

**PUBLIC SERVICE COMMISSION
OF MARYLAND**

**RENEWABLE ENERGY PORTFOLIO
STANDARD REPORT OF 2010**

With Data for Compliance Year 2008

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

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TABLE OF CONTENTS

I. INTRODUCTION.....	1
A. Report Contents	1
B. Objectives of the Program	1
C. Overview of the Maryland RPS Program	1
1. Registration of Renewable Energy Facilities.....	3
2. Maryland RPS Annual Percentage Requirements	4
3. Maryland RPS Alternative Compliance Penalty Requirements	5
II. SUPPLIER COMPLIANCE REPORTS	6
III. MARYLAND RENEWABLE ENERGY FACILITIES.....	13
IV. CONCLUSION	15
APPENDICES.....	17
Appendix A: Summary of State Renewable Portfolio Standards	18
Appendix B: 2008 Compliance Reports – Retired RECs by Tier & Resource	20
Appendix C: 2008 Compliance Reports – Facilities Generating Retired RECs by State & Resource.....	21
Appendix D: Distribution of 2008 Vintage RECs Generated in Maryland.....	22
Appendix E: Maryland Certified Renewable Energy Facilities	23
Appendix F: Number of Renewable Energy Facilities Located in Maryland	33
Appendix G: Capacity of Renewable Energy Facilities Located in Maryland (in MWs)	34
Appendix H: RPS History.....	35

LIST OF TABLES

Table 1: Eligible Tier 1 and Tier 2 Resources 4

Table 2: Annual RPS Requirements by Tier..... 4

Table 3: ACP Schedule (\$/MWh)..... 5

Table 4: Results of the RPS Compliance Reports 7

Table 5: 2008 Compliance Reports’ REC Retirement by State..... 12

Table 6: 2008 Compliance Reports’ REC Retirement by State (%)...... 12

Table 7: 2008 Maryland Generated RECs by Fuel Source..... 14

Table 8: Disposition of 2008 Maryland Generated RECs 14

Table 9: Retired 2008 Maryland Generated RECs by State 15

LIST OF FIGURES

Figure 1: 2008 Compliance Year RECs by Generation Year 8

Figure 2: 2008 Tier 1 & Tier 2 RECs Acquired by Fuel Source 9

Figure 3: 2007 Tier 1 & Tier 2 RECs Acquired by Fuel Source 10

Figure 4: Total Rated Capacity by State 10

Figure 5: Number of RECs Retired by Facility Location (2008) 11

I. INTRODUCTION

A. Report Contents

This document constitutes the 2010 annual report of the Public Service Commission of Maryland (Commission) regarding the Maryland Renewable Energy Portfolio Standard (RPS Program). This report is submitted pursuant to § 7-712 of the Public Utility Companies Article, *Annotated Code of Maryland* (PUC Article). Section 7-712 of the PUC Article 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. The electric 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 2010 report highlights data from electric suppliers' 2008 compliance reports and relevant 2009 data such as the renewable facilities certified by the State of Maryland.

In compliance with § 7-712 of the PUC Article, 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 §7-701 *et seq.* of the PUC Article (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 retail suppliers of electricity to meet a prescribed minimum portion of their energy supply needs 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 §7-703 of the PUC Article. 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 Load Serving Entities (LSEs), which include electricity suppliers and the utilities that provide Standard Offer Service.¹ LSEs file compliance reports with the Commission verifying that the renewable requirement for each entity is satisfied.

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 PUC Article §§ 7-501(n), 7-510(c).

Each 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 one megawatt-hour (MWh) of electricity generated using specified renewable sources. As such, a REC is a tradable commodity equal to one MWh of electricity generated or obtained from a renewable energy generation resource. Generators and 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. Suppliers that do not meet the annual RPS requirement are required to pay compliance fees.

Compliance fees are deposited into the Maryland Strategic Energy Investment Fund (SEIF or Energy Fund) as dedicated funds to provide for loans and grants that can indirectly spur the creation of new renewable energy sources in the State.⁴ 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). Indeed, the majority of the SEIF funds result from the RGGI carbon dioxide allowance auctions. Auctions are held quarterly; the initial six auctions held between September 2008 and December 2009 yielded proceeds totaling \$96,271,577.⁵ At least 6.5 percent of the funds from the RGGI allowances sold between March 1, 2009 and June 30, 2011 are to be allocated to renewable and clean energy, climate change programs, and energy related public education and outreach programs.⁶

Responsibility for developing renewable energy sources has been vested with the Maryland Energy Administration (MEA). MEA advises that due to delayed appropriation approval, no renewable projects were supported by the Energy Fund either through dedicated funds (*i.e.*, RPS compliance fees) or RGGI auction revenues as of the end of calendar year 2008.⁷

² Using the Tier 2 RPS requirement as an example, assume a hypothetical LSE operating in the State had 100,000 MWh in retail electricity sales for 2008. In 2008 the Tier 2 requirement was 2.5 percent. Thus, the LSE would have to 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 Environmental Information Services, Generation Attribute Tracking System (GATS) Operating Rules, Revision 5, at 3 (December 8, 2008).

⁴ Chapters 127 and 128 of the Laws of 2008 repealed the Maryland Renewable Energy Fund and redirected compliance fees paid into that fund into the Maryland Strategic Energy Investment Fund.

⁵ Regional Greenhouse Gas Initiative, CO2 Auctions, Auction Results, Available: http://www.rggi.org/docs/MD_Proceeds_by_Auction_091204.pdf (January 8, 2010).

⁶ Maryland General Assembly, The Budget Reconciliation and Financing Act of 2009, Chapter 487 of 2009, Available: <http://mlis.state.md.us/2009rs/billfile/hb0101.htm> (December 21, 2009). An allocation of up to 10.5 percent of the RGGI funds is provided for in subsequent auctions.

⁷ MEA began using funds from the RPS Alternative Compliance Penalties in the fiscal year beginning July 1, 2009. From July 1, 2009 through February 1, 2010, approximately \$600,000 from Alternative Compliance Penalties and \$3.4 million of the RGGI auction revenues, also a component of the SEIF, were used to fund new Tier 1 renewable energy resources in Maryland. The grants from ACPs supported the installation of 400 kilowatts (0.400 megawatts) of solar photovoltaic (PV) capacity. RGGI auction proceeds supported an additional 888 kilowatts (0.888 megawatts) of solar PV and 65 kilowatts (0.065 megawatts) of small-wind energy systems. Source: MEA, Maryland Public Service Commission data request response, February 24, 2010.

1. Registration of Renewable Energy Facilities

Facilities eligible for the Maryland RPS Program must be located in PJM (*i.e.*, the wholesale bulk power control area in which Maryland resides);⁸ in a state adjacent to the PJM region; or in a control area that is adjacent to the PJM region,⁹ so long as the electricity is delivered into the PJM region.¹⁰ To certify a Renewable Energy Facility (REF), Commission Staff must determine whether the facility meets the standards set forth by the Maryland RPS Program. Applicants potentially qualifying under Maryland's RPS Program initially work with Commission Staff and complete the appropriate application for renewable energy facility certification posted on the Commission's RPS website.¹¹ In addition to the geographic requirement, 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.¹²

Facilities 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 will be credited with RECs. A comprehensive listing of REFs currently certified with the Maryland RPS Program can be found in Appendix E. Eligible fuel sources for Tier 1 RECs and Tier 2 RECs are listed in Table 1. Solar has its own standard within Tier 1.

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. 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 Environmental Information Services, Generation Attribute Tracking System (GATS) Operating Rules, Revision 5, at 5 (December 8, 2008). 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 Chapters 125 and 126 of the 2008 Session modify the geographic region of eligible renewable resources provided for within PUC § 7-701(i). Effective January 1, 2011, the geographic scope in which renewable resources can be located will be restricted within the PJM region or in a control area adjacent to the PJM region, if the electricity is delivered into the PJM region. That is, renewable energy facilities located in states adjacent to the PJM control area will not have RECs qualify for Maryland's RPS unless the underlying electricity is delivered into the PJM region.

¹¹ Solar and standard REF applications are maintained by the Commission and are available online. Maryland Public Service Commission, Renewable Portfolio Standard Documents, Available: http://webapp.psc.state.md.us/intranet/ElectricInfo/home_new.cfm.

¹² 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
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Hydroelectric power other than pump storage generation • Waste-to-energy <p><i>Note: Tier 1 RECs may be used to satisfy Tier 2 obligations.</i></p>

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 the Tier 1 solar set-aside requirements gradually increase until they peak in 2022 at 18 percent and 2 percent, respectively, and are subsequently maintained at those levels.¹³ Maryland’s Tier 2 requirement remains constant at 2.5 percent through 2018, after which it sunsets.

Table 2: Annual RPS Requirements by Tier

Compliance Year	Tier 1*	Tier 1 Solar	Tier 2
2008	2.00%	0.005%	2.50%
2009	2.00%	0.010%	2.50%
2010	3.00%	0.025%	2.50%
2011	4.96%	0.040%	2.50%
2012	6.44%	0.060%	2.50%
2013	8.10%	0.100%	2.50%
2014	10.15%	0.150%	2.50%
2015	10.25%	0.250%	2.50%
2016	12.35%	0.350%	2.50%
2017	12.55%	0.550%	2.50%
2018	14.90%	0.900%	2.50%
2019	16.20%	1.200%	
2020	16.50%	1.500%	
2021	16.85%	1.850%	
2022	18.00%	2.000%	

* Does not include the solar set-aside (Tier 1 Solar)

¹³ "Tier 1 solar set-aside" refers to the set-aside (or carve-out) of Tier 1 for energy derived from a 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.

An electricity supplier can make a request of the Commission to consider a delay in scheduled Tier 1 and Tier 1 solar RPS requirements provided certain renewable procurement cost thresholds are met.¹⁴ To date, no request to delay scheduled RPS compliance requirements has been made by electric suppliers operating in the Maryland marketplace.

3. Maryland RPS Alternative Compliance Penalty Requirements

Suppliers of electricity not meeting the RPS standard pay an Alternative Compliance Penalty (ACP) for shortfalls, as seen in Table 3. Table 3 presents the ACP schedule separated by tiers for each year of the RPS from 2008 to 2023 and beyond. Compliance fees, as previously mentioned, are submitted to the Energy Fund and dedicated to supporting the development of new Tier 1 renewable resources in Maryland. The Tier 1 compliance fee is \$20 per MWh for 2008 to 2010 compliance years, and then doubles to \$40 per MWh for all subsequent years. The Solar Tier 1 ACP was set at \$450 per MWh shortfall for the 2008 compliance year, then decreases by \$50 per MWh every other subsequent year until reaching a \$50 per MWh base for the 2023 compliance year and all subsequent years. The Tier 2 compliance fee is \$15 per MWh from 2008 until the sunset of the standard in 2018. There is a separate compliance fee for Industrial Process Load (IPL) Tier 1 shortfalls only.

Table 3: ACP Schedule (\$/MWh)

Compliance Year	Tier 1 (non-solar)	Solar Tier 1	Tier 2	IPL* Tier 1
2008	\$20	\$450	\$15	\$8
2009	\$20	\$400	\$15	\$5
2010	\$20	\$400	\$15	\$5
2011	\$40	\$350	\$15	\$4
2012	\$40	\$350	\$15	\$4
2013	\$40	\$300	\$15	\$3
2014	\$40	\$300	\$15	\$3
2015	\$40	\$250	\$15	\$2.50
2016	\$40	\$250	\$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

* According to PUC §7-705 b (2) and COMAR 20.61.06 E (5), a supplier sale from Industrial Process Load 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 compliance fee for Tier 2 shortfalls.

