
Maryland State Government

Energy Procurement

Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

October 2024

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Maryland State Government Energy Procurement

Introduction

Since fiscal 2000, when Maryland’s electricity market was deregulated through legislation, Maryland law has allowed electricity customers to enter into agreements with third-party energy suppliers in the competitive marketplace for electric supply, a practice commonly known as “customer choice.” The State government, acting as a customer, has purchased deregulated¹ electricity since 2002. The procurement of electricity to meet the needs of State agencies for consumption in State facilities is led by the Department of General Services (DGS). The DGS Office of Energy and Sustainability is generally responsible for managing the centralized procurement of energy² on behalf of State agencies. The office contracts with one or more third-party intermediaries to secure electricity supply sourced from the PJM Interconnection (PJM) wholesale electricity market.

DGS procurement of energy through the PJM market utilizes a variety of buying strategies, including reverse auctions, periodic block and index (B&I) purchases, and long-term utility scale power purchasing agreements (PPA). In addition to meeting the energy needs of State agencies, energy procurements made by DGS also occur within the context of the broader energy policies and goals of the State, such as greenhouse gas emission reduction targets and required use of electricity sourced from renewable energy. As the State looks to enact policies to combat the effects of climate change, efforts are ongoing to manage existing infrastructure and consider new ways to lower energy use and carbon emissions, all within the framework of State procurement law.

Maryland procurement law, specified in Division II of the State Finance and Procurement Article and Title 21 of the Code of Maryland Regulations (COMAR), applies to all Executive Branch agencies unless specifically exempted.³ Statute authorizes the Board of Public Works (BPW) to set policy, regulations, and internal operational procedures in controlling the procurement process and to delegate its authority to “control agencies” to manage and approve specified types of contracts. In general, such delegation is limited to contracts of \$200,000 or less (\$1 million for public universities) and leaves all larger contracts for BPW approval. Depending on the nature and costs, energy-related procurement contracts may require approval by BPW before being managed by DGS. Such long-term contracts with industry partners are discussed in greater detail below.

¹ Deregulated energy markets allow consumers to choose energy suppliers and service plans for the purchase of energy supply through a competitive market, as opposed to one utility company holding a monopoly in a given jurisdiction.

² In this document, “energy” generally refers to units of electric power, such as kilowatt-hours, although it can also encompass direct heating/cooling in other contexts.

³ For example, the University System of Maryland is generally exempt from State procurement law, although DGS purchases electricity on behalf of the system.

Energy Market

Energy purchasing and consumption in Maryland takes place within a competitive market framework operated and overseen by the PJM Interconnection Regional Transmission Organization, which serves more than 65 million people in 13 states and the District of Columbia.⁴ PJM coordination of the wholesale electricity market includes publishing hourly market prices, settling purchases, tracking emissions and renewable energy credits (REC), and managing and operating control centers that monitor and control energy supply and transmission to ensure that electric supply meets demand and that service remains reliable in the event of potential disruptions. Entities authorized to purchase energy from the PJM wholesale market to supply end-use consumers are referred to as load-serving entities and include both large investor-owned utility companies and independent energy suppliers.

The State of Maryland does not have a statutory relationship with PJM; however, the Public Service Commission (PSC) is part of the Organization of PJM States, Inc., an intergovernmental organization made up of utility regulatory agencies of states served by PJM, that coordinates data analysis and policy formulation related to PJM, its operations, and related matters pending before the Federal Energy Regulatory Commission (FERC). As a private entity involved in the interstate transmission of electricity, PJM is regulated by FERC.

Maryland

Generally, electricity consumed in Maryland, whether by households, commercial enterprises, or government agencies, is routed through PJM and its participating power producers and utility companies across the region, many of which cross state boundaries. Due to the deregulated structure of Maryland's electricity market, customers have the option of purchasing electricity supplied by either their local utility company or a third-party supplier. However, the distribution of the electricity in either scenario is still provided by the utility company in whose service territory the customer is located, even if supply is purchased through a third party, due to the general ownership by the utility of distribution infrastructure.

In purchasing energy, the State government is similar to a residential or commercial customer. The primary differences are in the size and number of accounts that the State holds and the State's more direct involvement in the wholesale purchase of its electric supply compared to the average utility customer. Neither the State of Maryland nor DGS is licensed to conduct transactions directly with the PJM wholesale electricity market.

DGS contracts with Washington Gas Light Energy Services (WGL Energy) to manage its wholesale electricity accounts and make purchases on behalf of the State with PJM. Due to the size and scope of the State's energy needs, it holds many accounts serviced in different regions of

⁴ The PJM service territory includes all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia.

