PUBLIC SERVICE COMMISSION OF MARYLAND

RENEWABLE ENERGY PORTFOLIO STANDARD REPORT

With Data for Calendar Year 2012

In compliance with Section 7-712 of
the Public Utilities Article,
Annotated Code of Maryland

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January 2014

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION

A. Report Contents

This document constitutes the 2013 annual report of the Public Service Commission of Maryland (Commission) regarding the implementation of Maryland's Renewable Energy Portfolio Standard (RPS) Program. This report is submitted pursuant to § 7-712 of the Public Utilities Article, *Annotated Code of Maryland* (Pub. Utils.). Pub. Utils. § 7-712 requires that, on or before February 1 of each year, the Commission shall report to the General Assembly on the status of the implementation of the RPS Program. Beginning this year, the Commission will issue this report prior to the beginning of the legislative session so as to provide ample time for review. As such, this second 2013 annual report covers the 2012 calendar year, while the previous report issued in March 2013 reviewed the 2011 calendar year. Electricity suppliers are not required to file an RPS compliance report with the Commission for the prior calendar year until April 1 of the next year. Consequently, this report, which is due to the General Assembly in February, 2014, highlights data from electricity suppliers' 2012 compliance reports and relevant 2012 data such as the renewable facilities certified by the State of Maryland.

In compliance with Pub. Utils. § 7-712, topics addressed in this report include the availability of Tier 1, Tier 1 Solar, and Tier 2 renewable energy sources, renewable compliance fees collected to support in-State renewable projects, and other pertinent information. The report also provides historical information and accomplishments over the past year.

B. Objectives of the Program

The objective of Pub. Utils. § 7-701 *et seq.* (RPS Statute) is to recognize and develop the benefits associated with a diverse collection of renewable energy supplies to serve Maryland. The State's RPS Program does this by recognizing the environmental and consumer benefits associated with renewable energy. The RPS Program requires electricity suppliers to meet a prescribed minimum portion of their retail electricity sales with various renewable energy sources, which have been classified within the RPS Statute as Tier 1 and Tier 2 renewable sources. The program is implemented through the creation, sale, and transfer of Renewable Energy Credits (RECs). The development of renewable energy sources is further promoted by requiring electricity suppliers to pay a financial penalty for failing to acquire sufficient RECs to satisfy the RPS as set forth in Pub. Utils. § 7-703. The penalty is used to support the creation of new Tier 1 renewable sources in the State.

C. Overview of the Maryland RPS Program

Under the RPS Program, electricity suppliers are required to meet a renewable energy portfolio standard. This is an annual requirement placed upon Maryland electricity suppliers, which includes competitive suppliers and electric companies, including those that provide

Standard Offer Service.[1] Electricity suppliers must file compliance reports with the Commission verifying that the renewable requirement for each entity has been satisfied.

Each electricity supplier must present, on an annual basis, RECs equal to the percentage specified by the RPS Statute[2] or pay compliance fees equal to shortfalls. A REC is equal to the renewable attributes associated with the production of one megawatt-hour (MWh) of electricity generated using eligible renewable sources. As such, a REC is a tradable commodity equal to one MWh of electricity generated or obtained from an eligible renewable energy resource. Generators and electricity suppliers are allowed to trade RECs using a Commission-approved system known as the Generation Attributes Tracking System (GATS). GATS is a system designed and operated by PJM Environmental Information Services, Inc. (PJM-EIS) that tracks the ownership and trading of the generation attributes.[3] A REC has a three-year life during which it may be transferred, sold, or redeemed. Electricity suppliers that do not meet their annual RPS requirements are required to pay compliance fees, also known as an Alternative Compliance Penalty (ACP).

Compliance fees are deposited into the Maryland Strategic Energy Investment Fund (SEIF) as dedicated funds to provide for loans and grants that spur the creation of new renewable energy sources in the State. As a special, non-lapsing fund, the SEIF is also the depository of revenues generated through the sale of carbon allowances under the Regional Greenhouse Gas Initiative (RGGI), the first market-based regulatory program in the United States to reduce greenhouse gas emissions. RGGI is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont to cap and reduce CO_2 emissions from the power sector. Indeed, the majority of the SEIF funds result from the RGGI carbon dioxide allowance auctions. Auctions are held quarterly; the initial 21 auctions held between September 2008 and September 2013 yielded proceeds for Maryland totaling $300,026,815.50.[4] At least 6.5% of the funds from the RGGI allowances sold between March 1, 2009 and June 30, 2011 were to be allocated to renewable and clean energy, climate change programs, and energy related public education and outreach programs.[5] An allocation of up to 10.5% of the RGGI funds is provided to the SEIF in all subsequent auctions post June 2011.[6]

Responsibility for developing renewable energy sources has been vested with the Maryland Energy Administration (MEA). According to MEA, 2,389 residential and small

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1 Standard Offer Service (SOS) is electricity supply purchased from an electric company by the company's retail customers that cannot or choose not to transact with a competitive supplier operating in the retail market. *See* Pub. Utils. §§ 7-501(n), 7-510(c).

2 Using the Tier 2 RPS requirement as an example, assume a hypothetical electricity supplier operating in the State had 100,000 MWh in retail electricity sales for 2012. In 2012 the Tier 2 requirement was 2.5 percent. Thus, the electricity supplier would have to either verify the purchase of 2,500 Tier 2 RECs in satisfaction of the Tier 2 RPS obligation or pay compliance fees for deficits. Similar requirements apply to Tier 1 and Tier 1 Solar; the additional RPS tiers provided for in Maryland's RPS Statute.

3 An attribute is "a characteristic of a generator, such as location, vintage, emissions output, fuel, state RPS Program eligibility, etc." PJM-EIS, GATS Operating Rules, at 3 (December 2011).

4 RGGI, CO2 Auctions, Auction Results, Available: http://www.rggi.org/market/co2_auctions/results (October 9, 2013).

5 Maryland General Assembly, The Budget Reconciliation and Financing Act of 2009, Chapter 487 of 2009, Available: http://mgaleg.maryland.gov/2009rs/chapters_noln/Ch_487_hb0101E.pdf (August 7, 2013).

6 *Ibid*.

commercial renewable projects were supported by the SEIF either through dedicated funds (i.e., RPS compliance fees) or RGGI auction revenues in fiscal year 2013. In fiscal year 2013, $6,051,869.60 was used from RGGI auction revenues and compliance fees to fund new Tier 1 renewable energy resources in Maryland, an increase of approximately $2 million over 2012. These grants from SEIF and compliance fees supported the installation of 1 wind facility, 605 geothermal facilities, 292 solar hot water heaters, and 1,481 solar photovoltaic (PV) facilities.[7]

1. Registration of Renewable Energy Facilities

Facilities eligible for the Maryland RPS Program must be located in PJM (the wholesale bulk power control area in which Maryland resides);[8] or in a control area that is adjacent to the PJM region,[9] so long as the electricity they produce is delivered into the PJM region. However, facilities generating electricity from solar energy, geothermal, poultry litter–to–energy, waste–to–energy, or refuse–derived fuel are eligible only if the facility is connected with the electric distribution grid serving Maryland. Before recommending that a Renewable Energy Facility (REF) be certified, Commission Staff must determine whether the facility meets the standards set forth by the RPS Statute and COMAR 20.61, which implements the RPS Statute. REF applicants who may qualify under Maryland's RPS Program initially work with Commission Staff and must complete the appropriate application for REF certification posted on the Commission's RPS website.[10] In addition to the geographic requirements, applicants must also meet the fuel source requirements associated with Tier 1 and Tier 2 REC creation. Verification of the fuel source is usually completed with the aid of Energy Information Administration Form 860 (EIA-860) to validate each facility's rated nameplate capacity, fuel source(s), location and commercial operation start date.[11]

REFs must register with GATS to transact business and to have RECs recognized and created. The GATS account must be established with the State facility certification number issued by the Commission upon approval of the REF application. Facilities that co-fire a REC-eligible renewable fuel source with non-eligible fuel sources must submit a formula or method to account for the proportion of total electricity generation that is produced by eligible fuel sources and will be credited with RECs. Eligible fuel sources for Tier 1 RECs and Tier 2 RECs are listed in Table 1. Solar has its own standard within Tier 1.

