

Department of Legislative Services
Maryland General Assembly
2013 Session

FISCAL AND POLICY NOTE

House Bill 1102
Economic Matters

(Delegate Olszewski, *et al.*)

Renewable Energy Portfolio Standard - Qualifying Biomass

This bill alters the definition of “qualifying biomass” as a Tier 1 renewable source eligible for inclusion in the State’s Renewable Energy Portfolio Standard (RPS). Specifically, the definition is altered to include only 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. Conversely, qualifying biomass used at a generation unit that started before January 1, 2005, or that achieves a total system efficiency of less than 65% is designated as a Tier 2 renewable source. The bill applies only prospectively and may not be applied or interpreted to have any effect on specified renewable energy credits (RECs) or contracts for RECs.

Fiscal Summary

State Effect: The Public Service Commission (PSC) can implement the bill with existing budgeted resources. REC prices, and thus State expenditures on electricity, are not anticipated to be materially affected. The bill is not anticipated to materially affect Strategic Energy Investment Fund revenue from Alternative Compliance Payments (ACPs).

Local Effect: Minimal or none.

Small Business Effect: Minimal or none.

Analysis

Bill Summary: “Total system efficiency” means the sum of the net useful power output and the net useful thermal output divided by the total fuel input. “Useful thermal 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 the effective date of the bill or (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.

Current Law: A REC is a tradable commodity equal to one megawatt-hour of electricity generated or obtained from a renewable energy generation resource. 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 PSC-approved system known as the Generation Attributes Tracking System, which is a trading platform designed and operated by PJM Environmental Information Services, Inc., which tracks the ownership and trading of RECs.

Maryland's RPS requires that renewable sources generate specified percentages of Maryland's electricity supply each year, increasing to 20%, including 2% from solar power, by 2022. Electricity suppliers must submit RECs equal to the percentage mandated by statute each year, or pay an ACP equivalent to the supplier's shortfall. RECs are classified as Tier 1, Tier 1 Solar, or Tier 2. 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.

Examples of Tier 1 sources include wind; 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 source; a small hydroelectric plant of less than 30 megawatts; poultry litter-to-energy; and waste-to-energy. Tier 1 Solar sources include photovoltaic cells and residential solar water heating systems commissioned in fiscal 2012 or later. Any ACPs are used by the Maryland Energy Administration (MEA) to support new renewable energy sources.

Biomass

“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. A net metered customer generator may operate a biomass generating facility.

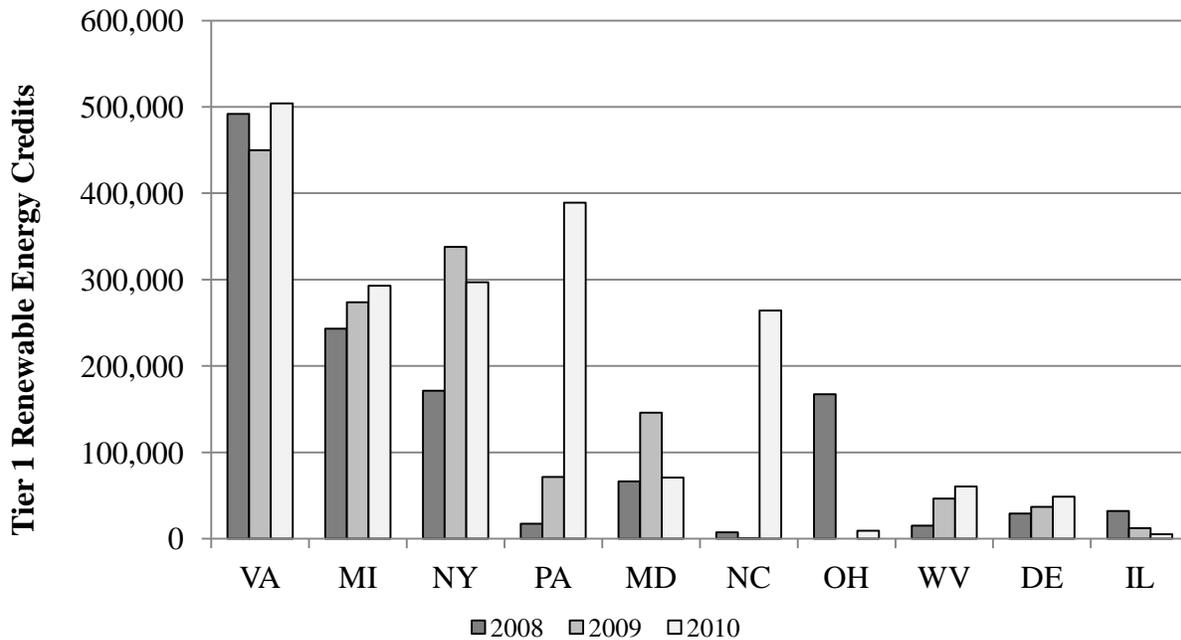
Background: The bill tightens the qualifications of facilities that use qualifying biomass to produce Tier 1 RECs. Under current law, any facility that is registered with PSC as a certified generator earns Tier 1 RECs for each megawatt-hour of electricity generation using qualifying biomass, regardless of when the facility went into operation or what level of thermal efficiency it has. The bill classifies as Tier 2 sources all facilities that went into operation prior to January 1, 2005, or fail to achieve a 65% total system efficiency. The Tier 2 RPS obligation ends December 31, 2018.

