SB 734

Department of Legislative Services

Maryland General Assembly
2014 Session

FISCAL AND POLICY NOTE

Senate Bill 734 (Senator Feldman, *et al.*)
Finance

Renewable Energy Portfolio Standard - Qualifying Biomass

This bill alters the definition of a "Tier 1 renewable source" eligible for inclusion in the State's Renewable Portfolio Standard (RPS) to allow energy produced from "qualifying biomass" only if specified operation date and efficiency conditions are met. Beginning in the first fiscal year in which final data is available for calendar 2018 RPS compliance, and annually thereafter, if specified conditions are met, the Governor must appropriate funds in the State budget based on specified calculations to the Maryland Energy Administration (MEA). MEA must issue a grant to the owner of a specified facility located in Western Maryland in the amount of any appropriation made by the Governor. The bill applies only prospectively to all contracts entered into, renewed, extended, or substantially amended after the bill's effective date.

Fiscal Summary

State Effect: Under one set of assumptions, Strategic Energy Investment Fund (SEIF) and/or other special fund or general fund expenditures increase by approximately $2.6 million in FY 2021, and significantly thereafter, from appropriations made to MEA under the bill; MEA expenditures increase correspondingly to issue grants under the bill. The Public Service Commission (PSC) can implement the bill with existing budgeted resources. Renewable Energy Credit (REC) prices, and thus State expenditures on electricity, are not anticipated to be materially affected. The bill is not anticipated to materially affect SEIF revenue from Alternative Compliance Payments (ACPs). **This bill establishes a mandated appropriation beginning in FY 2021.**

Local Effect: Minimal or none.

Small Business Effect: Minimal or none.

Analysis

Bill Summary: Qualifying biomass used at a generation unit that (1) started commercial operation on or after January 1, 2005, and (2) achieves a total system efficiency of 65% or more is eligible as a Tier 1 renewable source. Conversely, qualifying biomass used at a generation unit that (1) started commercial operation before January 1, 2005, or (2) achieves a total system efficiency of up to 65% is eligible as a Tier 2 renewable source only.

Before January 1, 2018, qualifying biomass used at a generation unit that (1) started commercial operation before January 1, 2005, and (2) achieved certification with PSC before January 1, 2006, is eligible as a Tier 1 renewable source. Beginning January 1, 2018, qualifying biomass used at these facilities is only eligible as a Tier 2 renewable source (for one year, until Tier 2 terminates under current law at the end of 2018).

"Total system efficiency" means the sum of the net useful electric energy output measured in British Thermal Units (BTUs) and the net useful thermal energy output measured in BTUs divided by the total fuel input. "Useful thermal energy output" means energy (1) in the form of direct heat, steam, hot water, or other thermal form that is used in production and beneficial measures for heating, cooling, humidity control, process use, or other valid thermal end use energy requirements and (2) for which fuel or electricity would otherwise be consumed. It does not include thermal energy used to dry or refine biomass fuel.

The bill applies only prospectively and may not be applied or interpreted to have any effect on (1) contracts entered into for the purchase of RECs before January 1, 2014; (2) RECs included in the PJM Generation Attributes Tracking System that were generated by a facility that qualified as a Tier 1 energy source before the effective date of the bill, including those that are purchased by an electricity supplier before the effective date of the bill; and (3) RECs purchased before March 1, 2014, as part of a request for proposals notice issued before the effective date of the bill.

Annual "Make Whole" Appropriation

Beginning in the first fiscal year in which final data is available for calendar 2018 RPS compliance, and annually thereafter, the Governor must appropriate funds in the State budget from SEIF or other funding sources based on specified calculations to MEA, which must then issue a grant to the owner of a specified facility located in Western Maryland in the amount of any appropriation made by the Governor. The amount is calculated by:

- *multiplying:* the average annual quantity of the sum of Tier 1 and Tier 2 RECs produced by the facility from January 2013 through December 2018 by the average annual selling price of nonsolar Tier 1 RECs retired for Maryland RPS compliance in the most recent calendar year in which final data is available; and then
- *subtracting:* any revenues received in that same calendar year from the sale of Tier 1 or Tier 2 RECs produced by the facility, as verified by PSC.

The owner of the facility must make all reasonable efforts to maximize the revenue received for the sale of Tier 1 and Tier 2 RECs in any markets in which the RECs are eligible for sale. The appropriation must only be made in a fiscal year in which the facility manufactures at least 25% of the final tonnage of paper products produced in calendar 2012.