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7 Source: MEA email, November 15, 2013.

8 The PJM wholesale market includes all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia.

9 A control area is an "electric system or systems, bounded by interconnection metering and telemetry, capable of controlling generation to maintain its interchange schedule with other Control Areas and contributing to frequency regulation. For the purposes of this document, a Control Area is defined in broad terms to include transmission system operations, market, and load-serving functions within a single organization. A Control Area operator may be a system operator, a transmission grid operator, or a utility." PJM-EIS GATS Operating Rules, at 5 (December 2011). For example, the multi-state area controlled by the PJM Regional Transmission Operator is one control area, as is the adjacent Midwest Independent System Operator (ISO) multi-state area, and the adjacent New York ISO.

10 REF applications are maintained by the Commission and are available online under Renewable Portfolio Standard Documents, Available at: http://webapp.psc.state.md.us/intranet/ElectricInfo/home_new.cfm.

11 Submitting Form EIA-860 is a requirement under Section 13(b) of the Federal Energy Administration Act of 1974 (FEAA) (Public Law 93-275) for generating plants, regulated and unregulated, which have a nameplate rating of 1 MW or more, are operating or plan to operate within 5 years, and are connected to the transmission grid.

Table 1: Eligible Tier 1 and Tier 2 Resources

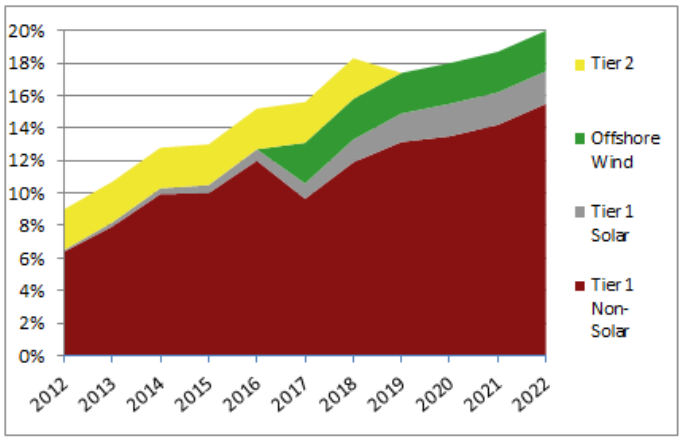
Tier 1 Renewable Sources	Tier 2 Renewable Sources
• Solar (Tier 1 Solar) • Wind • Qualifying Biomass • Methane from a landfill or wastewater treatment plant • Geothermal • Ocean • Fuel Cell that produces electricity from a Tier 1 source • Hydroelectric power plant less than 30 MW capacity • Poultry litter-to-energy • Waste-to-energy[12] • Refuse–derived fuel • Thermal energy from a thermal biomass system	• Hydroelectric power other than pump storage generation *(Note: Tier 1 RECs may be used to satisfy Tier 2 obligations)*

2. Maryland RPS Annual Percentage Requirements

Electricity suppliers are required to purchase specified minimum percentages of their electricity resources via RECs from Maryland-certified Tier 1 and Tier 2 renewable resources. Tier 1 and Tier 1 Solar set-aside requirements gradually increase until they peak in 2022 at 18% and 2%, respectively, and are subsequently maintained at those levels.[13] Beginning in 2017, a constant Tier 1 Offshore Wind set-aside of up to 2.5% begins as part of the Tier 1 portfolio.[14] Maryland's Tier 2 requirement remains constant at 2.5% through 2018, after which it sunsets.

Table 2: Annual RPS Requirements by Tier

Compliance Year	Tier 1 Non-Solar	Tier 1 Solar	Offshore Wind	Tier 2
2012	6.40%	0.10%	0.00%	2.50%
2013	7.95%	0.25%	0.00%	2.50%
2014	9.95%	0.35%	0.00%	2.50%
2015	10.00%	0.50%	0.00%	2.50%
2016	12.00%	0.70%	0.00%	2.50%
2017	9.65%	0.95%	2.50%	2.50%
2018	11.90%	1.40%	2.50%	2.50%
2019	13.15%	1.75%	2.50%	0.00%
2020	13.50%	2.00%	2.50%	0.00%
2021	14.20%	2.00%	2.50%	0.00%
2022	15.50%	2.00%	2.50%	0.00%



[12] Waste-to-energy was moved from Tier 2 to Tier 1 as a result of legislation (Chapter 519 of 2011) which took effect October 1, 2011. This only affected RECs generated on or after October 1, 2011, and RECs from these sources generated prior to the effective date of the legislation remain Tier 2 RECs.

[13] "Tier 1 Solar set-aside" refers to the set-aside (or carve-out) of Tier 1 for energy derived from qualified solar energy facilities. The Tier 1 Solar set-aside requirement applies to retail electricity sales in the State by electricity suppliers and is a sub-set of the Tier 1 standard.

[14] The offshore wind set-aside was initiated as a result of legislation (Chapter 9 of 2013) which took effect June 1, 2013. Beginning in 2017, Tier 1 will include an amount of offshore wind RECs set by the Commission, not to exceed 2.5 percent. The project must be generating RECs in order for the obligation to begin.

An electricity supplier can request the Commission to consider a delay in scheduled Tier 1 and Tier 1 Solar RPS requirements provided certain renewable procurement cost thresholds are met.[15] To date, no such request has been made by electricity suppliers operating in the Maryland marketplace.

3. Maryland RPS Alternative Compliance Penalty (ACP) Requirements

Electricity suppliers who do not meet their RPS obligation must pay an ACP for shortfalls, as shown in Table 3. Table 3 presents the ACP schedule separated by tiers for each year of the RPS from 2012 to 2023 and beyond. ACPs are submitted to the SEIF and dedicated to supporting the development of new Tier 1 renewable resources in Maryland.

Table 3: ACP Schedule ($/MWh)

Compliance Year	Tier 1 Non-Solar	Tier 1 Solar	Tier 2	IPL[16] Tier 1
2012	$40	$400	$15	$4
2013	$40	$400	$15	$3
2014	$40	$400	$15	$3
2015	$40	$350	$15	$2.50
2016	$40	$350	$15	$2.50
2017	$40	$200	$15	$2
2018	$40	$200	$15	$2
2019	$40	$150		$2
2020	$40	$150		$2
2021	$40	$100		$2
2022	$40	$100		$2
2023 +	$40	$50		$2

II. ELECTRICITY SUPPLIER COMPLIANCE REPORTS

Calendar year 2012 marked the seventh compliance year for the Maryland RPS, and the fifth year for electricity suppliers to comply with the Tier 1 Solar set-aside. The RPS compliance reports submitted to the Commission by electricity suppliers, along with information obtained from GATS, provide information regarding the RECs retired and the underlying REFs (*e.g.*, type and location of generators) utilized by electricity suppliers to comport with Maryland RPS obligations.[17] RPS compliance reports were filed by 83 electricity suppliers (up from 71 in

[15] Pub. Utils. § 7-705.

[16] Under Article § 7-705(b)(2) and COMAR 20.61.01.06.E(5), a supplier sale for IPL is required to meet the entire Tier 1 obligation for electricity sales, including solar. However, the ACP for an IPL Tier 1 non-solar shortfall and a Tier 1 Solar shortfall is the same. For IPL there is no ACP for Tier 2 shortfalls.

[17] According to Pub. Utils. § 7-709, a REC can be diminished or extinguished before the expiration of three years by: the electricity supplier that received the credit; a nonaffiliated entity of the electricity supplier that purchased or otherwise received the transferred credit; or demonstrated noncompliance by the generating facility with the requirements of Article § 7-704(f). In the PJM region, the regional term of art is "retirement," and describes the process of removing a

2011), including 54 competitive suppliers (up from 47 in 2011), 11 brokers or electricity suppliers with zero retail electricity sales (down from 13 in 2011), and 11 electric companies, of which four are investor-owned utilities. RPS compliance reports are due by April 1 of the following year. This year, there were approximately 61.9 million MWh (from 63.1 million MWh in 2011) of total retail electricity sales in Maryland for 2012: 60.9 million MWh were subject to RPS compliance, and 1.0 million MWh were exempt.[18]

For the 2012 compliance year, electricity suppliers retired 5,480,712 RECs, which was slightly more than the obligation for the year. According to the compliance reports filed with the Commission, the cost of RECs retired totaled $24.4 million for the 2012 compliance year. Table 4 displays the total costs for each Tier, as well as the average cost per REC retired in each Tier.

