

Department of Legislative Services
Maryland General Assembly
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FISCAL AND POLICY NOTE
Revised

Senate Bill 209

(The President, *et al.*) (By Request – Administration)

Finance

Economic Matters

Renewable Portfolio Standard Percentage Requirements - Acceleration

This Administration bill increases the percentage requirements of the Renewable Energy Portfolio Standard (RPS) to 20% in 2022 and beyond. Tier 1 compliance fees are increased to four cents per kilowatt hour, and the geographic scope in which renewable resources can be obtained for compliance is restricted. For an eight-year period that ends December 31, 2018, the bill allows the Public Service Commission to delay electric suppliers' scheduled RPS requirements for Tier 1 (nonsolar) resources.

The increase in the compliance fee takes effect January 1, 2011; all other provisions take effect January 1, 2009.

Fiscal Summary

State Effect: The Public Service Commission could handle any reporting changes with existing resources. Potential increase in compliance fee revenues due to higher RPS requirements. Potential increase in State expenditures due to higher electricity prices.

Local Effect: Potential increase in local government expenditures due to higher electricity prices. Local finances and operations would not be directly affected.

Small Business Effect: The Administration has determined that this bill has minimal or no impact on small business (attached). Legislative Services concurs with this assessment. (The attached assessment does not reflect amendments to the bill.)

Analysis

Bill Summary: For Tier 1 renewable sources, the bill increases the fee charged to electric suppliers for shortfalls from 2 cents per kilowatt hour (kWh) to 4 cents per kWh beginning on January 1, 2011. The bill also restricts acceptable renewable energy resources to those within the PJM region (*i.e.*, the wholesale, bulk power control area in which Maryland resides) or in a control area that is adjacent to the PJM region, if the electricity is delivered into the PJM region. Additionally, the bill increases the RPS percentage requirements in 2011 through 2021, and for the years 2022 and beyond sets the Tier 1 percentage requirement at 20%, as shown in **Exhibit 1**.

Exhibit 1 Renewable Energy Portfolio Standards

<u>Year</u>	<u>Tier 1 Proposed</u>	<u>Tier 1 (Current)</u>	<u>Tier 1 Solar (Current)</u>	<u>Tier 2 (Current)</u>
2006	-	1.000%	-	2.500%
2007	-	1.000%	-	2.500%
2008	-	2.005%	0.005%	2.500%
2009	-	2.010%	0.010%	2.500%
2010	-	3.025%	0.025%	2.500%
2011	5.00%	3.040%	0.040%	2.500%
2012	6.50%	4.060%	0.060%	2.500%
2013	8.20%	4.100%	0.100%	2.500%
2014	10.30%	5.150%	0.150%	2.500%
2015	10.50%	5.250%	0.250%	2.500%
2016	12.70%	6.350%	0.350%	2.500%
2017	13.10%	6.550%	0.550%	2.500%
2018	15.80%	7.900%	0.900%	2.500%
2019	17.40%	8.700%	1.200%	0%
2020	18.00%	9.000%	1.500%	0%
2021	18.70%	9.350%	1.850%	0%
2022	20.00%	9.500%	2.000%	0%

Upon a formal request by an electric supplier, PSC can consider delaying a specific electric suppliers' scheduled RPS requirement for Tier 1 (nonsolar) resources. For an eight-year period that ends December 31, 2018, PSC can grant a delay if the costs associated with meeting the RPS requirement of a subsequent year are equal to or greater than the current year's costs. PSC can also grant a delay if total costs associated with meeting the RPS requirement are equal to or greater than 10% of the electric suppliers total annual electric sales revenue in the State. If PSC allows for a delay, the delay in the RPS requirements can continue for subsequent, consecutive years so long as the above conditions continue to exist in the renewable marketplace.

Current Law: Maryland's RPS was established in 2004 in order to recognize the economic, environmental, fuel diversity, and security benefits of renewable energy resources, establish a market for electricity from those resources in Maryland, and lower consumers' cost for electricity generated from renewable sources. Chapter 119 of 2007 requires PSC to take certain steps to improve the State's use of solar energy and established a Tier 1 solar requirement. According to the U.S. Department of Energy, 24 states and the District of Columbia have adopted some form of RPS as of September 2007. All states from North Carolina to Maine with the exception of West Virginia have RPS legislative requirements; the exception is Virginia, which has a nonbinding goal.

An electricity supplier must meet the RPS by accumulating "renewable energy credits" created from various renewable energy sources classified as Tier 1, Tier 1 solar, and Tier 2 renewable sources. A renewable energy credit (REC) is a tradable commodity representing the renewable energy generation attributes of one megawatt hour (MWh) of electricity.

As shown in **Exhibit 2**, Tier 1 renewable sources include solar, wind, qualifying biomass, methane, and geothermal sources. Tier 2 renewable sources include hydroelectric power, incineration of poultry litter, and waste-to-energy sources.