¹⁴ PUC § 7-705.

II. SUPPLIER COMPLIANCE REPORTS

Calendar year 2008 marked the third compliance year for the Maryland RPS, and the first year for LSEs to comply with the solar Tier 1 set-aside. The RPS compliance reports submitted to the Commission by LSEs and GATS provide information regarding the RECs retired and the underlying renewable energy facilities (*e.g.*, type and location) utilized by electricity suppliers to comport with Maryland RPS obligations.¹⁵ RPS compliance reports were filed by 72 electricity LSEs, including 11 utilities, 33 suppliers, and 28 brokers. RPS compliance reports are due by April 1st every year. There was approximately 64 million MWh of total retail electricity sales in Maryland for 2008: 59.2 million MWh were subject to RPS compliance, and 5 million MWh were exempt.¹⁶

For the 2008 compliance year, electricity LSEs retired 2,684,815 RECs, which was greater than the obligation for the year by over 19,000 RECs. According to the compliance reports filed with the Commission, the cost of RECs retired totaled \$2,039,583 for the 2008 compliance year. Comparable REC price data was not collected in 2006 or 2007.¹⁷ For the three compliance years, Table 4 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).¹⁸ The estimated total costs of all 2008 RECs retired for compliance was just over \$2 million and the remaining RPS obligations accrued an ACP balance of \$1,241,365.¹⁹

¹⁵ According to PUC Article 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 PUC Article 7-704 (f). In the PJM region, the regional term of art is “retirement,” and describes the process of removing a REC from circulation by the REC owner, *i.e.*, the owner “diminishes or extinguishes the REC.” PJM Environmental Information Services, Generation Attribute Tracking System (GATS) Operating Rules, at 52-54 (December 8, 2008).

¹⁶ According to PUC Article §7-703(a)(2), exceptions for the RPS requirement may include: industrial process load which exceed 300,000,000 kWh to a single customer in a year; regions where residential customer rates are subject to a freeze or cap (under PUC § 7-505); or electric cooperatives under a purchase agreement that existed prior to October 1, 2004, until the expiration of the agreement.

¹⁷ For the 2008 compliance year, the Commission issued data requests to the electricity suppliers in order to supplement the 2008 Annual Supplier Reports with specific REC price data, including Tier 1, Tier 1 Solar, and Tier 2 price data. The 2009 Annual Supplier Reports, due April 1, 2010, now explicitly request this REC price data.

¹⁸ The RPS obligation is the total obligation for electricity sales in MWh, which is equal to the number of RECs required for compliance. The number of retired RECs is the actual number of RECs retired for RPS compliance in each corresponding compliance year. The ACP required is calculated by multiplying the difference between the RPS obligation and the actual retired RECs (*i.e.*, the shortfalls) by the applicable ACP and is denominated in U.S. dollars.

¹⁹ LSEs can meet RPS obligations through the retirement of RECs or by paying ACPs. LSEs are required to report the total cost of purchasing RECs for compliance.

Table 4: Results of the RPS Compliance Reports

RPS Compliance Year		Tier 1 (non-solar)	Tier 1 Solar	Tier 2	Total
2006	RPS Obligation (MWh)	520,073	-	1,300,201	1,820,274
	Retired RECs (MWh)	552,874	-	1,322,069	1,874,943
	ACP Required (\$/MWh)	\$13,293	-	\$24,917	\$38,209
2007	RPS Obligation (MWh)	553,612	-	1,384,029	1,937,641
	Retired RECs (MWh)	553,374	-	1,382,874	1,936,248
	ACP Required (\$/MWh)	\$12,623	-	\$23,751	\$36,374
2008	RPS Obligation (MWh)	1,183,439	2,934	1,479,305	2,665,678
	Retired RECs (MWh)	1,184,174	227	1,500,414	2,684,815
	ACP Required (\$/MWh)	\$9,020	\$1,218,739	\$8,175	\$1,235,934

Notably, in 2008 there was a shortfall of 2,707 MWh in RECs for the initial year of the Solar Tier 1 requirement of 2,934 MWh. This shortfall appears largely attributable to the timing of SOS procurement contracts. For residential and small commercial SOS, three of the four Maryland investor-owned utilities purchase two-year supply contracts via competitive bids conducted twice each year.²⁰ The statute governing the RPS was amended during the Maryland General Assembly’s 2007 session to include a specific Tier 1 solar RPS requirement starting January 1, 2008,²¹ which occurred during the effective period of a number of existing two-year SOS procurement contracts.²² Over 98 percent of the total ACPs for the 2008 compliance year are from Solar Tier 1 shortfalls,²³ and the degree to which solar technologies are available to provide renewable output plays a role in the Tier 1 Solar compliance option selected.²⁴

²⁰ The Potomac Edison Company d/b/a Allegheny Power has been in a transition mode purchasing 5-month to 29-month contracts for its residential and small commercial SOS via competitive bids conducted up to four times a year.

²¹ Chapters 119 and 120, Acts 2007, codified at Md. Code Ann., PUC, §7-703.

²² Normally renewable electricity (*i.e.*, the RECs) is provided to the utilities as a product component within the wholesale power purchase agreements. However, an SOS service year runs for a 24 month contract term and straddles two RPS compliance years (in this case calendar years 2008 and 2009). In the event the RPS requirement is increased, the contracts supporting SOS require the utilities and suppliers to meet via a stakeholder process to consider terms under which the wholesale suppliers could supply the incremental RPS requirement, but ultimately leave it up to the Commission to determine how this requirement will be met. Stakeholders proposed to have the utilities pay the statutory penalty for noncompliance (*i.e.*, the alternative compliance payment or ACP) with the RPS Tier 1 solar requirement for the period from June 1, 2008 through December 31, 2008. The Commission approved the stakeholder proposal. For the period covering January 1, 2009 through May 31, 2009, the stakeholders proposed to develop and conduct a competitive bid to purchase the needed SRECs.

²³ Of the remaining portion of ACPs (non-solar) paid, 94 percent was provided by one LSE.

²⁴ As noted above, LSEs can meet RPS obligations by either purchasing available RECs or paying the ACP. For SOS procurement auctions that had occurred before the solar requirement was enacted, it was too late to buy solar RECs for those SOS contracts. Therefore, only the default ACP option was available. However, currently parties are working to implement a supplemental procurement method for solar RECS for SOS contracts still operative that were procured before the enactment of the current solar REC requirement.

RECs used to comply with the Maryland RPS are valid for three years from the date created unless the REC is retired before expiration.²⁵ Figure 1 aggregates the Maryland RPS tiers on the basis of generation year. A small percentage of 2005 vintage RECs were retired within the 2008 compliance year. Nearly half of the RECs retired in 2008 (49 percent) were generated in 2006, approximately 31 percent of the retired RECs were generated in 2007; the balance of the RECs, approximately 16 percent, were generated in 2008. With the exception of the small percentage of 2005 vintage RECS, the number of RECs retired decreases for each subsequent generation year; as a result, a relatively small portion of the RECs retired were generated during the 2008 compliance year. Since the bulk of the RECs retired in 2008 were not generated in 2008, this indicates generators and/or suppliers are utilizing Maryland’s three year banking provision.²⁶

Figure 1: 2008 Compliance Year RECs by Generation Year

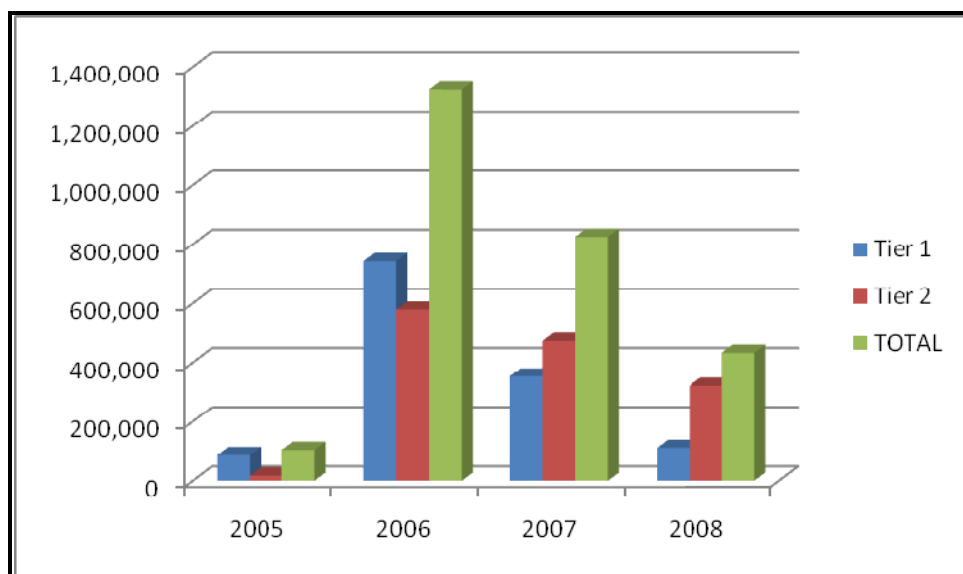


Figure 2 and Figure 3 illustrate for RPS compliance years 2008 and 2007, respectively, the fuel sources used to satisfy Tier 1 and Tier 2 RPS requirements, enabling a comparison of fuel sources used to meet each of the Maryland RPS tier requirements in those two years. Of the Tier 1 RECs retired for 2008, the principle resources used were black liquor-fueled resources that provided approximately 38 percent of the RECs;²⁷ waste wood, 30 percent; small hydro, 17 percent; and landfill gas, nearly 15 percent. Wind and solar resources account for less than one

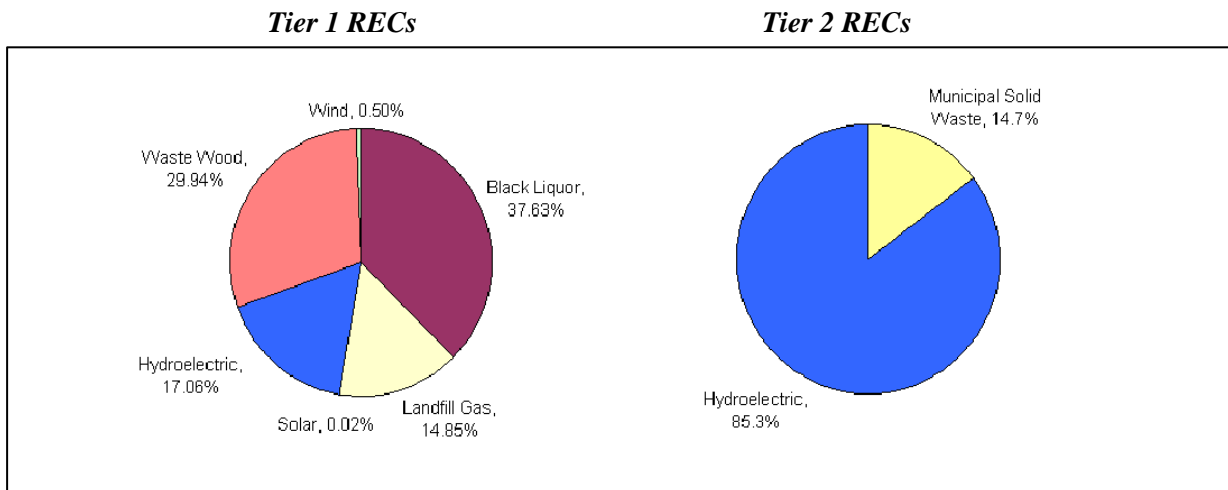
²⁵ According to PUC Article §7-709(d)(2); unless the REC is diminished or extinguished before expiration.

