

**Department of Legislative Services**  
Maryland General Assembly  
2011 Session

**FISCAL AND POLICY NOTE**  
**Revised**

House Bill 1121  
Economic Matters

(Delegate McHale)

Finance

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**Renewable Energy Portfolio - Waste-to-Energy, Refuse-Derived Fuel, and Small  
Hydroelectric Power Plants**

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This bill alters the renewable energy portfolio standards (RPS) to include energy from waste-to-energy as a Tier 1 renewable source, instead of a Tier 2 renewable source. The bill also adds refuse-derived fuel as a Tier 1 renewable source.

A waste-to-energy or refuse-derived fuel facility must be connected with the electric distribution grid serving Maryland in order to be eligible for inclusion in meeting Tier 1 RPS. The bill also requires a small hydroelectric power plant of less than 30 megawatts (MW) to be connected with the electric grid serving Maryland in order to be eligible for inclusion in meeting Tier 1 RPS. A waste-to-energy or refuse-derived fuel facility is eligible for inclusion in meeting Tier 1 RPS regardless of when the facility was placed in service.

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**Fiscal Summary**

**State Effect:** None. The bill does not directly affect State finances or operations.

**Local Effect:** Montgomery County revenues increase by \$137,700 in FY 2012 and by \$240,000 in FY 2013. Future year revenues also increase by as much as \$240,000 annually, dependent on the value of Tier 1 RECs. No effect on local expenditures. Other local jurisdictions could also benefit to the extent they operate waste-to-energy facilities in the future that become certified Tier 1 renewable sources.

**Small Business Effect:** Minimal.

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## Analysis

**Current Law:** With respect to RPS requirements, waste-to-energy is considered a Tier 2 renewable source. Hydroelectric power other than pump storage generation is also considered a Tier 2 renewable source but a small hydroelectric power plant of less than 30 MW in capacity that is licensed or exempt from licensing by the Federal Energy Regulatory Commission is considered a Tier 1 renewable source.

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 renewable energy credits (RECs) equal to the percentage mandated by statute each year, or pay the alternative compliance payment (ACP) equivalent to the supplier's shortfall. RECs are classified as Tier 1, Tier 2, or solar RECs. Tier 1 sources include solar; 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 renewable source; a small hydroelectric plant of less than 30 MW; and poultry litter-to-energy. As noted above, Tier 2 sources include hydroelectric and waste-to-energy. **Exhibit 1** shows RPS percentage requirements through 2022.

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### Exhibit 1 Renewable Energy Portfolio Standards

<u>Year</u>	<u>Tier 1 Total</u>	<u>Tier 1 Solar</u>	<u>Tier 2</u>
2011	5.0%	0.05%	2.5%
2012	6.5%	0.10%	2.5%
2013	8.2%	0.20%	2.5%
2014	10.3%	0.30%	2.5%
2015	10.5%	0.40%	2.5%
2016	12.7%	0.50%	2.5%
2017	13.1%	0.55%	2.5%
2018	15.8%	0.90%	2.5%
2019	17.4%	1.20%	-
2020	18.0%	1.50%	-
2021	18.7%	1.85%	-
2022	20.0%	2.00%	-

Source: Department of Legislative Services

In order to be eligible for inclusion in meeting the Tier 2 RPS, a waste-to-energy facility must have been in existence and operational as of January 1, 2004, even if the facility was not capable of generating electricity on that date. Energy from a Tier 1 renewable source is eligible for inclusion in meeting the RPS regardless of when the generating system or facility was placed in service and may be applied to the RPS for either Tier 1 or Tier 2.

With specified exceptions, energy from a solar generating facility or poultry litter-to-energy facility is eligible for inclusion in meeting the RPS only if the source is connected with the electric distribution grid serving Maryland.

The ACP for Tier 1 sources is \$0.04 per kilowatt-hour (kWh) in 2011 and 2012 and decreases to \$.02 per kWh in 2017 and thereafter. ACP for the Tier 1 solar requirement is \$.40 per kWh through 2014 and decrease to \$.05 per kWh in 2023 and thereafter.

**Background:** According to the PJM Interconnection (PJM) generation attribute tracking system, the current generation capacity from Tier 1 nonsolar sources within the PJM region is 3,530 MW. The current generation capacity from Tier 2 sources within the PJM region is 1,690 MW. Allowing waste-to-energy connected to the electric grid serving Maryland to be eligible for inclusion to meet Tier 1 RPS will add an additional 257 MW to Tier 1 nonsolar generation capacity; however, requiring waste-to-energy facilities to be connected with the electric grid serving Maryland reduces eligible RPS capacity from waste-to-energy facilities by 264 MW, the capacity currently located out of State. Additionally, requiring a small hydroelectric generating station to be connected to the electric grid serving Maryland, instead of within the PJM service territory, will reduce the amount of Tier 1 eligible generation by 161 MW, the capacity currently located out of State. **Exhibit 2** shows the net impact on capacity eligible for inclusion in Maryland's RPS under the bill.