Exhibit 2
Maryland RPS – Summary of Eligible Technologies

Tier 1 Sources

- Solar (“Tier 1 solar”)
- Wind
- Qualifying biomass
- Methane from the 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 a Tier 1 renewable source
- Small-scale hydroelectric power (LT 30MW)

Tier 2 Sources

- Hydroelectric power other than pump storage generation
- Incineration of poultry litter
- Waste-to-energy

The compliance fee for a shortfall in meeting the Tier 1 renewable is 2 cents per kWh for all years. The Tier 2 renewable compliance fee is 1.5 cents per kWh for all years. The compliance fee for a shortfall in meeting the Tier 1 solar requirements starts at 45 cents per kilowatt hour in 2008 and decreases by 5 cents every two years to equal 5 cents per kilowatt hour in 2023 and later. **Exhibit 3** presents the compliance fee schedule in dollars per megawatt-hour basis.

Exhibit 3
Compliance Fee Schedule
(\$/MWh)

<u>Year</u>	<u>Tier 1</u>	<u>Tier 1 Solar</u>	<u>Tier 2</u>
2006	\$20	-	\$15
2007	\$20	-	\$15
2008	\$20	\$450	\$15
2009	\$20	\$400	\$15
2010	\$20	\$400	\$15
2011	\$20	\$350	\$15
2012	\$20	\$350	\$15
2013	\$20	\$300	\$15
2014	\$20	\$300	\$15
2015	\$20	\$250	\$15
2016	\$20	\$250	\$15
2017	\$20	\$200	\$15
2018	\$20	\$200	\$15
2019	\$20	\$150	\$15
2020	\$20	\$150	\$15
2021	\$20	\$100	\$15
2022	\$20	\$100	\$15
2023+	\$20	\$50	\$15

Note: A megawatt hour is 1,000 kilowatt-hours; \$20/MWh = 2.0 cents/kWh and the \$450 = 45 cents/kWh.

Exhibit does not present industrial process load.

Background: RPS is a policy that requires retail suppliers of electricity (otherwise referred to as load serving entities or electric suppliers) to meet a portion of their energy supply needs with eligible forms of renewable energy. RPS policies are generally designed to maintain and/or increase the contribution of renewable energy to electricity supply. Implementing an RPS is expected to create a stable and predictable market from energy generated from renewables, which is envisioned to foster additional development and growth of the renewable industry. Market barriers seen as impeding the development of the renewable industry would be overcome and the benefits such as reduced costs of

electricity generated from renewables, fuel diversity, and environmental improvement are targeted.

Legislative Services advises that an increase in RPS percentage requirements and restricting the geographic scope has the effect of increasing the demand while reducing the supply; the combination of the two generally results in upward price pressure for RECs. As to the level of renewable resources available in the Mid-Atlantic region for future years, Legislative Services takes a cautious approach with respect to current projections. However, narrowing the geographic footprint of the RPS does create greater incentives to build renewable generation near or in Maryland.

In the event of renewable energy shortages, electric suppliers may turn to the use of the compliance fees and make payments to the State instead of providing the renewable industry with direct revenues to establish a renewable energy market in and around Maryland. Raising the compliance fee allows for a greater number of renewable industry participants to potentially compete and feasibly provide renewable electricity.

Legislative Services notes that RPS requirements of surrounding states and Maryland are increasing in tandem to create additional demand for renewable energy. Depending on the pace of new renewable development to provide renewable electricity, a limited amount of new renewable energy may be available to accommodate an expansion of RPS percentage requirements in future years.

Tier 1 and Tier 2 Prices

The Maryland RPS includes a compliance fee. Compliance fees act as a cap on the prices electric suppliers must pay for renewable energy supplies. If renewable energy is not available in sufficient quantity or produced at too high a price, electric suppliers can comply with the renewable requirement through the compliance fee. In the event that an electric supplier falls short on meeting its annual RPS procurement requirements, the electric supplier may make a payment for any MWh shortfall. As a mechanism, the compliance fee is generally set at a level, sufficiently above the expected cost premium of renewable energy, to encourage the purchase of renewables instead of paying the compliance fee. However, the compliance fee can be paid if market circumstances warrant without a regulatory process to impose a penalty.

Compliance fees are deposited into the Maryland Renewable Energy Fund to provide loans and grants that can indirectly spur the creation of new renewable energy sources in the State. The Maryland Renewable Energy Fund also includes loan repayments, investment earnings, and other monies contributed to the fund. As shown in Exhibit 1, 2006 was the first year that electric suppliers were required to provide that a portion of

their retail sales came from renewable resources and required a relatively modest level of renewables as a requirement: 1% of electric supplier's electricity had to come from Tier 1 renewables, while a minimum of 2.5% had to come from Tier 2 renewables.