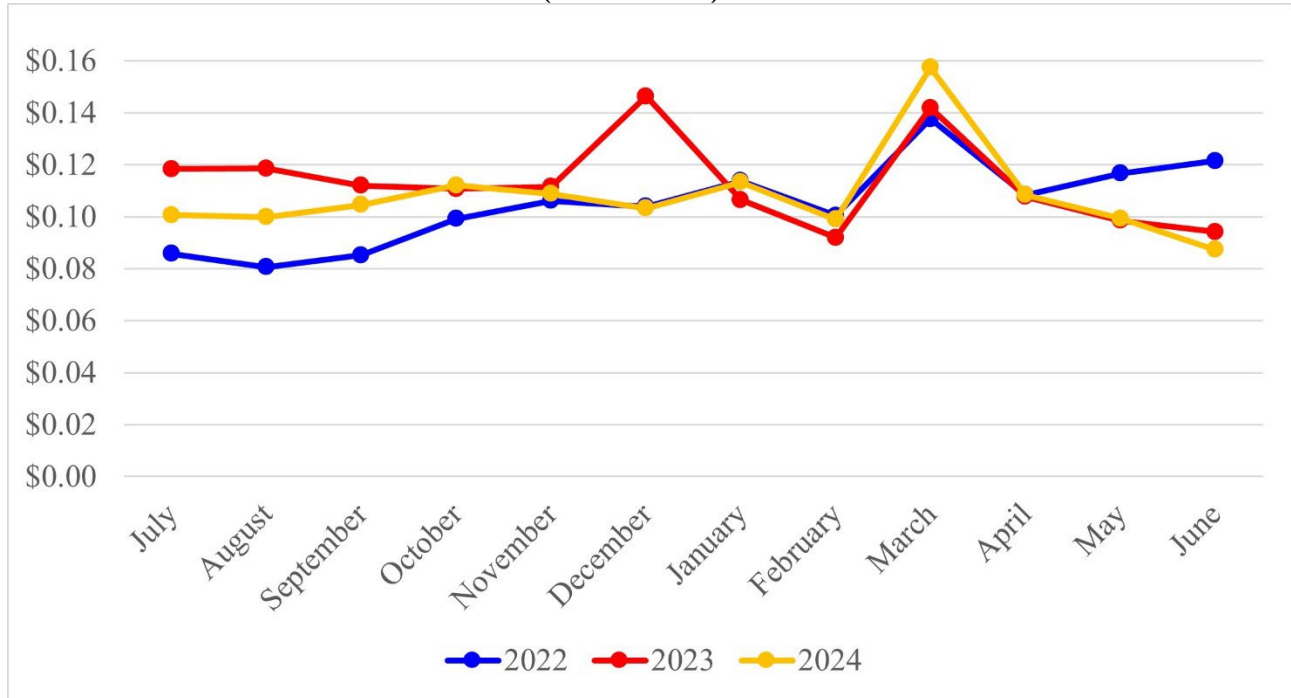
the State, by different utility companies and with energy supplied from a variety of sources across the PJM territory. Wholesale electricity purchases serve the requirements of several dozen major accounts and comprise approximately 80% of the State's annual electricity expenditures. The remaining 20% is provided through three utility scale power purchasing agreements (PPA), discussed further below.

Energy procurement for State enterprises is managed by the Office of Energy and Sustainability within DGS. DGS must follow a procurement process defined in the State Finance and Procurement Article and Title 21 of COMAR. The office manages contracts related to wholesale electricity and other commodities⁵. Working with multiple private-sector partners, energy purchases are made through the office on behalf of State agencies. While these are bulk purchases of energy serving many agencies, the monthly billing process for State agencies functions similarly to that of the private household. State agencies receive energy bills from their local utility companies, which include both supply and distribution costs, and are paid using funds provided to the agency through the State budget.

Exhibit 1 shows the monthly variation in electricity rates paid by the State government from fiscal 2022 through 2024. There was an upward trend in price per kWh through fiscal 2022, and rates remained elevated through most of fiscal 2023 and 2024, generally consistent with the broader movements in electricity prices during that time. However, the State derives significant savings from its wholesale purchasing strategies: the average price per kWh in fiscal 2022, 2023, and 2024 was \$0.104, \$0.113, and \$0.106 respectively. For comparison, the average retail commercial price per kWh in Maryland during that time was about \$0.125.

