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

Prepared by
The Public Service Commission of Maryland

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Table of Contents

EXECUTIVE SUMMARY **1**
NET METERING IN MARYLAND **1**
ELIGIBILITY CAP **3**
CURRENT LEVEL OF RENEWABLE DEPLOYMENT **3**
RECOMMENDATION ON ELIGIBILITY CAP **5**
NET METERING REGULATIONS COMAR 20.50.10 ..... **5**
ELIGIBLE CUSTOMER SIZE. 5
AGGREGATE NET METERING. 5
OTHER ISSUES **7**

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 eighth 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 current level of installed net-metered generating capacity, approximately 239 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. In addition, the Commission convened a proceeding, docketed as Public Conference 40 ("PC40"), to investigate technical and financial barriers to the deployment of small distributed energy resources ("DER") across the State. As part of PC40, the Commission hosted a technical conference on October 20, 2015, which included presentations from a wide cross-section of stakeholders on the topics of: (1) the appropriate valuation factors for small DER; (2) the cost of interconnection for small DER; and (3) alternative utility cost recovery mechanisms. Additional technical conferences regarding the PC40 investigation may be scheduled in the future.

Net Metering in Maryland

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; the simplification is facilitated by the use of a single meter to capture both energy usage and generation. 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 the customer's annual energy usage. The term "net metering" refers to measurement of electricity on the basis that is net of energy used and produced by an eligible customer-generator during a single billing period, *e.g.*, one month.

[1] Installed capacity as of June 30, 2015.

As discussed further below, the terms of utility tariffs typically require a net metering customer to pay the monthly customer charge, regardless of the amount of energy produced by the eligible customer-generator. However, for energy billed, the customer pays only for energy that is consumed, netted against any generation produced by the customer. The law also provides for monetary payment for net excess generation when the customer terminates service, or at the end of the net metering year.[2] 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, the utilities paid approximately $663,000 of excess generation credits to customers in the 12-month period ending April 30, 2015.

Table 1: Excess Generation Credit Payouts to Residential and Commercial Customers for the 12-Month Period Ending April 30, 2015

Electric Utility	Residential	Commercial	Total
Baltimore Gas and Electric Company	$ 85,273.34	$ 258,966.85	$ 344,240.19
Choptank Electric Cooperative	$ 12,745.50	$ 2,739.88	$ 15,485.38
Delmarva Power and Light Company	$ 20,010.39	$ 143,699.82	$ 163,710.21
Easton Utilities Commission	$ 34.98	$ 2,747.77	$ 2,782.75
Hagerstown Municipal Electric Light Plant	$ 36.11	$ 5.69	$ 41.80
Thurmont Municipal Light Company	$ -	$ -	$ -
Mayor and Council of Berlin	$ 51.99	$ 474.60	$ 526.59
Potomac Electric Power Company	$ 33,788.70	$ 10,406.98	$ 44,195.68
Potomac Edison Company	$ 25,307.92	$ 46,739.26	$ 72,047.18
Williamsport Municipal Light Plant	$ -	$ -	$ -
Southern Maryland Electric Cooperative	$ 15,865.54	$ 4,550.33	$ 20,415.87
Statewide Total	**$ 193,114.47**	**$ 470,331.18**	**$ 663,445.65**

[2] 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-generators[3] also may benefit from less costly interconnection with the utility, *e.g.,* only a single standard meter and without additional switches. The 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 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.[4] This limit represents approximately 10% of the State's peak demand, which in 2015 was on the order of 15,000 MW (gross of demand-side management programs).[5] The generating capacity of an electric generating system used by an eligible customer-generator for net metering may not exceed 2 MW.[6]

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 has increased from approximately 364 kW in 2007 to 238,913 kW through the end of June 2015. Table 2 below shows the results of the Commission Staff's survey of net-metered installations through June 30, 2015. When contrasted with net-metered installations from the previous 12-month reporting period (through June 30, 2014, depicted in Table 3), installed net-metered generating capacity has increased by 66% during this reporting period.

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[3] "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).

[4] PUA §7-306(d).

[5] Public Service Commission of Maryland, *Ten-Year Plan (2014-2023) of Electric Companies in Maryland* (Aug. 2014) at 60, Appx. Table 3(a)(i).

[6] PUA §7-306(g)(1).

