt service payments and funds available from property taxes and other sources. To offset the reduction in State property tax revenues, general fund expenditures could increase in an amount equal to the decrease in ABF revenues, or the State property tax rate would have to be increased in order to meet debt service payments. This assumes that the ABF does not have an adequate fund balance to cover the reduction in State property tax revenues.

Local Fiscal Effect: The bill establishes three provisions that affect, or potentially affect, local property tax revenues:

- extending the eligibility period for certain community solar projects to receive a personal property tax exemption through 2030 and increasing the maximum eligible project size;
- excluding specified nonresidential solar on rooftops or parking facility canopies from State or local property taxes; and
- establishing an optional authority to reduce the assessed value of real property for a parking structure that has specified types of rooftop solar.

Accordingly, local revenues decrease, potentially significantly, beginning in fiscal 2025 from reduced real and personal property tax revenues. The amount of revenue loss for a particular local government is unknown, but depends on several factors, including the number of eligible properties, individual property tax rates, and whether the local government chooses to implement the optional authority to reduce the assessed value of certain real property. For context, SDAT has advises that there are 3 community solar projects in Prince George's County under construction that potentially qualify for the personal property tax exemption with the bill's extension of the eligibility period. Combined, the projects are estimated to represent about $87,500 in annual personal property tax revenue for the county.

DLS notes that as additional solar energy generation continues to be built to meet the State RPS and other climate goals, potential revenue losses due to the tax incentives increase.

Local finances may also be affected from fiscal 2025 through 2027 to the extent the bill's reallocation of SEIF solar ACP revenues reduces the amount of funding available to local governments in the form of loans and grants to support the creation of new solar energy sources in the State.

The requirement for local governments to adopt solar permitting software is not anticipated to materially affect local government finances or operations.

Small Business Effect: Small solar developers benefit significantly from the net metering changes, additional SREC credits, and solar property tax incentives in the bill, offset at least in part by additional prevailing wage and home improvement contract requirements for some solar systems. Reallocating solar ACPs may also affect particular small solar developers. The effect on any particular small business is unknown but could be meaningful.

Additional Comments: DLS cannot advise on the bill's effect on electricity prices paid by the State, local governments, and small businesses. The net metering changes may

broadly raise distribution costs due to additional net metering payments being made to eligible customer-generators. The certified SRECs and solar property tax incentives may reduce RPS compliance costs and project costs for some solar systems; however, the prevailing wage and home improvement contract requirements may increase project costs for some solar systems. These changes may be reflected in energy commodity prices over time.

Additional Information

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

Designated Cross File: HB 1435 (Delegate Fraser-Hidalgo, *et al.*) - Economic Matters.

Information Source(s): Public Service Commission; State Department of Assessments and Taxation; Maryland Energy Administration; Maryland Department of Labor; Office of People's Counsel; Anne Arundel, Harford, Prince George's, and Wicomico counties; city of College Park; Maryland Association of Counties; Maryland Municipal League; 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 geothermal. 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 has not been the case recently. The Maryland Energy Administration must use ACPs for purposes related to renewable energy, as specified.

In 2024, the requirements are 33.7% from Tier 1 sources, including at least 6.5% from solar and 0.15% 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 $438.8 million in 2022: $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
2017-2022

	2017	2018	2019	2020	2021	2022
Compliance Costs ($ Millions)						
Tier 1 Nonsolar RECs	$50.0	$56.4	$79.3	$99.8	$187.3	$246.5
Tier 1 Solar RECs	21.3	27.4	55.2	122.9	144.4	101.4
Tier 2 RECs	0.7	1.0	0.06	0.4	1.0	4.4
ACPs	0.1	0.1	7.7	0.1	77.1	86.6
Total	**$72.1**	**$84.9**	**$142.3**	**$223.2**	**$409.8**	**$438.8**
Average REC Price ($)						
Tier 1 Nonsolar	$7.14	$6.54	$7.77	$8.24	$14.36	$17.80
Tier 1 Solar	38.18	31.91	47.26	66.10	72.59	57.80
Tier 2	0.48	0.66	1.05	1.06	6.45	7.42

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 and 2022 ($76.9 million and $85.9 million, respectively) were due to a shortfall of solar RECs.

Source: Public Service Commission

Related Studies and Reports

PSC must submit an RPS compliance report to the General Assembly each year. The most recent report, which contains historical data through 2022, 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 was due by January 1, 2024, but has been delayed.

The Department of Legislative Services also issued a report on the RPS in 2023, which can be found here. The report contains additional detail on the program, significant statutory changes, and visualizations of planned and actual RPS percentage requirements over time.