²⁶ 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 which continues to be active beyond the GATS trading period can be accumulated and “banked” for use in subsequent compliance years.

²⁷ Black liquor is a waste byproduct from paper production.

percent of the RECs retired in 2008 for Maryland RPS compliance requirements.²⁸ Of the Tier 2 RECs retired for 2008, Figure 2 also reveals that hydroelectric facilities provided the bulk of the RECs: approximately 85 percent; while municipal solid waste provided nearly 15 percent of the RECs retired.

Figure 2: 2008 Tier 1 & Tier 2 RECs Acquired by Fuel Source



As in 2007, qualifying waste wood and black liquor were the predominant Tier 1 resources in 2008. Black liquor resources accounted for approximately 38 percent of the RECs retired in 2008, consistent with 2007 figures. Waste wood provided 30 percent of the 2008 Tier 1 RECs, compared with 35% in 2007; landfill gas provided 15 percent, compared with 21 percent in 2007. Small hydro resources contributed larger Tier 1 REC numbers in 2008. No wind or solar RECs were retired in 2007. With respect to Tier 2 RECs, more large hydroelectric was procured in 2008 than in 2007. Large hydroelectric and municipal solid waste fueled resources had contributed nearly equal amounts of RECs (*i.e.*, approximately a 50/50 percentage allocation) retired for 2007 Tier 2 RPS compliance requirements, in contrast with the 85 percent -15 percent split in 2008.

²⁸ 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, LSEs tend to purchase lower priced RECs from lower cost renewable technologies first. The renewable fuel sources retired in Maryland for 2008 compliance (Figures 2 and 3) 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 resources is likely to occur (*e.g.*, wind, solar). 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 are willing to pay the price premium for these RECs over electricity from fossil fuel resources. Therefore, green power product currently available in the market and to retail customers also support higher cost renewable technologies.

Figure 3: 2007 Tier 1 & Tier 2 RECs Acquired by Fuel Source

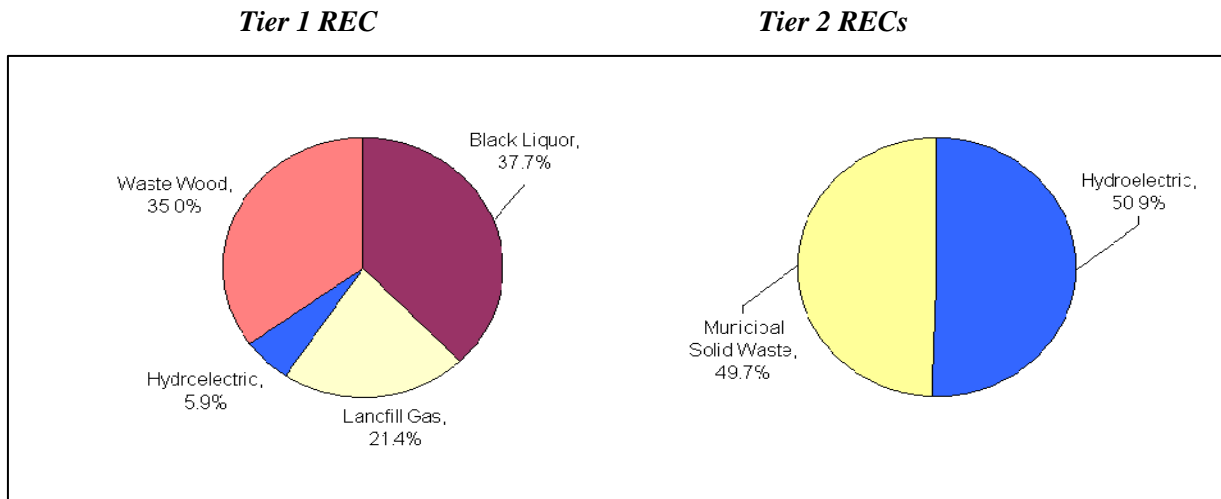
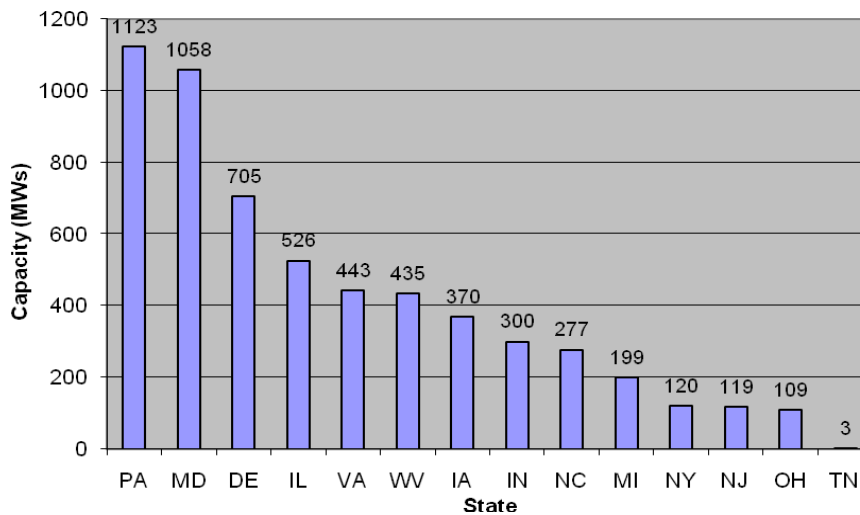


Figure 4 presents the geographical location and the total generating capacity (5,789 MW) for all Maryland RPS-certified facilities regardless of Tier.²⁹ RPS requirements also exist in the surrounding states, which generally supports out-of-state and regional market participation (see Appendix A). Seventy-five percent of the renewable facilities that are eligible to participate and potentially provide renewable energy in Maryland reside in the Mid-Atlantic states: Pennsylvania, 19 percent of the potential capacity; Maryland, 18 percent; Delaware, 12 percent; Illinois, 9 percent; Virginia, 8 percent; and West Virginia, 8 percent. The locations of the remaining eligible resources span eight states and in total contribute to 26 percent of the State’s eligible capacity.

Figure 4: Total Rated Capacity by State³⁰

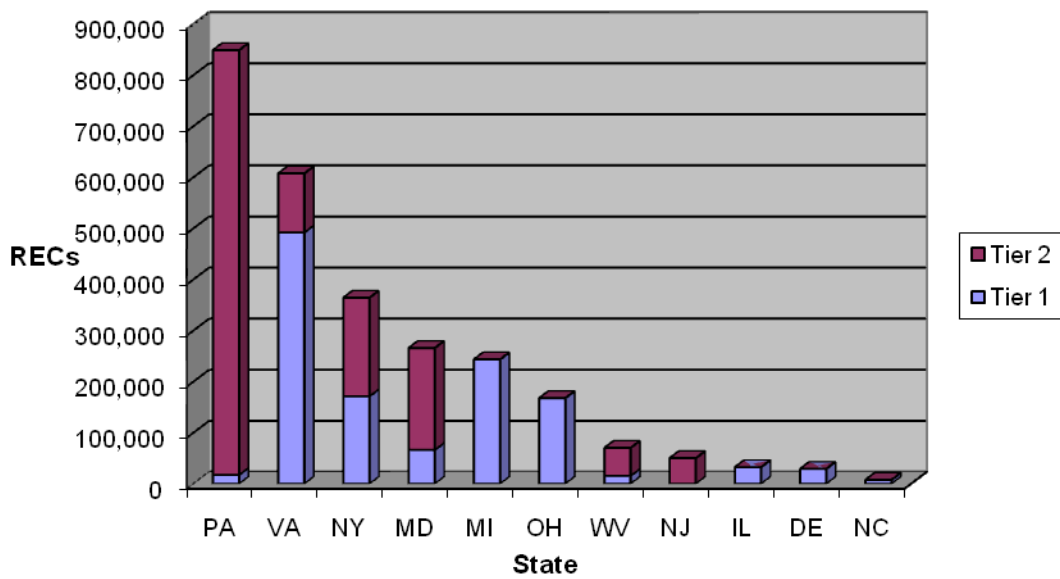


²⁹ PJM-EIS, Generation Attribute Tracking System, Database query, February 2010.

³⁰ The information in this figure comes from PJM GATS, and does not include Commission authorized REFs that have not established a REC account with PJM GATS.

For the 2008 compliance year, Figure 5 provides a visual display of aggregate REC data to convey general relationships among the States that contributed RECs in 2008. Pennsylvania supplied the largest number of RECs purchased by retail electricity suppliers. The majority of the Pennsylvania RECs were from Tier 2 facilities. Virginia was the second most plentiful source of RECs procured by Maryland electric suppliers; additionally, Virginia was the largest source of Tier 1 RECs retired for 2008 compliance purposes. New York, which supplied a relatively equal amount of Tier 1 and Tier 2 RECs, was ranked third in terms of state location for retired RECs. Notably, once statutory changes take effect in 2011, facilities in New York will only qualify to participate in the Maryland RPS if the electricity is delivered into the PJM region.

Figure 5: Number of RECs Retired by Facility Location (2008)



Tables 5 and Table 6 provide the quantitative data that supports Figure 5 above. Table 5 provides the reported levels of RECs retired by Maryland retail suppliers in 2008 on a tier and aggregate basis. As noted above, Pennsylvania-generated RECs, followed by Virginia and New York, were used in the largest aggregate amounts by Maryland electric suppliers for 2008 RPS compliance.³¹ Tier 1 Maryland RECs retired include 227 Solar RECs.

³¹ Table 5 provides the explicit number of RECs retired by state of origin, which would be difficult to read and compare in the Figure above.

Table 5: 2008 Compliance Reports' REC Retirement by State

State	Tier 1	Tier 2	Total
PA	17,287	831,424	848,711
VA	491,891	115,459	607,350
NY	171,308	192,929	364,237
MD	66,270*	199,472	265,742
MI	243,317	0	243,317
OH	167,515	0	167,515
WV	15,378	54,760	70,138
NJ	0	50,001	50,001
IL	32,305	0	32,305
DE	29,165	0	29,165
NC	7,406	0	7,406
TOTAL	1,241,842*	1,444,045	2,685,887

* This includes 227 Tier 1 Solar RECs.

Table 6 presents the same data as Table 5, but on a percentage basis. Data is presented on a percentage basis to facilitate comparisons among the individual state contributions by individual tier and on an aggregate basis. Among the Tier 1 resources, Virginia provided nearly 40 percent of the RECs retired in 2008; Michigan, nearly 20 percent; New York, nearly 14 percent, and Ohio, 13.5 percent. Maryland provided just over 5 percent of the RECs retired in 2008, while few Tier 1 RECs were provided by the remaining states. For the Tier 2 resources, Pennsylvania provided nearly 58 percent of the RECs, followed by Maryland (13.8 percent), New York (13.4 percent), and Virginia (8.0 percent). On a percentage basis, single digit REC amounts or no RECs were provided by the remaining states for RPS compliance.

