

Department of Legislative Services
 Maryland General Assembly
 2017 Session

FISCAL AND POLICY NOTE
 First Reader

House Bill 1457 (Delegate Clippinger)
 Economic Matters

Public Utilities - Renewable Energy Portfolio Standard - Revisions

This bill increases the annual percentage requirements for compliance with the Renewable Energy Portfolio Standard (RPS) that must come from Tier 1 Solar while leaving Tier 1 Nonsolar generally unchanged. Total Tier 1 RPS percentage requirements increase from 25% by 2020 to 26.5% by 2022. Alternative compliance payments (ACPs) for Solar are reduced from 2018 through 2022, but increase beginning in 2024. ACPs for Nonsolar are reduced slightly beginning in 2021. Beginning October 1, 2017, an electricity supplier receives 50% credit for meeting RPS for energy derived from a solar photovoltaic (PV) system that is greater than two megawatts in capacity. For energy derived from a solar PV system that is two megawatts or less in capacity, there is no change from current law. The lifespan of a renewable energy credit (REC) is increased from three years to five years. A presently existing obligation or contract right may not be impaired in any way by the bill.

The bill applies only prospectively.

Fiscal Summary

State Effect: State expenditures (all funds) increase by \$247,500 in FY 2018, escalating to \$607,500 by FY 2022, and significantly thereafter, due to higher electricity prices. This estimate assumes a solar renewable energy credit (SREC) price of \$30 (which is 50% or less of ACP) in each year. SREC prices have experienced significant volatility over the past year, so actual costs may vary from this estimate. The bill does not otherwise materially affect State finances or operations.

(in dollars)	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Revenues	\$0	\$0	\$0	\$0	\$0
GF/SF/FF Exp.	247,500	495,000	461,300	483,800	607,500
Net Effect	(\$247,500)	(\$495,000)	(\$461,300)	(\$483,800)	(\$607,500)

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

Local Effect: Local government expenditures increase minimally beginning in FY 2018 due to higher electricity prices. The bill does not otherwise materially affect local government finances or operations.

Small Business Effect: Meaningful. Small businesses in the solar industry benefit significantly under the bill. First, overall demand for solar energy is increased. Second, the amount of qualifying energy from solar PV systems larger than two MW is functionally cut in half. Reducing the available supply and increasing demand for solar energy puts upward pressure on SREC prices, which benefits small solar businesses. Small business pay higher electricity prices beginning in FY 2018.

Analysis

Bill Summary/Current Law: Percentage requirements and ACPs under current law and the bill are shown in **Exhibits 1** and **2**. Current law reflects Chapters 1 and 2 of 2017.

Exhibit 1 Annual RPS Specifications – Tier 1 Current Law and the Bill

<u>Compliance Year</u>	<u>Percentage of Retail Sales</u>					
	<u>Current Law</u>			<u>The Bill</u>		
	<u>Nonsolar</u>	<u>Solar</u>	<u>Total</u>	<u>Nonsolar</u>	<u>Solar</u>	<u>Total</u>
2018	14.30%	1.50%	15.8%	14.30%	2.60%	16.90%
2019	18.45%	1.95%	20.4%	18.45%	3.05%	21.50%
2020	22.50%	2.50%	25.0%	22.50%	3.45%	25.95%
2021	22.50%	2.50%	25.0%	22.55%	3.70%	26.25%
2022	22.50%	2.50%	25.0%	22.50%	4.00%	26.50%
2023	22.50%	2.50%	25.0%	22.50%	4.00%	26.50%
2024	22.50%	2.50%	25.0%	22.50%	4.00%	26.50%
2025+	22.50%	2.50%	25.0%	22.50%	4.00%	26.50%

RPS: Renewable Energy Portfolio Standard

Source: Department of Legislative Services

Exhibit 2
Alternative Compliance Payments – Tier 1
Current Law and the Bill

<u>Compliance Year</u>	Current Law		The Bill	
	<u>Nonsolar</u>	<u>Solar</u>	<u>Nonsolar</u>	<u>Solar</u>
2018	\$37.50	\$175.00	\$37.50	\$100.00
2019	\$37.50	\$150.00	\$37.50	\$95.00
2020	\$37.50	\$125.00	\$37.50	\$90.00
2021	\$37.50	\$100.00	\$35.00	\$80.00
2022	\$37.50	\$75.00	\$35.00	\$60.00
2023	\$37.50	\$60.00	\$35.00	\$60.00
2024	\$37.50	\$50.00	\$35.00	\$60.00
2025+	\$37.50	\$50.00	\$35.00	\$60.00

Source: Department of Legislative Services

Maryland’s Renewable Energy Portfolio Standard – Generally

Maryland’s RPS was enacted in 2004 to facilitate a gradual transition to renewable sources of energy. It operates on a two-tiered system with carve-outs for solar energy and offshore wind energy and corresponding RECs for each tier. Electric companies (utilities) and other electricity suppliers must submit RECs equal to a percentage specified in statute each year or else pay an ACP equivalent to their shortfall. Over the past few years, the requirements have been met almost entirely through RECs, with negligible reliance on ACPs. The Maryland Energy Administration must use ACPs to support new renewable energy sources.

