

PUBLIC SERVICE COMMISSION
OF MARYLAND

The EmPOWER Maryland Energy Efficiency Act
REPORT OF 2023

With Data for Compliance Year 2022

In compliance with Section 7-211 of
the Public Utilities Article,
Annotated Code of Maryland

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Report Contents

This document constitutes the 2023 annual report of the Maryland Public Service Commission regarding the EmPOWER Maryland Energy Efficiency Act. This report is submitted in compliance with §7-211 of the Public Utilities Article, *Annotated Code of Maryland* (“PUA”). PUA §7-211 requires that, on or before May 1 of each year, the Commission, in consultation with the Maryland Energy Administration (MEA), shall report to the General Assembly on the following:

1. the status of programs and services to encourage and promote the efficient use and conservation of energy, including an evaluation of the impacts of the programs and services that are directed to low-income communities, low- to moderate-income communities to the extent possible, and other particular classes of ratepayers;
2. a recommendation for the appropriate funding level to adequately fund these programs and services; and
3. in accordance with subsection (c) of this section, the per capita electricity consumption and the peak demand for the previous calendar year.

In compliance with PUA §7-211, topics addressed in this report include a summary of: the energy efficiency and conservation (EE&C) and demand response (DR) program achievements; and information regarding forthcoming milestones.

Executive Summary

The Commission reviews the progress of EmPOWER programs on a semi-annual basis, typically in May to review the results of the third and fourth quarters of the previous year, and again in October to review the results of the first and second quarters of the current year. As part of these semi-annual hearings, parties may also request program modifications and budget adjustments. As needed, the Commission also holds *ad hoc* proceedings to address specific EmPOWER elements.

The Commission held a legislative-style hearing on May 5, 2022 to review the semi-annual EmPOWER reports filed by the EmPOWER Maryland utilities¹, Washington Gas Light Company (WGL), and the Maryland Department of Housing and Community Development (DHCD), with data from the third and fourth quarters of 2021. Following these hearings, on June 15, 2022, the Commission issued Order No. 90261 which addressed program design and evaluation issues as well as future programming. Specifically, the Commission approved BGE’s Midstream Appliance Recycling program pilot and transitioning from a targeted electrical or gas

¹ The EmPOWER Maryland utilities (electric) are: The Potomac Edison Company (PE); Baltimore Gas and Electric Company (BGE); Delmarva Power & Light Company (DPL); Potomac Electric Power Company (Pepco); and Southern Maryland Electric Cooperative, Inc. (SMECO).

savings goal to a targeted GHG reductions goal beginning in 2024.² Further, the Commission directed the Finance Work Group to include cost proposals from additional lenders that are reflective of a 600 credit score requirement and include further reporting metrics in its July 15, 2023 CEA Pilot Program final report. The Commission also directed the Midstream Work Group to meet monthly to complete further study and consider other improvements.

The Commission held its second legislative-style hearing on October 25, 2022, to consider the semi-annual EmPOWER reports filed by the utilities, WGL and DHCD for the first and second quarters of 2022. On December 2, 2022, the Commission issued Order No. 90433 which provided direction on programmatic improvements and modifications. Specifically, the Commission approved several new programs and budget requests. The Order also directed the EmPOWER Reporting and Process Improvement (ERPI) and Midstream work groups to develop reports to be filed throughout 2023 for the Commission's review.

Initiative Highlights

- Program-to-date, the utilities' EmPOWER Maryland programs have saved a total of 14,998,227 MWh and 3,051 MW. The expected savings associated with EmPOWER Maryland programs is over \$13.6 billion over the life of the installed measures for the EE&C programs.
- Across all utilities, the lifecycle cost per kWh for the EE&C programs, in 2022, is \$0.057 per kWh³—significantly lower than the current cost of Standard Offer Service (SOS), which ranges from \$0.067 to \$0.118 per kWh.
- Program-to-date, the utilities have spent over \$3.8 billion on the EmPOWER Maryland programs, including approximately \$2.6 billion on EE&C programs, and \$1.1 billion on DR programs.
- EmPOWER EE&C programs continue to be cost effective on a statewide basis in 2021, with a statewide Societal Cost Test (SCT) score of 2.22 verified for program year 2021. For every dollar of reported utility or participant cost, the EmPOWER EE&C programs generate approximately \$2.22 in benefits.
- Program-to-date, 59,397 limited-income customers participated in EmPOWER Maryland through the residential limited-income programs. Of the program-to-date participants, 11,921 limited-income households participated in 2022. The average savings per participant in 2022 was 729 kWh. Program-to-date spending on limited-income energy efficiency programs is approximately \$240.2 million.

² The Commission subsequently issued an order requiring utilities to develop three different 2024–2026 EmPOWER plans that achieve different levels of GHG reductions while meeting the energy savings goals required by PUA §7-211(g)(2). Order No. 90546 (Mar. 20, 2023) at 14.

³ The lifecycle cost per kWh is calculated by dividing the total EE&C expenditures by the total lifecycle energy savings of the utilities.

- The average monthly residential surcharge bill impacts⁴ for 2022 were as follows:

Table 1: Average Monthly Residential Bill Impacts from EmPOWER Maryland Surcharge in 2022

	EE&C	DR	Dynamic Pricing ⁵	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

- The reported energy savings for 2022 and program-to-date are as follows:

Table 2 EE&C Reported Achievements^{6,7}

	2022 Reported Energy Savings (MWh) ⁸	2016 Retail Sales Baseline	2022 Target Energy Savings %	Program-to-Date Reduction (MWh) ⁹
BGE	811,665	32,001,806	2.54%	8,021,242
DPL	106,330	4,205,544	2.53%	933,994
PE	150,544	7,412,446	2.03%	3,959,484
Pepco	429,702	14,546,641	2.95%	1,406,974
SMECO	74,337	3,388,854	2.19%	676,534

EmPOWER Maryland Portfolios

For the 2021-2023 program cycle, the Commission directed the utilities to meet the EmPOWER Maryland goals through a diverse array of cost-effective solutions for Maryland ratepayers, which can include EE&C, DR, and advanced metering infrastructure (AMI) or smart

⁴ Bill impacts are calculated assuming an average residential monthly usage of 1,000 kilowatt-hours (kWh). The calculated bill impact does not reflect savings produced by EmPOWER Maryland programs through reduced customer usage or energy rate reductions due to reduced system demand.

⁵ The difference between rebates paid to participants and revenues received from PJM markets are trued-up in the subsequent calendar year review of the EmPOWER Maryland surcharge. Therefore, the 2021 dynamic pricing bill impacts include trued-up costs associated with the Peak Time Rebate program offered by BGE, DPL, and Pepco in the summer of 2020. The dynamic pricing surcharge for BGE was negative in 2021 (*i.e.* resulted in a credit) because the PJM capacity payments received by the utility exceeded the rebate credits paid to customers.

⁶ “Reported” savings constitute unverified energy savings and demand reductions based on the utilities’ quarterly programmatic reports. An independent, third-party verification of reported savings is conducted annually.

⁷ EmPOWER Maryland 2018 annual target was defined in the *2018-2020 Program Cycle EmPOWER Maryland Annual Electric Energy Efficiency Targets* in Order No. 87402 (Sept. 26, 2017) at 11.