⁵ While not the focus of this report, the University of Maryland, College Park Campus manages wholesale natural gas contracts for the university system, through which DGS purchases natural gas on behalf of other State agencies.

Exhibit 1
Maryland State Government Average Monthly Electricity Rates per kWh
Fiscal 2022-2024
(\$ in Dollars)



Note: Includes distribution and administration fees and University System of Maryland accounts.

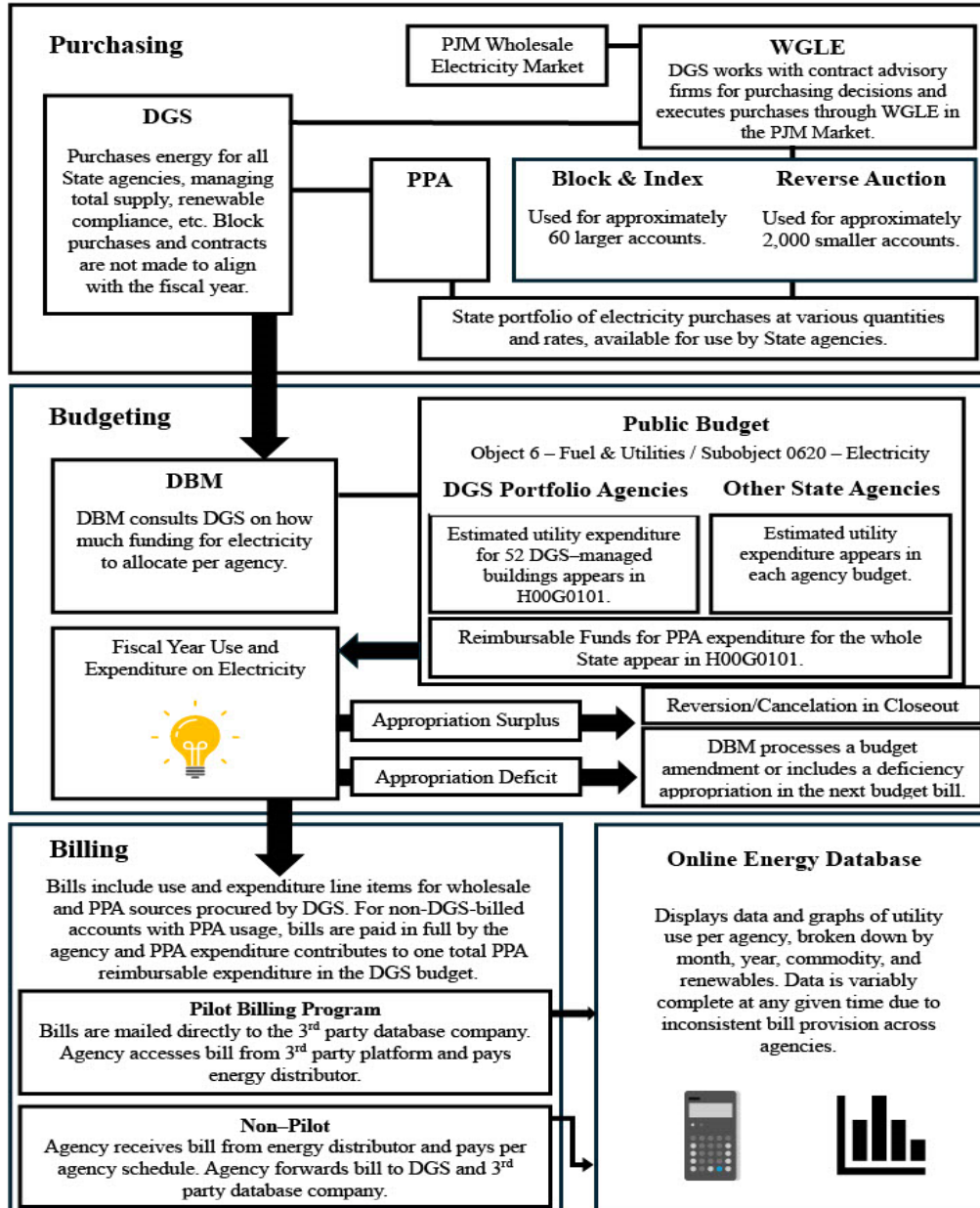
Source: Department of General Services, EnergyCap

The data shown above is provided in total cost per kWh, including transmission and administration fees, and comes from the average across account types and sources. In practice, in addition to factors such as seasonal demand and source, rates vary based on the purchasing method (discussed below); market decisions are made according to the kWh competitive market price and before the addition of administrative fees. Rates also reflect the cost of renewable energy through three utility scale PPAs made in 2011 and 2012 with 20-year performance periods.