Chapters 1 and 2 of 2017 increased the Tier 1 percentage requirements from 20% by 2022 to 25% by 2020. The solar carve-out, which is included in Tier 1, was likewise increased from 2.0% by 2022 to 2.5% by 2020. The Tier 2 requirement remains constant at 2.5% each year until ending after 2018. In 2017, the requirements are 13.1% for Tier 1 renewable sources, including at least 1.15% from solar energy, and 2.5% from Tier 2 renewable 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 Tier 1 renewable 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. Tier 1 solar sources include photovoltaic cells and residential solar water-heating systems commissioned in fiscal 2012 or later. Following the transfer of several sources to Tier 1, Tier 2 includes only large hydroelectric power plants.

Background: Exhibits 3 and 4 show the potential cost of the Tier 1 RPS, in terms of dollars and monthly residential bills, under *current law*. The average residential bill assumes one megawatt-hour (MWh) of electricity usage per month. If historic price trends continue, nonsolar ACPs are likely to range between 25% and 50% of ACP. SREC prices have experienced significant volatility over the past year, but 25% to 50% of ACP is also a reasonable range to assume for likely prices.

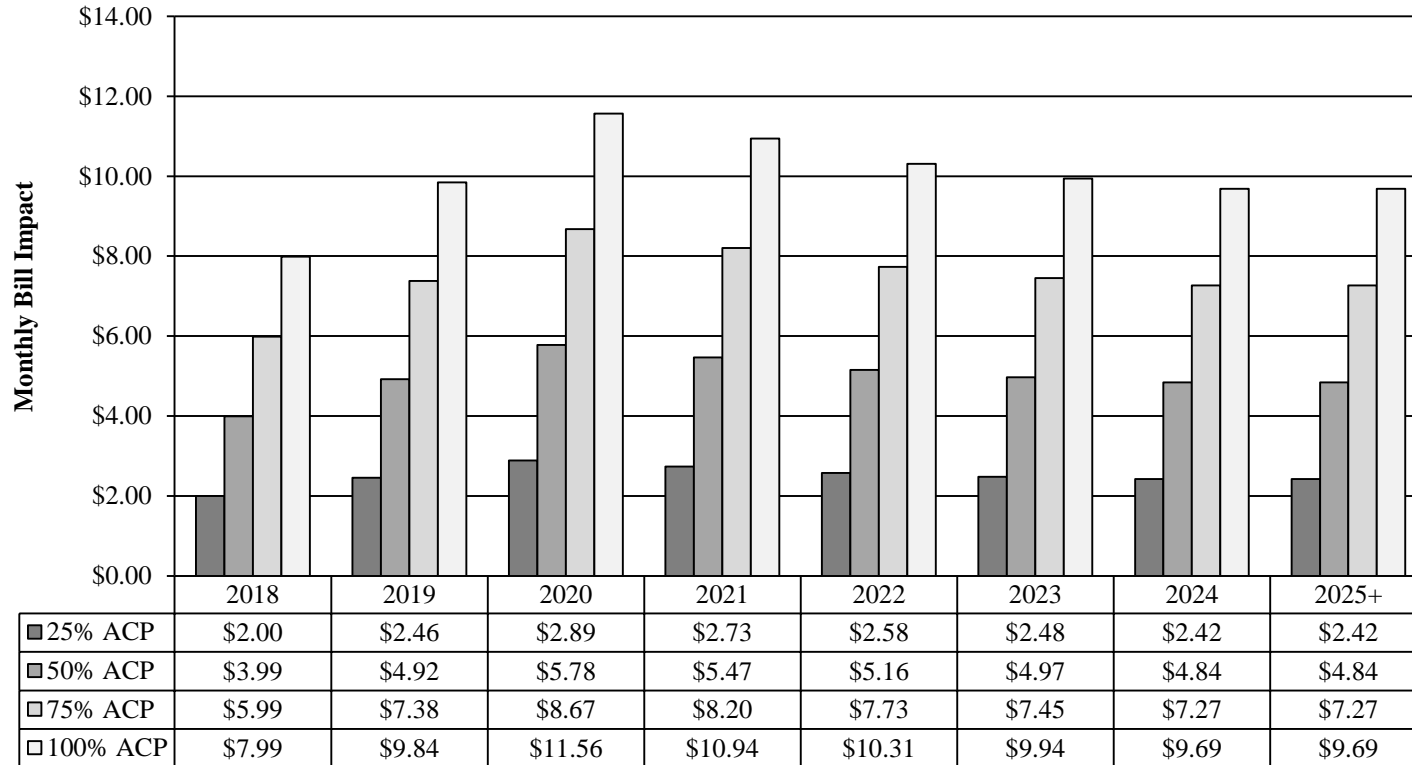
Exhibit 3
Potential Total Cost of RPS – Current Law
Calendar 2018-2025+
(\$ in Millions)