⁸ Based on preliminary energy savings from semi-annual programmatic reports. These savings will be verified through an EM&V process.

⁹ Program-to-date reported reductions include savings contributions from Fast Track Programs, which were lighting and appliance rebate programs that began before the EmPOWER Maryland law was enacted.

grid-enabled opportunities.¹⁰ While the EmPOWER Maryland Act mandates that the Commission require each gas and electric utility to establish energy efficiency programs, the directive is limited to those programs that the Commission deems appropriate and cost effective. Furthermore, the Commission must consider the impact on rates of each ratepayer class in determining whether to approve an energy efficiency program. Other statutory factors that the Commission must consider in determining whether an energy efficiency program is appropriate include the impact on jobs and on the environment.¹¹

In order to verify the Utilities' energy and peak demand savings resulting from individual EE&C and DR programs, the Commission has developed an independent, third-party evaluation, measurement and verification (EM&V) process for the EmPOWER programs, consistent with national best practices. See the "Evaluation, Measurement & Verification" section herein for further information. Beginning with the 2016 program year, the utilities were evaluated against the post-2015 electric energy efficiency goals established by Order No. 87082,¹² which are designed to achieve an annual incremental gross energy savings equivalent to 2.0 percent of the individual utility's weather normalized gross retail sales baseline, with a ramp-up rate of 0.20 percent per year.

Energy Efficiency & Conservation Programs

In Order No. 89679, issued on December 18, 2020, the Commission approved plans for the 2021-2023 program cycle. The utilities' EmPOWER Maryland core EE&C program offerings are similarly designed with standardized customer incentives across the State, albeit with some variation in program implementation based on service territory demographics. Residential EE&C programs include discounted light-emitting diodes (LEDs) and appliances; heating, ventilation, and air conditioning (HVAC) rebates; home energy audits; weatherization; and limited-income programs.¹³ Commercial and industrial EE&C programs are designed to encourage businesses to upgrade to more efficient equipment, such as lighting or HVAC retrofits, or to improve overall building performance through weatherization or building shell upgrades. For larger commercial buildings or industrial facilities, a utility can customize its program offerings for cost-effective improvements.

¹⁰ Beginning in 2015, the Commission also directed WGL to implement natural gas energy efficiency and conservation programs. See Case No. 9362, *In the Matter of Washington Gas Light Company's Energy Efficiency, Conservation and Demand Response Programs Pursuant to the EmPOWER Maryland Energy Efficiency Act of 2008*.

¹¹ PUA §7-211(i)(1). In its evaluation of a program or service, the Commission must consider the following four factors: cost effectiveness; impact on rates of each ratepayer class; impact on jobs; and impact on the environment.

¹² The electric energy efficiency goals are codified in statute for the duration of the 2018-2020 and 2021-2023 program cycles as a result of legislation enacted during the 2017 legislative session. See Md. Laws Ch. 014 (2017); PUA §7-211(g).

¹³ Other than the volumetric surcharge collected from all ratepayers, limited-income programs are offered at no additional cost for those who qualify.

Baltimore Gas and Electric Company (BGE)

BGE EmPOWER Programs	
Residential Program	Commercial Programs
Appliance Rebates	Combined Heat and Power
Appliance Recycling	Commercial Behavior Based
Home Performance with Energy Star	Custom
HVAC	Midstream Products
Lighting	Prescriptive
Quick Home Energy Checkup	Retrocommissioning
Residential Behavior Based	Small Business
Residential New Construction	
Smart Thermostats	
Schools	

BGE realized 109 percent of its 2022 annual energy savings target (or 811,665 MWh) and 111 percent of its forecasted 2022 annual demand reduction target (or 560 MW). BGE's programs reached nearly 1.7 million participants and installed over 7.6 million measures in homes and businesses in the BGE service territory for just over \$146.3 million.

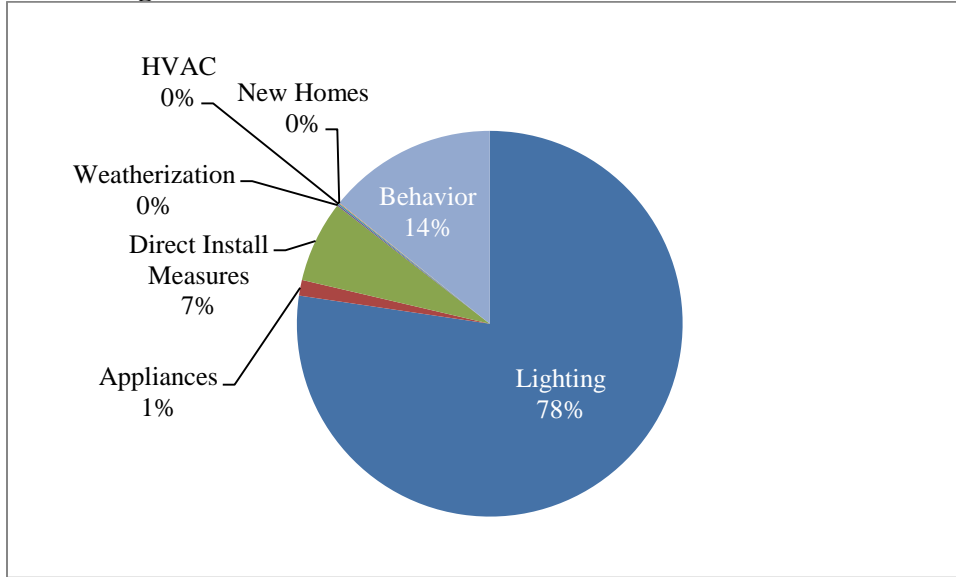
Table 3 BGE Reported Savings vs Targets for 2022

	2022 Reported Savings	2022 Target Savings ^{14,15}	% of Target Achieved
MWh	811,665	747,104	109%
MW	560	504	111%

¹⁴ EmPOWER Maryland reduction targets are based upon the individual EmPOWER Maryland filings of each utility.

¹⁵ The demand reduction targets and reported achievements include peak demand reductions generated by both EE&C and DR programs, as both components are part of the total portfolio.

