

**Report on the Status of Net Energy Metering
In the State of Maryland**

**Prepared by
The Public Service Commission of Maryland**

**Prepared for the General Assembly of Maryland
Under Public Utilities Article §7-306(h)**

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Executive Summary

This report is prepared by the Public Service Commission of Maryland (“Commission”) in compliance with Public Utilities Article (“PUA”) §7-306(h), *Annotated Code of Maryland*. PUA §7-306(h) requires the Commission to report on the status of the net metering program, including the amount of capacity by type of energy resource from net-metered facilities in the State, and to recommend whether the cap on eligible capacity should be altered. This is the ninth report prepared by the Commission. The initial report was produced in 2008.

At this time, the Commission does not recommend changes to the eligibility cap for net metering. Although there has been an increase in the number of recent installations, the level of installed net-metered generating capacity documented in this Report, approximately 461 megawatts (“MW”),¹ is far below the eligible State cap of 1,500 MW. Therefore, it is unlikely that the current cap would be approached without several years of advance notice.

While no revisions to PUA §7-306 are recommended at this time, the Commission continues to monitor local and national renewable energy issues with an eye toward regulation and tariff changes. Additionally, in an effort to build on the prior year’s technical conference in which the Commission undertook an investigation into the technical and financial barriers to the deployment of small distributed energy resources (“DER”) across the State, the Commission initiated a proceeding in September 2016, docketed as Public Conference 44 (“PC44”), for purposes of exploring issues related to grid modernization.² Also during 2016, the Commission convened the Maryland Net Metering Work Group to begin implementation of a three-year Community Solar Pilot Program in response to the legislative requirements of Senate Bill 398 and House Bill 1087 – signed into law in May 2015.

Net Metering in Maryland

By using a single meter to capture both energy usage and generation, net metering is a method of simplifying the measurement of energy produced by a renewable energy generator when it is connected to an electric utility distribution system. Net energy metering generally utilizes the existing meter for all calculations, thereby avoiding the expense of a second meter to measure incoming and outgoing energy separately. Net metering is permitted by law for solar, wind, biomass, micro combined heat and power, fuel cell, and closed conduit hydro electric generators that are intended primarily to supply a customer’s annual energy usage. The term “net metering” refers to the measurement of electricity on a net basis in which a customer’s energy usage is offset by the quantity of energy produced by an eligible customer-generator during a single billing period, *e.g.*, one month.

¹ Installed capacity as of June 30, 2016.

² *In The Matter of Transforming Maryland’s Electric Distribution Systems to Ensure that Electric Service Is Customer-Centered, Affordable, Reliable and Environmentally Sustainable in Maryland.*

As discussed further below, the terms of utility tariffs require a net metering customer to pay the monthly customer charge, regardless of the amount of energy produced by an eligible customer-generator. With respect to the energy billed, however, the net metering customer pays only for energy that is consumed, offset by any generation produced by the eligible customer-generator. The law also provides for monetary payment associated with net excess generation when a participating customer terminates service, or at the end of the net metering year.³ The dollar value of net excess generation is equal to the generation or commodity portion of the rate that the eligible customer-generator would have been charged by the electric company (averaged over the previous 12-month period), multiplied by the number of kilowatt-hours of net excess generation produced by the eligible customer-generator during the applicable time period. The following table summarizes the total amount of excess generation credit payouts by rate class for each of the utilities operating in Maryland. As Table 1 indicates, net metering customers received approximately \$2,223,000 of excess generation credit payments during the 12-month period ending April 30, 2016.

Table 1: Excess Generation Credit Payouts to Residential and Commercial Customers for the 12-Month Period Ending April 30, 2016