Table 6: 2008 Compliance Reports' REC Retirement by State (%)

State	Tier 1	Tier 2	Total
PA	1.4%	57.6%	31.6%
VA	39.6%	8.0%	22.6%
NY	13.8%	13.4%	13.6%
MD	5.3%	13.8%	9.9%
MI	19.6%	0.0%	9.1%
OH	13.5%	0.0%	6.2%
WV	1.2%	3.8%	2.6%
NJ	0.0%	3.5%	1.9%
IL	2.6%	0.0%	1.2%
DE	2.3%	0.0%	1.1%
NC	0.6%	0.0%	0.3%
TOTAL	100.0%	100.0%	100.0%

Additional information pertaining to the source of renewable energy used to meet Maryland's 2008 RPS compliance requirements is in Appendices B and C. Appendix B provides the renewable resources used by retail suppliers on a Tier and State basis. Appendix C provides a summary of the renewable energy facilities in and outside of the State that generated RECs, which were retired in 2008 for the Maryland RPS. Appendix C also presents the number of facilities by state, tier, and type of renewable facility.

III. MARYLAND RENEWABLE ENERGY FACILITIES

Maryland's RPS requires electric suppliers to obtain a minimum percentage of their power from renewable energy resources. 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, power plant developers may locate projects within the State. Moreover, Maryland's RPS requires 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. Additionally, on or before December 31, 2011, Tier-1 solar resources that are not located in the State are eligible only to the extent sufficient offers from in-state resources are not made. This section of the report provides information on the renewable energy facilities located in Maryland in 2008.^{32,33} 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).³⁴ Green power products are offered to the public with higher concentrations of renewable energy than required via state RPS requirements. Additional analysis pertaining to the Maryland-based renewable generators is presented below and in Appendix D.

In 2008, over 217,000 Tier 1 RECs and nearly 2,557,000 Tier 2 RECs were generated in Maryland, totaling over 2,774,000 RECs (see Table 7). Black liquor comprised nearly a 70 percent share of the Tier 1 RECs generated in Maryland; small hydro, 15.2 percent; landfill gas, 15.0 percent; and solar, 0.1 percent. Tier 2 in-state RECs were hydro facilities with a 72.1 percent share, and municipal solid waste, 27.9 percent.

³² PUC Article §7-704(a)(2)(i)(2)

³³ Specific information pertaining to the State's renewable energy facilities and described herein was made available by PJM-EIS, in response to Commission Staff's request. PJM-EIS has subsequently determined that the requested information will be made available on an ongoing basis as a GATS State Agency Report.

³⁴ Facilities located in Maryland are not necessarily registered by the Maryland PSC 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 year end 2009, there are 273 registered renewable generators located in Maryland. Of the 273 generators, 257 are approved by the PSC for Maryland RPS compliance. The 16 facilities registered for use in other states include 11 solar PV or solar thermal facilities registered in the District of Columbia, and the remaining five are landfill gas generators registered in Delaware, New Jersey, and Pennsylvania.

Table 7: 2008 Maryland Generated RECs by Fuel Source

Tier 1					Tier 2			Tier 1 & 2 Total
BLQ	WAT	LFG	Solar	<i>Total</i>	WAT	MSW	<i>Total</i>	
151,297	33,015	32,534	276	217,122	1,843,962	713,035	2,556,997	2,774,119
69.7%	15.2%	15.0%	0.1%	100.0%	72.1%	27.9%	100.0%	

Fuel Source Abbreviations: 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.

Source: PJM-EIS, Maryland PSC data requests, 11/5/2009 and 1/13/2010.

Table 8 presents additional detail regarding the disposition of 2008 Maryland-generated RECs through calendar year 2008. Nearly two-thirds (64.5 percent) of the RECs generated within the State of Maryland by independent electric generators were unsold and consequently banked for potential sale in Maryland or other states in subsequent compliance years.³⁵ Nearly a third (28.9 percent) of the RECs generated in Maryland were retired to meet the RPS requirements in various states. Maryland 2008 vintage RECs (6.6 percent) were also sold to support voluntary market products (*e.g.*, green energy). Labeled as “Other” in Table 8, a small minority of RECs were posted for sales or awaiting confirmation by counterparties to complete year-end transactions (0.2 percent).

Table 8: Disposition of 2008 Maryland Generated RECs

	Banked	2008 RPS Compliance	Sold - Voluntary Markets	Other	Total
Tier 1	196,098	18,271	2,477	0	216,846
Tier 1 Solar	48	227	0	1	276
Tier 2	1,593,026	776,304	181,381	6,286	2,556,997
Total	1,789,172	794,802	183,858	6,287	2,774,119
(%)	64.5%	28.9%	6.6%	0.2%	100.0%

Source: PJM-EIS, Maryland PSC data requests, 11/5/2009 and 1/13/2010.

Table 9 presents on a state-by-state basis, the distribution of the RECs generated in the State of Maryland that were then extinguished (*i.e.*, retired) for 2008 compliance purposes. In 2008, Maryland-generated RECs were used in six jurisdictions: Delaware, Illinois, Maryland, New Jersey, Pennsylvania, and the District of Columbia. For 2008 Maryland Tier 1 RECs, New

³⁵ In part, banking provides an opportunity for generators and electric suppliers to locate one another and establish relationships in the newly established 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).

Jersey used 82.7 percent of the generated RECs; Delaware, 16.1 percent, and Maryland, 1.2 percent. The Maryland resources retired in-State for compliance purposes were limited to Solar RECs. Negligible procurement of Tier 1 Maryland RECs generated in 2008 supported Pennsylvania and the District of Columbia RPS programs.

Table 9: Retired 2008 Maryland Generated RECs by State

Fuel & Tier	DC	DE	IL	MD	NJ	PA	TOTAL
BLQ	-	-	-	-	-	-	-
SUN	-	-	-	227	-	-	227
LFG	-	2,974	-	-	2,292	-	5,266
WAT	-	-	-	-	13,000	5	13,005
Tier 1 Total	-	2,974	-	227	15,292	5	18,498
Percentage	0.0%	16.1%	0.0%	1.2%	82.7%	0.0%	100.0%
MSW	25,682	-	-	4,971	538,370	19,200	588,223
WAT	-	-	110,940	76,986	-	155	188,081
Tier 2 Total	25,682	-	110,940	81,957	538,370	19,355	776,304
Percentage	3.3%	0.0%	14.3%	10.6%	69.4%	2.5%	100.0%
TOTAL	25,682	2,974	110,940	82,184	553,662	19,360	794,802
Percentage	3.2%	0.4%	14.0%	10.3%	69.7%	2.4%	100.0%

Fuel Source Abbreviations: 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.

Source: PJM-EIS, Maryland PSC data requests, 11/5/2009 and 1/13/2010.

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 electric supplier compliance reports of 2008, 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 or via alternative compliance payments. Market participants use a strategy that identifies and incorporates the use of the least-cost, predominant renewable technologies to meet the State's tiered requirements. For the 2008 RPS requirements, suppliers used substantial amounts of qualifying biomass (*e.g.*, waste wood and the mill residue known as black liquor), as well as methane from the anaerobic decomposition of organic materials in landfills. Small hydroelectric resources were also procured in substantial amounts by electric suppliers. A limited amount of wind energy was procured.

Three Mid-Atlantic states provided nearly two-thirds (64.1 percent) of the Tier 1 and Tier 2 RECs retired by Maryland electric suppliers in 2008: Pennsylvania was the largest provider of Tier 2 RECs, Virginia the largest provider of Tier 1 RECs. As well, Maryland resources in the aggregate provided slightly less than ten percent of the RECs for Maryland's tiered RPS requirements. In 2008, robust levels of Tier 2 resources were available in the State for potential use by electric suppliers for RPS compliance. Tier 1 and Tier 1 solar RPS obligations require electric suppliers to contract with in-State and out-of-state resources, and pay compliance fees for shortages. For the initial year of the State's Tier 1 solar requirement, compliance fees were the predominate method used by electric suppliers.

Maryland renewable energy facilities 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 retail suppliers. In Maryland, only a small portion of the renewable output and associated RECs generated during calendar year 2008 were retired for RPS compliance purposes; nearly two-thirds (64.5 percent) of the RECs were banked for sale in future years.

In 2008, Maryland enacted several changes to the Maryland Renewable Energy Portfolio Standard to increase the contribution of renewable energy to electricity supply: the RPS percentage requirements were accelerated and the geographic scope in which renewable resources can be obtained for compliance restricted. The effect is an increase in demand while reducing supply, thereby providing upward price pressure for RECs. Moreover, an increase in the Tier 1 compliance fees will take effect in 2011 to assist in fostering additional development and growth in the industry. Maryland's adoption of a Tier 1 solar requirement in 2008, in addition to Tier 1 and Tier 2 requirements, will support development of a wider variety of technologies as a result of RPS implementation. Initial year implementation and timing of the solar requirement resulted in significant payments into the SEIF to support in-state Tier 1 resource development.

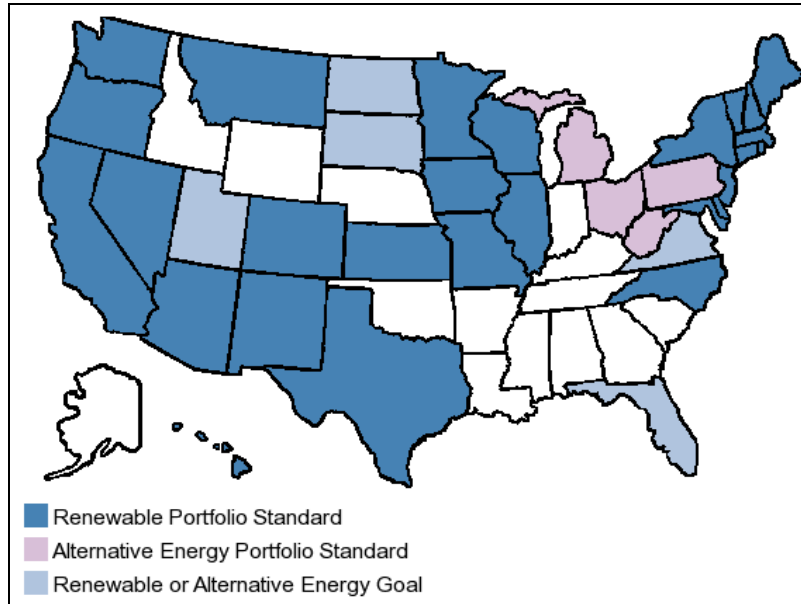
The Commission will continue to review applications from facilities requesting certification as a Maryland renewable energy facility, oversee the Renewable Portfolio Standard Program, and verify that the suppliers providing electricity products in the State of Maryland procure adequate renewable resources. 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: Summary of State Renewable Portfolio Standards

To facilitate and promote the use of renewable energy, the RPS was enacted as a state policy that required electricity providers to obtain a minimum percentage of their power from renewable energy resources by a specific date. Currently, more than 30 states including Maryland have RPS policies in place in an effort to promote clean energy and reduce greenhouse gas emissions in the nation.

Renewable and Alternative Energy Portfolio Standards in the U.S.



(Source: www.pewclimate.org)

This table presents a summary of state renewable portfolio standards with links to organizations that are administering these standards and for further reference. Percentages refer to a portion of electricity sales and megawatts (MW) to absolute capacity requirements. Most of these standards are phased in over multiple years, and the Year on the table refers to when the full requirement takes effect.