As discussed below, a large portion of Maryland's Tier 1 RPS obligation has been met with qualifying biomass – primarily in the form of black liquor and wood waste. MEA advises that the bill removes all currently qualified black liquor and wood waste facilities that have generated RECs in the past for Maryland's RPS compliance, as they all went into operation prior to January 1, 2005. However, MEA advises, and the Department of Legislative Services 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.

As shown below in **Exhibit 1**, for the 2010 compliance year (the most recent year for which data is available) Maryland electricity suppliers sourced the majority of Tier 1 RECs from surrounding states. The exhibit includes both Tier 1 and Tier 1 Solar RECs. Virginia, Michigan, and New York were among the largest sources of RECs submitted for 2010 – a continuation of a general trend from 2008 and 2009. In 2010, Maryland located sources supplied only 3.2% of Tier 1 RECs used for compliance. For Tier 2 compliance, the vast majority of RECs were sourced from Pennsylvania, Virginia,

New York, and Maryland, which accounted for over 85% of all Tier 2 RECs retired in 2010.

Exhibit 1
State Origin of Tier 1 RECs Retired for Maryland RPS Compliance



Source: Public Service Commission

While the term “renewable energy” generally brings to mind energy sources such as wind, solar, or geothermal, in practice, Maryland’s Tier 1 RPS obligations have been met largely by black liquor, hydroelectric, landfill gas, and wood and waste solids. For Tier 2 sources, hydroelectric continues to be the dominant source of RECs. **Exhibit 2** below tracks the energy sources of both Tier 1 and Tier 2 RECs used for Maryland RPS compliance for the most recent four years of available data. General trends include an increasing reliance on black liquor and hydroelectric sources, with a corresponding decrease in reliance on landfill gas and wood and waste solids. Solar and wind remain the smallest sources of Tier 1 RECs, though their proportion grew rapidly from 2008 to 2010.

Exhibit 2
Energy Sources of RECs Retired for Maryland RPS Compliance

	<u>Tier 1 Sources</u>			
	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
Black Liquor	37.7%	37.6%	28.3%	42.8%
Hydroelectric	6.0%	17.1%	33.8%	32.7%
Landfill Gas	21.4%	14.9%	11.4%	5.8%
Solar	0.0%	0.0%	0.2%	0.8%
Wind	0.0%	0.5%	1.4%	0.9%
Wood and Waste Solids	35.0%	29.9%	24.8%	17.0%
Total	100%	100%	100%	100%

	<u>Tier 2 Sources</u>			
	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
Blast Furnace Gas	0.0%	0.0%	0.0%	1.5%
Hydroelectric	50.3%	85.3%	80.8%	73.4%
Municipal Solid Waste	49.7%	14.7%	19.2%	25.1%
Total	100%	100%	100%	100%

Notes: Municipal solid waste was moved to Tier 1 effective October 1, 2011. Numbers may not sum to total due to rounding.

Source: Public Service Commission

RPS Compliance

For the 2010 compliance year, electricity suppliers retired 3.6 million RECs at a cost of \$7.6 million. The *total* cost of compliance with the 2010 RPS was just under \$8 million, with ACPs accounting for \$217,620 of the total. **Exhibit 3** below summarizes the results of the annual compliance reports filed by electricity suppliers with PSC for the years 2006 through 2010. In general, electricity suppliers have been able to meet all of their Tier 1 and Tier 2 REC requirements; therefore, the predominant source of ACPs is from the Tier 1 Solar requirement.

Exhibit 3
Results of RPS Compliance Reports
2006-2010

<u>Compliance Year</u>	<u>Tier 1</u>	<u>Tier 1 Solar</u>	<u>Tier 2</u>	<u>Total</u>
2006				
RPS Obligation	520,100	-	1,300,200	1,820,300
Retired RECs	552,900	-	1,322,100	1,874,900
ACP Required	\$13,300	-	\$24,900	\$38,200
2007				
RPS Obligation	553,600	-	1,384,000	1,937,600
Retired RECs	553,400	-	1,382,900	1,936,200
ACP Required	\$12,600	-	\$23,800	\$36,400
2008				
RPS Obligation	1,183,400	2,900	1,479,300	2,665,700
Retired RECs	1,184,200	200	1,500,400	2,684,800
ACP Required	\$9,000	\$1,218,700	\$8,200	\$1,235,900
2009				
RPS Obligation	1,228,500	6,100	1,535,700	2,770,300
Retired RECs	1,280,900	3,300	1,509,300	2,793,500
ACP Required	\$400	\$1,147,600	\$300	\$1,148,300
2010				
RPS Obligation	1,922,100	16,000	1,601,700	3,539,800
Retired RECs	1,931,400	15,500	1,622,800	3,569,600
ACP Required	\$20	\$217,600	-	\$217,600

Notes: Some electricity suppliers retired more RECs than required. Numbers may not sum to total due to rounding.

Source: Public Service Commission

Small Business Effect: MEA advises that there are no small businesses in the State who operate a renewable energy facility registered with PSC that would be impacted by the bill.

Additional Information

Prior Introductions: None.

Cross File: SB 684 (Senator Garagiola, *et al.*) - Finance.

Information Source(s): Public Service Commission, Maryland Energy Administration, Department of Natural Resources, Maryland Department of the Environment, Washington Suburban Sanitary Commission, Department of Legislative Services

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Analysis by: Stephen M. Ross

Direct Inquiries to:
(410) 946-5510
(301) 970-5510