

Policy Initiatives and Energy Programs

Maryland Renewable Energy Portfolio Standard

The Maryland Renewable Energy Portfolio Standard (RPS) was enacted in May 2004. The RPS requires retail electrical suppliers to provide a specified percentage of their electricity sales from Maryland-certified Tier 1 and Tier 2 renewable resources. Currently, the Maryland RPS requires 52.5 percent of electricity sales to come from Tier 1 and Tier 2 resources by 2030. Every MWh generated by qualified renewable energy resources is eligible to be registered as one Maryland-certified Renewable Energy Credit (REC). Eligible RECs may come from a PSC certified renewable energy facility that is either located within PJM or for the electricity the facility delivers into PJM from an adjacent control area outside of PJM. The 2004 RPS law has been modified by legislation 15 times from 2007 through 2023, mainly to increase the requirement and to change the eligibility of renewable energy resources. Figure 1 illustrates the RPS requirements over time.

The current version of the Maryland RPS contains the following provisions:

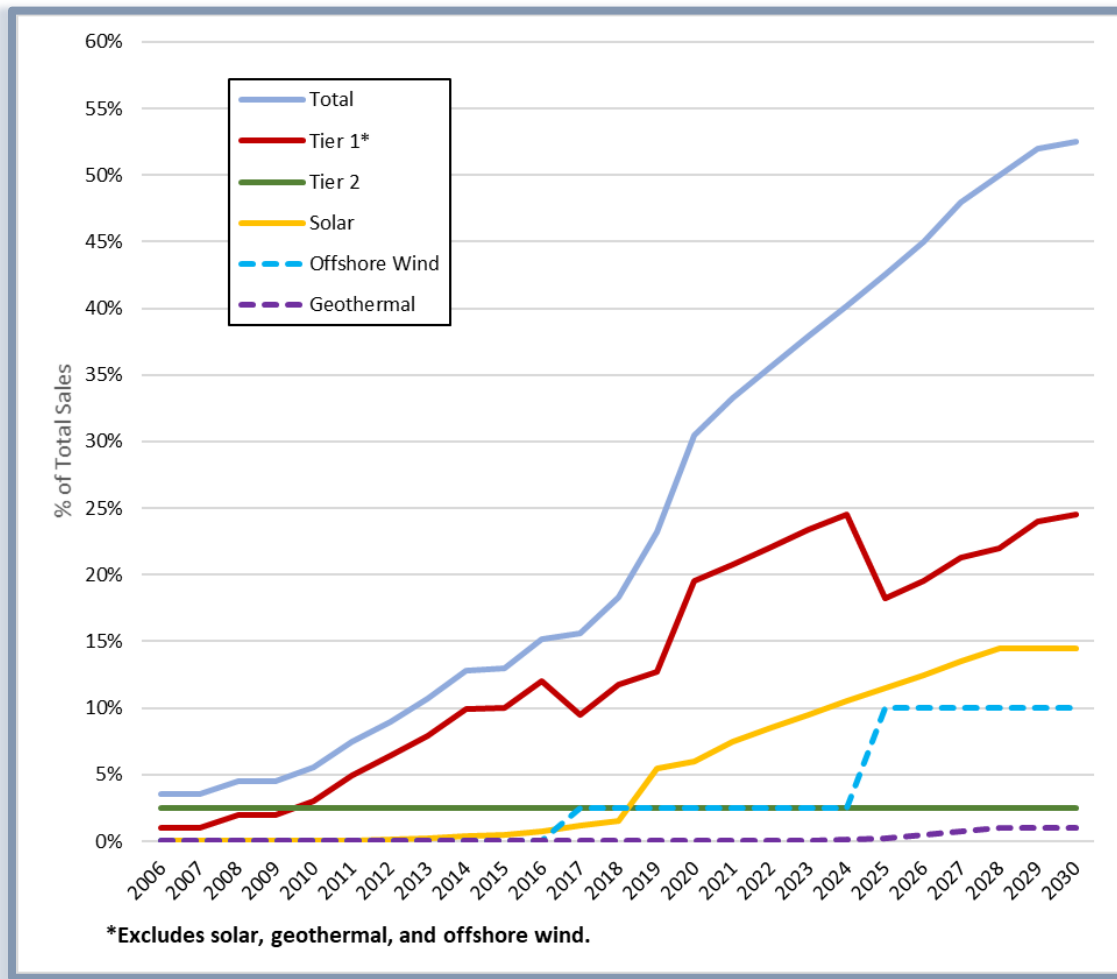
- Tier 1 renewable resources include fuel cells that produce electricity from other Tier 1 renewable fuel resources, geothermal, hydroelectric facilities under 30 MW, methane, ocean, poultry litter-to-energy, qualifying biomass, solar, wind, waste-to-energy, refuse-derived fuel and offshore wind.
- Including the geothermal and solar carve-outs, the Tier 1 requirement began at 1 percent and increases annually; in 2023 it was 29.87 percent and will reach its 50 percent maximum in 2030. Senate Bill 65 of 2021 (Chapter 673) removed black liquor as an eligible renewable resource. Existing obligations or contract rights may not be impaired; therefore, black liquor RECs will remain eligible until certain still-existing contracts expire.¹
- The solar energy carve-out requires that a specified percentage of energy supply must come from in-state solar facilities. The solar carve-out began in 2008 at 0.005 percent and will reach its maximum of 14.5 percent in 2030. The 14.5 percent solar requirement is part of the Tier 1 overall 50 percent requirement.
- The Maryland Offshore Wind Energy Act, which was passed in 2013, created a separate carve-out for offshore wind facilities. The offshore wind energy carve-out requires that a specified percentage of energy in the state must come from offshore wind facilities located between 10 and 80 miles off the coast of Maryland. Each year, the PSC will set the percentage of required offshore energy to be no less than 400 MW of offshore wind by 2026, 800 MW by 2028 and 1,200 MW by 2030. This is in addition to the 368 MW of