Maryland's RPS requirement sets the compliance fee for Tier 1 resources at \$20 per MWh and \$15 per MWh for Tier 2 resources. As the percentage of total energy sold in the State that is required to be generated using renewable resources increases, it can be expected that costs may also increase as the lower cost renewable fuels become exhausted. Therefore, compliance fees can also act as a barrier to entry for those renewable technologies that cannot provide electricity at prices below the compliance fee. The level of the compliance fee consequently impacts the ability of the RPS to foster development of renewable technologies. Renewable technology investors consider RPS compliance fees to determine if energy and the associated renewable attributes can be sold into the markets, providing for project cost recovery and an adequate return.

A 2006 Maryland Power Plant Research Program (PPRP) report assessed the availability of renewable resources to meet not only Maryland's RPS, but also to assess the availability of resources for renewable policies established in Delaware, New Jersey, Pennsylvania, and the District of Columbia. The PPRP report advises that there may be insufficient resources located within PJM to satisfy the combined requirements of Maryland, the District of Columbia, Pennsylvania, New Jersey, and Delaware. However, there appear to be ample Tier 1 and Tier 2 resources in PJM plus PJM's adjacent states to satisfy Maryland's requirements without the development of new renewable energy facilities. PPRP's analysis suggests that a significant portion of the renewable energy required to meet the Maryland RPS can be anticipated to be generated from eligible sources located in states adjacent to PJM.

PSC reports that calendar 2006 marked the first compliance year for the Maryland RPS program. Annual reports were received from 67 market participants, the vast majority complying with the RPS through the purchase of renewable energy and subsequent retirement of REC certificates. Certain electric suppliers retired RECs above and beyond the percent requirement either to demonstrate support for renewable energy or to ensure compliance fee avoidance. Approximately 6% of the market participants also paid compliance fees for both Tier 1 and Tier 2 resources in 2006, as presented in **Exhibit 4**.

Exhibit 4
2006 RPS Compliance Fees

<u>2006</u>	<u>RPS Requirement (%)</u>	<u>Compliance Fees (\$/MWh)</u>	<u>Compliance Fees Paid</u>	<u>MWh Short of RPS Requirement</u>
Tier 1	1.00%	\$20.00	\$13,292.80	665
Tier 2	2.50%	\$15.00	\$24,916.65	1,661
Total			\$38,209.45	2,326

The accumulation of compliance fees by the State to indirectly support the growth and development of renewable resources in the State must be considered in the context of the larger regional market in which multiple states and the District of Columbia compete for renewable energy to satisfy their respective RPS requirements. **Exhibit 5** compares the compliance fees of Maryland with the surrounding states of Delaware, New Jersey, and Pennsylvania, as well as the District of Columbia.

Exhibit 5
Compliance Payments in the Surrounding Region
(\$/MWh)

Delaware	\$50
New Jersey	\$50
Pennsylvania	\$45
District of Columbia	\$25
Maryland	\$20

Exhibit 5 demonstrates that in the Mid-Atlantic region, Maryland has the lowest compliance payments required as an alternative to purchasing renewable energy. Electric suppliers compete to provide services in multiple states and may have, at times, limited access to renewable energy to meet the various RPS requirements across the region as individual state standards expand and renewable facilities are constructed in individual states. If an electric supplier cannot procure enough renewable energy to meet regional RPS standards, electric suppliers will act to minimize costs. Electric suppliers may employ a regional strategy given the current compliance fee structure in the Mid-Atlantic states by meeting the RPS standards of the states that surround Maryland first and thereby avoiding the higher compliance fees. Maryland's compliance fees provide loans and grants to support the creation of new renewable resources in the State. A compliance fee

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of \$40 per MWh allows the State to remain competitive with the surrounding states, while substantially increasing the potential to support the new renewable resources inside the State's boundaries through loans and grants.

RPS Delay Mechanism

Upon a formal request by an electric supplier, PSC can consider delaying a specific electric suppliers' scheduled RPS requirement for Tier 1 (nonsolar) resources. Such a delay may be granted as the result of the second year's dollar-for-dollar costs associated with RPS requirements being greater than the first year's dollar-for-dollar costs.

Legislative Services notes that an increase in the number of RECs an electricity supplier must procure to meet the State's RPS requirement from one year to the next tends to result in increased costs to an electricity supplier, all things equal. That is to say, increasing the quantity of a product to be purchased, generally results in the purchaser incurring greater costs. To the extent renewable resources are stimulated, technological advances occur and a robust competitive market develops, downward price pressure will, over time, result. However, such downward price pressure is generally predicated upon the development of actual demand for renewable resources, which is largely assisted via increasing RPS percentage requirements.

Additional Information

Prior Introductions: None.

Cross File: HB 375 (The Speaker, *et al.*) (By Request – Administration) – Economic Matters.

Information Source(s): Department of Natural Resources, Public Service Commission, Office of People's Counsel, Department of Legislative Services

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