Table 4: Cost of RECs per Tier

Tier	Total Costs	Cost Per REC
Tier 1 Non-Solar	$12,453,493	$3.19
Tier 1 Solar	$11,346,967	$201.92
Tier 2	$664,220	$0.44

For the seven compliance years, Table 5 displays the breakdown of RECs submitted for each tier (MWh), the number of RECs retired in the year by tier (MWh), as well as the payments for the shortfalls in terms of the ACP amount required ($ per MWh).[19] The total cost of compliance with the 2012 RPS requirements was $24.4 million, with the ACPs accounting for just $5,450.[20] This compares to 2011 RPS requirement payments of $14.6 million, with ACPs accounting for $98,520 of that figure.

REC from circulation by the REC owner, *i.e.,* the owner "diminishes or extinguishes the REC." PJM-EIS, GATS Operating Rules, at 54-56 (September 30, 2010).

[18] According to Pub. Utils. § 7-703(a)(2), exceptions for the RPS requirement may include: IPL which exceeds 300,000,000 kWh to a single customer in a year; regions where residential customer rates are subject to a freeze or cap (under Article § 7-505); or electric cooperatives under a purchase agreement that existed prior to October 1, 2004, until the expiration of the agreement.

[19] In Table 4, "RPS Obligation" represents the total obligation for electricity sales in MWh, which is equal to the number of RECs required for compliance. "Retired RECs" represents the actual number of RECs retired for RPS compliance in each corresponding compliance year. "ACP Required" represents the compliance payments owed, and is calculated by multiplying the difference between the RPS obligation and the actual retired RECs (*i.e.*, the shortfalls) by the applicable ACP.

[20] Electricity suppliers can meet RPS obligations through the retirement of RECs or by paying ACPs. Electricity suppliers are required to report the total cost of purchasing RECs for compliance.

Table 5: Results of the RPS Compliance Reports

RPS Compliance Year		Tier 1 Non-Solar	Tier 1 Solar	Tier 2	Total
2006	RPS Obligation	520,073	-	1,300,201	1,820,274
	Retired RECs	552,874	-	1,322,069	1,874,943
	ACP Required	**$13,293**	**-**	**$24,917**	**$38,209**
2007	RPS Obligation	553,612	-	1,384,029	1,937,641
	Retired RECs	553,374	-	1,382,874	1,936,248
	ACP Required	**$12,623**	**-**	**$23,751**	**$36,374**
2008	RPS Obligation	1,183,439	2,934	1,479,305	2,665,678
	Retired RECs	1,184,174	227	1,500,414	2,684,815
	ACP Required	**$9,020**	**$1,218,739**	**$8,175**	**$1,235,934**
2009	RPS Obligation	1,228,521	6,125	1,535,655	2,770,301
	Retired RECs	1,280,946	3,260	1,509,270	2,793,475
	ACP Required	**$395**	**$1,147,600**	**$270**	**$1,148,265**
2010	RPS Obligation	1,922,070	15,985	1,601,723	3,539,778
	Retired RECs	1,931,367	15,451	1,622,751	3,569,569
	ACP Required	**$20**	**$217,600**	**$0**	**$217,620**
2011	RPS Obligation	3,079,851	28,037	1,553,942	4,661,830
	Retired RECs	3,083,141	27,972	1,565,945	4,677,058
	ACP Required	**$48,200**	**$41,200**	**$9,120**	**$98,520**
2012	RPS Obligation	3,901,558	56,130	1,522,179	5,479,867
	Retired RECs	3,902,221	56,194	1,522,297	5,480,712
	ACP Required	**$0**	**$4,400**	**$1,050**	**$5,450**

Note: Some electricity suppliers retired more RECs than required.

RECs are valid for compliance with the RPS for the calendar year in which they were generated and the following two calendar years.[21] Figure 1 aggregates the Maryland RPS tiers on the basis of generation year. In 2012, 54.5% of the RECs retired for compliance were generated in 2012, 30.1% of the retired RECs were generated in 2011; the balance (15.4%) were generated in 2010. Since a significant number of the RECs retired in 2012 were not generated in 2012, this indicates generators and/or electricity suppliers are utilizing Maryland's three year banking provision.[22]

[21] COMAR 20.61.03.01.C (unless the REC is diminished or extinguished before expiration).

[22] Once a REC has been created, the generator can sell or transfer the REC to another GATS account, keep the REC active, or retire (extinguish) the REC. A REC that is not retired during the year it was generated can be accumulated and "banked" for use in the two subsequent compliance years.

Figure 1: RECs Retired in 2012 by Generation Year

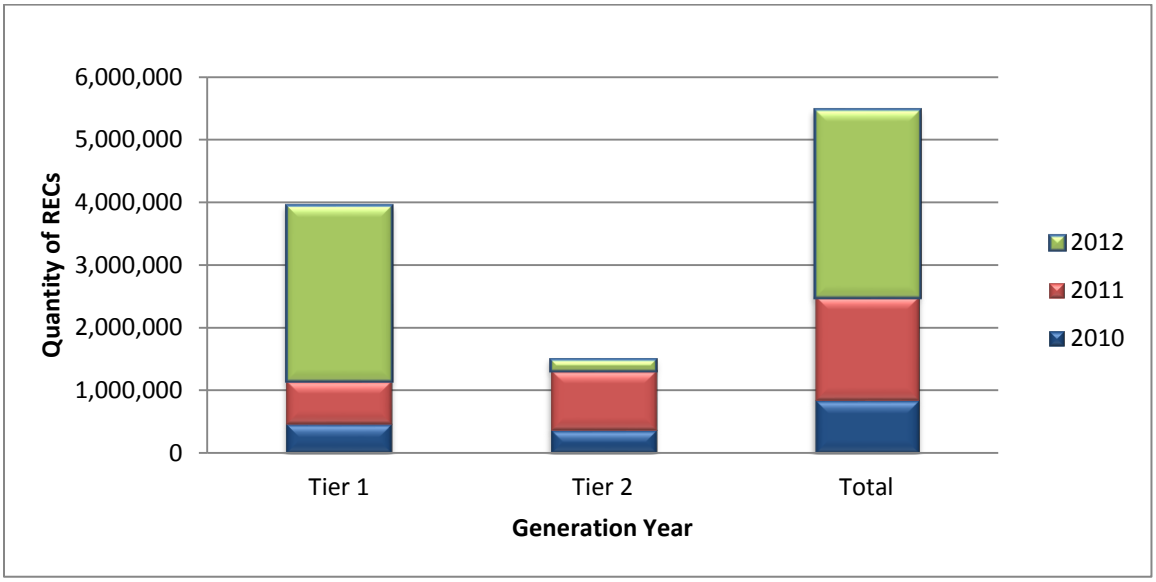
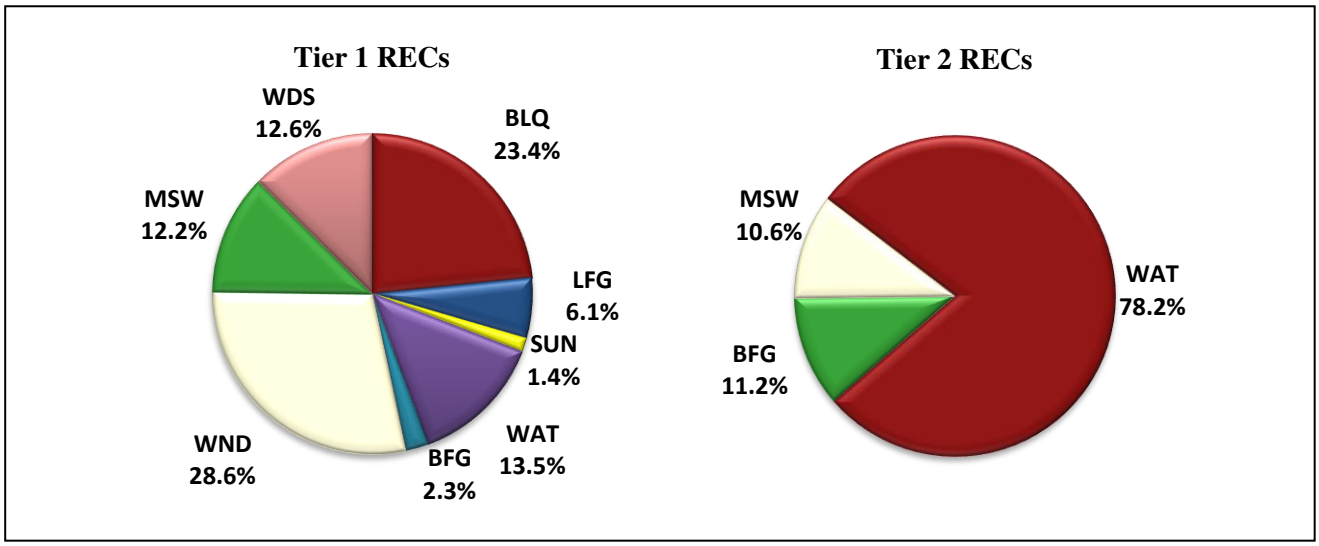