¹ [RPS Report of 2010 \(state.md.us\)](#), 2022 RPS Report, Footnote 23, p. 16.

offshore wind approved by the PSC to receive Offshore Renewable Energy Credits (ORECs) in 2017.²

- A new carve-out of Tier 1 for geothermal began in 2023, starting at 0.05 percent and increasing to 1 percent by 2028.
- Existing hydroelectric facilities that are not pump-storage and are over 30 MW qualify to meet the Tier 2 standard as long as the facilities were operational as of January 1, 2004. Tier 1 resources may also be used to meet the 2.5 percent Tier 2 standard.

Figure 1 Maryland RPS Requirements Summary, 2006-2030



Source: Maryland Senate Bill 516; 2019 and the Annotated Code of Maryland, PUA §7-703.

Electricity suppliers have the option to make an Alternative Compliance Payment (ACP) in place of RECs. As summarized below, the ACP varies based upon tier and carve-out.

² Maryland General Assembly, Maryland Public Utilities Articles § 7-701 - § 7-713.

- Tier 1 ACP – \$0.0375 for each kilowatt-hour (kWh) (i.e., \$37.50/MWh) in 2017 and 2018. Decreases to \$0.03/kWh (\$30/MWh) from 2019 to 2023, then gradually decreases each year until 2030 when it is set at \$0.02235/kWh (\$22.35/MWh) and remains constant thereafter.
- Tier 1 Solar Carve-out ACP – Began at \$0.45/kWh (\$450/MWh) in 2006 but has since decreased to \$0.1/kWh (\$100/MWh) in 2020. The ACP will continue to decrease, reaching \$0.055/kWh (\$55/MWh) by 2025, and finally reaching \$0.0225/kWh (\$22.5/MWh) in 2030.
- Tier 1 Geothermal Carve-out ACP – Begins at \$0.1/kWh (\$100/MWh) from 2023 through 2025, decreases to \$0.09/kWh (\$90/MWh) in 2026 and \$0.08/kWh (\$80/MWh) in 2027, and reaches a fixed \$0.065/kWh (\$65/MWh) in 2028.
- Tier 2 ACP – \$0.015/kWh (\$15/MWh).³

At the conclusion of 2022, there were 77,222 renewable energy facilities certified by the Maryland PSC,⁴ providing approximately 34,439 MW of renewable energy capacity in PJM (see Table 1).

³ ACPs are different for industrial process load customers. For Tier 1, the ACP is 0.2 cents/kWh (\$2/MWh). There is no ACP for Tier 2 resources. The ACP drops further to 0.1 cents/kWh (\$1/MWh) in years where suppliers are required to buy ORECs, and nothing at all if the net rate impact of OREC purchases exceeds \$1.65/MWh, in 2012\$.

⁴ [RPS Report of 2010 \(state.md.us\)](#), 2022 RPS Report, Appendix B.

Table 1 Maryland RPS Certified Capacity as of December 2022 (MW)