Figure 1 Residential Measures Installed in BGE in 2022



Potomac Electric Power Company (Pepco)

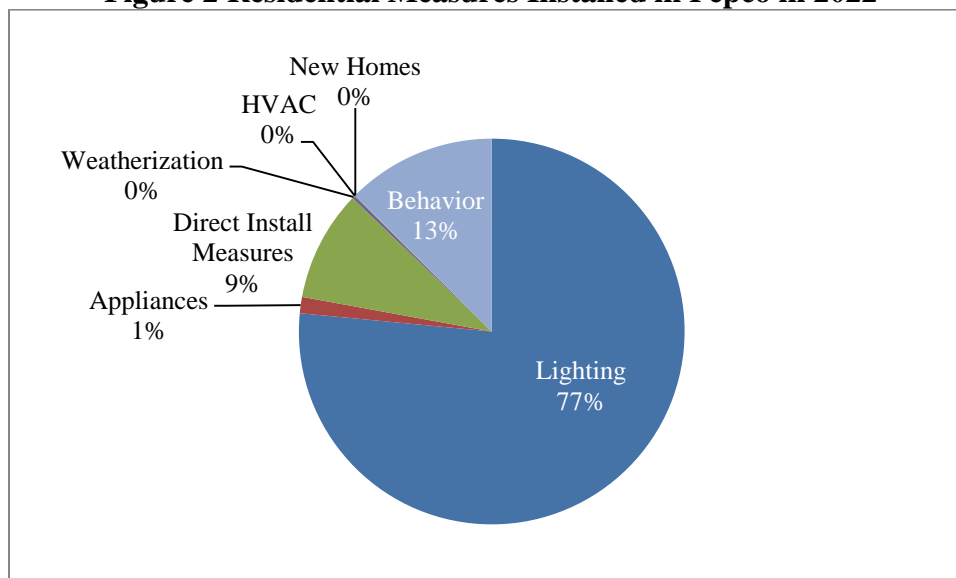
Pepco EmPOWER Programs	
Residential Program	Commercial Programs
Appliance Rebates	Combined Heat and Power
Appliance Recycling	Custom
Behavior Based	Customer Engagement Portal
Home Performance with Energy Star	Energy Efficient Communities
HVAC	Midstream Products
Lighting	Prescriptive
Quick Home Energy Checkup	Retrocommissioning
Residential New Construction	Small Business
Schools	Virtual Commissioning
Smart Thermostats	

Pepco realized 106 percent of its 2022 annual energy savings target (or 406,045 MWh) and 114 percent of its forecasted 2022 annual demand reduction target (or 400 MW). Pepco’s programs reached over 525,000 participants and installed over 3.8 million measures in homes and businesses in the Pepco service territory for approximately \$89.6 million.

Table 4 Pepco Reported Savings vs Targets for 2022

	2022 Reported Savings	2022 Target Savings ^{16,17}	% of Target Achieved
MWh	429,702	406,045	106%
MW	457	400	114%

Figure 2 Residential Measures Installed in Pepco in 2022



The Potomac Edison Company (PE)

PE EmPOWER Programs	
Residential Program	Commercial Programs
Appliance Rebates	Custom
Appliance Recycling	Prescriptive
Behavior Based	Retrocommissioning
Energy Efficiency Kits	Small Business
Home Performance with Energy Star	
HVAC	
Lighting	
Quick Home Energy Checkup	
Residential New Construction	
Schools	

PE realized 96 percent of its 2022 annual energy savings target (or 150,544 MWh) and 99 percent of its forecasted 2022 annual demand reduction target (or 23 MW). PE’s programs reached over 470,000 participants and installed nearly two million measures in homes and businesses in the PE service territory for approximately \$35.4 million.

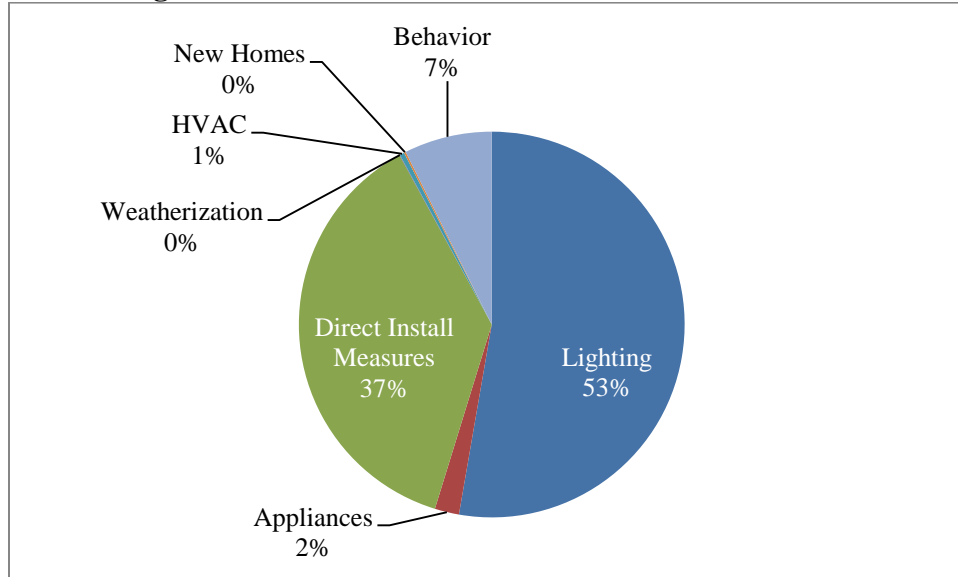
¹⁶ EmPOWER Maryland reduction targets are based upon the individual EmPOWER Maryland filings of each utility.

¹⁷ The demand reduction targets and reported achievements include peak demand reductions generated by both EE&C and DR programs, as both components are part of the total portfolio.

Table 5 PE Reported Savings vs Targets for 2022

	2022 Reported Savings	2022 Target Savings ¹⁸	% of Target Achieved
MWh	150,544	156,953	96%
MW	23	23	99%

Figure 3 Residential Measures Installed in PE in 2022



Delmarva Power & Light Company (DPL)

DPL EmPOWER Programs	
Residential Program	Commercial Programs
Appliance Rebates	Combined Heat and Power
Appliance Recycling	Custom
Behavior Based	Customer Engagement Portal
Home Performance with Energy Star	Energy Efficient Communities
HVAC	Midstream Products
Lighting	Prescriptive
Quick Home Energy Checkup	Retrocommissioning
Residential New Construction	Small Business
Schools	Virtual Commissioning
Smart Thermostats	

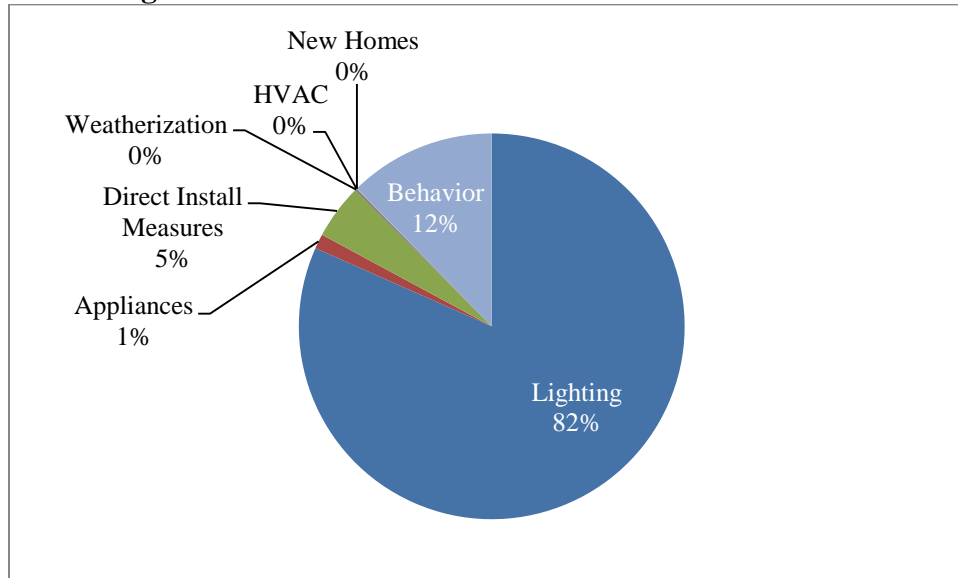
DPL realized 105 percent of its 2022 annual energy savings target (or 106,330 MWh) and 136 percent of its forecasted 2022 annual demand reduction target (or 87 MW). DPL’s programs reached over 154,000 participants and installed over 1.1 million measures in homes and businesses in the DPL service territory for approximately \$29.8 million.

