

**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 Maryland’s 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 eleventh report prepared by the Commission. The initial report was produced in 2008.

Although there has been an increase in the number of recent installations of net-metered facilities, the current level of installed capacity, approximately 754 megawatts (“MW”),¹ is just over half of the eligible State cap of 1,500 MW. At this time, the Commission is not recommending changes to the eligibility cap for net metering. If current rates of installation continue, the current statewide cap may be reached in 2025 or 2026.²

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.³ In previous years, the Commission has held a technical conference, docketed as Public Conference (“PC”) 40⁴ to address distributed generation issues. In 2016, the Commission initiated Public Conference 44 (“PC44”), was to explore issues related to grid modernization and

¹ Installed capacity as of June 30, 2019.

² See page 8 for details on this estimate.

³ Net energy metering programs are currently in effect in at least 43 states and state legislatures and utility commissions are beginning to examine ways to treat net-metered customers based on the costs they impose, and the benefits they deliver, to the distribution system.

⁴ In the Matter of the Investigation into the Technical and Financial Barriers to the Deployment of Small Distributed Energy Resources.

distributed resources.⁵ During 2016, the Commission convened the Maryland Net Metering Working Group (“MNMWG”) to implement a Community Solar Program (“Program”) in response to the legislative requirements of House Bill 1087 (“HB1087”) of the 2015 Session.⁶ After a Commission Rulemaking, Subtitle 62 of Title 20 of the Code of Maryland Regulations (“COMAR”), which governs Community Solar Energy Generating Systems (“CSEGS”) and provides a framework for the Program was adopted in July 2016. The Commission directed the MNMWG to work collaboratively to develop utility tariffs to implement the regulations. In its February 15, 2017 Letter Order, the Commission directed Maryland’s investor-owned utilities to file compliance tariffs to implement the Program and directed its Technical Staff to prepare forms to authorize Subscriber Organizations. This was accomplished in April-June of 2017, and Year 1 of the Program is complete. Approximately 10 megawatts of CSEGS are operating in Maryland. In 2019, the Maryland General Assembly amended PUA § 7-306.2 to extend and expand the Community Solar Program.

Net Metering in Maryland

By using a single meter to capture both 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 hydroelectric generators that are intended primarily to supply a customer’s annual energy usage. The term “net metering”

⁵ 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.

⁶ See PUA § 7-306.1.

refers to the 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. As discussed further below, the terms of utility tariffs require a customer to pay the monthly customer charge, regardless of the amount of energy produced. However, for energy billed, the customer pays only for energy that is used, netted against any generation produced by the customer. The practical effect of this policy is to allow customers to use the utility grid as if it were battery storage, so that excess energy produced at any given instant could be stored for later use. 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.⁷ 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. 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, approximately \$2,921,334.67 of excess generation credits was paid to customers in the 12-month period ending April 30, 2019.

⁷ 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.

Table 1: Excess Generation Credit Payouts to Residential and Commercial Customers for the 12-Month Period Ending April 30, 2019			
Electric Utility	Residential	Commercial	Total
Baltimore Gas and Electric Company	\$632,365.00	\$303,855.00	\$936,220.00
Choptank Electric Cooperative, Inc.	\$47,565.68	\$33,555.27	\$81,120.95
Delmarva Power & Light Company	\$120,687.64	\$546,507.21	\$667,194.85
Easton Utilities Commission	\$625.49	\$8,035.34	\$8,660.83
Hagerstown Municipal Electric Light Plant	\$5.78	\$1.81	\$7.59
Thurmont Municipal Light Company	-	-	-
Mayor and Council of Berlin	\$436.46	\$1,691.02	\$2,127.48
Potomac Electric Power Company	\$514,230.77	\$460,656.01	\$974,886.78
The Potomac Edison Company	\$79,436.68	\$82,137.50	\$161,574.18
Williamsport Municipal Light Plant	-	-	-
Southern Maryland Electric Cooperative, Inc.	\$87,016.59	\$2,525.42	\$89,542.01
State Total	\$1,482,370.09	\$1,438,964.58	\$2,921,334.67

Eligible customer-generators⁸ also may benefit from less costly interconnection with the utility, *e.g.*, only a single standard meter and without additional switches. The ease of interconnection allows the customer to use 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.