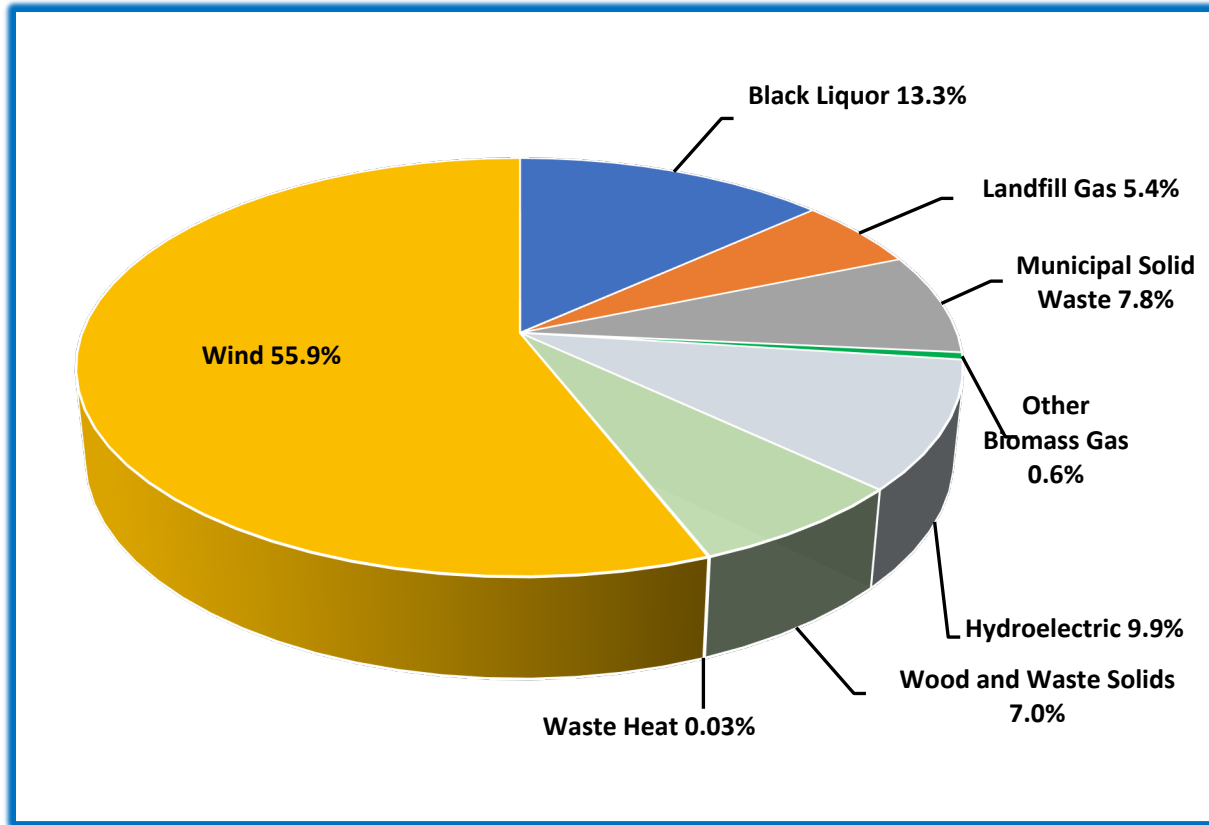
State	Tier 1										Tier 2	Total
	Solar	Solar Thermal	Wind	Hydro	Landfill Gas	Other Biomass Gas	Black Liquor	Municipal Solid Waste	Wood Waste	Geothermal	Hydro	
Maryland	1,805	4	190	20	31	-	65	138	4	2	474	2,733
Delaware	-	-	2	-	12	-	-	-	-	-	-	14
Illinois	-	-	5,125	20	88	-	-	-	-	-	-	5,233
Indiana	-	-	2,530	8	8	-	-	-	-	-	-	2,546
Kentucky	-	-	-	2	18	-	-	-	5	-	229	254
Michigan	-	-	58	15	4	-	-	-	31	-	20	128
Missouri	-	-	839	-	-	-	-	-	-	-	-	839
New Jersey	-	-	8	11	45	15	-	152	-	-	-	231
North Carolina	-	-	208	-	-	-	152	-	-	-	755	1,115
North Dakota	-	-	360	-	-	-	-	-	-	-	-	360
Ohio	-	-	1,099	-	50	6	93	-	-	-	125	1,373
Pennsylvania	-	-	1,460	95	96	1	164	-	-	-	501	2,317
Tennessee	-	-	-	-	-	-	50	-	-	-	206	256
Virginia	-	-	12	69	134	3	288	143	241	-	266	1,156
West Virginia	-	-	856	54	-	-	-	-	-	-	159	1,069
Washington, D.C.	-	4	-	-	-	49	-	-	-	-	-	53
TOTAL	1,805	8	12,747	294	486	74	812	433	281	2	2,735	19,677

Source: PJM Generation Attribute Tracking System (GATS) nameplate capacities, as of December 31, 2022.

Note: The capacity values are based on the nameplate of renewable energy capacity for each facility, which does not necessarily equal the total nameplate capacity at that facility.

As depicted in Figure 2, wind power is the leading fuel source for compliance with the Tier 1 Maryland RPS, followed by black liquor, small-scale hydro, municipal solid waste, wood waste, and landfill gas.

Figure 2 Tier 1 Non-Solar Retired RECs by Fuel Source, 2022



Source: Maryland Public Service Commission, Renewable Energy Portfolio Standard Report With Data for Calendar Year 2022, November 2023, https://www.psc.state.md.us/wp-content/uploads/CY22-RPS-Annual-Report_Final-w-Corrected-Appdx-A.pdf.

The PSC is charged with ensuring compliance with the RPS and certifying eligible facilities. Retail electricity suppliers are required to submit annual compliance reports by April of the following year. Table 2 shows the aggregate supplier obligation, the RECs retired and the ACPs submitted from 2006-2022.⁵ Each retired REC represents 1 MWh of renewable energy generated from a Tier 1 or Tier 2 facility.

In 2022, Maryland generated about 2.9 million MWh of renewable electricity from in-state Tier 1 resources and about 1.7 million MWh of renewable electricity from in-state Tier 2 resources, with a total of 4.7 million RECs produced. Of the total Maryland-generated RECs retired for compliance purposes in 2022, about 63 percent were retired in Maryland. Overall, the cost of compliance with the RPS requirement in 2022 was about \$438 million.

⁵ Retirement of a REC means that it has been used by the owner; it can no longer be sold.