Figure 2 illustrates the fuel sources used to satisfy Tier 1 and Tier 2 RPS requirements for the 2012 RPS compliance year. Of the Tier 1 RECs retired for 2012, the principle resources used were wind resources that provided approximately 28.6% of the RECs; black liquor, 23.4%; small hydroelectric, 13.5%; waste wood, 12.6%; municipal solid waste, 12.2%; landfill gas, 6.1%; blast furnace gas, 2.3%; and solar, 1.4%.[23] Of the Tier 2 RECs retired for 2012, Figure 2 also reveals that hydroelectric facilities provided a large majority of the RECs, 78.2%; while blast furnace gas accounted for 11.2%, and municipal solid waste provided 10.6% of the Tier 2 RECs retired for 2012.

[23] The prices associated with RECs vary depending upon the renewable resource, because the various renewable technologies have different costs associated with electricity production. To minimize costs, electricity suppliers tend to purchase lower priced RECs from lower cost renewable technologies first. The renewable fuel sources retired in Maryland for 2012 compliance (Figure 2) suggest such a strategy by market participants. Over time, as the RPS percentage standard increases and the opportunity to utilize low-cost technologies may become exhausted, the use of RECs from more expensive renewable resources is likely to occur. Moreover, development of these more expensive renewable technologies may be incentivized. In addition to RECs used for RPS compliance, RECs are also sold to support green retail products that have large renewable energy amounts (*e.g.*, 100 percent wind). Customers may have a preference for energy from a specific technology and be willing to pay the price premium for these RECs over electricity from fossil fuel resources. Therefore, green power products currently available in the market and to retail customers also support higher cost renewable technologies.

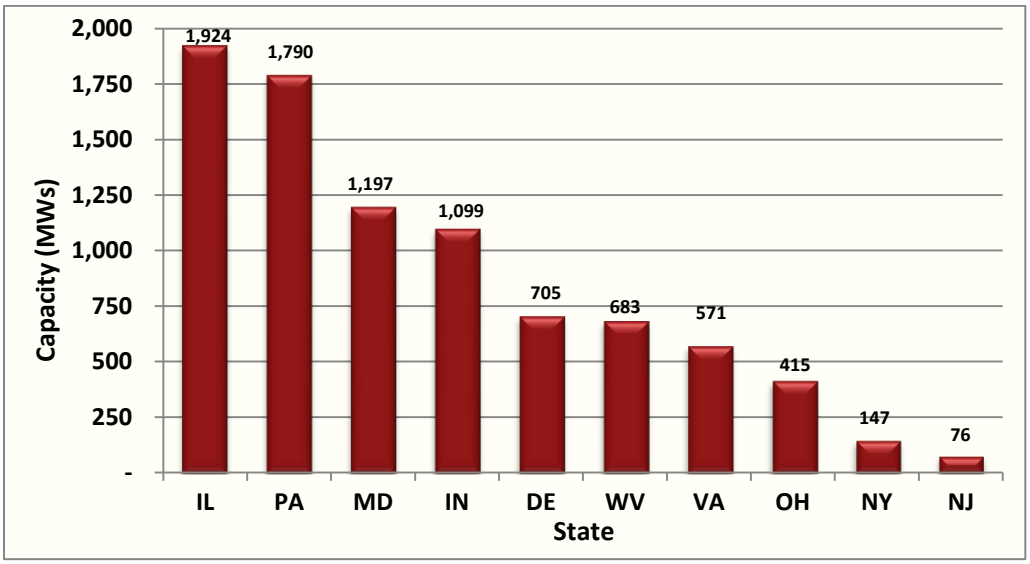
Figure 2: 2012 Tier 1 and Tier 2 Retired RECs by Fuel Source[24]



Abbreviations: BFG, Blast Furnace Gas; BLQ, Black Liquor; LFG, Landfill Gas; MSW, Municipal Solid Waste; OBL, Other Biomass Liquids; SUN, Solar; WAT, Hydroelectric; WDS, Wood and Waste Solids; and WND, Wind.

Figure 3 presents the geographical location and the total generating capacity (8,607 MW) for all Maryland RPS-certified facilities regardless of Tier. RPS requirements also exist in the surrounding states, which generally support out-of-state and regional market participation (see Appendix A). Just over 50% of the capacity of renewable facilities that are eligible to participate in Maryland reside in the Mid-Atlantic States. The locations of the remaining eligible resources span five states and in total contribute 49.6% of the State's eligible capacity.

Figure 3: Total Rated Capacity by State[25]

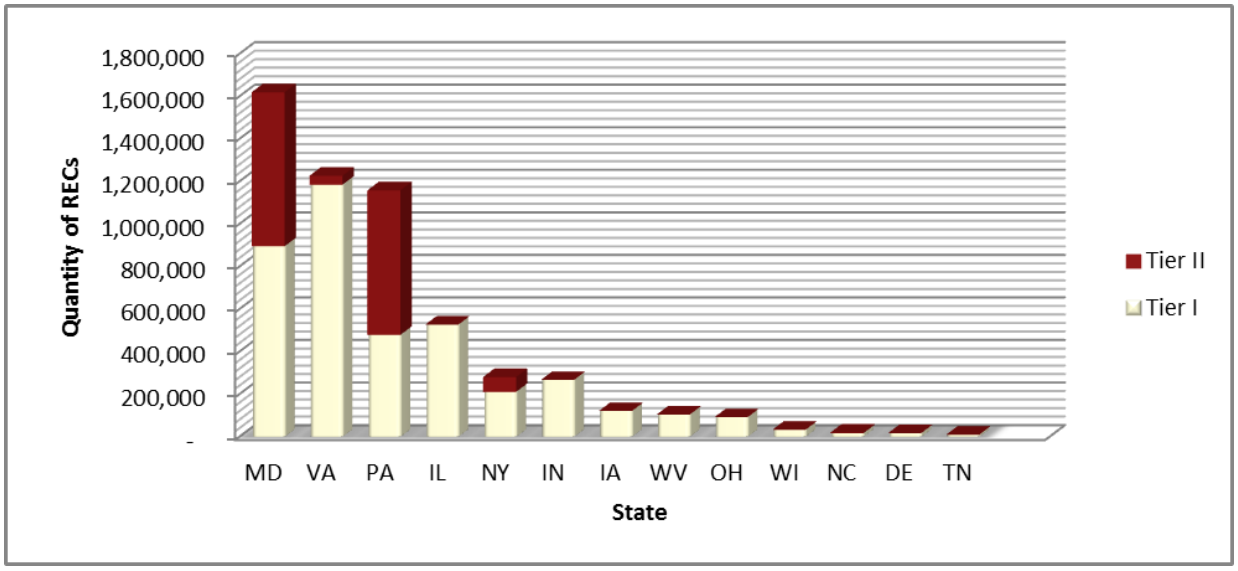


[24] Blast furnace gas and municipal solid waste are considered waste-to-energy fuels, and as such were changed from Tier 2 to Tier 1 fuels as of October 1, 2011.