Electric Utility	Residential	Commercial	Total
Baltimore Gas and Electric Company	\$ 311,047.28	\$ 1,139,546.82	\$ 1,450,594.10
Choptank Electric Cooperative	\$ 23,810.16	\$ 37,488.24	\$ 61,298.40
Delmarva Power and Light Company	\$ 53,076.55	\$ 231,861.61	\$ 284,938.16
Easton Utilities Commission	\$ 311.14	\$ 5,633.73	\$ 5,944.87
Hagerstown Municipal Electric Light Plant	\$ 4.38	\$ 7.76	\$ 12.14
Mayor and Council of Berlin	\$ 463.47	\$ 516.40	\$ 979.87
Potomac Edison Company	\$ 58,955.92	\$ 134,665.31	\$ 193,621.23
Potomac Electric Power Company	\$ 151,219.07	\$ 28,436.76	\$ 179,655.83
Southern Maryland Electric Cooperative	\$ 38,730.62	\$ 7,490.50	\$ 46,221.12
Thurmont Municipal Light Company	\$ -	\$ -	\$ -
Williamsport Municipal Light Plant	\$ -	\$ -	\$ -
Statewide Total	\$ 637,618.59	\$ 1,585,647.13	\$ 2,223,265.72

³ PUA §7-306(f)(6) states: (i) On or before 30 days after the billing cycle that is complete immediately prior to the end of April of each year, the electric company shall pay each eligible customer-generator for the dollar value of any accrued net excess generation remaining at the end of the previous 12-month period ending with the billing cycle that is complete immediately prior to the end of April; (ii) Within 15 days after the date the eligible customer-generator closes the eligible customer-generator's account, the electric company shall pay the eligible customer-generator for the dollar value of any accrued net excess generation remaining at the time the eligible customer-generator closes the account. *See also* PUA § 7-306(f)(7) for certain provisions applicable to electric cooperatives of a certain size.

Eligible customer-generators⁴ also may benefit from less costly interconnection with the utility, *e.g.*, through the use of only a single standard meter and without additional switches. Specifically, this relatively less complicated method of interconnection (as compared to generation resources sized in excess of the 2 MW net metering eligibility cap) facilitates the customer's use of the eligible renewable generator in a grid-connected manner, without significant additional installation or operating expense. For larger commercial customers, interconnection sometimes requires a more expensive installation, because tariffs typically recover distribution improvement costs from the customer.

In accordance with PUA §7-306, the utilities implement net energy metering operations through tariffs that are filed with the Commission. These tariffs place terms and conditions on net energy metering operations, which include, but are not limited to, eligibility requirements that cap the maximum installed generating capacity of individual systems and specify the statewide net-metered generating capacity limit. Any statutory change affecting the net energy metering provisions requires each utility to revise its applicable tariff and file the revision with the Commission.

Eligibility Cap

Electric companies are required to permit net metering for eligible customers. The current aggregate limit on eligible net-metered generating capacity in the State is 1,500 MW.⁵ This limit represents slightly greater than 10% of the State's peak demand, which in 2016 was on the order of 14,300 MW (gross of demand-side management programs).⁶ The generating capacity of an electric generating system used by an eligible customer-generator for net metering may not exceed 2 MW.⁷

Current Level of Renewable Deployment

The Commission Staff surveyed Maryland electric companies for the number of net-metered facilities currently operating in each electric company distribution service territory. The total amount of installed net-metered capacity increased from approximately 364 kW in 2007, to 460,957 kW through the end of June 2016. Table 2 below shows the results of the Commission Staff's survey of net-metered installations through June 30, 2016. When contrasted with net-metered installations from the previous 12-month reporting period (*i.e.* through June 30, 2015, as depicted in Table 3), installed

⁴ "Eligible customer-generator" means a customer that owns and operates, leases and operates, or contracts with a third party that owns and operates a biomass, micro combined heat and power, solar, fuel cell, wind or closed conduit hydro electric generating facility that: (i) is located on the customer's premises or contiguous property; (ii) is interconnected and operated in parallel with an electric company's transmission and distribution facilities; and (iii) is intended primarily to offset all or part of the customer's own electricity requirements. *See PUA §7-306(a)(4).*

⁵ PUA §7-306(d).

⁶ Public Service Commission of Maryland, *Ten-Year Plan (2016-2025) of Electric Companies in Maryland* (Nov. 2016), at 41, Appx. Table 3(a)(i).

⁷ PUA §7-306(g)(1).

net-metered generating capacity has increased by 222,045 kW, or 93% during this reporting period.