¹⁸ EmPOWER Maryland reduction targets are based upon the individual EmPOWER Maryland filings of each utility.

Table 6 DPL Reported Savings vs Targets for 2022

	2022 Reported Savings	2022 Target Savings ^{19,20}	% of Target Achieved
MWh	106,330	101,555	105%
MW	87	64	136%

Figure 4 Residential Measures Installed in DPL in 2022



Southern Maryland Electric Cooperative, Inc. (SMECO)

SMECO EmPOWER Programs	
Residential Program	Commercial Programs
Appliance Rebates	Combined Heat and Power
Appliance Recycling	Custom
Behavior Based	Midstream Products
Energy Efficiency Kits	Prescriptive
Home Energy Improvement	Retrocommissioning
HVAC	Small Business
Lighting	
My Energy Target	
Residential New Construction	
Schools	
Smart Thermostats	
SmartTemps	

SMECO realized 122 percent of its 2022 annual energy savings target (or 74,337 MWh) and 114 percent of its forecasted 2022 annual demand reduction target (or 84 MW). SMECO's

¹⁹ EmPOWER Maryland reduction targets are based upon the individual EmPOWER Maryland filings of each utility.

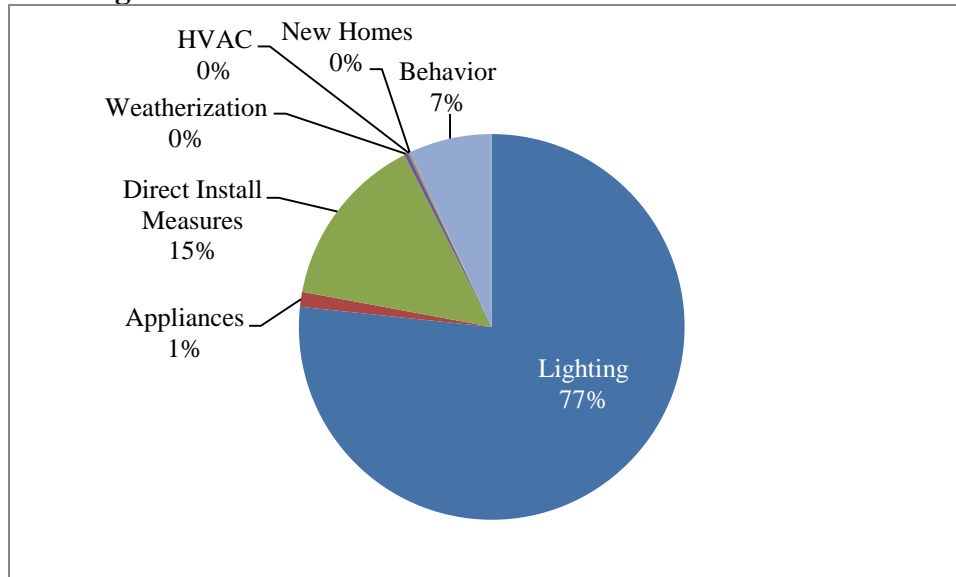
²⁰ The demand reduction targets and reported achievements include peak demand reductions generated by both EE&C and DR programs, as both components are part of the total portfolio.

programs reached over 437,000 participants and installed almost 1.2 million measures in homes and businesses in the SMECO service territory for approximately \$26.2 million.

Table 7 SMECO Reported Savings vs Targets for 2022

	2022 Reported Savings	2022 Target Savings ^{21,22}	% of Target Achieved
MWh	74,337	60,951	122%
MW	84	73	114%

Figure 5 Residential Measures Installed in SMECO in 2022



Washington Gas Light Company (WGL)

WGL EmPOWER Programs	
Residential Program	Commercial Programs
Residential Existing Home	C&I Prescriptive
Residential New Construction	Custom
Behavior Based	
Residential Coordinated	

WGL realized 77 percent of its 2022 annual energy savings target (or 2,069,732 Therms). WGL’s programs reached over 129,000 participants and installed over 138,000 measures in homes and businesses in the WGL service territory for approximately \$14.3 million.

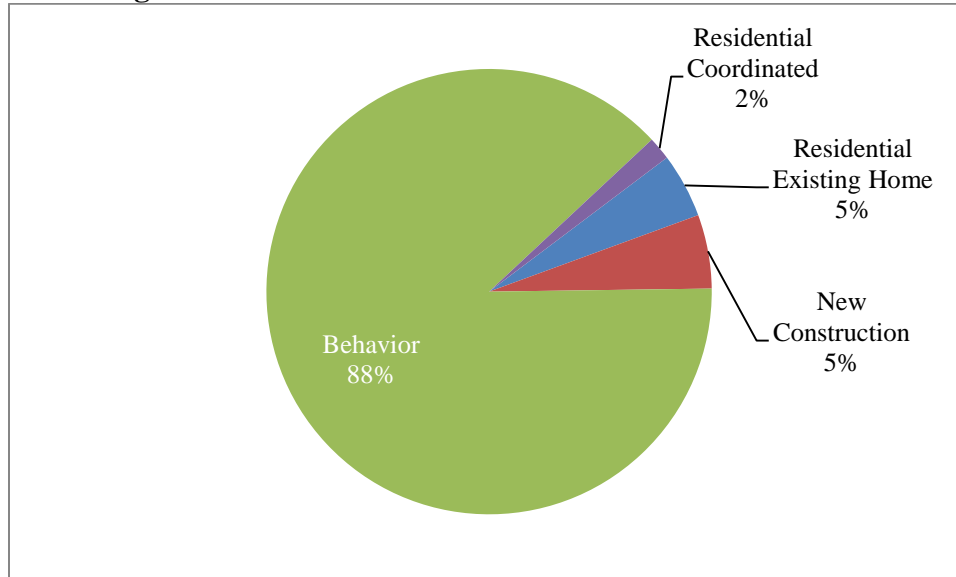
²¹ EmPOWER Maryland reduction targets are based upon the individual EmPOWER Maryland filings of each utility.

²² The demand reduction targets and reported achievements include peak demand reductions generated by both EE&C and DR programs, as both components are part of the total portfolio.

Table 8 WGL Reported Savings vs Targets for 2022

	2022 Reported Savings	2022 Target Savings ²³	% of Target Achieved
Therms	2,069,732	2,692,852	77%

Figure 6 Residential Measures Installed in WGL in 2022



Limited-Income Programs

On December 22, 2011, the Commission, in Order No. 84569, designated DHCD as the sole implementer of limited-income programs for the EmPOWER Maryland utilities. In April 2012, DHCD accepted control of the residential limited-income programs of BGE, PE, and SMECO. In July 2012, the transition was completed with DHCD accepting control of the Pepco and DPL limited-income programs.