[25] PJM-EIS, Generation Attribute Tracking System, Database query, June 25, 2012. The information in this figure does not include Commission authorized REFs that have not established a REC account with PJM GATS.

For the 2012 compliance year, Figure 4 provides a visual display of aggregate REC data to convey general relationships among the States that contributed RECs in 2012. For the first time, Maryland supplied the largest number of its own RECs purchased by retail electricity suppliers; with municipal solid waste (29.7%) and large hydroelectric (26.9%) contributing the majority of RECs from generators in Maryland. Virginia was the second highest source of RECs procured by Maryland electricity suppliers, and was the largest source of Tier 1 RECs retired for 2012 compliance purposes. Pennsylvania was ranked a close third in terms of state location for retired RECs, although they had a much larger share of the Tier II RECs which made up the total.

Figure 4: Number of RECs Retired by Facility Location (2012)



Tables 6 and 7 provide the quantitative data that supports Figure 4 above. Table 6 provides the reported levels of RECs retired by Maryland electricity suppliers in 2012 on a Tier and aggregate basis, whereas Table 7 provides the information on a percentage basis. As noted above, Maryland generated RECs, followed by Virginia and Pennsylvania, were used in the largest aggregate amounts by Maryland electricity suppliers for 2012 RPS compliance.[26] Tier 1 Maryland RECs retired include 56,152 Solar RECs (SRECs).

[26] Table 6 provides the number of RECs retired by state of origin.

Table 6: 2012 Compliance Reports' REC Retirement by State

State*	Tier 1 Non-Solar	Tier 1 Solar	Tier 2	Total
MD (2)	840,131	56,152	723,692	1,619,975
VA (1)	1,185,441	0	41,673	1,227,114
PA (3)	479,397	0	679,125	1,158,522
IL (5)	527,345	0	0	527,400
NY (4)	211,395	0	69,754	281,149
IN (12)	267,543	0	0	267,543
IA (7)	121,351	0	0	121,351
WV (6)	104,662	0	0	104,662
OH (14)	92,481	0	0	92,481
WI (11)	33,192	0	0	33,192
NC (8)	16,900	0	2,954	19,854
DE (9)	17,647	0	0	17,647
TN (n/a)	9,651	0	0	9,651
Total	**3,907,136**	**56,152**	**1,517,198**	**5,480,486**

* The parentheses show the State's positions last year. New Jersey was 10th in 2011, and no Tennessee RECs were used in 2011.

Table 7: 2012 Compliance Reports' REC Retirement by State (%)

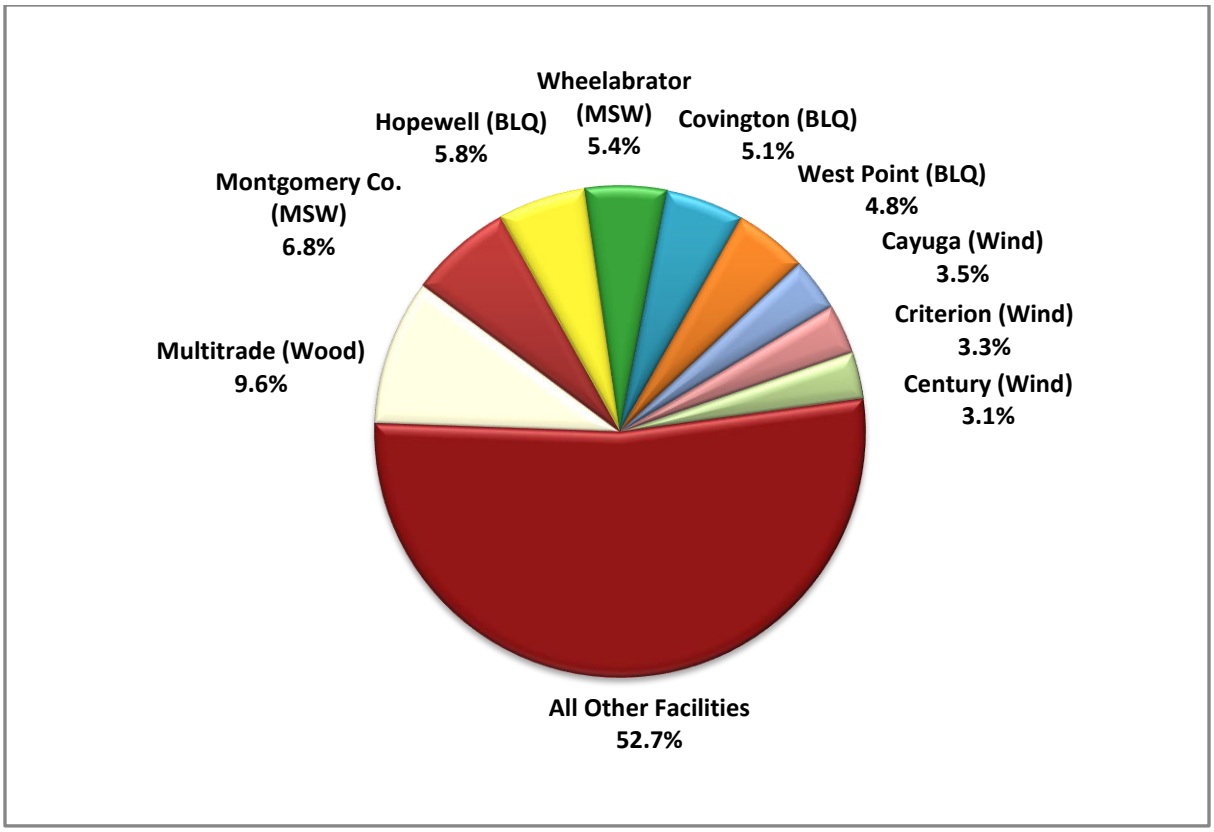
State	Tier 1 Non-Solar	Tier 1 Solar	Tier 2	Total
MD	21.5%	100.0%	47.7%	29.6%
VA	30.3%	0.0%	2.7%	22.4%
PA	12.3%	0.0%	44.8%	21.1%
IL	13.5%	0.0%	0.0%	9.6%
NY	5.4%	0.0%	4.6%	5.1%
IN	6.8%	0.0%	0.0%	4.9%
IA	3.1%	0.0%	0.0%	2.2%
WV	2.7%	0.0%	0.0%	1.9%
OH	2.4%	0.0%	0.0%	1.7%
WI	0.8%	0.0%	0.0%	0.6%
NC	0.4%	0.0%	0.2%	0.4%
DE	0.5%	0.0%	0.0%	0.3%
TN	0.2%	0.0%	0.0%	0.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Additional information pertaining to the source of renewable energy used to meet Maryland's 2012 RPS compliance requirements is presented in Appendices A and B. Appendix A provides the renewable resources used by electricity suppliers on a Tier and state basis.

Appendix B presents the number of facilities by state, tier, and type of renewable facility which provided RECs for compliance with the 2012 RPS.

Figure 5 shows a list of those facilities that were major contributors of Maryland Tier 1 RECs retired in 2012, their generation source and origin. The nine facilities listed in Figure 5 provided 47.3% of the Tier 1 RECs retired for 2012. The remaining 52.7% of Tier 1 RECs were provided by 86 non-solar facilities (51.3%) and 3,240 solar facilities (1.4%).

Figure 5: List of Significant Tier 1 Generators (2012)



III. MARYLAND RENEWABLE ENERGY FACILITIES

Maryland's RPS requires electricity suppliers to obtain a minimum percentage of their power supply from renewable energy resources (see Table 2). Implementation of the Maryland RPS Program can provide an incentive for renewable generators to locate in Maryland and generate electricity. The renewable requirement establishes a market for renewable energy, and to the extent Maryland's geography and natural resources can be utilized to generate renewable electricity, developers may locate projects within the State. Moreover, Maryland's RPS requires electricity suppliers that do not meet the annual obligations to pay penalties, which in turn are used to support the creation of new Tier 1 renewable sources in the State. This section of the

report provides information about the REFs located in Maryland in 2012.[27] Renewable energy generated in Maryland can be used in other states for RPS compliance purposes, and also can be sold in support of competitive retail electricity supplier product offerings (*i.e.*, green power products).[28] Green power products are offered to the public with higher concentrations of renewable energy than required via State RPS requirements.