Table 2 Maryland RPS Compliance, 2006-2022

RPS Compliance Year		Tier 1			Total
		Tier 1 Solar	(Non-Solar)	Tier 2	
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	--	\$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	--	\$12,623	\$23,751	\$36,374
2008	RPS Obligation (MWh)	2,934	1,183,439	1,479,305	2,665,678
	Retired RECs (MWh)	227	1,184,174	1,500,414	2,684,815
	ACP Required	\$1,218,739	\$9,020	\$8,175	\$1,235,934
2009	RPS Obligation (MWh)	6,125	1,228,521	1,535,655	2,770,301
	Retired RECs (MWh)	3,260	1,280,946	1,509,270	2,793,475
	ACP Required	\$1,147,600	\$395	\$270	\$1,148,265
2010	RPS Obligation (MWh)	15,985	1,922,070	1,601,723	3,539,778
	Retired RECs (MWh)	15,451	1,931,367	1,622,751	3,569,569
	ACP Required	\$217,600	\$20	\$0	\$217,620
2011	RPS Obligation (MWh)	28,037	3,079,851	1,553,942	4,661,830
	Retired RECs (MWh)	27,972	3,083,141	1,565,945	4,677,058
	ACP Required	\$41,200	\$48,200	\$9,120	\$98,520
2012	RPS Obligation (MWh)	56,130	3,901,558	1,522,179	5,479,867
	Retired RECs (MWh)	56,194	3,902,221	1,522,297	5,480,712
	ACP Required	\$4,400	\$0	\$1,050	\$5,450
2013	RPS Obligation (MWh)	133,713	4,858,404	1,521,981	6,514,098
	Retired RECs (MWh)	134,124	4,871,586	1,526,789	6,532,499
	ACP Required	\$2,440	\$40	\$0	\$2,480
2014	RPS Obligation (MWh)	203,827	6,062,635	1,520,966	7,787,428
	Retired RECs (MWh)	203,884	6,062,135	1,521,022	7,787,041
	ACP Required	\$15,600	\$46,600	\$3,765	\$65,965

RPS Compliance Year		Tier 1			Total
		Tier 1 Solar	(Non-Solar)	Tier 2	
2015	RPS Obligation (MWh)	299,456	6,131,624	1,531,193	7,962,273
	Retired RECs (MWh)	299,525	6,134,653	1,531,279	7,965,457
	ACP Required	\$7,000	\$16,000	\$1,515	\$24,515
2016	RPS Obligation (MWh)	411,466	7,224,223*	1,500,440	9,136,129
	Retired RECs (MWh)	411,787	7,216,439	1,501,587	9,129,813
	ACP Required	\$0	\$520	\$30	\$33,933
2017	RPS Obligation (MWh)	556,929	7,004,181	1,442,923	9,029,149
	Retired RECs (MWh)	557,224	7,006,113	1,448,567	9,011,904
	ACP Required	\$1,170	\$53,607**	\$255	\$55,032
2018	RPS Obligation (MWh)	857,023	8,660,012*	1,500,715	11,017,750
	Retired RECs (MWh)	857,232	8,627,737	1,599,819	11,084,788
	ACP Required	\$795	\$66,866**	\$135	\$67,796
2019	RPS Obligation (MWh)	1,141,734	10,091,893*	205,611	11,439,238
	Retired RECs (MWh)	1,167,329	10,210,275	55,879	11,433,483
	ACP Required	\$2,658,500	\$5,012,592**	\$59,132	\$7,730,223
2020	RPS Obligation (MWh)	1,854,176	12,007,171	367,082	14,228,429
	Retired RECs (MWh)	1,859,976	12,117,585	366,260	14,343,821
	ACP Required	\$29,800	\$270	\$22,170	\$52,240
2021	RPS Obligation (MWh)	2,912,479	12,975,526	147,946	16,035,951
	Retired RECs (MWh)	1,989,505	13,045,432	148,702	15,183,639
	ACP Required	\$76,884,624	\$232,930	\$11,459	\$77,129,013
2022	RPS Obligation (MWh)	3,181,323	13,796,451	592,758	17,570,532
	Retired RECs (MWh)	1,753,987	13,849,611	590,330	16,193,928
	ACP Required	\$85,859,393	\$677,490	\$48,000	\$86,584,883

* Includes Tier 1 RECs retired for industrial process load customers.

** Includes ACPs for Tier 1 for industrial process load customers.

Source: Maryland Public Service Commission, Renewable Energy Portfolio Standard Report With Data for Calendar Year 2022, November 2023, Table 6, https://www.psc.state.md.us/wp-content/uploads/CY22-RPS-Annual-Report_Final-w-Corrected-Appdx-A.pdf

Federal Investment Tax Credit and Production Tax Credit

The federal **Investment Tax Credit (ITC)** provides a federal tax credit for investments in solar and other renewable energy technologies and energy storage. The federal **Production Tax Credit (PTC)** is a per-kWh tax credit for electricity generated and is offered as an alternative to the ITC.

The Inflation Reduction Act (IRA) which was passed in 2022 offers federal tax incentives to taxable and nontaxable entities. Non-taxable entities such as non-profits and governmental entities would receive direct payments in lieu of the tax credit. For projects over 1 MW, the IRA offers a base ITC of 6 percent that generally increases up to 30 percent, and a base PTC of 0.5¢/kWh with an increase to 2.5¢/kWh if the project meets prevailing wage and apprenticeship requirements. The following additional bonus credits are also available:

- If the project meets the 40% minimum domestic content requirement (i.e., defined as any steel, iron or manufactured product in a renewable energy project that was produced in the United States), a 10 percent bonus credit would increase the total ITC to 40 percent and the total PTC to 2.8¢/kWh.
- If the project is sited in an Energy Community (defined as a census tract where a coal mine was closed or a coal-fired electric generation unit was retired after December 31, 2009), an additional 10 percent bonus credit would increase the total ITC to 50 percent and the PTC to 3.1¢/kWh.
- If the project is sited in a low-income community or on Indian land and is under 5 MW, an additional 10 percent bonus credit would increase the total ITC to 60 percent. These projects are not eligible for the PTC.

Projects under 1 MW are eligible for either a 30% ITC or a 2.75¢/kWh PTC.

Energy technologies that would be eligible for the ITC or PTC are listed in the table below.