Utilities implement the net energy metering operations authorized in PUA § 7-306 through tariffs that are filed with the Commission. These tariffs place terms and conditions on net energy metering operations. These tariffs also include eligibility requirements that cap the maximum

⁸ “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).

installed size, as well as the State-wide limit. Any statutory change requires each utility to revise its 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 renewable generation capacity in the State is 1,500 MW. This limit represents approximately 10 percent of the peak demand, which in 2014 was on the order of 15,000 MW in the State.⁹ The capacity is set at 1,500 MW based on PUA § 7-306(d). The generating capacity of an electric generating system used by an eligible customer-generator for net metering may not exceed 2 MW.¹⁰

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's distribution service territory. The total amount of generation has increased from approximately 364 kW in 2007 to 754,226 kW through the end of June 2019. Table 2 below shows the results of the Commission Staff's survey of net-metered installations through June 30, 2019, as compared with net-metered installations from the previously reported 12-month period ending June 30, 2018, shown in Table 3. In the 12 months since June 30, 2018, net metering capacity has increased by 84,390 kW, representing a 13 percent increase from the previously reported capacity.

In the process of reviewing data provided by the utilities, Commission Staff discovered multiple data issues that affected reported 2019 data and data reported previously. Two utilities included

⁹ Ten-Year Plan (2014-2023) of Electric Companies in Maryland, issued August, 2014, Appendix Table 3(a)(i), page 60.

¹⁰ PUA § 7-306(g)(1).

pending net metering facilities in the installed capacity data. Commission Staff removed all pending capacity from the 2019 data as well as from previous years' data. Another utility had five individual capacity entries that were overstated by a factor of 1,000. This utility provided updated capacity data correcting this error, and Commission Staff made the same corrections to the 2018 and 2017 data for this utility.

Table 2: Net Metering Capacity as of June 30, 2019						
Electric Utility	Solar	Wind	Biomass /Other	Utility Total	YOY % Change	kW Change
Kilowatts of Installed Capacity						
Baltimore Gas and Electric Company	288,953	64	-	289,017	10%	25,308
Choptank Electric Cooperative, Inc.	24,414	368	30	24,812	21%	4,300
Delmarva Power and Light Company	90,107	889	-	90,996	18%	13,652
Easton Utilities Commission	2,609	-	-	2,609	0.2%	6
Hagerstown Municipal Electric Light Plant	194	-	-	194	6%	11
Thurmont Municipal Light Company	125	-	-	125	20%	21
Mayor and Council of Berlin	397	-	-	397	11%	38
Potomac Electric Power Company	209,903	71	2,535 ¹¹	212,509	18%	32,117
Potomac Edison Company	77,470	7	256	77,733	5%	3,970
Williamsport Municipal Light Plant	28	-	-	28	0%	-
Southern Maryland Electric Cooperative, Inc.	55,450	36	320	55,806	10%	4,967
State Total	749,650	1,435	3,141	754,226	13%	84,390

¹¹ These facilities are natural gas fuel cell generation.

Table 3: Net Metering Capacity as of June 30, 2018						
Electric Utility	Solar	Wind	Biomass /Other	Utility Total	YOY % Change	kW Change
Kilowatts of Installed Capacity						
Baltimore Gas and Electric Company	263,655	54	-	263,709	8%	19,730
Choptank Electric Cooperative, Inc.	20,433	79	-	20,512	13%	2,349
Delmarva Power and Light Company	76,455	889	-	77,344	25%	15,705
Easton Utilities Commission	2,603	-	-	2,603	440%	2,121
Hagerstown Municipal Electric Light Plant	182	-	-	182	1040%	167
Thurmont Municipal Light Company	104	-	-	104	8%	7
Mayor and Council of Berlin	352	7	-	359	17%	53
Potomac Electric Power Company	177,786	71	2,535 ¹²	180,392	24%	35,058
Potomac Edison Company	73,506	7	250	73,763	22%	13,446
Williamsport Municipal Light Plant	28	-	-	28	0%	-
Southern Maryland Electric Cooperative, Inc.	50,483	36	320	50,839	14%	6,354
State Total	665,587	1,144	3,105	669,836	17%	94,990

The amount of installed capacity has increased each year since the inception of Maryland’s net metering program. The table below shows the installed capacity and the growth rates for the four periods from 2016 through 2019. Capacity grew steadily through 2016, when net capacity installed grew 93 percent; for 2017, the capacity growth fell to 48 percent; and for 2018, growth slowed further at 17 percent. In 2019, growth was 13 percent relative to 2018 reported capacity.

