HB 1366

Department of Legislative Services

Maryland General Assembly
2022 Session

FISCAL AND POLICY NOTE
First Reader

House Bill 1366 (Chair, Economic Matters Committee)(By Request - Departmental - Maryland Energy Administration)

Economic Matters

Zero–Emission Energy Resources and Carbon Capture, Use, and Sequestration – Renewable Energy Portfolio Standard and Study

This departmental bill allows electricity produced by a "zero-emission energy resource" to be eligible as a Tier 1 renewable source under the State's Renewable Energy Portfolio Standard (RPS) if the source is connected with the electric distribution grid serving Maryland. Additionally, the bill requires the Maryland Energy Administration (MEA), in consultation with the Public Service Commission (PSC), the Maryland Department of the Environment (MDE), and the Department of Natural Resources (DNR), to study specified aspects of the regulatory and statutory impediments to the adoption of carbon capture, use, and sequestration and the corresponding establishment and growth of the carbon capture, use, and sequestration industry in the State. In conducting the study, MEA must solicit stakeholder involvement and hold a minimum of four public meetings. MEA must report its findings to the General Assembly by December 31, 2022. **Alterations to the State RPS take effect January 1, 2023, and the study provisions take effect July 1, 2022.**

Fiscal Summary

State Effect: MEA can conduct the study, and PSC, MDE, and DNR can provide consultation as needed, with existing resources. The bill does not otherwise materially affect State finances.

Local Effect: The bill does not materially affect local government finances.

Small Business Effect: MEA has determined that the bill has minimal or no economic impact on small business (attached); the Department of Legislative Services concurs with this assessment.

Analysis

Bill Summary: The bill defines "zero-emission energy resource" as a natural gas or qualifying biomass generating station with a concomitant carbon capture system to the extent that the captured carbon dioxide offsets the carbon output of the generating station and is indefinitely sequestered through another method.

Current Law: Maryland's 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, offshore wind, and, beginning in 2023, new geothermal systems. Electric companies (utilities) and other electricity suppliers must submit renewable energy credits (RECs) equal to a percentage of their retail electricity sales specified in statute each year or else pay an alternative compliance payment (ACP) equivalent to their shortfall. Historically, RPS requirements have been met almost entirely through RECs, with negligible reliance on ACPs. MEA must use ACPs for purposes related to renewable energy, as specified.

For additional information on Maryland's RPS, see the **Appendix – Renewable Energy Portfolio Standard**.

"Qualifying biomass" (for 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, crate, or dunnage;
- agricultural and silvicultural sources, including tree crops, vineyard materials, grain, legumes, sugar, and other crop by-products or residues;
- 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, black liquor, or any product derived from black liquor, or invasive exotic plant species.

Background: Carbon capture, use, and sequestration is the process of capturing carbon dioxide emissions from sources like power plants or industrial processes and either reusing or storing it so that it will not reenter the atmosphere. Whereas most other clean energy

sources reduce or eliminate the rate of additional carbon emissions into the atmosphere, carbon capture, use, and sequestration technologies can, in theory, reduce the total amount of carbon dioxide already in the atmosphere. As a result, MEA advises that carbon capture, use, and sequestration is a key ingredient in meeting the State's climate and emissions goals.

Additional Comments: MEA advises that there are currently no facilities in the State that would qualify for participation in the State RPS as a zero-emission energy resource. To the extent future facilities qualify for participation as a zero-emission energy resource, the supply of RECs may increase, but the effect on compliance costs and electricity prices is likely negligible.

Additional Information

Prior Introductions: None.

Designated Cross File: None.

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

Fiscal Note History: First Reader - March 8, 2022
fnu2/lgc

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Appendix – Renewable Energy Portfolio Standard

General Overview

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, offshore wind, and, beginning in 2023, new geothermal systems. Electric companies (utilities) and other electricity suppliers must submit renewable energy credits (RECs) equal to a percentage of their retail electricity sales specified in statute each year or else pay an alternative compliance payment (ACP) equivalent to their shortfall. Historically, RPS requirements have been met almost entirely through RECs, with negligible reliance on ACPs. The Maryland Energy Administration (MEA) must use ACPs for purposes related to renewable energy, as specified.

In 2022, the requirements are 30.1% from Tier 1 sources, including at least 5.5% from solar, and 2.5% from Tier 2 sources.

Recent Significant Changes to Overall Percentage Requirements

- 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.

- Chapter 673 of 2021 reduced the amount of solar energy required under the RPS each year from 2022 through 2029, while leaving the nonsolar requirement generally unchanged, before realigning with the previous requirements beginning in 2030. The Act also extended Tier 2 in perpetuity at 2.5%.