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**Exhibit 2**  
**Generating Capacity Eligible for Inclusion in Nonsolar RPS**  
(in MW)

<u>Generating Capacity</u>	<u>Current Law</u>	<u>Under the Bill</u>	<u>Net Change</u>
Tier 1	3,530	3,626	96
<u>Tier 2</u>	<u>1,690</u>	<u>1,169</u>	<u>(521)</u>
<b>Total</b>	<b>5,220</b>	<b>4,795</b>	<b>(425)</b>

Source: Public Service Commission, PJM Interconnection

There are about 90 municipal solid waste (MSW) incinerators currently operating nationwide, including three major MSW incinerator sites in Maryland that are certified as Tier 2 renewable facilities. **Exhibit 3** shows these generators and their estimated generation capacity.

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**Exhibit 3**  
**Tier 2 Certified Waste-to-energy Facilities**

<b><u>Waste-to-energy Facility</u></b>	<b><u>Generation Capacity (in MW)</u></b>
Montgomery County Resource Recovery Facility	68.0
Wheelabrator Baltimore Refuse	60.2
Severstal Sparrows Point	<u>129.0</u>
<b>Total</b>	<b>257.2</b>

Source: PJM Interconnection

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The Northeast Maryland Waste Disposal Authority (NMWDA) is currently planning to add a new MSW incinerator facility to serve Frederick and Carroll counties, and another facility to serve Baltimore and Harford counties.

Energy Answers International has received a Certificate of Public Convenience and Necessity to construct a 120-MW generating facility on the Fairfield Peninsula in Baltimore. The facility will incinerate refuse-derived fuel which includes urban wood waste, auto shredder residue, and chipped tires.

MSW incinerators are hailed for their waste disposal and renewable energy attributes, but widely regulated due to various environmental impacts. As an energy source, MSW incinerators compare very favorably to coal and oil electricity generators in terms of carbon dioxide, sulfur dioxide, and nitric oxides emissions. However, MSW incinerators are significant contributors to the environmental deposition of mercury, dioxin, furan, and other toxic metals and organic compounds. Nevertheless, since U.S. Environmental Protection Agency regulation under federal solid and hazardous waste laws began in the early 1990s, emissions of these toxic pollutants have fallen dramatically.

**Local Fiscal Effect:** Montgomery County is the only local government that *currently* operates a waste-to-energy facility certified as a Tier 2 renewable source. The bill makes this facility eligible to meet Tier 1 RPS requirements, thereby increasing the value of RECs associated with this facility.

Montgomery County has already sold Tier 2 RECs for its waste-to-energy facility for the 2011 compliance year. The county estimates that revenues from the sale of all RECs will increase by \$137,400 in fiscal 2012, assuming half of the RECs for that year are sold as Tier 2 prior to the bill's effective date, and half are sold as Tier 1 after the bill's effective date. Revenues increase by an estimated \$240,000 in fiscal 2013, the first full year of implementation. Future year revenues increase by as much as \$240,000 annually, dependent on the value of Tier 1 RECs.

No local governments currently operate refuse-derived fuel facilities.

Other local jurisdictions could also benefit to the extent they operate waste-to-energy or refuse-derived fuel facilities in the future that become certified Tier 1 renewable energy sources.

**Additional Comments:** In the 2009 compliance year, 31.5% of Tier 1 RPS was met through RECs from small hydroelectric generation located outside of Maryland. Under the bill, these electric generators are no longer eligible for Tier 1 RPS. To the extent electricity suppliers must procure RECs from more costly sources, electricity costs may increase, since the increased cost of RPS compliance is absorbed by retail electric customers. Additionally, since the bill reduces the amount of generation eligible to meet Tier 2 RPS, electricity suppliers may incur additional costs to meet Tier 2 RPS by paying ACP or through the use of Tier 1 RECs.

Under the bill, the amount of capacity eligible to meet Tier 1 RPS increases slightly (less than 3% of current capacity). However, Tier 1 generating capacity may increase further if additional waste-to-energy and refuse-derived fuel facilities are built as planned in Maryland.

A significant increase in supply of Tier 1 RECs may decrease the overall value of Tier 1 RECs, thereby reducing the cost incurred by electricity suppliers to meet Tier 1 RPS requirements. To the extent the availability of Tier 1 RECs increases and the cost of RPS compliance decreases, all electricity customers in the State benefit from the reduced cost of compliance; however, increasing the supply (thereby decreasing the value) of Tier 1 RECs will also reduce the income stream available to owners of existing Tier 1 renewable generating facilities.

Also, to the extent that the availability of Tier 1 RECs increases, electricity suppliers may be more likely to meet Tier 1 RPS through the purchase of RECs in lieu of paying ACP.

To the extent this occurs, special fund revenues from ACP to the Maryland Strategic Energy Investment Fund within the Maryland Energy Administration decrease. However, any such decrease is speculative. Due to the decrease in availability of Tier 2 RECs, however, special fund revenues from ACP could increase.

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### **Additional Information**

**Prior Introductions:** None.

**Cross File:** SB 690 (Senator Middleton, *et al.*) - Finance.

**Information Source(s):** Department of Natural Resources, Maryland Energy Administration, Office of People's Counsel, Public Service Commission, Montgomery County, Northeast Maryland Waste Disposal Authority, Department of Legislative Services

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