In Order No. 86785, issued on December 23, 2014, the Commission authorized DHCD to continue its implementation of the limited-income programs in Maryland during calendar year 2015, subject to certain specified structural enhancements such as spending guidelines per household. DHCD was approved as the implementer of the limited-income programs for the remainder of the 2015-2017 program cycle in Order No. 86995. In Order No. 89679, DHCD's 2021-2023 program cycle plan was approved.²⁴

DHCD offers two programs, one for single family homes and another for multifamily properties. In 2022, DHCD weatherized approximately 21,000 limited-income homes and 2,200 multifamily properties at a total cost of \$26.5 million. The average savings per participant in 2022 was 964 kWh.

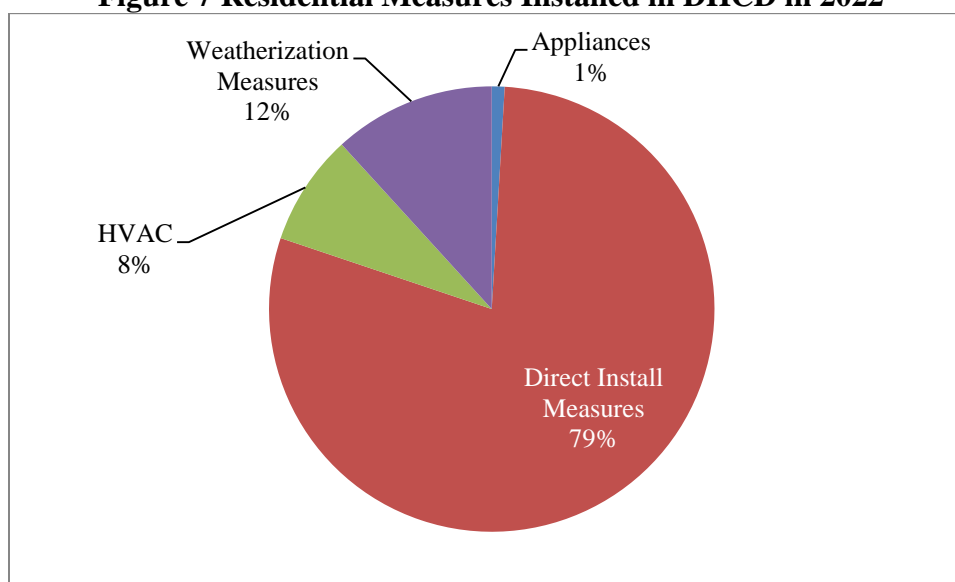
²³ EmPOWER Maryland reduction targets are based upon the individual EmPOWER Maryland filings of each utility.

²⁴ DHCD also partners with WGL to implement limited-income programs in WGL's service territory.

Table 9 DHCD Reported Savings vs Targets for 2022

Program	Energy/Demand Savings	2022 Reported Savings	2022 Target Savings ²⁵	% of Target Achieved
Single Family	MWh	4,765	7,538	63%
	MW	1,328	2,004	66%
Multifamily	MWh	4,384	4,056	108%
	MW	1,297	1,114	116%

Figure 7 Residential Measures Installed in DHCD in 2022



Demand Response

The EmPOWER Maryland Act requires the utilities to implement cost-effective demand response programs; although, there are not currently goals established for the magnitude of demand reduction that each utility must target (following the realization of the legislatively-mandated 15 percent by 2015 targets). The Commission approved four residential demand response programs in late 2007 and early 2008,²⁶ all of which were operational by the end of 2009.²⁷

Customers who have chosen to participate in the direct load control programs included in the utilities' demand response portfolios have a switch or thermostat installed at their properties to briefly curtail usage of central air conditioning or an electric heat pump in instances of system reliability issues or high electricity prices during critical peak hours. Each direct load control DR program includes the following common components: (1) customer participation in DR programs is voluntary; (2) upon receiving a customer request, the utility installs either a

²⁵ EmPOWER Maryland reduction targets are based upon the individual EmPOWER Maryland filings of DHCD.

²⁶ See Commission Letter Order (Nov. 30, 2007).

²⁷ The Commission did not approve a DR program for PE similar to those implemented for BGE, Pepco, DPL, and SMECO because PE's proposed program was not cost effective due to lower zonal capacity prices.

programmable thermostat or a direct load control switch for a central air conditioning system or for an electric heat pump on a customer’s premise; (3) the utilities provide a one-time installation incentive and annual bill credits to the participants during the specified summer peak months; and (4) with the exception of the SMECO DR program, customers can select one of three cycling choices (50 percent, 75 percent, or 100 percent).²⁸ Utilities will invoke the cycling process when PJM calls for an emergency event or if the utilities individually determine that an event is necessary during summer peak season. Table 10 summarizes the incentives offered by the utilities to the residential program participants.

Table 10 Utilities’ Incentive Levels for Residential Demand Response Program Participants

Utility	50% Cycling		75% Cycling		100% Cycling		Bill Credit Months
	Installation Incentive	Annual Bill Credit	Installation Incentive	Annual Bill Credit	Installation Incentive	Annual Bill Credit	
BGE	\$50	\$50	\$75	\$75	\$100	\$100	Jun.–Sept.
Pepco	\$40	\$40	\$60	\$60	\$80	\$80	Jun.– Oct.
DPL	\$40	\$40	\$60	\$60	\$80	\$80	Jun.– Oct.
SMECO	***	\$50	***	\$75	N/A	N/A	Jun.– Oct.

*** A participant in SMECO’s CoolSentry program can keep the installed thermostat at no additional cost following 12 months of program participation; otherwise, the thermostat will be removed if the participant terminates participation less than 12 months after installation.

Table 11 summarizes the number of active devices installed for each of the utilities’ direct load control program on a program-to-date basis through December 31, 2022.

Table 11 Utilities’ Residential Direct Load Program Device Installation

Utility	Residential	Commercial	Total
BGE	373,433	N/A	373,433
DPL	39,064	2,840	41,904
Pepco	232,994	6,301	239,295
SMECO	39,382	94	39,476
Total	684,873	9,235	694,108

²⁸ The three cycling choices represent the air conditioner compressor working cycled reduced by 50 percent, 75 percent, and 100 percent under PJM- or utility-invoked emergency events during summer peak season. SMECO only offers a 50 percent and 75 percent cycling level with corresponding bill credits of \$50 and \$75 during the summer months.

Table 12 summarizes the demand reduction capability for the utilities' DLC programs as of December 31, 2022.

Table 12 DLC Program Coincident Peak Demand Reduction (MW)

Utility	Program-to-Date Reported
BGE	257.947
DPL	39.412
Pepco	243.583
SMECO	52.898
Total	593.840

Additional demand reductions are expected to stem from smart grid-enabled dynamic pricing programs, as well as from other non-EmPOWER funded programs such as conservation voltage reduction (CVR). Table 13 summarizes the reported demand reductions from the dynamic pricing programs for 2013-2022.²⁹ BGE, Pepco, and DPL are currently the only utilities that operate dynamic pricing programs. Demand reductions from dynamic pricing programs represent a snapshot for a particular time period and are dependent upon customer engagement and participation; therefore, demand reductions attributable to dynamic pricing programs could change year-to-year.