State	Amount	Year	Organization Administering RPS
Arizona	15%	2025	Arizona Corporation Commission
California	33%	2030	California Energy Commission
Colorado	20%	2020	Colorado Public Utilities Commission
Connecticut	23%	2020	Department of Public Utility Control
District of Columbia	20%	2020	DC Public Service Commission
Delaware	20%	2019	Delaware Energy Office

Appendix A: Summary of State Renewable Portfolio Standards (Cont'd)

State	Amount	Year	Organization Administering RPS
Hawaii	20%	2020	Hawaii Strategic Industries Division
Iowa	105 MW		Iowa Utilities Board
Illinois	25%	2025	Illinois Department of Commerce
Massachusetts	15%	2020	Massachusetts Division of Energy Resources
Maryland	20%	2022	Maryland Public Service Commission
Maine	40%	2017	Maine Public Utilities Commission
Michigan	10%	2015	Michigan Public Service Commission
Minnesota	25%	2025	Minnesota Department of Commerce
Missouri	15%	2021	Missouri Public Service Commission
Montana	15%	2015	Montana Public Service Commission
New Hampshire	23.8%	2025	New Hampshire Office of Energy and Planning
New Jersey	22.5%	2021	New Jersey Board of Public Utilities
New Mexico	20%	2020	New Mexico Public Regulation Commission
Nevada	20%	2015	Public Utilities Commission of Nevada
New York	24%	2013	New York Public Service Commission
North Carolina	12.5%	2021	North Carolina Utilities Commission
North Dakota *	10%	2015	North Dakota Public Service Commission
Oregon	25%	2025	Oregon Energy Office
Pennsylvania	8%	2020	Pennsylvania Public Utility Commission
Rhode Island	16%	2019	Rhode Island Public Utilities Commission
South Dakota *	10%	2015	South Dakota Public Utility Commission
Texas	5,880 MW	2015	Public Utility Commission of Texas
Utah*	20%	2025	Utah Department of Environmental Quality
Vermont *	10%	2013	Vermont Department of Public Service
Virginia*	12%	2022	Virginia Department of Mines, Minerals, and Energy
Washington	15%	2020	Washington Secretary of State
Wisconsin	10%	2015	Public Service Commission of Wisconsin

*Five states, ND, SD, UT, VA, and VT, have set voluntary goals for adopting renewable energy instead of portfolio standards with binding targets.

(Source: http://apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm)

Appendix B: 2008 Compliance Reports – Retired RECs by Tier & Resource

Tier 1*						Tier 2																																																																																																																																																																																																																																																																																																																																																																																																					
Facility Name	State	Resource	Quantity	Resource %	% of Tier 1	Facility Name	State	Resource	Quantity	Resource %	% of Tier 2																																																																																																																																																																																																																																																																																																																																																																																																
1 PH Glatfelter	OH	BLQ	162,215	34.72%	13.06%	1 SPSA WTE	VA	MSW	115,459	54.53%	8.00%																																																																																																																																																																																																																																																																																																																																																																																																
2 Covington	VA	BLQ	111,015	23.76%	8.94%	2 Union County	NJ	MSW	50,001	23.61%	3.46%																																																																																																																																																																																																																																																																																																																																																																																																
3 Luke Mill	MD	BLQ	58,145	12.44%	4.68%	3 Montgomery County	MD	MSW	31,428	14.84%	2.18%																																																																																																																																																																																																																																																																																																																																																																																																
4 Hopewell Mill	VA	BLQ	51,952	11.12%	4.18%	4 Montenay Montgomery	PA	MSW	14,858	7.02%	1.03%																																																																																																																																																																																																																																																																																																																																																																																																
5 Escabana	MI	BLQ	43,000	9.20%	3.46%	Total			211,746	100.00%	14.66%																																																																																																																																																																																																																																																																																																																																																																																																
6 Franklin Mill	VA	BLQ	40,921	8.76%	3.30%	Total			467,248	100.00%	37.63%	Facility Name	State	Resource	Quantity	Resource %	% of Tier 2	7 Arbor Hills	MI	LFG	101,681	55.14%	8.19%	5 Safe Harbor	PA	WAT-2	816,566	66.26%	56.55%	8 Edge Moor	DE	LFG	29,165	15.81%	2.35%	6 Conowingo	MD	WAT-2	168,044	13.64%	11.64%	9 Mallard Lake	IL	LFG	21,864	11.86%	1.76%	7 Sherman Island	NY	WAT-2	138,500	11.24%	9.59%	10 Lyon Dev	MI	LFG	9,070	4.92%	0.73%	8 School Street	NY	WAT-2	54,429	4.42%	3.77%	11 C&C Electric	MI	LFG	7,552	4.10%	0.61%	9 AEP Summerville	WV	WAT-2	35,557	2.89%	2.46%	12 Richmond Electric	VA	LFG	6,642	3.60%	0.53%	10 Lake Lynn	WV	WAT-2	19,203	1.56%	1.33%	13 Charlotte Motor Speedway	NC	LFG	2,650	1.44%	0.21%	Total			1,232,299	100.00%	85.34%	14 Rockford Electric	IL	LFG	2,096	1.14%	0.17%	15 I-95 Landfill	VA	LFG	1,593	0.86%	0.13%	Tier 1 REC Total			1,241,615			16 Quad Cities	IL	LFG	1,593	0.86%	0.13%	SREC Total			227			17 South Barrington Electric	IL	LFG	510	0.28%	0.04%	Tier 2 REC Total			1,444,045			Total			184,416	100.00%	14.85%	Grand Total**			2,685,887			Facility Name	State	Resource	Quantity	Resource %	% of Tier 1	Resource Definitions Black Liquor BLQ Landfill Gas LFG Municipal Solid Waste MSW Hydroelectric WAT Wood/Waste Solids WDS Wind WND Solar SUN						18 Trenton	NY	WAT-1	121,474	57.33%	9.78%	*Solar facilities are not represented in this table. In 2008, 70 facilities located in Maryland, produced a total of 227 SRECs.						19 Inghams	NY	WAT-1	33,436	15.78%	2.69%	**REC totals reflect RECs retired in GATS in 2008, but differ slightly from what LSEs reported for RPS compliance. More RECs were retired in GATS than were used for compliance.						20 Prospect	NY	WAT-1	16,398	7.74%	1.32%							21 AP Misc	WV	WAT-1	15,378	7.26%	1.24%							22 Piney	PA	WAT-1	12,217	5.77%	0.98%							23 Deep Creek	MD	WAT-1	7,898	3.73%	0.64%							24 Conemaugh	PA	WAT-1	5,070	2.39%	0.41%							Total			211,871	100.00%	17.06%							Facility Name	State	Resource	Quantity	Resource %	% of Tier 1							25 Multitrade of Pittsylvania	VA	WDS	257,213	69.17%	20.72%							26 Cadillac RE	MI	WDS	75,328	20.26%	6.07%							27 Hopewell Mill	VA	WDS	15,648	4.21%	1.26%							28 Covington Mill	VA	WDS	6,907	1.86%	0.56%							29 Hillman	MI	WDS	6,686	1.80%	0.54%							30 Coshocton Mill	OH	WDS	5,300	1.43%	0.43%							31 VP Cravenwood	NC	WDS	4,756	1.28%	0.38%							Total			371,838	100.00%	29.95%							Facility Name	State	Resource	Quantity	Resource %	% of Tier 1							32 Mendota Hills LLC	IL	WND	6,242	100.00%	0.50%						
Total			467,248	100.00%	37.63%	Facility Name	State	Resource	Quantity	Resource %	% of Tier 2																																																																																																																																																																																																																																																																																																																																																																																																
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8 Edge Moor	DE	LFG	29,165	15.81%	2.35%	6 Conowingo	MD	WAT-2	168,044	13.64%	11.64%																																																																																																																																																																																																																																																																																																																																																																																																
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10 Lyon Dev	MI	LFG	9,070	4.92%	0.73%	8 School Street	NY	WAT-2	54,429	4.42%	3.77%																																																																																																																																																																																																																																																																																																																																																																																																
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12 Richmond Electric	VA	LFG	6,642	3.60%	0.53%	10 Lake Lynn	WV	WAT-2	19,203	1.56%	1.33%																																																																																																																																																																																																																																																																																																																																																																																																
13 Charlotte Motor Speedway	NC	LFG	2,650	1.44%	0.21%	Total			1,232,299	100.00%	85.34%																																																																																																																																																																																																																																																																																																																																																																																																
14 Rockford Electric	IL	LFG	2,096	1.14%	0.17%	15 I-95 Landfill	VA	LFG	1,593	0.86%	0.13%	Tier 1 REC Total			1,241,615			16 Quad Cities	IL	LFG	1,593	0.86%	0.13%	SREC Total			227			17 South Barrington Electric	IL	LFG	510	0.28%	0.04%	Tier 2 REC Total			1,444,045			Total			184,416	100.00%	14.85%	Grand Total**			2,685,887			Facility Name	State	Resource	Quantity	Resource %	% of Tier 1	Resource Definitions Black Liquor BLQ Landfill Gas LFG Municipal Solid Waste MSW Hydroelectric WAT Wood/Waste Solids WDS Wind WND Solar SUN						18 Trenton	NY	WAT-1	121,474	57.33%	9.78%	*Solar facilities are not represented in this table. In 2008, 70 facilities located in Maryland, produced a total of 227 SRECs.						19 Inghams	NY	WAT-1	33,436	15.78%	2.69%	**REC totals reflect RECs retired in GATS in 2008, but differ slightly from what LSEs reported for RPS compliance. More RECs were retired in GATS than were used for compliance.						20 Prospect	NY	WAT-1	16,398	7.74%	1.32%							21 AP Misc	WV	WAT-1	15,378	7.26%	1.24%							22 Piney	PA	WAT-1	12,217	5.77%	0.98%							23 Deep Creek	MD	WAT-1	7,898	3.73%	0.64%							24 Conemaugh	PA	WAT-1	5,070	2.39%	0.41%							Total			211,871	100.00%	17.06%							Facility Name	State	Resource	Quantity	Resource %	% of Tier 1							25 Multitrade of Pittsylvania	VA	WDS	257,213	69.17%	20.72%							26 Cadillac RE	MI	WDS	75,328	20.26%	6.07%							27 Hopewell Mill	VA	WDS	15,648	4.21%	1.26%							28 Covington Mill	VA	WDS	6,907	1.86%	0.56%							29 Hillman	MI	WDS	6,686	1.80%	0.54%							30 Coshocton Mill	OH	WDS	5,300	1.43%	0.43%							31 VP Cravenwood	NC	WDS	4,756	1.28%	0.38%							Total			371,838	100.00%	29.95%							Facility Name	State	Resource	Quantity	Resource %	% of Tier 1							32 Mendota Hills LLC	IL	WND	6,242	100.00%	0.50%																																																																																																												
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Total			184,416	100.00%	14.85%	Grand Total**			2,685,887																																																																																																																																																																																																																																																																																																																																																																																																		
Facility Name	State	Resource	Quantity	Resource %	% of Tier 1	Resource Definitions Black Liquor BLQ Landfill Gas LFG Municipal Solid Waste MSW Hydroelectric WAT Wood/Waste Solids WDS Wind WND Solar SUN																																																																																																																																																																																																																																																																																																																																																																																																					
18 Trenton	NY	WAT-1	121,474	57.33%	9.78%	*Solar facilities are not represented in this table. In 2008, 70 facilities located in Maryland, produced a total of 227 SRECs.																																																																																																																																																																																																																																																																																																																																																																																																					
19 Inghams	NY	WAT-1	33,436	15.78%	2.69%	**REC totals reflect RECs retired in GATS in 2008, but differ slightly from what LSEs reported for RPS compliance. More RECs were retired in GATS than were used for compliance.																																																																																																																																																																																																																																																																																																																																																																																																					
20 Prospect	NY	WAT-1	16,398	7.74%	1.32%																																																																																																																																																																																																																																																																																																																																																																																																						
21 AP Misc	WV	WAT-1	15,378	7.26%	1.24%																																																																																																																																																																																																																																																																																																																																																																																																						
22 Piney	PA	WAT-1	12,217	5.77%	0.98%																																																																																																																																																																																																																																																																																																																																																																																																						
23 Deep Creek	MD	WAT-1	7,898	3.73%	0.64%																																																																																																																																																																																																																																																																																																																																																																																																						
24 Conemaugh	PA	WAT-1	5,070	2.39%	0.41%																																																																																																																																																																																																																																																																																																																																																																																																						
Total			211,871	100.00%	17.06%																																																																																																																																																																																																																																																																																																																																																																																																						
Facility Name	State	Resource	Quantity	Resource %	% of Tier 1																																																																																																																																																																																																																																																																																																																																																																																																						
25 Multitrade of Pittsylvania	VA	WDS	257,213	69.17%	20.72%																																																																																																																																																																																																																																																																																																																																																																																																						
26 Cadillac RE	MI	WDS	75,328	20.26%	6.07%																																																																																																																																																																																																																																																																																																																																																																																																						
27 Hopewell Mill	VA	WDS	15,648	4.21%	1.26%																																																																																																																																																																																																																																																																																																																																																																																																						
28 Covington Mill	VA	WDS	6,907	1.86%	0.56%																																																																																																																																																																																																																																																																																																																																																																																																						
29 Hillman	MI	WDS	6,686	1.80%	0.54%																																																																																																																																																																																																																																																																																																																																																																																																						
30 Coshocton Mill	OH	WDS	5,300	1.43%	0.43%																																																																																																																																																																																																																																																																																																																																																																																																						
31 VP Cravenwood	NC	WDS	4,756	1.28%	0.38%																																																																																																																																																																																																																																																																																																																																																																																																						
Total			371,838	100.00%	29.95%																																																																																																																																																																																																																																																																																																																																																																																																						
Facility Name	State	Resource	Quantity	Resource %	% of Tier 1																																																																																																																																																																																																																																																																																																																																																																																																						
32 Mendota Hills LLC	IL	WND	6,242	100.00%	0.50%																																																																																																																																																																																																																																																																																																																																																																																																						