As shown in Table 8, 1,350,476 Tier 1 RECs and 1,639,132 Tier 2 RECs were generated within Maryland in 2012, totaling 2,989,608 RECs. Additional analysis pertaining to the Maryland-based renewable generators is presented in Appendices C through E. Appendix C shows the distribution of RECs generated in Maryland in 2012. Appendix D provides the number of renewable energy facilities by county that are both located in Maryland, and registered with GATS to participate in any one of the PJM States' RPS programs. Appendix E provides the total capacity of these facilities, broken out by county and tier.

Table 8: 2012 Maryland Generated RECs by Fuel Source

Fuel Type	Tier I										Tier II	Grand
	BFG	BLQ	LFG	MSW	OBL	STH	SUN	WAT	WND	Total	WAT	Total
Quantity of RECs	110,444	119,556	57,453	662,596	5	605	82,489	17,803	299,525	1,350,476	1,639,132	2,989,608
Percentage	8.2%	8.9%	4.3%	49.1%	0.0%	0.0%	6.1%	1.3%	22.2%	100.0%	100.0%	100.0%

Abbreviations: BFG, Blast Furnace Gas; BLQ, Black Liquor; LFG, Landfill Gas; MSW, Municipal Solid Waste; OBL, Other Biomass Liquids; SUN, Photovoltaic; STH, Solar Thermal; WAT, Hydroelectric; WDS; and WND, Wind.

Table 9 presents additional detail regarding the disposition of 2012 Maryland-generated RECs in calendar year 2012. Almost 62% of the RECs generated within Maryland by renewable facilities were banked for potential future sale in Maryland or other states in subsequent compliance years.[29] Just under 35% of the RECs generated in Maryland were retired to meet the RPS requirements in Maryland and various other PJM states. Labeled as "Other" in Table 9, just under 4% of RECs were sold for other purposes, posted for sales, or are awaiting confirmation by counterparties to complete year-end transactions.

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[27] Specific information pertaining to the State's REFs and described herein was made available by PJM-EIS in the GATS State Agency Report.

[28] Facilities located in Maryland are not necessarily registered by the Commission for the Maryland RPS; rather, certain facilities may seek certification out-of-state in support of a long-term contract for the RECs from an out-of-state counterparty. Counterparties can include an electricity supplier operating in a different state and purchasing the RECs to satisfy the RPS requirement for another state or other entities, such as brokers that purchase the REC output for resale. PJM-EIS reports that as of August 2013, there are 4,986 registered renewable generators located in Maryland. Of the 4,986 generators, all but 21 are approved by the Commission for Maryland RPS compliance. The 21 facilities registered for use in other states include 20 solar PV or solar thermal facilities registered in the District of Columbia, and/or Pennsylvania. The remaining facility is a landfill gas generator registered in New Jersey.

[29] In part, banking provides an opportunity for generators and electricity suppliers to locate one another and establish relationships in the renewable marketplace. The renewable marketplace is a regional marketplace. With the trend of individual states first enacting legislation to support renewables (*e.g.*, RPS requirements), and then increasing the percentage requirements and raising penalties for shortfalls, banking provides market participants with the opportunity to employ regional strategies (*i.e.*, maximize revenues, minimize compliance costs). Banking also provides an opportunity to support new product offerings outside of the RPS requirements, that is, green energy retail products that retail customers purchase, typically at a price premium, with significant concentrations of renewable energy (*e.g.*, 100 percent wind).

Table 9: Disposition of 2012 Maryland Generated RECs

	Banked	RPS Compliance	Other	Total
Tier 1	382,849	798,153	86,380	1,267,382
Tier 1 Solar	32,729	50,280	85	83,094
Tier 2	1,426,239	188,993	23,900	1,639,132
Total	1,841,817	1,037,426	110,365	2,989,608
(%)	61.61%	34.70%	3.69%	100.00%

Source: PJM-EIS.

Table 10 presents, on a state-by-state basis, the distribution of the RECs generated in the State of Maryland that were then retired for compliance purposes. In 2012, Maryland-generated RECs were used in six jurisdictions: the District of Columbia, Delaware, Illinois, Maryland, New Jersey, and Pennsylvania. In 2012, 91.1 percent of Maryland generated Tier 1 RECs retired for compliance purposes were retired in Maryland.

Table 10: 2012 Maryland Generated RECs Retired for RPS Compliance by State

	Fuel	DC	DE	IL	MD	NJ	PA	TOTAL
Tier 1	Black Liquor	188	0	0	79,434	0	0	79,622
	Blast Furnace Gas	0	0	0	89,431	0	0	89,431
	Land Fill Gas	0	0	0	12,983	13,397	0	26,380
	Municipal Solid Waste	0	0	0	442,945	6,167	0	449,112
	Small Hydro	0	0	0	11,512	0	0	11,512
	Solar PV	92	0	0	49,173	0	645	49,910
	Solar Thermal	0	0	0	370	0	0	370
	Wind	0	29,836	0	87,260	0	25,000	142,096
	Tier 1 Total	**280**	**29,836**	**0**	**773,108**	**19,564**	**25,645**	**848,433**
	Percentage	**0.0%**	**3.5%**	**0.0%**	**91.1%**	**2.3%**	**3.0%**	**100.0%**
Tier 2	Large Hydro	0	0	39,905	148,600	0	488	188,993
	Tier 2 Total	**0**	**0**	**39,905**	**148,600**	**0**	**488**	**188,993**
	Percentage	**0.0%**	**0.0%**	**21.1%**	**78.6%**	**0.0%**	**0.3%**	**100.0%**
Tier 1 & 2	**Grand Total**	**280**	**29,836**	**39,905**	**921,708**	**19,564**	**26,133**	**1,037,426**
	Percentage	**0.0%**	**2.9%**	**3.8%**	**88.8%**	**1.9%**	**2.5%**	**100.0%**

Source: PJM-EIS.

IV. CONCLUSION

The Maryland RPS Program is designed to create a stable and predictable market for energy generated from renewables, and to foster additional development and growth in the renewable industry. Implementation of the RPS Program assists in overcoming market barriers seen as impediments for the development of the industry; moreover, increasing reliance upon renewable energy technologies to satisfy electric power requirements can provide benefits including reductions in emissions of pollutants, increases in fuel diversity, and economic and employment benefits to the State.

The electricity supplier compliance reports of 2012, verified by Commission Staff, indicate that the State of Maryland RPS obligations were satisfied through submission of the appropriate level of Tier 1 and Tier 2 RECs, with only a minute and diminishing percentage relying on alternative compliance payments. Market participants use strategies that identify and incorporate the use of the least-cost, predominant renewable technologies to meet the State's tiered requirements. For the 2012 RPS requirements, electricity suppliers retired substantial amounts of hydroelectric, qualifying biomass (e.g., waste wood and the mill residue known as black liquor) and wind. While the number of RECs retired in 2012 from hydroelectric and qualifying biomass were similar to their numbers in 2011, the use of wind RECs increased by over 150%. Waste-to-energy (*e.g.*, municipal solid waste and blast furnace gas) and methane from the anaerobic decomposition of organic materials in landfills were also procured in significant amounts by electricity suppliers, although the amount of waste-to-energy RECs declined by about half. Even though the number of SRECs retired doubled from 2011 to 2012 calendar year, it still reflects a relatively small amount of procured energy compared to other resources.

Three States (Virginia, Maryland, and Pennsylvania) provided just under three-quarters (73.1%) of the Tier 1 and Tier 2 RECs retired by Maryland electricity suppliers in 2012. Maryland was the largest provider of Tier 2 RECs and Virginia the largest provider of Tier 1 RECs. For the third consecutive year, electricity suppliers did not rely heavily on ACPs to meet the State's Tier 1 Solar requirements. Instead, Maryland electricity suppliers retired 99.98% of the Tier 1 Solar RECs required to meet the 2012 RPS obligation, up from just 53.2% as recently as 2009.

REFs located in Maryland can register in multiple states to meet and comply with various policy objectives – and sell additional RECs that support clean, green, or renewable products offered by electricity suppliers. In Maryland, just over one-third of the renewable output and associated RECs generated during calendar year 2012 were retired for compliance with various states' RPS.