<u>Year</u>	<u>Retail Electric Sales (MWh)</u>	<u>SRECs</u>	<u>RECs</u>	<u>REC Price</u>			
				<u>25% of ACP Annual Cost</u>	<u>50% of ACP Annual Cost</u>	<u>75% of ACP Annual Cost</u>	<u>100% of ACP Annual Cost</u>
2018	62,886,600	951,487	9,070,842	\$126.7	\$253.3	\$380.0	\$506.7
2019	63,432,460	1,243,067	11,761,329	\$156.9	\$313.8	\$470.6	\$627.5
2020	63,747,040	1,600,046	14,400,414	\$185.0	\$370.0	\$555.0	\$740.0
2021	64,001,840	1,607,127	14,464,139	\$175.8	\$351.6	\$527.3	\$703.1
2022	64,285,060	1,614,942	14,534,478	\$166.5	\$333.1	\$499.6	\$666.2
2023	64,597,680	1,623,934	14,615,402	\$161.4	\$322.8	\$484.1	\$645.5
2024	64,957,340	1,633,143	14,698,284	\$158.2	\$316.4	\$474.6	\$632.8
2025+	65,325,707	1,642,404	14,781,637	\$159.1	\$318.2	\$477.3	\$636.4

ACP: alternative compliance payment
MWh: megawatt-hour
REC: renewable energy credit
RPS: Renewable Energy Portfolio Standard
SREC: solar renewable energy credit

Source: Department of Legislative Services

Exhibit 4
Average Residential Customer Monthly Bill Impact, Total RPS – Current Law
Calendar 2018-2025+



ACP: alternative compliance payment
RPS: Renewable Energy Portfolio Standard

Source: Department of Legislative Services

State Expenditures: The bill requires electricity suppliers to purchase between 0.6 million and 1.0 million additional SRECs annually, relative to current law, while keeping the number of required RECs the same as under current law. The bill also places further upward pressure on SREC prices by decreasing the available supply through the limitation on large solar PV facilities. Extending the lifespan of RECs and SRECs from three to five years may increase available credits in future years if the credits would have otherwise expired before being used for compliance, which would apply moderate downward price pressure.

Regardless of these mostly upward price pressures, if SRECs are \$30 per MWh each year, then the total RPS cost increases by \$18.2 million to \$29.6 million annually over what it otherwise would have been from 2018 through 2025. When averaged out over retail electric sales, this equates to \$0.29 to \$0.45 per MWh. These costs are summarized in **Exhibit 5** below. When applied to State government electricity use of 1.5 million MWh annually, State expenditures (all funds) increase by \$247,500 in fiscal 2018, escalating to \$607,500 by fiscal 2022. SREC prices have experienced significant volatility over the past year, so actual costs may vary from this estimate. The bill does not otherwise materially affect State finances or operations.

Exhibit 5
Incremental Cost of the Bill, Assuming \$30 SREC

<u>Year</u>	<u>New SRECs</u>	<u>Cost</u> <u>(\$ Millions)</u>	<u>\$ per MWh</u>
2018	697,757	\$20.9	\$0.33
2019	701,217	\$21.0	\$0.33
2020	608,017	\$18.2	\$0.29
2021	771,421	\$23.1	\$0.36
2022	968,965	\$29.1	\$0.45
2023	974,360	\$29.2	\$0.45
2024	979,886	\$29.4	\$0.45
2025+	985,442	\$29.6	\$0.45

MWh: megawatt-hour

SREC: solar renewable energy credit

Source: Department of Legislative Services

Additional Information

Prior Introductions: None.

Cross File: None.

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

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