¹² These facilities are natural gas fuel cell generation.

Table 4: Net Metering Capacity Growth for the Previous Three Years			
Year end	kW	kW Change	Percent Change
June 30, 2019	754,226	84,390	13%
June 30, 2018	669,836	94,990	17%
June 30, 2017	574,846	187,335	48%
June 30, 2016	387,511	186,973	93%

Recommendation on Eligibility Cap

As of June 30, 2019, the level of installed capacity is 50 percent of the current limit. At this time, the Commission does not view the 1,500 MW limit as a barrier to installation of new renewable generation. Commission Staff projected future installed net metering capacity based on the average capacity growth for the past two years and assumed 154 MW in Community Solar net metering capacity, which is the current sum of offered community solar capacity (Table 6). Based on this projection methodology, the 1,500 MW limit would not be approached until 2025 or 2026. This projection does not include any additional capacity that may be added to the Community Solar Program due to changes in legislation or regulations.

Net Metering Regulations COMAR 20.50.10

COMAR 20.50.10 promotes the deployment of net-metered facilities and simplifies the requirements for customer interconnection. The regulations address the allowed size for net metering eligibility as a multiple of customer load and establish aggregate net metering for agricultural, municipal, and non-profit customers.

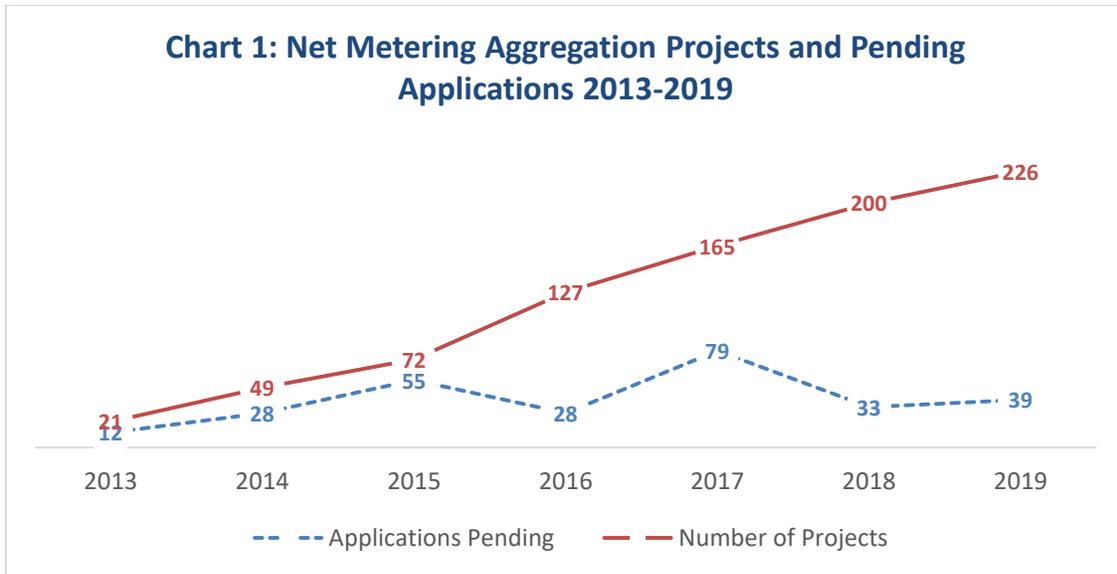
Eligible Customer Size. Under the regulations, a customer may participate in net metering using facilities that are sized to produce up to 200 percent of a customer's annual baseline kWh use.