Table 13 Dynamic Pricing Demand Reduction (MW)

Utility	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

PJM Reliability Pricing Model Capacity Market

Some EmPOWER Maryland programs are eligible to participate in the wholesale energy market through PJM's capacity auctions and can receive payments that are used to offset the costs in the EmPOWER programs and lower the surcharge.

PJM conducted the Base Residual Auction (BRA) for delivery years 2022/2023 in June of 2022 after the auction was postponed in 2019. The postponement was due to the complexities resulting from the Federal Energy Regulatory Commission's (FERC) orders stating that the PJM auction was non-competitive and which added a Minimum Offer Price Rule (MOPR) that was applicable to any capacity resource that was deemed to receive a state subsidy. After receiving FERC orders on October 15 and November 12, 2021, approving PJM's proposal for fixing the capacity market rules by imposing a MOPR, PJM released a schedule for the capacity auctions. The BRA for the 2023/2024 delivery year was held in December of 2022 and the BRA for the 2024/2025 delivery year will be held in June 2023.

²⁹ Dynamic pricing programs are the AMI-enabled peak time rebate which offers customers a rebate of \$1.25 per kWh reduced below their typical usage.

The following tables illustrate the cleared capacity and PJM capacity payments for the DLC, EE&C, and DP programs.

Table 14 Demand Response Program BRA Results

	Cleared Capacity (MW)	PJM Capacity Payment (Million \$)
DY 2009/2010	217	\$18.8
DY 2010/2011	415	\$26.4
DY 2011/2012	662	\$26.6
DY 2012/2013	953	\$46.5
DY 2013/2014	803	\$67.7
DY 2014/2015	772	\$33.9
DY 2015/2016	625	\$36.0
DY 2016/2017	554	\$24.1
DY 2017/2018	536	\$23.5
DY 2018/2019	522	\$11.5
DY 2019/2020	230	\$1.6
DY 2020/2021	265	\$9.2
DY 2021/2022³⁰	N/A	N/A
DY 2022/2023³¹	N/A	N/A
DY 2023/2024³²	N/A	N/A
Total	6,554	\$325.8

³⁰ The DLC program committed 589 MW of capacity as a Price Responsive Demand resource. Under the prior RPM construct, 589 MW would have earned approximately \$32.8 million in capacity payments from PJM.

³¹ The DLC program committed 233 MW of capacity as a Price Responsive Demand resource. Under the prior RPM construct, 233 MW would have earned approximately \$9.8 million in capacity payments from PJM.

³² The DLC program committed 235 MW of capacity as a Price Responsive Demand resource. Under the prior RPM construct, 235 MW would have earned approximately \$5.2 million in capacity payments from PJM

The utilities also bid capacity reductions from their non-DR programs which include EE&C programs and AMI-enabled dynamic pricing programs. Similar to the direct load control (DLC) programs, the utilities earn capacity payments from PJM for these commitments; the payments are used to offset EE&C program costs and to fund the rebates earned by customers in the dynamic pricing program. Table 15 and Table 16 summarize the capacity bid into the PJM capacity market from the EE&C and dynamic pricing programs by delivery year, and the payments the utilities receive from PJM.

Table 15 EE&C Program BRA Results

	Cleared Capacity (MW)	PJM Capacity Payment (Million \$)
DY 2012/2013	168	\$8.2
DY 2013/2014	107	\$8.7
DY 2014/2015	179	\$8.3
DY 2015/2016	175	\$10.2
DY 2016/2017	226	\$9.5
DY 2017/2018	243	\$10.8
DY 2018/2019	172	\$10.1
DY 2019/2020	184	\$6.8
DY 2020/2021	199	\$5.8
DY 2021/2022	180	\$11.4
DY 2022/2023	49	\$2.0
DY 2023/2024	90	\$2.3
Total	1,972	\$94.1

Table 16 Dynamic Pricing Program BRA Results

	Cleared Capacity (MW)	PJM Capacity Payment (Million \$)
DY 2014/2015	267	\$12.2
DY 2015/2016	426	\$23.3
DY 2016/2017	461	\$20.0
DY 2017/2018	387	\$17.0
DY 2018/2019	378	\$10.0
DY 2019/2020	225	\$2.2
DY 2020/2021	425	\$13.1
DY 2021/2022	177	\$4.8
DY 2022/2023	186	\$2.5
DY 2023/2024	177	\$4.3
Total	3,109	\$109.4

Table 17 illustrates the amount of capacity cleared in the BRA by the EmPOWER utilities for the delivery years of 2022/2023 and 2023/2024. The table also shows the amount of capacity revenue that the utilities can expect to receive from PJM in the two delivery years, which will be used to offset the costs of the DR, EE&C, and dynamic pricing programs borne by ratepayers.

The amount of capacity cleared in the 2023/2024 delivery year auctions is 32 MW more than the amount of capacity cleared in the 2022/2023 delivery year. The primary reason for this slight increase in cleared capacity was due to an increase in the amount of energy efficiency

resources bid into the auction. The overall trend in the reduction of cleared capacity is due to the utilities not bidding any capacity from the demand response programs in auctions as these resources do not meet the capacity performance requirements that a resource is available anytime during the year. These resources were offered as Price Responsive Demand (PRD) resources and do not receive capacity payments.

Table 17 Maryland Utilities’ PJM BRA Results and Expected Revenue for Delivery Years 2022/2023 and 2023/2024

DY 2022/2023					DY 2023/2024				
Cleared Bids (MW)				Value	Cleared Bids (MW)				Value
DR	DP	EE&C	Total	(\$Million)	DR	DP	EE&C	Total	(\$Million)
N/A	186	49	235	\$4.4	N/A	177	90	267	\$6.6

EmPOWER Maryland Funding Levels

EE&C Program Funding

On December 18, 2020, in Order No. 89679, the Commission approved the 2021-2023 program cycle budgets based on the EmPOWER Maryland utilities' proposals. Table 18 breaks down the 2022 Commission-approved budgets for each of the utilities, while Table 19 illustrates the actual 2022 expenditures by the utilities with respect to their EmPOWER Maryland EE&C programs.