Table 2: Net Metering Capacity as of June 30, 2016 (kW of Installed Capacity)						
Electric Utility	Solar	Wind	Biomass	Utility Total	% Change from 2015	kW Change
Baltimore Gas and Electric Company	176,107	113	-	176,220	124%	97,439
Choptank Electric Cooperative	10,232	65	-	10,298	0%	1
Delmarva Power and Light Company	70,646	132	-	70,779	52%	24,244
Easton Utilities Commission	222	-	-	222	-51%	(231)
Hagerstown Municipal Electric Light Plant	45	-	-	45	1%	0
Mayor and Council of Berlin	256	7	-	263	114%	140
Potomac Edison Company	45,862	116	-	45,978	113%	24,368
Potomac Electric Power Company	126,870	62	-	126,932	96%	62,182
Southern Maryland Electric Cooperative	29,774	36	320	30,130	86%	13,896
Thurmont Municipal Light Company	91	-	-	91	9%	7
Williamsport Municipal Light Plant	-	-	-	-	0%	-
Statewide Total	460,105	531	320	460,958	93%	222,046

Table 3: Net Metering Capacity as of June 30, 2015 (kW of Installed Capacity)						
Electric Utility	Solar	Wind	Biomass	Utility Total	% Change from 2014	kW Change
Baltimore Gas and Electric Company	78,707	74	-	78,781	57%	28,644
Choptank Electric Cooperative	10,232	65	-	10,297	50%	3,425
Delmarva Power and Light Company	44,545	930	1,060	46,535	65%	18,374
Easton Utilities Commission	453	-	-	453	174%	288
Hagerstown Municipal Electric Light Plant	45	-	-	45	19%	7
Mayor and Council of Berlin	116	7	-	123	68%	50
Potomac Edison Company	21,494	116	-	21,610	61%	8,184
Potomac Electric Power Company	64,746	4	-	64,750	74%	27,531
Southern Maryland Electric Cooperative	15,878	36	320	16,234	115%	8,694
Thurmont Municipal Light Company	84	-	-	84	13%	10
Williamsport Municipal Light Plant	-	-	-	-	0%	-
Statewide Total	236,300	1,232	1,380	238,912	66%	95,207

The cumulative amount of installed capacity has increased each year since the inception of the State's net metering program; although, the growth rate year-to-year has fluctuated. During 2016, the growth rate in installed net-metered capacity increased significantly as compared to prior years, as illustrated by Table 4 below.

Table 4: Installed Net-Metered Generating Capacity Growth			
Year end	kW	kW Change	Percent Change
June 30, 2016	460,958	222,045	93%
June 30, 2015	238,913	95,207	66%
June 30, 2014	143,706	42,014	41%
June 30, 2013	101,692	43,178	74%
June 30, 2012	58,514	26,775	84%
June 30, 2011	31,739	6,525	--

Recommendation on Eligibility Cap

As of June 30, 2016, the level of installed net-metered generating capacity represents approximately 31% of the current statewide limit. At this time, the Commission does not view the 1,500 MW limit as a barrier to the installation of new renewable generation. The net-metering survey administered by the Commission's Technical Staff requested information regarding the installation date of eligible customer-generators, which revealed an increase in new renewable generating capacity in recent years. The rate of installation captured by the data, however, does not indicate that the statewide eligibility cap will be approached in the near future.

Net Metering Regulations – COMAR 20.50.10

The Commission's regulations promulgated in COMAR 20.50.10, *et seq.*, promote the deployment of net-metered facilities and simplify the requirements for customer interconnection of eligible customer-generators. The regulations also address the permissible size for net metering systems as a multiple of customer load, and further establish aggregate net metering rules for agricultural, municipal, and non-profit customers.

Eligible Customer Size. Under the regulations, a customer may net meter using facilities that are sized to produce up to 200% of a customer's annual baseline energy usage (kWh).