Eligible for ITC or PTC	Eligible for ITC	Eligible for PTC
Solar and wind technologies, municipal solid waste, geothermal (electric) and tidal	Energy storage technologies, microgrid controllers, fuel cells, geothermal (heat pump and direct use), combined heat & power, microturbines and interconnection costs	Biomass, landfill gas, hydroelectric, marine and hydrokinetic

Source: [Summary of Inflation Reduction Act provisions related to renewable energy | U.S. EPA.](#)

After January 1, 2025, both the ITC and PTC will be replaced by the Clean Electricity Investment Tax Credit and the Clean Electricity Production Tax Credit, respectively. Both are comparable to the ITC and PTC, but eligibility is not technology-specific. Generation facilities (and energy storage) that have an expected greenhouse gas emissions rate of zero are eligible. Both credits will be gradually phased out should the U.S. meet its greenhouse gas emission reduction targets.

In 2017, the Maryland General Assembly enacted legislation requiring PPRP to conduct a comprehensive review of the costs and benefits of the state's RPS and the likely impacts of increasing the RPS in the future. The legislation directed PPRP to consider a wide range of topics including the standard's effectiveness in reducing the carbon content of imported electricity; the impact of long-term clean energy contracts; whether RPS benefits are equitably distributed among communities; whether adequate supply exists to meet a more ambitious RPS; specific opportunities for job creation; the types of system flexibility needed to meet future goals; how best to address flexible resources such as advanced energy storage systems; and the role of

instate clean energy in reaching GHG reduction goals and promoting economic development. The final report was submitted to the General Assembly in December 2019 and is available on PPRP's website.⁶

The Maryland Clean Energy Jobs Act of 2019 requires PPRP to conduct a supplemental study on the cost and benefits of increasing the RPS to 100 percent by 2040 and to study nuclear energy's role as a renewable or clean energy resource for addressing climate change in the state. The final report on Maryland nuclear energy was submitted to the General Assembly in January 2020 and is available on PPRP's website.⁷ The supplemental RPS study will be submitted to the General Assembly by mid- to late 2024 and has been expanded to include clean energy sources such as nuclear energy and combined heat and power.

Net Metering in Maryland

Ratepayers with distributed generation, e.g., rooftop solar, may receive compensation for generation beyond their consumption through a billing mechanism known as net metering. Net metering is the method of compensating consumers with distributed generation capacity in periods when a customer produces more energy than they consume. Essentially, when a consumer is producing more electricity than they are consuming, the meter "runs backwards" in order to track the net amount of energy the customer consumes in a billing period. Net metering allows the consumer to sell electricity back to the utility in the form of a per-kWh credit and the excess energy is exported to the distribution grid for the utility to sell to other customers. Net metering is like a ratepayer utilizing the local electric grid as battery storage.

Maryland's net metering regulations, originally enacted in 1997, have been amended multiple times. The current law, set forth in Public Utilities Article (PUA) §7-306 and Code of Maryland Regulations (COMAR) 20.50.10, as amended in 2021 by House Bill (HB) 569, sets a statewide aggregate cap of 3,000 MW for net metered systems. All investor-owned utilities (IOUs), cooperatives and municipal utilities comply with the regulations by installing a meter capable of accurately measuring the bi-directional flow of electricity. Additionally, each electric provider in the state must offer a tariff rate or contract rate at nondiscriminatory prices to customers with qualified onsite generation who wish to receive net metered service.

Net metering is commonly associated with solar photovoltaic (PV) panels, but can also be used for numerous other onsite distributed generators like small-scale wind, biomass and fuel cells. Specifically, the State of Maryland designates solar, wind, biomass, fuel cell, closed-conduit hydroelectric and micro-combined heat and power (CHP) as resources eligible for net metering. Ownership of the net metered system can be direct or through a third-party contract such as through a lease or power purchase agreement (PPA). The maximum capacity for individual net metered systems is limited to 200 percent of the customer's total annual baseline energy

⁶ Maryland Department of Natural Resources, Power Plant Research Program, Final Report Concerning the Maryland Renewable Portfolio Standard as Required by Chapter 393 of the Acts of the Maryland General Assembly of 2017, December 2019, dnr.maryland.gov/pprp/Documents/FinalRPSReportDecember2019.pdf.

⁷ Maryland Department of Natural Resources, Power Plant Research Program, Nuclear Power in Maryland: Status and Prospects, January 2020, dnr.maryland.gov/pprp/Documents/NuclearPowerinMaryland_Status-and-Prospects.pdf.

consumption, capped at 2 MW. All types of facilities (e.g., homes, schools, businesses and government properties) may participate in net metering as long as the net metered system is installed with the principal intention of offsetting the customer’s onsite energy consumption (e.g., a rooftop solar array on a residential building used to deliver a portion of the resident’s electricity). The net metered system must be interconnected with the local utility’s transmission and distribution facilities. Furthermore, agricultural, municipal and county governments, and nonprofit organizations can combine meter readings from more than one utility service point, referred to as aggregate net metering. Utilities provide this service by using physical interconnection of service points or by summing the total usage from two or more meters (virtual aggregation). Aggregating multiple individual loads allows customers to take advantage of economies of scale and build a large system.

The PSC must submit an annual report on the status of the net metering program to the General Assembly by September 1 each year. A summary of the net metering capacity through June 30, 2023 is provided in Table 3. As of June 30, 2023, there was a total of 1,022 MW of net metering capacity. While installed net metering capacity has grown every year, the annual growth rate has slowed from a peak of 93 percent year over year in 2016 to 6.24 percent in 2022. Despite the decrease in growth, in that same period installed capacity has more than doubled from 387 MW in 2016 to 1,022 MW in 2022.

