

Department of Legislative Services
Maryland General Assembly
2021 Session

FISCAL AND POLICY NOTE
Third Reader - Revised

House Bill 561
Economic Matters

(Delegate D.E. Davis)

Finance

Renewable Energy Portfolio Standard - Wastewater Heating or Cooling System

This bill expands “Tier 1” of the State’s Renewable Energy Portfolio Standard (RPS) to include raw or treated wastewater used as a heat source or heat sink for a heating or cooling system, subject to specified requirements. Energy from such a system is eligible only if the system (1) is connected with the electric distribution grid serving Maryland or (2) processes wastewater from Maryland residents. The Public Service Commission (PSC) must adopt related regulations. **The bill takes effect July 1, 2021, and applies to all RPS compliance years starting with 2021.**

Fiscal Summary

State Effect: PSC can handle the bill’s requirements with existing budgeted resources. State entities that own or operate wastewater treatment plants have access to a new potential source of revenue beginning in fiscal 2022, but revenues, if any, are unknown. State expenditures are affected to the extent that State entities choose to install newly eligible Tier 1 RPS technologies due to the bill. The effect on electricity prices is discussed separately below.

Local Effect: Local governments that own or operate wastewater treatment plants have access to a new potential source of revenue beginning in FY 2022. Local expenditures are affected to the extent that local governments choose to install newly eligible Tier 1 RPS technologies due to the bill.

Small Business Effect: Minimal.

Analysis

Bill Summary: A person must receive renewable energy credits (RECs) equal to the amount of energy, converted from British thermal units (BTUs) to kilowatt-hours, that is generated by a wastewater heating or cooling system for space heating or cooling, industrial heating or cooling, or another useful thermal purpose, if the person owns and operates the system, leases and operates the system, or contracts with a third party who owns and operates the system.

To determine the energy savings of a wastewater heating or cooling system, PSC must:

- use the wastewater heating or cooling engineering technical system designs provided with the REC application; and
- in determining the annual amount of RECs awarded for the wastewater heating or cooling system, convert the annual BTUs into annual megawatt-hours.

Current Law: Maryland's RPS is primarily electricity based; its compliance mechanism, the REC, represents the generation attributes of one megawatt-hour of renewable energy. A limited number of thermal sources, such as geothermal heating and cooling systems, are also specifically eligible under the program. For those sources, a standard conversion is used to allocate RECs from the thermal energy. For additional information on Maryland's RPS, see the **Appendix – Renewable Energy Portfolio Standard**.

State Fiscal Effect: PSC can handle the bill's requirements with existing budgeted resources. State entities that own or operate wastewater treatment plants have access to a new potential source of revenue beginning in fiscal 2022, but revenues, if any, are unknown. State expenditures are affected to the extent that State entities choose to install newly eligible Tier 1 RPS technologies due to the bill. For example, the Maryland Environmental Service advises that its facilities are likely too small to make wastewater heat sink projects financially viable.

Local Fiscal Effect: Local governments that own or operate wastewater treatment plants have access to a new potential source of revenue beginning in fiscal 2022. Local expenditures are affected to the extent that local governments choose to install newly eligible Tier 1 RPS technologies due to the bill.

Additional Comments (Electricity Prices): The addition of new Tier 1 resources puts downward pressure on REC prices and, therefore, expenditures on electricity for State and local governments, as electricity customers, and small businesses. The effect begins in fiscal 2022; however, the amount cannot be reliably estimated at this time. PSC advises that the effect is most likely small or negligible.

Additional Information

Prior Introductions: None.

Designated Cross File: None.

Information Source(s): Public Service Commission; Maryland Environmental Service; Carroll, Harford, and Montgomery counties; Department of Legislative Services

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Appendix – 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. There are specified eligible (“Tier 1” or “Tier 2”) sources as well as carve-outs for solar and offshore wind. Electric companies (utilities) and other electricity suppliers must submit renewable energy credits (RECs) equal to a percentage specified in statute each year or else pay an alternative compliance payment (ACP) equivalent to their shortfall. Historically, 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.

Chapter 757 of 2019 significantly increased the percentage requirements, which now escalate over time to a minimum of 50% from Tier 1 sources, including 14.5% from solar, by 2030. In 2021, the requirements are 30.8% for Tier 1 sources, including at least 7.5% from solar. Tier 2, which has been extended several times, terminated after 2020.

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. REC generators and electricity suppliers are allowed to trade RECs using a Public Service Commission (PSC) 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 specified 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. Eligible solar sources include photovoltaic cells and residential solar water-heating systems commissioned in fiscal 2012 or later. Tier 2, when it was in effect, eventually included only large hydroelectric power plants.

RPS Compliance

According to the most recent RPS compliance [report](#) on PSC’s website, electricity suppliers retired 11.4 million RECs at a cost of \$134.5 million in 2019, as average REC prices rose from their 2018 levels, as shown in **Exhibit 1**.

Exhibit 1
RPS Compliance Costs and REC Prices
2015-2019

	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Compliance Costs (\$ Millions)					
Tier 1 Nonsolar	\$85.1	\$88.2	\$50.0	\$56.4	\$79.3
Tier 1 Solar	39.1	45.6	21.3	27.4	55.2
Tier 2	<u>2.6</u>	<u>1.4</u>	<u>0.7</u>	<u>1.0</u>	<u>.06</u>
Total	\$126.7	\$135.2	\$72.0	\$84.8	\$134.5
Average REC Price (\$)					
Tier 1 Nonsolar	\$13.87	\$12.22	\$7.14	\$6.54	\$7.77
Tier 1 Solar	\$130.39	\$110.63	\$38.18	\$31.91	\$47.26
Tier 2	\$1.71	\$0.96	\$0.47	\$0.66	\$1.05

REC: renewable energy credit

RPS: Renewable Energy Portfolio Standard

Note: Numbers may not sum to total due to rounding.

Source: Public Service Commission

In 2019, wind (43%), black liquor (23%), small hydroelectric (11%), municipal solid waste (11%), and wood and waste solids (7%) were the primary energy sources used for Tier 1 RPS compliance. Maryland facilities generated 4.7 million RECs in 2019: approximately 2.5 million Tier 1 RECs and 2.2 million Tier 2 RECs. Many RECs can be used for compliance in both Maryland and other surrounding states, although there are geographic and energy source restrictions.

Pursuant to Chapter 393 of 2017, the Power Plant Research Program in the Department of Natural Resources has released its final report on a comprehensive study of the RPS. The report contains historical data but also looks at future scenarios. The report can be found [here](#) or on the department's website.