The Commission will continue to review applications from facilities requesting certification as a Maryland REF, oversee the RPS Program, and verify that the electricity suppliers in Maryland procure adequate renewable resources. As RPS Program results are received and reviewed, further refinements to the program may be made to ensure that the objectives of the Maryland RPS Program are met.

APPENDICES

Appendix A: 2012 Retired RECs by Tier and Resource

Tier 1*

Facility Name	Resource	State	Quantity	WND %	Tier 1
Beech Ridge	WND-01	WV	15,939	1.41%	0.40%
Big Sky	WND-01	IL	87,048	7.69%	2.20%
Blue Creek	WND-01	OH	4,373	0.39%	0.11%
Camp Grove	WND-01	IL	14,788	1.31%	0.37%
Cayuga Ridge	WND-01	IL	138,364	12.22%	3.49%
Century 1	WND-01	IA	121,351	10.72%	3.06%
Criterion	WND-01	MD	129,409	11.43%	3.27%
Eco Grove	WND-01	IL	41,685	3.68%	1.05%
Fowler Ridge	WND-01	IN	93,773	8.28%	2.37%
Fowler Ridge 1	WND-01	IN	48,784	4.31%	1.23%
Fowler Ridge 3	WND-01	IN	11,587	1.02%	0.29%
Grand Ridge 1	WND-01	IL	10,627	0.94%	0.27%
Grand Ridge 3	WND-01	IL	2,756	0.24%	0.07%
Greenland Gap	WND-01	WV	47,603	4.20%	1.20%
Highland North	WND-01	PA	7,400	0.65%	0.19%
Klondike Rd	WND-01	MD	108	0.01%	0.00%
Locust Ridge	WND-01	PA	5,500	0.49%	0.14%
Meadow Lake 1	WND-01	IN	96,223	8.50%	2.43%
Meadow Lake 2	WND-01	IN	16,975	1.50%	0.43%
Meadow Lake 4	WND-01	IN	201	0.02%	0.01%
Meyersdale	WND-01	PA	11,906	1.05%	0.30%
Old Trail	WND-01	IL	95,273	8.42%	2.40%
PN Armenia	WND-01	PA	2,025	0.18%	0.05%
Stony Creek	WND-01	PA	72,818	6.43%	1.84%
Top Crop	WND-01	IL	55,614	4.91%	1.40%
		Total	**1,132,130**	**100.00%**	**28.57%**

Facility Name	Resource	State	Quantity	BLQ %	Tier 1
Chillicothe	BLQ-01	OH	53,086	5.72%	1.34%
Covington Facility	BLQ-01	VA	203,209	21.91%	5.13%
Franklin Mill	BLQ-01	VA	82,984	8.95%	2.09%
Hopewell Mill	BLQ-01	VA	228,182	24.61%	5.76%
Kaukauna	BLQ-01	WI	9,940	1.07%	0.25%
Luke Mill	BLQ-01	MD	106,251	11.46%	2.68%
Spring Grove	BLQ-01	PA	52,767	5.69%	1.33%
West Point Mill	BLQ-01	VA	190,912	20.59%	4.82%
		Total	**927,331**	**100.00%**	**23.40%**

Tier 1*

Facility Name	Resource	State	Quantity	WAT %	Tier 1
Allegheny 5	WAT-01	PA	38,833	7.26%	0.98%
Allegheny Lock	WAT-01	PA	38,819	7.26%	0.98%
Allegheny River	WAT-01	PA	79,339	14.84%	2.00%
AP Misc	WAT-01	WV	41,120	7.69%	1.04%
Beardslee	WAT-01	NY	21,758	4.07%	0.55%
Big Shoals	WAT-01	VA	141	0.03%	0.00%
Blewett	WAT-01	NC	16,900	3.16%	0.43%
Coleman Falls	WAT-01	VA	1,353	0.25%	0.03%
Conemaugh	WAT-01	PA	30,533	5.71%	0.77%
Deep Creek	WAT-01	MD	11,512	2.15%	0.29%
Dixon	WAT-01	IL	15,914	2.98%	0.40%
E.J. West	WAT-01	NY	22,000	4.11%	0.56%
Granby	WAT-01	NY	5,421	1.01%	0.14%
Holcomb Rock	WAT-01	VA	2,543	0.48%	0.06%
Inghams	WAT-01	NY	12,229	2.29%	0.31%
Little Quinnesec	WAT-01	WI	21,700	4.06%	0.55%
Prospect	WAT-01	NY	32,387	6.06%	0.82%
Schoolfield	WAT-01	VA	18,130	3.39%	0.46%
Snowden	WAT-01	VA	5,400	1.01%	0.14%
Trenton	WAT-01	NY	117,600	21.99%	2.97%
Upper Sterling	WAT-01	IL	1,044	0.20%	0.03%
		Total	**534,676**	**100.00%**	**13.49%**

Facility Name	Resource	State	Quantity	WDS %	Tier 1
Coshocton Mill	WDS-01	OH	35,022	7.00%	0.88%
Hopewell Mill	WDS-01	VA	33,504	6.70%	0.85%
Kaukauna	WDS-01	WI	1,552	0.31%	0.04%
MeadWestvaco	WDS-01	VA	20,509	4.10%	0.52%
Multitrade	WDS-01	VA	380,745	76.15%	9.61%
Viking Energy	WDS-01	PA	28,645	5.73%	0.72%
		Total	**499,977**	**100.00%**	**12.62%**

Facility Name	Resource	State	Quantity	MSW %	Tier 1
Montgomery County	MSW-01	MD	269,126	55.85%	6.79%
Wheelabrator	MSW-01	MD	212,738	44.15%	5.37%
		Total	**481,864**	**100.00%**	**31.76%**

Facility Name	Resource	State	Quantity	BFG %	Tier 1
Sparrows Point	BFG-01	MD	90,587	100.00%	2.29%
		Total	**90,587**	**100.00%**	**2.29%**

Appendix A: 2012 Retired RECs by Tier and Resource (Cont'd)

Tier 1 (Cont'd)*

Facility Name	Resource	State	Quantity	LFG %	Tier 1
AP Arden	LFG-01	PA	4,523	1.88%	0.11%
AP Upton	LFG-01	PA	4,521	1.88%	0.11%
Archbald	LFG-01	PA	35,658	14.82%	0.90%
BWWTP	LFG-01	MD	8,738	3.63%	0.22%
Chestnut Ridge	LFG-01	TN	9,651	4.01%	0.24%
CID	LFG-01	IL	4,743	1.97%	0.12%
Des Plaines	LFG-01	IL	939	0.39%	0.02%
DPL NWLND	LFG-01	MD	894	0.37%	0.02%
Edge Moor	LFG-01	DE	17,647	7.34%	0.45%
Fairless Hills	LFG-01	PA	43,769	18.19%	1.10%
Greene Valley	LFG-01	IL	9,054	3.76%	0.23%
I-95 Landfill	LFG-01	VA	560	0.23%	0.01%
Kankakee	LFG-01	IL	3,156	1.31%	0.08%
Lake Gas Recovery	LFG-01	IL	9,676	4.02%	0.24%
Lakeview Gas	LFG-01	PA	5,738	2.39%	0.14%
Mallard Lake	LFG-01	IL	10,000	4.16%	0.25%
PE Pottstown	LFG-01	PA	5,154	2.14%	0.13%
PEP Ritchie Brown	LFG-01	MD	2,845	1.18%	0.07%
PEP Ritchie PG	LFG-01	MD	6,149	2.56%	0.16%
PL Archbald	LFG-01	PA	10,340	4.30%	0.26%
PL Pine Grove	LFG-01	PA	1,109	0.46%	0.03%
Richmond Electric	LFG-01	VA	251	0.10%	0.01%
Settlers Hill	LFG-01	IL	17,383	7.23%	0.44%
VP Amelia	LFG-01	VA	3,215	1.34%	0.08%
VP Charles City	LFG-01	VA	1,352	0.56%	0.03%
VP Henrico	LFG-01	VA	1,559	0.65%	0.04%
VP King George	LFG-01	VA	2,185	0.91%	0.06%
VP Northeast	LFG-01	VA	1,307	0.54%	0.03%
VP Peninsula	LFG-01	VA	7,400	3.08%	0.19%
Westchester	LFG-01	IL	443	0.18%	0.01%
Woodland	LFG-01	IL	8,838	3.67%	0.22%
Worcester County	LFG-01	MD	1,774	0.74%	0.04%
		Total	**240,571**	**100.00%**	**6.07%**