- Chapter 164 of 2021 created an additional carve-out for post-2022 geothermal systems in Tier 1 beginning in 2023.

Limited Applicability to Municipal Electric Utilities and Electric Cooperatives

As RPS percentage requirements have grown over time, legislation has been enacted to limit the effect on municipal electric utilities and electric cooperatives. Tier 1 percentage requirements for municipal electric utilities are limited to 20.4% in total beginning in 2021, including at least 1.95% from solar energy and up to 2.5% from offshore wind. Municipal electric utilities are also exempt from Tier 2 after 2021. Electric cooperatives are exempt from future increases to the solar carve-out beyond 2.5%, and the RPS does not apply to Choptank Electric Cooperative.

Renewable Energy Credits

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.

Eligible Sources

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 includes only large hydroelectric power plants.

Chapter 673 of 2021 excluded black liquor, or any product derived from black liquor, from Tier 1 beginning in 2022. Chapter 691 of 2021 included raw or treated wastewater used as a heat source or sink for heating or cooling in Tier 1 beginning in 2021.

Trends in Compliance Costs, Renewable Energy Credit Prices, and Resources Used

Electricity suppliers retired 14.3 million RECs at a cost of $223.2 million in 2020, as shown in **Exhibit 1**. This continues a multi-year trend of increasing compliance costs and, generally, average REC prices. Notably, the solar carve-out ($122.9 million) cost was higher than the remaining Tier 1 requirement ($99.8 million) – the first time since 2011.

In 2020, wind (56.7%), municipal solid waste (11.8%), black liquor (11.5%), and small hydroelectric (8.5%) were the primary energy sources used for Tier 1 RPS compliance. This continues a multi-year trend of increasing reliance on wind energy. Maryland facilities generated 4.3 million RECs in 2019: approximately 2.7 million Tier 1 RECs and 1.7 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.

Exhibit 1
RPS Compliance Costs and REC Prices
2016-2020

	2016	2017	2018	2019	2020
Compliance Costs ($ Millions)					
Tier 1 Nonsolar	$88.2	$50.0	$56.4	$79.3	$99.8
Tier 1 Solar	45.6	21.3	27.4	55.2	122.9
Tier 2	1.4	0.7	1.0	0.06	0.4
Total	**$135.2**	**$72.0**	**$84.8**	**$134.5**	**$223.2**
Average REC Price ($)					
Tier 1 Nonsolar	$12.22	$7.14	$6.54	$7.77	$8.24
Tier 1 Solar	110.63	38.18	31.91	47.26	66.10
Tier 2	0.96	0.47	0.66	1.05	1.06

REC: renewable energy credit
RPS: Renewable Energy Portfolio Standard

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

Source: Public Service Commission

Related Studies Reports

PSC must submit an RPS compliance report to the General Assembly each year. The most recent report, which contains historical data through 2020, can be found here.

The Power Plant Research Program (PPRP) in the Department of Natural Resources has frequently been required to conduct RPS studies. PPRP submitted a final report on a comprehensive RPS study in December 2019, which can be found here. PPRP also submitted a related required study on nuclear energy at that time, which can be found here. A supplemental study on the overall costs and benefits of increasing the RPS to a goal of 100% by 2040 is due by January 1, 2024.

Chapter 164 of 2021 required MEA to staff a new Geothermal Energy Workgroup and complete a technical study on the potential impact of expanding and incentivizing the use of geothermal heating and cooling systems in the State. The Act required a related report to be submitted to the General Assembly by December 1, 2021.

ANALYSIS OF ECONOMIC IMPACT ON SMALL BUSINESSES

TITLE OF BILL: Zero-Emission Energy Resources and Carbon Capture, Use, and Sequestration – Renewable Energy Portfolio Standard and Study

BILL NUMBER: HB 1366

PREPARED BY: Landon Fahrig, Legislative Liaison

PART A. ECONOMIC IMPACT RATING

This agency estimates that the proposed bill:

__X__ WILL HAVE MINIMAL OR NO ECONOMIC IMPACT ON MARYLAND SMALL BUSINESSES

OR

_____ WILL HAVE A MEANINGFUL ECONOMIC IMPACT ON MARYLAND SMALL BUSINESSES

PART B. ECONOMIC IMPACT ANALYSIS

MEA0007 will have minimal impact on Maryland small businesses. Some small businesses may enjoy new business as support for energy projects which are initiated or expanded to take advantage of a growing demand for carbon capture, utilization, and sequestration.