Table 3 Net Metering Capacity as of June 30, 2023 (kW)

Utility	Solar	Wind	Biomass	Total	Year Over Year Percent Change
Baltimore Gas and Electric Company	395,769	84	0	395,853	8.18%
Choptank Electric Cooperative	30,683	352	30	31,065	4.90%
Delmarva Power and Light Company	114,581	889	240	115,710	2.21%
Easton Utilities Commission	3,381	0	6	3,387	4.11%
Hagerstown Utilities Commission	286	0	0	286	37.52%
Thurmont Municipal Light Company	233	0	0	233	9.01%
Mayor and Council of Berlin	595	0	0	595	3.66%
Potomac Electric Power Company	283,336	77.51	0	283,413	3.47%
Potomac Edison Company	113,472	7	256	113,735	8.57%
Williamsport Municipal Light Plant	28	0	0	28	0%
Southern Maryland Electric Cooperative	77,557	36	320	77,913	10.61%
Maryland Total	1,019,923	1,445	852	1,022,220	6.24%

Source: Maryland Public Service Commission, Report on the Status of Net Energy Metering in the State of Maryland, November 2023, <https://www.psc.state.md.us/wp-content/uploads/2023-Net-Metering-Report.pdf>.

In Maryland, if a customer's generation is greater than its demand (a concept known as net excess generation), then the billed kWh credit is carried over to the next month. Once per year (ending in April of each year), if the customer still has net excess generation remaining, the utility compensates the customer for the net excess generation balance at the prevailing electricity commodity rate. Customers have the added benefit of owning all RECs accumulated by their net metered system, allowing the customer to sell its credits in the REC market. Table 4 shows the net excess generation credits paid to customers over the 12-month period as of April 30, 2023. In total, Maryland utilities paid \$5,154,799, with Pepco and BGE paying 14 percent and 59 percent, respectively, of the total net excess generation.

Table 4 Net Metering Payments to Residential and Commercial Customers, April 2022-April 2023

Utility	Residential	Commercial	Total	Percentage of Total
Baltimore Gas and Electric Company	\$3,687,304	\$916,085	\$4,603,389	53%
Choptank Electric Cooperative	\$129,363	\$124,333	\$253,696	3%
Delmarva Power and Light Company	\$277,843	\$1,188,883	\$1,466,726	17%
Easton Utilities Commission	\$1,480	\$11,558	\$13,038	0%
Hagerstown Utilities Commission	173	\$0	\$173	0%
Thurmont Municipal Light Company	\$250	824	\$1,074	0%
Mayor and Council of Berlin	\$1,740	\$787	\$2,527	0%
Potomac Electric Power Company	\$1,208,091	\$190,632	\$1,398,723	16%
Potomac Edison Company	\$326,146	\$437,917	\$764,063	9%
Williamsport Municipal Light Plant	-	-	\$0	0%
Southern Maryland Electric Cooperative	\$229,628	\$9,512	\$239,140	3%
Total	\$5,862,018	\$2,880,531	\$8,742,549	100%

Source: Maryland Public Service Commission, Report on the Status of Net Energy Metering in the State of Maryland, November 2023, <https://www.psc.state.md.us/wp-content/uploads/2023-Net-Metering-Report.pdf>.

EmPOWER Maryland

The EmPOWER Maryland energy initiative was announced in July 2007, with a goal of reducing Maryland's per capita energy consumption and peak demand by 15 percent by 2015. This initiative was codified by the EmPOWER Maryland Energy Efficiency Act of 2008 (EPM Act).

The EPM Act sought to achieve electric consumption and peak demand reductions as follows:⁸

- Per capita electricity consumption: 5 percent reduction by the end of 2011 and 15 percent by the end of 2015, from 2007 levels; and
- Per capita peak demand: 5 percent reduction by the end of 2011, 10 percent by the end of 2013, and 15 percent by the end of 2015, from 2007 levels.

Under the EPM Act, utilities with more than 200,000 customers are responsible for the full 15 percent demand reduction and two-thirds of the consumption goal (i.e., a 10 percent reduction in consumption), with the remaining 5 percentage point reduction in per capita electricity consumption to be achieved through state-administered programs and changes to efficiency codes and standards. The utilities required to participate in EmPOWER Maryland included BGE, DPL, PE, Pepco and SMECO.

As written, the EPM Act is inclusive of both electric and gas companies; however, the PSC has not established goals for gas energy efficiency programs. In 2014, Washington Gas Light (WGL) submitted a voluntary gas reduction program for the 2015-2017 program cycle.⁹ On December 23, 2014, the PSC approved WGL's residential and demand response programs,¹⁰ which are designed to reduce gas consumption for heating and water heating in existing and new construction. In 2016, the PSC began considering the development of natural gas efficiency goals,¹¹ but as of April 2024, no natural gas goals have been established.

On July 16, 2015, the PSC issued Order No. 87082, which established energy efficiency goals for the EmPOWER Maryland electric utilities beyond 2015. The PSC adopted an annual incremental gross energy savings reduction of 2 percent from a utility's weather-normalized gross retail sales baseline, which was implemented for the 2018-2020 program cycle. The 2016 weather-normalized gross retail sales served as the baseline for the 2018-2020 program cycle. The PSC did not set demand reduction goals but stated that utilities should continue to use the demand reduction targets established through the approved 2015-2017 plans for program years 2016 and 2017. In spring 2017, the General Assembly enacted legislation to codify the 2 percent goal, thus continuing the EmPOWER Maryland efforts for the 2018-2020 and 2021-2023 program cycles.