Appendix C: 2008 Compliance Reports – Facilities Generating Retired RECs by State & Resource

	DE	IL	MD	MI	NC	NJ	NY	OH	PA	VA	WV	Total
<i>Tier 1</i>												
Black Liquor			1	1				1		3		6
Land Fill Gas	1	4		3	1					2		13
Solar			70									70
Small Hydro			1				3		2		1	7
Waste Wood				2	1			1		3		7
Wind		1										1
<i>Tier 2</i>												
Municipal Waste			1			1			1	1		4
Large Hydro			1				2		1		2	6
Total*	1	5	74	6	2	1	5	2	4	9	3	112

* Information is based upon certified renewable energy facilities which offered RECs retired in GATS for the 2008 compliance year. Two facilities in Virginia, the Covington Facility and Hopewell Mill, were double counted since each facility has a Commission issued certification number and produces RECs from both black liquor and wood waste. Therefore, 110 facilities produced RECs for the 2008 RPS compliance year.

Appendix D: Distribution of 2008 Vintage RECs Generated in Maryland

Fuel Type & Tier	RECs Retired by State						Banked	Sold - Voluntary Markets	Pending Transfer	Bulletin Board	Exported	RECs Generated in 2008
	NJ	IL	MD	DC	PA	DE						
SUN			227				48			1		276
BLQ							151,297					151,297
LFG	2,292					2,974	27,268					32,534
WAT	13,000				5		17,533	2,477				33,015
Tier 1 Total	15,292	0	0	0	5	2,974	196,098	2,477	0	0	0	216,846
MSW	538,370		4,971	25,682	19,200		124,672	140				713,035
WAT		110,940	76,986		155		1,468,354	181,241	6,286			1,843,962
Tier 2 Total	538,370	110,940	81,957	25,682	19,355	0	1,593,026	181,381	6,286		0	2,556,997
Total	553,662	110,940	82,184	25,682	19,360	2,974	1,789,172	183,858	6,286	1	0	2,774,119

Source: PJM-EIS, Maryland PSC data requests, 11/5/2009 and 1/13/2010.

Appendix E: Maryland Certified Renewable Energy Facilities

Plant Name	State	Capacity	Fuel
217 International Circle Bunting, LLC	MD	0.04095	SUN
6011Bradley	MD	0.00374	SUN
ACE CUMBERLAND CTY 1 LF	NJ	4.8	LFG
AEP FOWLER RIDGE 1A WF	IN	200	WND
AEP FOWLER RIDGE 1B WF	IN	100	WND
AEP FRIES HYDRO	VA	5	WAT
AEP SUMMERVILLE 1-2 H	WV	80	WAT
Airy Hill Farms	MD	0.004	SUN
Airy Hill Farms	MD	0.004	SUN
Albrecht Residence	MD	0.00368	SUN
Allegheny 5	PA	7.1	WAT
Allegheny Lock& Dam No 6 Hydro Project	PA	8.9	WAT
Angiola	MD	0.005	SUN
Ann Marie Magenta	MD	0.0042	SUN
AP ARDEN 1 LF	PA	6.4	LFG
AP GREENLAND GAP 1 WF	WV	264	WND
AP MISC HYDRO H	WV	6	WAT
Arbor Hills	MI	25	LFG
Archbald Power Station	PA	23	LFG
Ardanuy	MD	0.00405	SUN
Arnheim Residence	MD	0.005	SUN
Astrom Solar Residence	MD	0.003	SUN
Avijan	MD	0.003	SUN
Barry Levine	MD	0.0028	SUN
Bass Residence	MD	0.01	SUN
Beecher	IL	3.171	LFG
Ben Wright	MD	0.0015	SUN
Bensley Residence	MD	0.002	SUN
Berman	MD	0.002	SUN
Big Shoals Hydro	VA	0.5	WAT
Bjork	MD	0.002	SUN
Blankman Residence	MD	0.00102	SUN
Blewett	NC	22	WAT
Bohdal Solar 1	MD	0.0032	SUN
Bolger Residence	MD	0.00095	SUN
Boonsboro Pharmacy	MD	0.012	SUN
Boonsboro Pharmacy #2	MD	0.01	SUN
Brennecke - Solar 1	MD	0.0126	SUN

Notes: These are the REFs that have been certified by the Commission, and registered in GATS of 1/14/2010. The rated capacity figure (in MWs) for the REFs is for the facility as a whole and does not partition out the amount attributable to renewable fuel sources.

Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
Bristol	MD	0.001	SUN
Broadley Residence	MD	0.006	SUN
Brown	MD	0.0035	SUN
Bruce and Kathy Hendrickson	MD	0.0046	SUN
Bryan-Taff	MD	0.003	SUN
Burgess	MD	0.01075	SUN
BWWTP Co-Gen Plant	MD	3	LFG
C&C Electric	MI	3	LFG
Cadillac Renewable Energy	MI	40	WDS
Capitol City	MD	0.004	SUN
Cardin Solar Residence	MD	0.00321	SUN
Carter	MD	0.002	SUN
Century 1 WF	IA	185	WND
Charlotte Motor Speedway	NC	5.3	LFG
Chase Residence	MD	0.00299	SUN
Chestnut Ridge	TN	3.2	LFG
Chin	MD	0.004	SUN
Chisholm	MD	0.00405	SUN
Chitnis	MD	0.002	SUN
CID	IL	6.2	LFG
Clayton-Alexander	MD	0.003	SUN
Coleman Falls Hydro	VA	0.5	WAT
Collins Residence	MD	0.004	SUN
COM HIGH TRAIL 1 WIND	IL	198	WND
COM OLD TRAIL WF 2	IL	198	WND
Conemaugh Hydro Plant	PA	16.5	WAT
Conowingo	MD	474	WAT
Coshocton Mill	OH	16.5	WDS
Coster	MD	0.002	SUN
Covanta New Martinsville Energy	WV	34	WAT
Covington Facility	VA	96.5	BLQ & WDS
Crawford System	MD	0.005	SUN
Cupps	MD	0.004	SUN
Czarnowski	MD	0.002	SUN
Dale Delahay	MD	0.002	SUN
Damanhuri	MD	0.00264	SUN
D'Arcy Residence	MD	0.001	SUN
David J. Gochenaur	MD	0.068	SUN
Davio Residence	MD	0.00322	SUN

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Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
Dawley	MD	0.004	SUN
Dayton Hydro Facility	IL	3.6	WAT
Deep Creek	MD	32.66	WAT
Des Plaines	IL	3.5	LFG
DeSilva residence	MD	0.0017	SUN
Dowd Residence	MD	0.00432	SUN
DPL CENTRAL 1 LF	DE	3	LFG
DPL SOUTHERN LF1	DE	4	LFG
Drenning	MD	0.005	SUN
Dribben Residence	MD	0.00288	SUN
Dubrosky Residence	MD	0.0054	SUN
Duncan	MD	0.001	SUN
Easton	MD	69	OBL
Eckel Residence	MD	0.00216	SUN
Ed Blacka	MD	0.00552	SUN
Edge Moor	DE	75	LFG
Edge Moor	DE	177	LFG
Edge Moor	DE	446	LFG
Ellen/Boscov Residence	MD	0.004	SUN
Epley	MD	0.003	SUN
Escanaba Paper Co.	MI	103	BLQ & WDS
Fairless Hills	PA	30	LFG
Fairless Hills	PA	30	LFG
Feighner Residence	MD	0.00945	SUN
Ferguson Residence	MD	0.00306	SUN
Fighera Solar	MD	0.0027	SUN
Finn	MD	0.005	SUN
Finn Residence	MD	0.0038	SUN
Finnerty	MD	0.00315	SUN
Frank Residence	MD	0.0014	SUN
Franklin Mill	VA	25	BLQ
FRANKLIN MILL	VA	15.625	BLQ
FRANKLIN MILL	VA	32.4	BLQ
Fred Gasper	MD	0.003	SUN
Fuller	MD	0.005	SUN
GABLER	MD	0.004	SUN
Gagliardi_Cheverly	MD	0.00954	SUN
Gall	MD	0.002	SUN
Garnett Residence	MD	0.004	SUN

Notes: These are the REFs that have been certified by the Commission, and registered in GATS of 1/14/2010. The rated capacity figure (in MWs) for the REFs is for the facility as a whole and does not partition out the amount attributable to renewable fuel sources.

Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
Gary Clarke	MD	0.00668	SUN
Gesswein	MD	0.005	SUN
Gibson Residence	MD	0.00315	SUN
gigante	MD	0.002	SUN
Gilbert Wright	MD	0.00483	SUN
Glazer	MD	0.00414	SUN
Gogtay	MD	0.0036	SUN
Goldberg	MD	0.003	SUN
Good	MD	0.003	SUN
Goor	MD	0.005	SUN
Grabow Residence	MD	0.00416	SUN
Greene Valley	IL	9.3	LFG
Greg Thornwall	MD	0.0031	SUN
Grill	MD	0.005	SUN
Gruner	MD	0.002	SUN
Gunn	MD	0.003	SUN
Gurevich Solar	MD	0.0099	SUN
Haas Home System	MD	0.0048	SUN
Haas Solar	MD	0.006	SUN
Hamilton Solar	MD	0.00684	Sun
Hansen	MD	0.004	SUN
Harvey	MD	0.0081	SUN
Hauck	MD	0.002	SUN
Heimer	MD	0.005	SUN
Heimer 2	MD	0.00252	SUN
Herman	MD	0.0027	SUN
Highland	MD	0.003	SUN
Hilditch	MD	0.003	SUN
Hillman Power Co.	MI	20	WDS
Hinton	MD	0.002	SUN
Hoffman Residence	MD	0.004	SUN
Hogenson	MD	0.00405	SUN
Holcomb Rock Hydro	VA	0.6	WAT
Holder, Justin	MD	0.0098	SUN
Holder, Justin II	MD	0.0099	SUN
Hopewell Mill	VA	47.6	BLQ & WDS
Hopkins Residence	MD	0.0052	SUN
Horton	MD	0.003	SUN
Hudson	MD	0.002	SUN

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Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
I-95 Landfill Phase I	VA	0.8	LFG
I-95 Landfill Phase II	VA	0.8	LFG
I-95 Landfill Phase II	VA	0.8	LFG
I-95 Landfill Phase II	VA	0.8	LFG
I-95 Landfill Phase II	VA	0.8	LFG
I-95 Landfill Phase1	VA	0.8	LFG
I-95 Landfill Phase1	VA	0.8	LFG
I-95 Landfill Phase1	VA	0.8	LFG
Inghams	NY	6.8	WAT
Isenstadt Solar	MD	0.004	SUN
Jacobs Solar	MD	0.0021	SUN
James Parreco & Son, Inc.	MD	0.009	SUN
JAMESESTAFFORD	MD	0.00705	SUN
Jamison	MD	0.005	SUN
Jenkins Roof	MD	0.0036	SUN
Jha Residence	MD	0.0036	SUN
John Spears Solar	MD	0.00315	SUN
Johnson	MD	0.00405	SUN
Kaminski	MD	0.005	SUN
Kankakee	IL	1.8	LFG
KC-MES JV	MD	0.255	SUN
Keim	MD	0.005	SUN
Kempf	MD	0.0069	SUN
Kent Island Kindel Generation	MD	0.0045	SUN
Kessel home	MD	0.001	SUN
Kessel home	MD	0.0045	SUN
Klinken Residence	MD	0.00731	SUN
Klontz	MD	0.001	SUN
Kovalskaia residence	MD	0.00526	SUN
Krasnopoler PV	MD	0.00468	SUN
Krute	MD	0.002	SUN
Lake Gas Recovery	IL	9.3	LFG
Lake Lynn Power Station	WV	51.2	WAT
Lakeview Gas Recovery	PA	6.1	LFG
Larney	MD	0.002	SUN
Larry Lauver	MD	0.0036	SUN
Lawrence	MD	0.003	SUN
Lennox Residence	MD	0.001	SUN
Levin	MD	0.00495	SUN

Notes: These are the REFs that have been certified by the Commission, and registered in GATS of 1/14/2010. The rated capacity figure (in MWs) for the REFs is for the facility as a whole and does not partition out the amount attributable to renewable fuel sources.

Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
Lieberman	MD	0.005	SUN
Lucci Residence	MD	0.00405	SUN
Luke Mill	MD	65	BLQ
Lyon Development	MI	5	LFG
Lyon Residence	MD	0.0041	SUN
Machuga Solar	MD	0.0054	SUN
Mack Residence	MD	0.00165	SUN
Maggie's Music	MD	0.004	SUN
Mallard Lake Electric	IL	25	LFG
Manley	MD	0.004	SUN
Marc Gagnier	MD	0.00472	SUN
Marshall	NC	5	WAT
Mary C. Bunting	MD	0.004	SUN
Masterman Residence	MD	0.00525	SUN
McConnell	MD	0.003	SUN
McCormick HVPDC Building	MD	0.5	SUN
McCormick Spice Milling Plant	MD	0.375	SUN
McCullough	MD	0.00405	SUN
MCPS - Clarksburg HS	MD	0.277	SUN
MCPS - College Gardens ES	MD	0.076	SUN
MCPS - Lakelands Park MS	MD	0.11	SUN
MCPS - Richard Montgomery	MD	0.108	SUN
MD-70145-SUN-01	MD	0.0035	SUN
MD-70146-SUN-01	MD	0.0035	SUN
MD-70147-SUN-01	MD	0.0063	SUN
MD-70148-SUN-01	MD	0.0063	SUN
MD-70149-SUN-01	MD	0.00756	SUN
MD-70150-SUN-01	MD	0.00525	SUN
Meiselman	MD	0.004	SUN
Mendota Hills LLC	IL	50	WND
Meyersdale Windpower	PA	30	WND
Middlesex Generating Facility	NJ	22.25	LFG
Mitchell Residence	MD	0.00324	SUN
Monmouth Landfill Gas to Energy	NJ	7.4	LFG
Monmouth Landfill Gas To Energy BTM	NJ	3	LFG
Montenay Montgomery LP	PA	32.1	MSW
Montgomery County Resource Recovery	MD	68	MSW
Montgomery County Resource Recovery Facility	MD	10	MSW

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Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
Moss	MD	0.002	SUN
Mossor1	MD	0.00608	SUN
Mountain Rd	MD	0.003	SUN
Muehling	MD	0.005	SUN
Multitrade of Pittsylvania LP	VA	80	WDS
Murchie	MD	0.002	SUN
Murphy	MD	0.003	SUN
Neumann	MD	0.002	SUN
Nichols Tree Farm	MD	0.01	SUN
Nitchie	MD	0.002	SUN
O'Neill Residence	MD	0.00552	SUN
Owen Woods 1	MD	0.00116	SUN
P.H. Glatfelter - Spring Grove	PA	109.68	BLQ
Parker Residence	MD	0.0072	SUN
Parrish	MD	0.003	SUN
PE POTTSTOWN 1 LF	PA	6.2	LFG
PE SE CHES CO REFUSE 1 LF	PA	0.84	LFG
Peoples Generating Station	MI	2.4	LFG
PEP RITCHIE BROWN 2 LF	MD	4.2	LFG
PEP RITCHIE PG COGEN 1	MD	2.5	LFG
PH Glatfelter -Chillicothe	OH	92.8	BLQ
Piney	PA	20	WAT
PL FREY FARM LF	PA	3.2	LFG
PL LOCUST RIDGE 2 WF	PA	102	WND
PL N LBNON 1 LF	PA	3.2	LFG
Plater	MD	0.003	SUN
PN ALLEGHENY RIDGE 1 WF	PA	80	WND
PN ARMENIA MOUNTAIN 1 WF	PA	100.5	WND
PN NORTHERN TIER 1 D	PA	1.6	LFG
PN SHIPPENSBURG 1 LF	PA	6.4	LFG
PN SHIPPENSBURG 1 LF	PA	6.4	LFG
Polikov Solar	MD	0.004	SUN
Polk Residence Solar	MD	0.0115	SUN
Pong Orchard	MD	0.0063	SUN
Prechtl Residence	MD	0.0042	SUN
Price-Smithsburg	MD	0.0035	SUN
Prospect	NY	18.08	WAT
Pusey	MD	0.0042	SUN

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Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
Quad Cities	IL	2	LFG
Quinones	MD	0.004	SUN
Ramelmeier	MD	0.0108	SUN
Rao	MD	0.002	SUN
Reinhold	MD	0.004	SUN
Richard Payne and Susan Wood	MD	0.004	SUN
Richard Schmidt	MD	0.00278	SUN
Richmond Electric	VA	3	LFG
Roberts	MD	0.0092	SUN
Robertson Solar	MD	0.0042	SUN
Rock House	MD	0.00414	SUN
Rockford Electric	IL	2	LFG
Rockton Hydro Facility	IL	1.1	WAT
Rogers	MD	0.004	SUN
Romanko	MD	0.00304	SUN
Ross Residence	MD	0.003	SUN
Ross Shonat	MD	0.00207	SUN
Ross Solar Residence	MD	0.0042	SUN
Ruiz	MD	0.003	SUN
Safe Harbor	PA	31.953	WAT
Safe Harbor	PA	38.55	WAT
Safe Harbor	PA	37.95	WAT
Safe Harbor	PA	38.55	WAT
Safe Harbor	PA	31.95	WAT
Safe Harbor	PA	32.55	WAT
Safe Harbor	PA	31.953	WAT
Safe Harbor	PA	32.55	WAT
Safe Harbor	PA	31.953	WAT
Safe Harbor	PA	32.55	WAT
Safe Harbor	PA	37.5	WAT
Safe Harbor	PA	38.55	WAT
Salvo Auto Parts - Essex	MD	0.0042	SUN
Sanborn	MD	0.0042	SUN
Savin	MD	0.003	SUN
SAYREVIL	NJ	22.25	LFG
School Street	NY	38	WAT
Schwartz Solar	MD	0.00456	SUN
Settlers Hill	IL	6.2	LFG

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Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
Shanley Residence	MD	0.002	SUN
Shanley-Sykesville	MD	0.002	SUN
Sharma	MD	0.003	SUN
Sherman Island	NY	29.8	WAT
Sherwood	MD	0.006	SUN
Shombert	MD	0.005	SUN
Shumaker Residence	MD	0.002	SUN
Sill Reisterstown	MD	0.003	SUN
Sill Upperco	MD	0.002	SUN
Silver-Isenstadt Solar	MD	0.004	SUN
Sklut	MD	0.004	SUN
Smearman Residence	MD	0.00158	SUN
Snowden Hydro Site	VA	5	WAT
Solar Bee	MD	0.004	SUN
SolarHomes	MD	0.004	SUN
South Barrington Electric	IL	1.6	LFG
Sparrows Point	MD	129	MSW
SPSA WTE	VA	60	MSW
Stadlin Residence	MD	0.0029	SUN
Stanton Residence	MD	0.002	SUN
Starrett	MD	0.002	SUN
Steele Residence	MD	0.0042	SUN
Stowe	PA	6.2	LFG
Strauss	MD	0.003	SUN
Summit School Solar	MD	0.00507	SUN
SunEdison Beltsville	MD	0.016	SUN
Tardif	MD	0.014	SUN
Tate Bethesda Solar PV	MD	0.00684	SUN
Teixeira's Home	MD	0.00405	SUN
Terry Dollarton	MD	0.00351	SUN
Tetter	MD	0.001	SUN
Thompson Residence	MD	0.006	SUN
Tillery	NC	86	WAT
Tom Neider Solar Residence	MD	0.0063	SUN
Trenton	NY	27.8	WAT
Union County Resource Recovery	NJ	45	MSW
Uppoor Residence	MD	0.00385	SUN
Venice Park Generating Facility	MI	0.8	LFG
Via Solar Residence	MD	0.004	SUN

Notes: These are the REFs that have been certified by the Commission, and registered in GATS of 1/14/2010. The rated capacity figure (in MWs) for the REFs is for the facility as a whole and does not partition out the amount attributable to renewable fuel sources.