Table 18 Forecasted 2022 EE&C Budgets

Utility	Residential	C&I	DHCD Limited- Income Program ³³	Total
BGE	\$63,486,401	\$57,040,158	\$13,110,731	\$133,637,290
DPL	\$8,386,410	\$19,315,664	\$0	\$27,702,074
PE	\$17,626,821	\$26,501,149	\$3,283,725	\$47,411,695
Pepco	\$27,479,211	\$49,177,812	\$0	\$76,657,023
SMECO	\$17,305,579	\$7,937,951	\$0	\$25,243,530
Total	\$134,284,423	\$159,972,733	\$16,394,456	\$310,651,612

Table 19 Reported 2022 EE&C Spending

Utility	Residential	C&I	DHCD Limited- Income Program	Total
BGE	\$53,604,054	\$48,793,571	\$12,215,575	\$114,613,200
DPL	\$7,961,139	\$14,081,315	\$3,926,466	\$25,968,920
PE	\$15,575,988	\$19,434,576	\$1,573,521	\$36,584,086
Pepco	\$25,750,627	\$37,787,215	\$7,876,755	\$71,414,598
SMECO	\$13,867,838	\$5,719,961	\$8,858	\$19,596,657
Total	\$116,759,647	\$125,816,638	\$25,601,175	\$268,177,461

Table 20 details the EmPOWER Maryland EE&C program surcharges and revenue requirements for each of the utilities. The EmPOWER Maryland surcharges are a volumetric-based charge, subject to the individual ratepayer's monthly energy usage. The revenue requirements do not correspond to the filed budgets because program costs are amortized and collected over a five-year period as directed by the Commission in Order No. 81637.³⁴ The Commission issued an order at the end of 2022 that will transition the recovery of EmPOWER costs to a single year by 2030. This process of shortening and then eliminating the amortization of EmPOWER costs over five years will start in 2024.³⁵

³³ This column represents the forecasts provided by the utilities to the Commission. DHCD projected \$27,543,323 in costs across all five utilities for 2022.

³⁴ *In the Matter of the Commission's Investigation of Advanced Metering Technical Standards, Demand Side Management (DSM) Cost Effectiveness Tests, DSM Competitive Neutrality, and Recovery of Costs Advanced Meters and DSM Programs*, Case No. 9111.

³⁵ *Order on Cost Recovery and Unamortized Balance Retirement*, Order No. 90456, Case No. 9648 (Dec. 29, 2022).

Table 20 2022 EE&C Monthly Surcharges (per kWh) and Revenue Requirements

Utility	Residential	Small C&I	Large C&I	Revenue Requirement
BGE	\$0.00423	\$0.00942	\$0.00372	\$116,793,138
DPL	\$0.00597	\$0.00794	\$0.00794	\$26,713,588
PE	\$0.00619	\$0.00523	\$0.00525	\$36,154,086
Pepco	\$0.00474	\$0.00664	\$0.00664	\$76,516,917
SMECO	\$0.00592	\$0.00470	\$0.00470	\$19,287,625

Demand Response Program Funding

The December 17, 2020 Commission order similarly approved three-year budgets for the demand response programs operated by BGE, DPL, Pepco, and SMECO. Table 21 details the EmPOWER Maryland demand response surcharges and revenue requirements for each of the Utilities operating an approved DR program.³⁶

Table 21 2022 Demand Response Monthly Surcharges (per kWh) and Revenue Requirements

Utility	Residential	C&I	Revenue Requirement
BGE	\$0.00241	N/A	\$30,836,417
DPL	\$0.00137	\$0.00021	\$3,136,939
Pepco	\$0.00216	\$0.00013	\$13,041,134
SMECO	\$0.00270	\$0.00053	\$6,683,225

Table 22 details the respective forecasted and reported budgets for each of the EmPOWER utilities operating an approved DR program during 2022. All of the utilities' programs were under budget for the 2022 program year.

Table 22 2022 Demand Response Forecasted and Reported Budgets

Utility	Forecasted Budget	Reported Costs	Variance
BGE	\$50,177,880	\$30,911,475	(\$19,266,405)
DPL	\$4,338,530	\$3,508,365	(\$830,165)
Pepco	\$17,642,179	\$16,961,012	(\$681,167)
SMECO	\$6,466,602	\$5,248,934	(\$1,217,668)
Total	\$78,625,191	\$56,629,786	(\$21,995,405)

Evaluation, Measurement and Verification

Determining and validating electricity savings and related impacts is a critical component of EE&C and DR programs. The process of evaluation, measurement, and verification (EM&V) of resulting program savings is particularly important in determining: the effectiveness of

³⁶ PE did not operate a separate DR program during 2021 and therefore did not file for a surcharge recovery of DR program costs.

program delivery; the factors driving or impeding customer participation in programs; characteristics of participants and non-participant customers; determinants of equipment decisions; and customer satisfaction with program delivery. Moreover, the design and depth of program data collection, monitoring, and analyses can impact the accuracy and prudence of compliance results. Given the scale of the EmPOWER Maryland initiative and the potential bill impacts, the Commission is sensitive to the issue of program credibility and transparency. This process also evaluates free-ridership, spillover, cost-effectiveness, deemed savings calculations, etc., which are pertinent to a thorough and ongoing review of viable and cost-effective energy efficiency and demand response programs.

Based on EM&V best practices, the Commission adopted an independent, third-party evaluator model to review the EmPOWER portfolio results.³⁷ In this model, the utilities direct primary evaluation and verification activities through an EM&V contractor; subsequently, the Commission's third-party, independent evaluator provides independent analysis and due diligence of the EM&V process. Because this thorough evaluation process requires up to six months following the receipt of program data from the prior calendar year to complete, this report illuminates the results of the utilities' 2021 program year reported savings. The utilities 2022 program year savings will be fully evaluated by October 2023 and included in next year's report to the legislature.

Overall EM&V Findings of the 2021 EmPOWER EE&C Program

Energy and Peak Demand Savings

In 2021, Guidehouse's evaluation of the first-year savings³⁸ for all utilities was 1,058,536 MWh and 198 MW, which was 94 percent and 99 percent of the utilities' reported energy and demand savings for that year. For the 2021 program year, Guidehouse estimated an effective net-to-gross (NTG) ratio of 0.69 for annual energy savings and 0.96 for peak demand savings. The NTG ratio is used to derive savings specifically attributable to the EmPOWER programs by calculating free-ridership levels and reducing reported gross savings by that amount.³⁹ Following the application of the calculated NTG ratios, the net savings for program year 2021 were 679,382 MWh and 134.733 MW.

As the EmPOWER Maryland independent evaluator, Loper Energy supports the Commission's oversight of the statewide evaluation of the EmPOWER EE&C programs conducted by Navigant. Loper Energy's verification analysis confirmed Navigant's results and accepted all of the evaluated energy and demand savings estimates for program year 2021. This important result should increase ratepayer and other stakeholders' confidence that the evaluated savings from the EmPOWER Maryland programs are real and credible.

Given that the key energy assumption values and NTG ratios have been updated and other anomalies in the program tracking databases have been rectified to improve the quality of

³⁷ Order No. 82869 (Aug. 31, 2009).

³⁸ "First-year savings" is the amount of energy a measure will save in the first year in which the measure is installed.

³⁹ A "free rider" is a customer who would have installed an energy efficiency measure absent the utility-provided EmPOWER incentive.

reporting, it is expected that the utilities’ reported savings estimates for 2022 should continue to be very similar to the evaluation results. Changes to evaluation parameters and codes and standards will have the effect of raising the baseline level of energy savings, therefore reducing the incremental energy savings achieved by installing efficient equipment. The EM&V contractors will monitor and reflect these changes in future evaluation cycles.

Cost Effectiveness

Table 23 presents the 2021 societal cost test (SCT) cost-effectiveness results by sector for each of the utilities.⁴⁰ The sector-level benefit-to-cost ratios reflect the present value of the benefits compared to the present value of the costs, aggregated from each program in the sector-level sub-portfolio. As noted, SCT ratios greater than 1.0 indicate that the financial benefits that accrue over the life of the measures exceed the financial costs of the program, specifically the costs associated with: utility program administration; the provision of incentives to free riders; and customer outlays for the efficiency measures. Statewide, both the residential and C&I sub-portfolios were cost effective in 2021, with overall SCT scores of 1.01 and 1.29, respectively.