The PSC reviews utility EmPOWER Maryland programs semi-annually, usually in May to assess the results from the third and fourth quarter of the previous year and in October to evaluate the results of the first and second quarters of the current year. During these PSC reviews, stakeholders may request changes to EmPOWER Maryland programs and budgets. The PSC may hold additional proceedings on EmPOWER Maryland as needed. In 2023, the PSC ordered utilities to submit three different EmPOWER Maryland plans, covering 2024 through 2026, that meet three different levels of greenhouse gas reductions while still meeting the

⁸ Maryland Public Utilities Article § 7-211.

⁹ Maryland Public Service Commission, Docket No. 9362, Mail Log No. 158098.

¹⁰ Maryland Public Service Commission, Order No. 86785.

¹¹ Maryland Public Service Commission, Order No. 87082.

requirements of the EPM Act.¹²

EmPOWER Maryland Energy Efficiency and Conservation Programs

The EPM Act directed Maryland utilities to develop EmPOWER Maryland plans for all customer sectors—residential, commercial and industrial. The PSC is directed to consider whether each program is cost-effective and adequate to achieve the EmPOWER Maryland goals, and to assess the program’s potential impacts on electricity rates, jobs and the environment. The programs offered by the utilities include rebates for ENERGY STAR® products, home energy audits, weatherization and retrofit assistance, CHP and incentives for energy-efficient new construction. In addition, all of the utilities have been directed by the PSC to include conservation programs targeting limited-income consumers. The Maryland Department of Housing and Community Development (DHCD) is the sole implementer of the residential limited-income programs of BGE, Potomac Edison, Pepco, Delmarva, and SMECO. These programs aid limited-income households with the installation of energy-saving measures in their homes with no out-of-pocket costs.¹³ To date, 59,397 limited-income customers have participated in EmPOWER Maryland programs.¹⁴

EmPOWER Maryland Peak Demand Reduction Programs

While energy efficiency programs can result in demand reduction, the majority of demand reduction comes from demand response and dynamic pricing programs. The EmPOWER Maryland utilities, with the exception of PE, have implemented these types of programs to meet these goals. PE cites a lack of any cost-effective mechanism to meaningfully reduce peak demand.

Concerning demand response programs, BGE implemented its Peak Rewards program, which is a voluntary program that cycles air conditioners, heat pumps and water heaters for residential customers. Pepco and DPL are operating an Energy Wise Rewards program and SMECO is running SmartTemp;¹⁵ each offers residential and small commercial direct load control programs for air conditioner cycling. Each program offers various cycling levels, including 50 percent, 75 percent and 100 percent. At the end of 2022, the four demand response programs were capable of providing a demand reduction of 593 MW.¹⁶ Annual bill credits ranged from \$40 to \$100 in 2022.¹⁷

¹² Maryland Public Service Commission, *Order on Goal-Setting for Future EmPOWER Maryland Program Cycles*, March 20, 2023, <https://www.psc.state.md.us/wp-content/uploads/Order-No.-90546-EmPOWER-Maryland-Goal-Setting-Order.pdf>.

¹³ Maryland Public Service Commission, EmPOWER Maryland, <https://www.psc.state.md.us/electricity/empower-maryland/>.

¹⁴ Maryland Public Service Commission, *The EmPOWER Maryland Energy Efficiency Act Standard Report of 2023 with Data for Compliance Year 2022*, p. 2, <https://www.psc.state.md.us/wp-content/uploads/2023-EmPOWER-Maryland-Energy-Efficiency-Act-Standard-Report.pdf>.

¹⁵ The SMECO CoolSentry demand response program was renamed “SmartTemp” effective January 1, 2024.

¹⁶ The EmPOWER Maryland Energy Efficiency Act Standard Report of 2023, Table 12.

¹⁷ *Ibid.*, Table 10.

The installation of Advanced Metering Infrastructure (AMI) meters allows for utilities to implement a dynamic pricing program, which is used to lower summer peak demand. Dynamic pricing is a voluntary program for all customers with an AMI meter, regardless of whether they have central air conditioning. The day before an event, the utility will notify customers that the following day will be a dynamic pricing day. On the day of a dynamic pricing event, for each kWh that a customer reduces their usage from its baseline between the hours of 1:00 p.m. and 7:00 p.m., the customer will receive a bill credit of \$1.25. BGE, Pepco and DPL are the only utilities that operate dynamic pricing programs. The annual dynamic pricing demand reductions, which fluctuate annually based upon customer engagement, are summarized in Table 5.¹⁸

Table 5 Utility Dynamic Pricing Demand Reduction (MW)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
BGE	0	209	309	336	330	140	111	110	125	125
DPL	0	0	143	39	31	47	0	54	64	31
Pepco	309	125	47	126	135	124	91	55	140	140
Total	309	334	499	501	496	311	202	219	329	296

Source: Maryland Public Service Commission, The EmPOWER Maryland Energy Efficiency Act Standard Report of 2023 with Data for Compliance Year 2022, Table 13, <https://www.psc.state.md.us/wp-content/uploads/2023-EmPOWER-Maryland-Energy-Efficiency-Act-Standard-Report.pdf>.