Appendix E: Maryland Certified Renewable Energy Facilities (Cont'd)

Plant Name	State	Capacity	Fuel
Vierling Home	MD	0.002	SUN
Viking Energy of Northumberland	PA	18	WDS
VP CRAVENWOOD 1	NC	47	WDS
VP GOSPORT 1 F	VA	60	MSW
Wallace	MD	0.001	SUN
Walters	NC	112	WAT
Warshaw Solar One	MD	0.003	SUN
Wash 'N Vac III	MD	0.0063	SUN
Watts	MD	0.005	SUN
Welch/Molloy	MD	0.017	SUN
Westchester	IL	3.5	LFG
WGES 001 - Kelly Properties	MD	0.1495	SUN
Wheelabrator Baltimore Refuse	MD	60.222	MSW
Wheelabrator Falls	PA	52.562	MSW
Wheelabrator Gloucester LP	NJ	14	MSW
Whitmyre Residence	MD	0.00684	SUN
Wiker Residence	MD	0.00294	SUN
William Parker	MD	0.0069	SUN
Williamson roof	MD	0.0049	SUN
Wolfe Residence	MD	0.0021	SUN
Woodland	IL	1.8	LFG
Wright Solar Residence	MD	0.002	SUN
Yingling Roof	MD	0.00358	SUN
Youkers Roof	MD	0.00276	SUN
Young	MD	0.003	SUN
Zhang Residence	MD	0.00675	SUN

Notes: These are the REFs that have been certified by the Commission, and registered in GATS of 1/14/2010. The rated capacity figure (in MWs) for the REFs is for the facility as a whole and does not partition out the amount attributable to renewable fuel sources.

Fuel Source Key:

BLQ	Black Liquor
LFG	Landfill Gas
MSW	Municipal Solid Waste
OBL	Other Biomass Liquids
SUN	Solar
WAT	Hydroelectric
WDS	Wood and Waste Solids
WND	Wind

Appendix F: Number of Renewable Energy Facilities Located in Maryland

Maryland County	Tier 1	Tier 1 Solar	Tier 2	Total
Allegany	1			1
Anne Arundel		29		29
Baltimore	1	33	3	37
Baltimore City	1	3		4
Calvert		5		5
Carroll		12		12
Cecil		5		5
Charles		1		1
Dorchester		1		1
Frederick		10		10
Garrett			1	1
Harford		7	1	8
Howard		39		39
Kent		3		3
Montgomery	2	79	2	83
Prince George's	4	19		23
Queen Anne's		3		3
Somerset		1		1
St. Mary's		6		6
Talbot	1	4		5
Washington		16		16
Wicomico	1	3		4
Worcester	1	1		2
Grand Total	12	280	7	299

Note: This list includes all renewable generators that are both: 1) located within the state of Maryland, and 2) registered to participate in any one of the PJM States' renewable energy programs as of January 22, 2010. This list does not correspond to the facilities listed in Appendix E.

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

Maryland County	Tier 1	Tier 1 Solar	Tier 2	Total
Allegany	65.000			65.000
Anne Arundel		0.363		0.363
Baltimore	3.000	1.268	318.222	322.490
Baltimore City	3.000	0.009		3.009
Calvert		0.033		0.033
Carroll		0.350		0.350
Cecil		0.024		0.024
Charles		0.003		0.003
Dorchester		0.004		0.004
Frederick		0.103		0.103
Garrett			32.660	32.660
Harford		0.026	474.000	474.026
Howard		0.163		0.163
Kent		0.011		0.011
Montgomery	3.240	1.154	78.000	82.394
Prince George's	13.400	0.238		13.638
Queen Anne's		0.011		0.011
Somerset		0.004		0.004
St. Mary's		0.021		0.021
Talbot	69.000	0.020		69.020
Washington		0.372		0.372
Wicomico	6.000	0.019		6.019
Worcester	2.000	0.004		2.004
Grand Total	164.64	4.20	902.88	1,071.72

Note: This list includes all renewable generators that are both: 1) located within the state of Maryland, and 2) registered to participate in any one of the PJM States' renewable energy programs as of January 22, 2010. This list does not correspond to the facilities listed in Appendix E.

Appendix H: RPS History

The Renewable Energy Portfolio Standard (RPS) was established in May 2004 by Senate Bill 869. In Case No. 9019,¹ the Commission considered certain threshold policy and administrative issues. With Case No. 9019 as a foundation, Staff convened the RPS Working Group which was composed of representatives from electric utilities, electricity suppliers, renewable energy supplier, Renewable Energy Credit (REC) brokers, industry specialists, environmentalists, the Maryland Office of People's Counsel, and other stakeholders.

On April 13, 2005, Staff filed recommended RPS regulations, and the Commission opened Rulemaking 12.² The Commission received comments and held open meetings concerning the regulations. On May 25, 2005, the Commission voted to publish the proposed RPS regulations as Section 20.61 of the Code of Maryland Regulations (COMAR). COMAR 20.61 was adopted and became effective November 24, 2005.

The Commission created regulations and procedures necessary to begin program implementations. The Commission also established a website dedicated to the RPS.³ The website includes: forms, reference documents, related links, Frequently Asked Questions, applications for retroactive RECs and applications to be classified as industrial process load.

2006 RPS Compliance Year

The first RPS compliance year began on January 1, 2006, and concluded on December 31, 2006. In addition to initiating the Tier 1 and Tier 2 REC requirements for retail electricity sales, the issuance of retroactive RECs concluded during the year and changes were made to the RPS regulations through Rulemaking 25.

1. Registration of Retroactive RECs

RECs created on or after January 1, 2004 and before final regulations were adopted on November 24, 2005 are known as retroactive RECs. A retroactive REC application was required to be filed within the six-month period immediately after the effective date of the final regulations. These retroactive RECs were partitioned into two categories, one category to account for generation that occurred during calendar year 2004, and the second category to cover the period spanning January 1, 2005, through November 24, 2005.

The deadline for filing applications requesting credit for 2004 and 2005 retroactive RECs was May 29, 2006. Retroactive RECs are identical to RECs in every way except that they are given a generation date of December 31st of the year they were generated as opposed to a generation date consisting of the month and year that the renewable electricity was created. Like normal RECs, retroactive RECs can be banked for a period of three years.

¹ In the Matter of the Commission's Inquiry into the Implementation of the Renewable Energy Portfolio Standard, Case No. 9019.

² COMAR 20.61 - Renewable Energy Portfolio Standards, Administrative Docket RM12.

³ Maryland Public Service Commission, Available:
http://webapp.psc.state.md.us/intranet/ElectricInfo/home_new.cfm

The Commission approved 2,768,537 Tier 1 RECs and 3,972,563 Tier 2 RECs that were generated during 2004. The figures for 2005 retroactive RECs certified by the Commission were 762,520 Tier 1 RECs, and 339,627 Tier 2 RECs.

2. Rulemaking 25

Rulemaking 25 proposed revisions to COMAR 20.61 and were adopted on December 6, 2006. The due date for electricity supplier annual compliance forms was brought forward from June 1, 2007, to April 1, 2007. In some cases, REC creation cannot be verified by the operator of the control area. Rulemaking 25 developed a procedure to issue RECs for a facility when the control area operator is unable to certify the total number of MWh generated by the facility. Facilities unable to obtain REC authentication may include those that operate behind the meter, deliver electricity directly to an interconnecting utility, or operate in a Regional Transmission Organization that could not verify electricity generation over a given time period.

2007 RPS Compliance Year

On October 19, 2007, a Solar Technical Conference was held at the Commission. The purpose of this conference was to convene a number of solar energy market participants to share information and ideas regarding a number of issues that may relate to the solar requirements. Topics discussed during the Solar Technical Conference included an overall background of the solar market, experiences from other state solar RPS programs, available REC trading platforms, and methods for metering and verifying renewable solar energy generation. Rulemaking 32 proposed regulations for COMAR 20.61 to address issues created by the solar statutory changes. The regulations were adopted on September 4, 2008.

Statutory Changes

2008 Legislative Session

During the 2008 Maryland Legislative Session three bills were passed which amend the RPS. The changes include: increasing the percentage requirements of the RPS; increasing Tier 1 compliance fees; restricting the geographic location of eligible renewable resources; establishing the Energy Fund and a Maryland Strategic Energy Investment Program; repealing the Maryland Renewable Energy Fund; and moving poultry litter from Tier 2 source to Tier 1.

Senate Bill 209 (Chapters 125 and 126 of 2008) increased the RPS requirements for Tier 1 renewable sources. Beginning in 2011, the Tier 1 requirements are accelerated to 20 percent by 2022. This approximately doubles the previous 2022 requirement of 9.5 percent. In addition, the Tier 1 compliance fee for REC shortfalls increased from 2 cents to 4 cents per kilowatt hour. Chapters 125 and 126 also restrict acceptable renewable energy sources to those within the PJM region, or in a control area that is adjacent to the PJM region if the electricity is delivered in the PJM region. The bill removes the provision that acceptable facilities may be located in a state adjacent to the PJM region.

Senate Bill 268 (Chapters 127 and 128 of 2008) established the Energy Fund, as well as a Maryland Strategic Energy Investment Program administered by the Maryland Energy Administration. The purpose of the Energy Fund is to decrease energy demand and increase energy supply to promote affordable, reliable and clean energy in Maryland. Chapters 127 and 128 repeal the Maryland Renewable Energy Fund and redirects revenues into a dedicated fund source within the new Energy Fund. The Energy Fund is also made up of the proceeds from the RGGI auction.

Senate Bill 348 (Chapters 135 and 136 of 2008) removed the incineration of poultry litter from the list of eligible Tier 2 renewable energy sources and added poultry litter-to-energy as a qualifying Tier 1 renewable energy source. Poultry litter-to-energy is an eligible resource only if the source is connected with the electric distribution grid serving Maryland.

2007 Legislative Session

In April 2007 the RPS was amended to add a solar set-aside to the Maryland RPS.⁴ The solar set-aside mandated that a specified percentage of Tier 1 must come from attributes associated with electricity generated from a solar technology. This requirement became effective on January 1, 2008. The initial solar requirement is 0.005 percent in 2008. The solar requirement increases each year and peaks in year 2023, at which time 2 percent of Maryland retail electricity sales must be represented by a solar source. Also, double credit for RECs derived from solar sources is no longer allowed.

Solar RECs (SRECS) purchased by a Load Serving Entity (LSE) directly from a solar on-site generator must be done through a contract with a term of no less than 15 years.⁵ The price level of the SRECs may vary throughout the life of the 15 year contract. For a solar on-site generator that is rated 10 kW or less, RECs must be purchased through a single initial payment representing the full estimated production of the system for the life of the contract.

Effective January 1, 2012, all SRECs must be sourced from solar renewable energy facilities that are interconnected with the electricity distribution grid serving Maryland.⁶ On or before December 31, 2011, SRECs from out-of-state resources may be used for compliance only if no sufficient offers have been made from Maryland sources. SRECs eligible for the RPS must be generated by a Commission certified facility, meaning that an out-of-state solar facility must be approved by the Commission for the creation of SRECs to be eligible for compliance with the solar portion of the RPS. Also, solar facilities located within Maryland must first offer to sell SRECs to LSEs participating in the Maryland RPS before selling SRECs out-of-state.⁷ If the offer is not accepted by an electricity LSE, then the SRECs may be sold for a purpose other than for compliance with the Maryland RPS. If the costs incurred by an LSE to purchase SRECs equals one percent of the total annual electricity sales revenue in Maryland, then the electricity LSE may request that the Commission delay the solar requirement for one year. The compliance

⁴ SB 595 was passed by the General Assembly on April 9, 2007 and signed by Governor O'Malley on April 24, 2007.

⁵ See PUC Article §7-709.

⁶ See PUC Article §7-704.

⁷ See PUC Article §7-704(a)(2).

fee for the solar Tier 1 set-aside begins at \$450 per MWh shortfall in 2008 and then starting in 2009, gradually reduces by \$50 per MWh every other year until 2023, at which time the compliance fee is \$50 per MWh. The RPS allocates a separate compliance fee schedule for Industrial Process Load. The entire Tier 1 Industrial Process Load obligation, including the solar portion, is subject to a compliance fee rate of \$8 per MWh.