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. Agricultural, municipal (including county governments), and non-profit entities (*e.g.* churches or schools) are permitted to aggregate net-metered loads under the regulations. 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. A solar array may be installed on a barn which 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 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 whose temporary restrictions ended in 2012. Thereafter, the Net Metering Aggregation Program was implemented without the pilot

restrictions and made open to all eligible customers. Table 5 below shows the number of applications and installed projects for the Net Metering Aggregation Program reported by utilities as of June 30, 2019. Chart 1 shows the growth in projects over time from 2013 to 2019 as well as the number of applications by year. As seen in Chart 1, the number of projects has increased from 21 in 2013 to 226 in 2019 while the number of applications has fluctuated from year to year.

Table 5: Projects and Pending Applications for Net Metering Aggregation Program as of June 30, 2019		
Electric Utility		
	Applications Pending	Number of Projects
Baltimore Gas and Electric Company	12	62
Choptank Electric Cooperative, Inc.	0	48
Delmarva Power & Light Company	16	45
Easton Utilities Commission	0	0
Hagerstown Municipal Electric Light Plant	0	0
Thurmont Municipal Light Company	0	0
Mayor and Council of Berlin	0	0
Potomac Electric Power Company	6	10
The Potomac Edison Company	2	49
Williamsport Municipal Light Plant	0	0
Southern Maryland Electric Cooperative, Inc.	3	12
State Total	39	226



By Letter Order, dated August 13, 2014, the Commission clarified its interpretation of COMAR 20.50.10 regarding the applicability of aggregate net metering within The Potomac Edison Company (“PE”) service territory. The Commission ruled that county governments in PE’s service territory were eligible customers for aggregate net metering.

Community Solar Energy Generating Systems

During the 2015 Legislative Session, the General Assembly passed House Bill 1087 and its Senate Bill counterpart, SB398, requiring the Commission to develop a Pilot Program (“Pilot”) and report on a new type of net-metering, Community Solar Energy Generating Systems (“CSEGS”). HB1087/SB398 was signed into law in May 2015 and is codified at PUA § 7-306.2. The law directed the Commission to establish a three-year pilot program and to report to the legislature on the results by 2019. During the 2019 Legislative Session, PUA § 7-306.2 was amended to extend the Pilot through July 1, 2022, with capacity increasing annually.¹³ The limit on subscribers per CSEGS was deleted and the date for the Commission to

¹³ HB683/SB520

file a Report on the Pilot was extended to July 1, 2022. Revised Regulations are currently being developed. Previous regulatory developments are described below.

The Maryland Net Metering Working Group, a Staff-facilitated stakeholder group, was reconvened 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 program.¹⁴ Community Solar regulations were adopted as final in July 2016, and participating utilities filed implementation tariffs in September of 2016. Throughout the second half of 2016, the MNMWG worked to revise the utility-proposed CSEGS tariffs 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 program details. In addition, the Staff and the MNMWG were directed to finalize application materials and report on program details and the Pilot Program Study Plan. Through the second year of the Pilot, 154.0 MW was offered under the 1,500 MW net metering cap. The Pilot's capacity may be installed over a seven-year period with annual capacity allotments increasing over time. The program capacity includes categories for low- and moderate-income customers; as well as small systems, rooftop systems, and installations on buildings and parking facilities. Implementation of the Pilot began in the second quarter of 2017 following approval of Pilot participants. Eligible participants may continue to operate CSEGS facilities under the program rules for 25 years. As of the writing of this report in 2019, there have been 106.8 MW of accepted Community Solar projects (Table 6). Most Year 2 projects are presently being constructed. As stated, the Community Solar program is being rolled out in a seven-year period with annual capacity allotments. Currently, as seen in Table 6, only Delmarva Power and Light

¹⁴ RM56, Revisions to COMAR 20.62 - Community Solar Energy Generation Systems.

Company has hit its combined first and second year cap, but most of the offered capacity has been reserved.

Table 6: Community Solar Capacity			
Electric Utility	Offered MW¹⁵	Accepted MW	Operating MW
Baltimore Gas and Electric Company	80.5	51.5	2.0
Delmarva Power and Light Company	13.2	13.2	2.0
Potomac Electric Power Company	40.0	23.0	5.5
Potomac Edison Company	20.3	19.1	0.1
State Total	154.0	106.8	9.6

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. However, the Commission will continue to monitor local and national renewable energy issues and determine if any tariff changes or new regulations are warranted.

¹⁵ Combined Capacity for year 1 and 2.