Aggregate Net Metering. Aggregation of net-metered loads is the practice of combining meter readings from more than one utility service point. Utilities can provide this service by using physical interconnection of service points or by summing the total usage from two or more meters (virtual aggregation). Only certain types of customers are permitted to use this service in accordance with Commission regulations, including: agricultural, municipal (including county governments), and non-profit entities (*e.g.* churches or schools). The practice of aggregation may provide increased incentives for system deployment by providing greater economies of scale for installations and allowing a customer to make the most efficient use of existing solar or wind resources. An example of an agricultural application of aggregate net metering would consist of combining the

load on a farm's barn, outbuildings, and residence. In this hypothetical, a solar array may be installed on a barn that would normally have excellent sun exposure, although it would use little electric power. Joining the load of the residence (which may have less roof area or be in a shady location) and outbuildings to the load of the barn would make the renewable generator installation more practical and cost-effective for the customer.

Through the acceptance of utility tariffs, the Commission administers a Net Metering Aggregation Program. Current net metering tariffs implement COMAR 20.50.10.07 and .08 by requiring utilities to provide aggregate net metering to more than one meter for certain types of customers. The Net Metering Aggregation Program began with a pilot that contained temporary restrictions ending in 2012, after which time the Net Metering Aggregation Program was implemented without the pilot restrictions and made available to all eligible customers. Table 5 below depicts the number of applications and installed projects for the Net Metering Aggregation Program reported by the utilities as of June 30, 2016. The number of active projects has increased more than six-fold since 2013.

Table 5: Projects and Pending Applications for Net Metering Aggregation Program as of June 30, 2016

Electric Utility	Applications Pending	Number of Projects
Baltimore Gas and Electric Company	3	33
Choctank Electric Cooperative	0	21
Delmarva Power and Light Company	8	30
Easton Utilities Commission	0	0
Hagerstown Municipal Electric Light Plant	0	0
Mayor and Council of Berlin	1	0
Potomac Edison Company	11	31
Potomac Electric Power Company	5	4
Southern Maryland Electric Cooperative	0	8
Thurmont Municipal Light Company	0	0
Williamsport Municipal Light Plant	0	0
Statewide Total	28	127

By Letter Order, dated August 13, 2014, the Commission clarified its interpretation of COMAR 20.50.10 regarding the applicability of aggregate net metering for municipal customers. The Commission ruled that county governments are eligible customers for purposes of the Aggregate Net Metering Program. While the initial request for clarification pertained to a municipal customer located within The Potomac Edison Company service territory, the Commission has since reached a similar determination pertaining to county governments in the Baltimore Gas and Electric Company service territory as well.

Community Solar Energy Generating Systems

With the passage of Senate Bill 398 and House Bill 1087 – signed into law in May 2015, Maryland’s General Assembly required the Commission to establish a three-year pilot program pertaining to a new form of net metering targeted at Community Solar Energy Generating Systems (“CSEGS”). The law directs the Commission to investigate a wide variety of policy questions and to report to the legislature on the results of the pilot by 2019.

The Maryland Net Metering Work Group, a Staff-facilitated stakeholder discussion forum, convened in July 2015 to develop a program design to implement the CSEGS legislation. Following development of the program parameters, the Commission established a rulemaking process to codify the pilot offering.⁸ Community Solar regulations were adopted as final in July, 2016, and participating utilities filed implementation tariffs in September, 2016. Throughout the second half of 2016, the Work Group met to revise the utility-proposed CSEGS tariffs designed to implement the new regulations. On February 15, 2017, the Commission issued a Letter Order to each of the investor-owned utilities directing the Companies to file revised tariffs and finalize the pilot program details. In addition, the Commission’s Technical Staff and the Work Group were directed to finalize application materials and report on program details and the Pilot Program Study Plan.

The resulting CSEGS pilot program, if fully subscribed, would add about 200 MW of installed renewable generating capacity, which would fall under the 1,500 MW statewide net metering cap. The planned pilot capacity may be installed over the duration of the three-year pilot, effectuated by annual capacity allotments. The pilot program capacity includes categories for low- and moderate-income customers, as well as for small systems, rooftop systems, and installations on buildings and parking facilities. Implementation of the pilot is expected to begin in the second quarter of 2017 following approval of program participants. Following the conclusion of the pilot, eligible participants may continue to operate CSEGS facilities under the program rules for 25 years.

Other Issues

At this time, the Commission has not identified other matters relating to the net metering eligibility limit that require the action of the General Assembly.

⁸ RM56, *Revisions to COMAR 20.62 - Community Solar Energy Generation Systems*.