Current Law: Maryland's RPS operates on a two-tiered system with carve-outs for solar energy and offshore wind energy and corresponding RECs for each tier. It requires that Tier 1 renewable sources generate specified percentages of the State's electricity supply each year, gradually increasing to a minimum of 20%, including 2% from solar sources, by 2022. In 2014, RPS requirements are 10.3% for Tier 1 renewable sources, including at least 0.35% from solar energy, and 2.5% from Tier 2 renewable sources. The Tier 2 requirement remains constant at 2.5% each year until ending after 2018. Generally, energy from a Tier 1 source is eligible for inclusion in meeting the State RPS regardless of when the generating system or facility was placed in service. For additional information, see the **Appendix – Maryland's Renewable Energy Portfolio Standard**.

"Qualifying biomass" for Tier 1 RPS compliance means a nonhazardous, organic material that is available on a renewable or recurring basis, and is waste material that is segregated from inorganic waste material and is derived from sources including:

- mill residue, except sawdust and wood shavings;
- precommercial soft wood thinning, slash, brush, or yard waste;
- a pallet or crate;
- agricultural and silvicultural sources, including tree crops, vineyard materials, grain, legumes, sugar, and other crop by-products or residue;
- gas produced from the anaerobic decomposition of animal waste or poultry waste; or
- a plant cultivated exclusively for the purpose of being used as a renewable source to produce electricity.

Qualifying biomass does not include old growth timber, unsegregated solid waste or postconsumer wastepaper, or invasive exotic plant species. An electricity supplier receives credit toward meeting RPS for electricity derived from the biomass fraction of biomass co-fired with other fuels.

Background: The bill tightens the standards for facilities that use qualifying biomass to produce Tier 1 RECs. As discussed below, much of Maryland's Tier 1 RPS obligation has been met with qualifying biomass – primarily in the form of black liquor and wood waste. The proportion has declined over time, however. MEA advises that the bill removes all but two of the currently qualified black liquor facilities that have generated RECs in the past for Maryland's RPS compliance. However, MEA advises, and the Department of Legislative Services (DLS) concurs, that removing these sources from the supply of available Tier 1 RECs is unlikely to have a sizeable or lasting impact on REC prices paid by Maryland electricity suppliers.

For the 2012 compliance year (the most recent year for which data is available) Maryland electricity suppliers sourced the majority of Tier 1 RECs from surrounding states. **Exhibit 1** tracks the energy sources of both Tier 1 and Tier 2 RECs used for Maryland RPS compliance for the most recent five years of available data.

Exhibit 1
Energy Sources of RECs Retired for Maryland RPS Compliance

	Tier 1 Sources				
	2008	**2009**	**2010**	**2011**	**2012**
Black Liquor	37.6%	28.3%	42.8%	33.3%	23.4%
Hydroelectric	17.1%	33.8%	32.7%	25.5%	13.5%
Landfill Gas	14.9%	11.4%	5.8%	9.0%	6.1%
Solar	0.0%	0.2%	0.8%	0.9%	1.4%
Wind	0.5%	1.4%	0.9%	14.2%	28.6%
Wood and Waste Solids	29.9%	24.8%	17.0%	12.4%	12.6%
Municipal Solid Waste	-	-	-	4.0%	12.2%
Blast Furnace Gas	-	-	-	0.7%	2.3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

	Tier 2 Sources				
	2008	**2009**	**2010**	**2011**	**2012**
Blast Furnace Gas	0.0%	0.0%	1.5%	3.9%	11.2%
Hydroelectric	85.3%	80.8%	73.4%	83.1%	78.2%
Municipal Solid Waste	14.7%	19.2%	25.1%	13.0%	10.6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Notes: Municipal solid waste and blast furnace gas were moved to Tier 1 effective October 1, 2011. Numbers may not sum to total due to rounding.

Source: Public Service Commission

State Fiscal Effect: Practically, the bill removes from the Tier 1 RPS and designates as Tier 2 all black liquor facilities except for Luke Mill (located in Western Maryland), and Covington (located in Virginia). These facilities were certified by PSC before January 1, 2006, and therefore remain eligible as Tier 1 sources until January 1, 2018. At that time, both are designated as Tier 2 renewable sources along with all other currently operational black liquor facilities eligible for Maryland's RPS. The Tier 2 RPS terminates at the end of 2018. Combined, these two facilities produced approximately 18% and 7.8% of the Tier 1 RECs retired for compliance in 2011 and 2012, respectively. However, the bill's changes in designation are not anticipated to affect REC prices, which are determined in a multistate market, and therefore, State expenditures on electricity are not materially affected.