Tier 2

Facility Name	Resource	State	Quantity	WAT %	Tier 2
Conowingo	WAT-02	MD	435,194	36.66%	28.68%
Lake Lynn	WAT-02	PA	102,380	8.62%	6.75%
Piney - 31	WAT-02	PA	21,305	1.79%	1.40%
Safe Harbor	WAT-02	PA	555,440	46.79%	36.61%
School Street	WAT-02	NY	30,786	2.59%	2.03%
Sherman Island	WAT-02	NY	38,968	3.28%	2.57%
Tillery	WAT-02	NC	2,954	0.25%	0.19%
		Total	**1,187,027**	**100.00%**	**78.24%**

Facility Name	Resource	State	Quantity	MSW %	Tier 2
Montgomery County	MSW-02	MD	93,029	58.11%	6.13%
VP Gosport	MSW-02	VA	41,673	26.03%	2.75%
Wheelabrator	MSW-02	MD	25,378	15.85%	1.67%
		Total	**160,080**	**58.11%**	**10.55%**

Facility Name	Resource	State	Quantity	BFG %	Tier 2
Sparrows Point	BFG-02	MD	170,091	100.00%	11.21%
		Total	**170,091**	**100.00%**	**11.21%**

Tier 1 REC Total	3,907,136
SREC Total	56,207
Tier 2 REC Total	1,517,198
Grand Total	5,480,541

Resource Definitions

Blast Furnace Gas	BFG	Municipal Solid Waste	MSW
Black Liquor	BLQ	Wood/Waste Solids	WDS
Landfill Gas	LFG	Wind	WND
Hydroelectric	WAT		

*Solar facilities are not represented in this table. In 2012, 3,240 facilities produced 56,207 SRECs.

Appendix B: Location of Facilities which Provided RECs for 2012 RPS Compliance

	DE	IA	IL	IN	MD	NC	NY	OH	PA	TN	VA	WI	WV	Total
Tier 1														
Black Liquor	-	-	-	-	1	-	-	1	1	-	5	1	-	9
Blast Furnace Gas	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Land Fill Gas	2	-	9	-	5	-	-	-	9	1	10	-	-	36
Municipal Solid Waste	-	-	-	-	2	-	-	-	-	-	-	-	-	2
Small Hydro	-	-	2	-	2	1	6	-	5	-	5	1	1	23
Solar (Photovoltaic)	-	-	1	-	3,022	-	-	-	-	-	-	-	-	3,023
Solar Thermal	-	-	-	-	217	-	-	-	-	-	-	-	-	217
Waste Wood	-	-	-	-	-	-	-	1	1	-	1	-	-	3
Wind	-	1	9	6	2	-	-	1	5	-	-	-	2	26
Tier 2														
Municipal Solid Waste	-	-	-	-	1	-	-	-	-	-	1	-	-	2
Large Hydro	-	-	-	-	1	1	2	-	14	-	-	-	-	18
Total	**2**	**1**	**21**	**6**	**3,254**	**2**	**8**	**3**	**35**	**1**	**22**	**2**	**3**	**3,360**

Note: Blast furnace gas and municipal solid waste were moved from Tier 2 to Tier 1 effective October 1, 2011. In order to prevent double counting, only those facilities that provided just Tier 2 RECs are listed as Tier 2 facilities, the facilities that provided both are only listed as Tier 1.

Appendix C: Distribution of 2012 Vintage RECs Generated in Maryland

Fuel Type and Tier	RECs Retired for RPS Compliance by State							Banked	Other	Bulletin Board	Pending Transfer	Total RECs Generated
	DC	DE	IL	MD	NJ	PA	Total					
Biomass Liquids	0	0	0	0	0	0	0	5	0	0	0	5
Black Liquor	188	0	0	79,434	0	0	79,622	39,934	0	0	0	119,556
Blast Furnace Gas	0	0	0	89,431	0	0	89,431	0	21,013	0	0	110,444
Land Fill Gas	0	0	0	12,983	13,397	0	26,380	30,692	381	0	0	57,453
Municipal Solid Waste	0	0	0	442,945	6,167	0	449,112	213,484	0	0	0	662,596
Small Hydro	0	0	0	11,512	0	0	11,512	6,291	0	0	0	17,803
Solar PV	92	0	0	49,173	0	645	49,910	32,500	23	0	56	82,489
Solar Thermal	0	0	0	370	0	0	370	229	2	4	0	605
Wind	0	29,836	0	87,260	0	25,000	142,096	92,443	64,986	0	0	299,525
Tier 1 Total	280	29,836	0	773,108	19,564	25,645	848,433	415,578	86,405	4	56	1,350,476
Blast Furnace Gas	0	0	0	0	0	0	0	0	0	0	0	0
Large Hydro	0	0	39,905	148,600	0	488	188,993	1,426,239	23,900	0	0	1,639,132
Municipal Solid Waste	0	0	0	0	0	0	0	0	0	0	0	0
Tier 2 Total	0	0	39,905	148,600	0	488	188,993	1,426,239	23,900	0	0	1,639,132
Grand Total	280	29,836	39,905	921,708	19,564	26,133	1,037,426	1,841,817	110,305	4	56	2,989,608

Appendix D: Number of Renewable Energy Facilities Located in Maryland

Maryland County	Tier 1	Tier 1 Solar	Tier 2	Total
Allegany	1	12	-	13
Anne Arundel	1	538	-	539
Baltimore	4	698	-	702
Baltimore City	-	56	-	56
Calvert	-	70	-	70
Caroline	-	20	-	20
Carroll	-	251	-	251
Cecil	-	91	-	91
Charles	-	68	-	68
Dorchester	-	29	-	29
Frederick	2	208	-	210
Garrett	4	21	-	25
Harford	1	314	1	316
Howard	1	566	-	567
Kent	-	40	-	40
Montgomery	4	1,143	-	1,147
Prince George's	4	439	-	443
Queen Anne's	-	56	-	56
Somerset	-	14	-	14
St. Mary's	-	89	-	89
Talbot	2	46	-	48
Washington	-	97	-	97
Wicomico	2	43	-	45
Worcester	3	47	-	50
Grand Total	**29**	**4,956**	**1**	**4,986**

Note: This list includes all renewable generators that are both: 1) located within Maryland, and 2) registered to participate in any one of the PJM States' renewable energy programs as of August 1, 2013.

Appendix E: Capacity of Renewable Energy Facilities Located in Maryland (in MWs)

Maryland County	Tier 1	Tier 1 Solar	Tier 2	Total
Allegany	65.0	0.2	-	65.2
Anne Arundel	3.2	9.1	-	12.3
Baltimore	195.2	12.8	-	208.0
Baltimore City	-	3.3	-	3.3
Calvert	-	0.5	-	0.5
Caroline	-	2.3	-	2.3
Carroll	-	2.5	-	2.5
Cecil	-	1.3	-	1.3
Charles	-	7.4	-	7.4
Dorchester	-	1.1	-	1.1
Frederick	4.0	20.1	-	24.1
Garrett	140.0	0.1	-	140.1
Harford	1.2	8.0	474.0	483.2
Howard	1.0	5.0	-	6.0
Kent	-	5.7	-	5.7
Montgomery	81.2	11.5	-	92.7
Prince George's	13.4	7.9	-	21.3
Queen Anne's	-	0.7	-	0.7
Somerset	-	6.6	-	6.6
St. Mary's	-	1.2	-	1.2
Talbot	69.3	1.3	-	70.6
Washington	-	33.4	-	33.4
Wicomico	6.0	1.8	-	7.8
Worcester	2.0	0.8	-	2.8
Grand Total	**581.6**	**144.4**	**474.0**	**1199.9**

Note: This list includes all renewable generators that are both: 1) located within Maryland, and 2) registered to participate in any one of the PJM States' renewable energy programs as of August 1, 2013.