EmPOWER Maryland Reductions

Through 2022, EmPOWER Maryland programs have reduced electricity consumption by 14,998,227 MWh. Additionally, the utilities have offset 3,051 MW in demand and from the purchase or installation of 138.7 million energy-efficient measures.¹⁹ Energy and demand reductions of the electric EmPOWER Maryland utilities to date are summarized in Table 6,²⁰ and the natural gas reductions from WGL’s efficiency program to date are summarized in Table 7.

¹⁸ Maryland Public Service Commission, The EmPOWER Maryland Energy Efficiency Act Standard Report of 2021 With Data for Compliance Year 2023. <https://www.psc.state.md.us/wp-content/uploads/2023-EmPOWER-Maryland-Energy-Efficiency-Act-Standard-Report.pdf>.

¹⁹ Maryland Public Service Commission, 2022 Annual Report, <https://www.psc.state.md.us/wp-content/uploads/2022-MD-PSC-Annual-Report.pdf>, p. 28.

²⁰ Note that 2009-2022 Gross Reductions in Table 3-17 of 12,490,820 MWh exclude savings from the Maryland Department of Housing and Community Development Limited Income Programs. Consequently, this value does not equal 14,998,227 MWh in the PSC 2022 Annual Report.

Table 6 *EmPOWER Maryland Electric Program Results to Date*

		Energy Reduction (MWh)			Demand Reduction (MW)		
		Goal/Forecast	Gross Reductions	Variance	Goal/Forecast	Gross Reductions	Variance
BGE	2009 - 2015	3,593,750	2,638,975	73%	1,267	1,156	91%
	2016 - 2017	1,149,791	1,335,350	116%	541	559	103%
	2018 - 2020*	1,430,944	2,448,950	171%	996	708	71%
	2021-2022	1,464,201	1,574,068	108%	992	1100	111%
	Total**	7,638,686	7,997,343	105%			
DPL	2009 - 2015	143,453	382,605	267%	18	147	815%
	2016 - 2017	213,471	202,421	95%	42	144	346%
	2018 - 2020*	289,222	309,014	107%	159	86	54%
	2021-2022	202,726	210,679	104%	178	208	117%
	Total**	848,872	1,104,719	130%			
PE	2009 - 2015	415,228	529,519	128%	21	82	392%
	2016 - 2017	162,274	174,922	108%	24	35	147%
	2018 - 2020*	356,168	386,804	109%	48	55	115%
	2021-2022	306,878	277,918	91%	44	44	100%
	Total**	1,240,548	1,369,163	110%			
Pepco	2009 - 2015	1,239,108	1,600,813	129%	672	640	95%
	2016 - 2017	686,546	786,428	115%	580	638	110%
	2018 - 2020*	1,168,129	1,296,587	111%	558	447	80%
	2021-2022	807,101	851,596	106%	796	919	115%
	Total**	3,900,884	4,535,424	116%			
SMECO	2009 - 2015	83,870	242,347	289%	139	92	67%
	2016 - 2017	116,181	102,736	88%	28	17	62%
	2018 - 2020*	161,201	167,155	104%	87	73	84%
	2021-2022	122,410	143,660	117%	143	147	103%
	Total**	483,662	655,898	136%			
Total	2009 - 2015	5,475,409	5,394,259	99%	2,117	2,117	100%
	2016 - 2017	2,328,263	2,601,857	112%	1,215	1,393	115%
	2018 - 2020*	3,037,609	1,436,783	47%	1,848	1,369	74%
	2021 - 2022	2,903,316	3,057,921	105%	2,153	2,418	112%
	Total**	13,744,597	12,490,820	91%			

* Gross Reductions exclude savings from MD Department of Housing and Community Development Limited Income Programs.

** Demand response savings are not additive.

Table 7 WGL Natural Gas Program Results to Date

	Reduction in Therms		
	Goal/Forecast	Gross Reductions	Variance
2022	2,692,852	2,069,732	77%

* Source: Maryland Public Service Commission, The EmPOWER Maryland Energy Efficiency Act Standard Report of 2023, Table 8.

The EmPOWER Maryland utilities have collectively spent over \$3.8 billion, including \$2.6 billion on energy efficiency and conservation (EE&C) and \$1.0 billion on demand response programs. Projected savings from EmPOWER Maryland are \$13.7 billion over the life of the installed measures for the EE&C programs. For all utilities, the lifecycle cost per kWh for EmPOWER Maryland programs in 2022 was \$0.057 per kWh. By comparison, the cost of Standard Offer Service in 2022 ranged from \$0.067 to \$0.118 per kWh.²¹ The average monthly residential bill impact for 2022, by utility, is provided in Table 8.

Table 8 Average Monthly Residential Bill Impact by Utility, 2022²²

	EE&C	Demand Response	Dynamic Pricing	Total
BGE	\$4.23	\$2.41	(\$0.22)	\$6.42
DPL	\$5.97	\$1.37	\$0.52	\$7.86
PE	\$6.19	N/A	N/A	\$6.19
Pepco	\$4.74	\$2.16	\$0.25	\$7.15
SMECO	\$5.92	\$2.70	N/A	\$8.62

Source: Maryland Public Service Commission 2022 Annual Report for the Calendar Year Ending December 31, 2022, Table 6.

²¹ The EmPOWER Maryland Energy Efficiency Act Standard Report of 2023.

²² Bill impact assumes the average monthly usage of 1,000 kWh. “N/A” indicates that the utility does not offer that program.