Table 2: Net Metering Capacity as of June 30, 2015 (kW of Installed Capacity)						
Electric Utility	**Solar**	**Wind**	**Biomass**	**Utility Total**	**% Change**	**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
Thurmont Municipal Light Company	84	-	-	84	13%	10
Mayor and Council of Berlin	116	7	-	123	68%	50
Potomac Electric Power Company	64,746	4		64,750	74%	27,531
Potomac Edison Company	21,494	116	-	21,610	61%	8,184
Williamsport Municipal Light Plant	-	-	-	-	0%	-
Southern Maryland Electric Cooperative	15,878	36	320	16,234	115%	8,694
Statewide Total	**236,300**	**1,232**	**1,380**	**238,912**	**66%**	**95,207**

Table 3: Net Metering Capacity as of June 30, 2014 (kW of Installed Capacity)						
Electric Utility	**Solar**	**Wind**	**Biomass**	**Utility Total**	**% Change**	**kW Change**
Baltimore Gas and Electric Company	50,073	64	-	50,137	35%	13,110
Choptank Electric Cooperative	6,805	68	-	6,873	38%	1,896
Delmarva Power and Light Company	27,230	930	-	28,161	25%	5,671
Easton Utilities Commission	165	-	-	165	6%	10
Hagerstown Municipal Electric Light Plant	38	-	-	38	9%	3
Thurmont Municipal Light Company	74	-	-	74	124%	41
Mayor and Council of Berlin	66	7	-	73	11%	7
Potomac Electric Power Company	37,215	4	-	37,219	56%	13,354
Potomac Edison Company	13,266	161	-	13,426	78%	5,892
Williamsport Municipal Light Plant	-	-	-	-	n/a	-
Southern Maryland Electric Cooperative	7,178	42	320	7,540	37%	2,030
Statewide Total	**142,110**	**1,276**	**320**	**143,706**	**41%**	**42,014**

While the amount of installed capacity has increased each year since the inception of net metering, the annual growth rate experienced a two-year decline beginning in 2013. However, the growth rate trend reversed itself this year so that both the amount of installed capacity and the growth rate increased in 2015 as compared to the previous year. Table 4 below depicts the installed capacity and the growth rates for the four periods ending between 2011 and 2015. In 2015, installed net-metered generating capacity increased by 66%.

Table 4: Installed Net-Metered Generating Capacity Growth			
Year end	kW	kW Change	Percent Change
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, 2015, the level of installed net-metered generating capacity represents approximately 16% 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 Commission Staff requested information on the installation date of eligible customer-generators, which revealed an increase in new renewable capacity in recent years. However, the rate of installation captured by the data contained in this report does not indicate that the cap would 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 allowed size for net metering systems as a multiple of customer load and establish methodologies pertaining to aggregate net metering for agricultural, municipal, and non-profit customers.

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

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 the 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 the farm's barn, outbuildings, and residence. 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.

By acceptance of utility tariffs, the Commission has implemented 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 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 pilot reported by utilities as of June 30, 2015. The number of active projects has more than tripled since 2013, while the number of applications has quadrupled since then.[7]

Table 5: Projects and Pending Applications for Net Metering Aggregation Program as of June 30, 2015

Electric Utility	Applications Pending	Number of Projects
Baltimore Gas and Electric Company	16	11
Choptank Electric Cooperative	1	12
Delmarva Power and Light Company	10	19
Easton Utilities Commission	0	0
Hagerstown Municipal Electric Light Plant	0	0
Thurmont Municipal Light Company	0	0
Mayor and Council of Berlin	1	0
Potomac Electric Power Company	2	3
Potomac Edison Company	24	20
Williamsport Municipal Light Plant	0	0
Southern Maryland Electric Cooperative	1	7
Statewide Total	**55**	**72**

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 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.

[7] In 2013, the number of pending applications and active projects was 12 and 21, respectively. In 2014, the number of pending applications and active projects was 28 and 49, respectively.

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.

Community Solar Energy Generating Facilities

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 on community solar energy generating facilities. 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, reconvened in July 2015 to develop a program design to implement the community solar pilot legislation. Following development of the program parameters, Staff filed draft regulations that provide the ability for customers, in certain circumstances, to subscribe to a community solar energy generating system. The Commission held an initial rulemaking session on December 14 and 15 for purposes of considering the draft regulations filed by Staff and the comments submitted by interested parties. The Commission will continue its rulemaking session on January 25 and 26, 2016. If the Commission approves the proposed regulations for publication, the proposed regulations will be published in the *Maryland Register* for notice and comment.