Table 23 2021 Portfolio SCT Results

	Residential	Commercial	Portfolio
BGE	1.83	2.57	2.20
Pepco	1.62	2.54	1.62
PE	2.00	2.48	2.24
DPL	1.25	2.61	2.18
SMECO	2.03	2.46	2.20
Statewide	1.79	2.55	2.22

At the statewide level, the 2021 EmPOWER residential portfolio is expected to generate approximately \$1.79 in utility and participant benefits for each dollar of utility and participant cost while the EmPOWER commercial portfolio is expected to generate approximately \$2.55 in utility and participant benefits for each dollar of utility and participant cost. For a total investment of \$317 million,⁴¹ the State’s utilities, participants, and ratepayers will realize approximately \$705 million⁴² in financial benefits via electricity, fuel, and water savings generated over the lifetime of the measures installed through the EmPOWER program. These results correspond to a net benefit of approximately \$387 million.

When assessing whether to approve the utilities’ plans, the Commission evaluates cost effectiveness at the sub-portfolio level, i.e., the C&I and residential sub-portfolios should both generate SCT ratios greater than 1.0. Thus, individual programs do not necessarily need to be cost effective as long as other programs are sufficiently cost-effective to generate sector-level SCT ratios that are greater than 1.0. The Commission may approve individual programs that are not individually cost effective to ensure a broader array of energy-saving opportunities amongst rate classes, income levels, etc., or because the program may promote innovative technologies

⁴⁰ The 2021 program year cost-effectiveness results are expected in the second half of 2022.

⁴¹ The \$318 million total investment is the present value of both utility and participant costs.

⁴² The \$704 million in financial benefits is the present value of both utility and participant benefits.

and market-transformative practices leading to broader energy savings. All EmPOWER utilities have developed cost-effective portfolios that pass the SCT test—most by a comfortable margin.

2022 per Capita Electricity Consumption and Peak Demand

Table 24 and Table 25 compare the per capita energy use and peak demand from 2011 to 2021 for all Maryland utilities. In 2022, there was a mixture of increases and decreases in per capita energy use and per capita peak demand as compared to 2021 levels.

Table 24 2012 - 2022 per Capita Energy Consumption

	Per Capita Energy Use MWh										
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
BGE	12.26	12.06	11.86	11.82	11.57	11.31	11.44	11.25	11.17	11.10	11.10
Pepco	8.18	8.1	7.81	7.94	7.73	7.56	7.6	7.45	7.21	7.17	7.00
PE	16.93	17.53	17.64	17.39	17.57	17.6	18.1	17.47	17.04	16.52	16.59
Delmarva	12.61	12.6	12.55	13	12.73	12.65	12.89	12.52	12.1	9.79	10.31
SMECO	10.61	10.49	10.21	10.25	10.03	9.72	9.75	9.96	9.45	9.20	9.67
Choptank	12.31	12.92	12.55	13.04	12.73	13.24	13.42	12.52	12.1	N/A	N/A
Hagerstown	7.93	7.71	7.6	7.62	7.58	7.49	8.27	8.05	7.71	7.91	7.46
Easton	16.65	16.52	16.41	16.55	16.33	16.03	17.12	17.36	15.01	15.63	15.08
Thurmont	13.02	13.27	13.02	13.68	13.06	12.61	13.41	11.94	11.77	11.22	11.29
Berlin	9.4	9.37	9.9	10.61	10.15	9.86	11.06	10.13	10.05	10.21	9.71
Williamsport	9.44	9.87	10.06	10.04	9.64	9.39	9.85	9.65	9.34	9.86	9.96
Somerset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A&N Coop.	10.83	10.81	11.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 25 2012 - 2022 per Capita Peak Demand

	Per Capita Energy Use kW										
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
BGE	2.38	2.38	2.27	2.36	2.4	2.34	2.36	2.22	2.3	2.29	2.23
Pepco	1.79	1.55	1.57	1.88	2.03	1.62	1.62	2.73	2.6	2.58	1.58
PE	3.27	3.1	2.62	3.68	3.49	3.42	3.34	3.19	3.39	3.28	3.02
Delmarva	2.8	2.72	2.62	2.76	2.83	2.67	2.64	2.67	2.61	2.11	2.08
SMECO	2.22	2.15	1.93	2.76	2.36	2.41	2.42	2.27	2.00	1.94	1.98
Choptank	3.17	3.33	2.59	3.33	2.83	2.99	2.98	3.31	3.08	N/A	N/A
Hagerstown	1.65	1.54	1.28	1.66	1.5	1.52	1.55	1.49	1.56	1.52	1.59
Easton	4.09	3.81	3.24	4.27	3.73	3.63	3.63	3.6	3.42	3.42	3.36
Thurmont	2.41	2.39	2.03	4.33	3.26	2.94	3.11	3.44	2.63	2.45	3.15
Berlin	2.44	2.09	2.19	2.3	1.17	2.21	2.27	2.1	2.31	2.25	2.13
Williamsport	1.85	1.87	1.39	2.48	2.15	2.18	2.21	2.52	2.09	1.96	2.42
Somerset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A&N Coop.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 26 illustrates the per capita electricity usage and peak demand statewide. Generally, statewide per capita energy usage has been lower in 2020-2022 than previous years.

Table 26 Statewide Per Capita Electricity Usage and Peak Demand 2007-2022

Year	Per Capita Energy Use MWh	Per Capita Energy Use kW
2007	12.38	2.56
2008	11.74	2.49
2009	11.73	2.53
2010	12.02	2.4
2011	11.7	2.5
2012	11.21	2.28
2013	11.13	2.18
2014	10.91	2.07
2015	10.96	2.37
2016	10.74	2.39
2017	10.53	2.21
2018	10.68	2.22
2019	10.49	2.50
2020	10.27	2.49
2021	10.05	2.01
2022	10.01	2.05

Upcoming Milestones

The Commission will review several work group reports as a result of Commission Order Nos. 90261 and 90433.

- Finance Work Group
 - A final report, to be filed by July 15, 2023 on the CEA Pilot Program including cost proposals from additional lenders that are reflective of the 600 credit score requirement and including additional reporting metrics.
- ERPI Work Group
 - A status report, filed April 17, 2023, on its findings regarding the use of publicly available regional sales data and on its establishment of an appropriate time frame for the program planning process
- Midstream Work Group
 - A status report, filed by April 17, 2023, on the issue of payment lag times

Finally, the Commission will review 2024-2026 EmPOWER Maryland program plans in October 2023. In Order No. 90456 on goal setting, the Commission directed the utilities to file three program plans by August 1, 2023. The three plans are required to meet the mandated goals of the EmPOWER Maryland statute and will provide the Commission information on energy savings, greenhouse gas emissions abatement, program costs, and customer bill impacts. The Commission will hold hearings to review these plans. The Commission will issue an order for the approved EmPOWER program plans by the end of the year.