The bill effectively specifies that the Governor must appropriate an amount necessary to make whole the Luke Mill facility beginning in the first fiscal year in which final data is available for calendar 2018 RPS compliance. Annual compliance reports are due April 1 of the following year. For example, the 2018 compliance report is due April 1, 2019. Therefore, DLS assumes annual appropriations are included in the State budget beginning in fiscal 2021.

The annual appropriation to MEA – which is then passed through to Luke Mill in the form of a grant – is calculated by multiplying the average annual REC output by Luke Mill over 2013 through 2018 by the average REC price in a particular compliance year. REC prices are determined in a market and are volatile over time. As such, a reliable estimate of REC prices for compliance year 2018 cannot be made at this time. However, **Exhibit 2** below illustrates a range of possible appropriations under various REC prices. DLS notes that ACP beginning in compliance year 2018 is $40 per REC, which effectively caps the REC price. The estimates assume Luke Mill continues to produce RECs at its 2009 through 2011 average annual rate of 125,704.

Exhibit 2
Potential "Make Whole" Payment by Average REC Price
Compliance Year 2018/Fiscal 2021

	$10	**$20**	**$30**	**$40**
Appropriation	$1,257,040	$2,514,080	$3,771,120	$5,028,160

Note: The appropriation does not reflect any revenue from the sale of RECs by Luke Mill into other eligible markets, which would reduce the appropriation.

Source: Department of Legislative Services

According to a December 2013 avoided cost study prepared by Exeter Associates, Inc. as part of the EmPOWER Maryland planning process, REC prices are projected to be $21 in 2018, increase to $23 in 2019, and then slowly decline over time. Absent any revenue from the sale of RECs into other markets, this requires a fiscal 2021 appropriation of $2.6 million. Therefore, under these assumptions, SEIF and/or other special fund or general fund expenditures increase by approximately $2.6 million in fiscal 2021, and significantly thereafter to provide the appropriation to MEA; MEA expenditures increase correspondingly to issue grants under the bill.

Additional Information

Prior Introductions: SB 684 of 2013, a similar bill, passed the Senate with amendments but no further action was taken. Its cross file, HB 1102, received an unfavorable report from the House Economic Matters Committee.

Cross File: HB 747 (Delegate Olszewski, *et al.*) - Economic Matters.

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

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Appendix – Maryland's Renewable Energy Portfolio Standard

Maryland's Renewable Energy Portfolio Standard (RPS) was enacted in 2004 to facilitate a gradual transition to renewable sources of energy. Maryland's RPS operates on a two-tiered system with carve-outs for solar energy and offshore wind energy and corresponding renewable energy credits (RECs) for each tier. It requires that Tier 1 renewable sources generate specified percentages of the State's electricity supply each year, gradually increasing to a minimum of 20%, including 2% from solar sources, by 2022. The Tier 2 requirement remains constant at 2.5% each year until ending after 2018.

In 2014, RPS requirements are 10.3% for Tier 1 renewable sources, including at least 0.35% from solar energy, and 2.5% from Tier 2 renewable sources. Electric companies (utilities) and other electricity suppliers must submit RECs equal to the percentage specified in statute each year or pay an alternative compliance payment (ACP) equivalent to their shortfall. The Maryland Energy Administration must use ACPs to support new renewable energy sources.

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. RECs are classified as Tier 1 or Tier 2, depending on the energy source. Solar and offshore wind are accounted for separately but are considered part of Tier 1. REC generators and electricity suppliers are allowed to trade RECs using a Public Service Commission-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.

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 a Tier 1 renewable source; 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. Tier 2 now includes only large hydroelectric power plants.

RPS Compliance

For the 2012 compliance year, electricity suppliers retired approximately 5.5 million RECs at a cost of $24.4 million, with ACPs accounting for only $5,450 of the total. In general, electricity suppliers have been able to meet all of their Tier 1 nonsolar and Tier 2 REC requirements. The predominant source of ACPs (when required) has been from the Tier 1 Solar requirement.