Case Study: Electricity Purchasing, Budgeting, and Billing

Exhibit 2 provides an overview and diagram of the electricity procurement process, starting with DGS's role in procuring an ongoing, multi-year supply of electricity for use by State agencies at any given time. Given a supply of electricity managed by DGS and its contracted partners, the Department of Budget and Management (DBM) allocates an estimated amount of funding to each agency for the payment of electricity bills. Agencies make use of electricity and receive bills from their providers, which inform DBM decisions and future procurement strategies by DGS.

Exhibit 2 State Electricity Purchasing, Budgeting, and Billing



DGS: Department of General Services
 PPA: Power purchasing agreement
 WGLE: Washington Gas Light Energy
 PJM: Pennsylvania–New Jersey–Maryland Interconnection
 DBM: Department of Budget and Management

Source: Department of Legislative Services

Purchasing

There are 56 State agencies and universities that have at least one electricity account in their name, and each account is associated with one electricity meter. Most agencies are responsible for multiple accounts corresponding to programs and subprograms in different locations, but a single account may also serve a complex of buildings under one program or subprogram. For example, a single electric meter serves approximately 20 buildings in the Annapolis Capitol Complex. Other centrally metered accounts include major State office building complexes, State hospitals, and correctional facilities.

B&I wholesale purchasing covers approximately 60 major accounts. Electric requirements for the State's remaining 2,000 smaller accounts are procured through periodic online reverse auctions.⁶ While DGS manages the supply contracts associated with these accounts and periodically makes bulk purchases to secure more affordable rates, each State agency is responsible for paying its electricity bills from one or more utility companies, using funding in the fiscal year budget appropriation for this purpose.

Energy procurement contracts can range from fully fixed-priced to fully flexible-priced models and include long-term PPAs made with particular energy producers. A fixed energy procurement contract secures a certain amount of energy at a fixed price, ensuring that the price will remain the same for the duration of the contract. This may be preferred in a more volatile market and when the price is expected to increase. A flexible-priced contract is made with a particular supplier and with unit price contingent on the market. PPAs provide a fixed or formula-determined rate throughout the contract performance period and can act to subsidize producers, for example, to promote use of renewable energy. The State, through DGS, engages in all these options: fixed-priced procurement contracts through reverse auction for smaller accounts; flexible-priced B&I contracts for large and group accounts; and, currently, three long-term PPAs.

Reverse Auction

DGS uses an online reverse auction process to secure electricity supply for approximately 2,000 smaller accounts. In fiscal 2024, DGS entered into a contract with Enel X to advise on reverse auction conditions and purchases. In the reverse auction process, DGS holds an auction for a fixed amount of energy, and each energy supplier can offer a fixed price per kWh and any other contract terms. In general, the lowest bidder wins. This process features DGS as the buyer and initiator of the bidding period, during which each supplier (bidder) is incentivized to enter its absolute lowest bid, ensuring the State receives the most favorable discounted price.

Block and Index

For approximately 60 accounts serving large agencies and building complexes, DGS employs a B&I hedging strategy that combines the fixed-price and flexible-priced models.

⁶ DGS has run nine reverse auctions since 2004 and has purchased wholesale electricity since 2009.

Generally, using this strategy, a business purchases blocks of energy at a fixed price, covering a portion of its total need, and purchases any remaining energy based on spot market, or index, pricing. This can hedge against higher prices in the future, resulting in overall savings to the buyer during the budget period. Historically, the B&I process for wholesale accounts has almost always outperformed the fixed-rate reverse auction process.

In the B&I process, DGS works with risk management firm Siemens Power Technologies International (Siemens PTI), which monitors the DGS portfolio and regularly advises on when to consider purchasing. The role of Siemens PTI is strictly advisory, and it is paid a flat monthly rate for its services. Once advised to buy, DGS works with WGL Energy to evaluate price quotes for different quantity and duration options, and WGL Energy executes a buy on the order of DGS.

WGL Energy provides a monthly billing statement to DGS on a two-month delayed schedule due to the PJM settlement process. Each bill includes costs for all blocks of energy purchased at any time for use in that month. This includes pre-purchased blocks as well as all energy used in excess of pre-purchased blocks. Such excess energy is billed at the PJM hourly market rate associated with each respective local utility zone. Because blocks of energy are purchased iteratively for the current or future fiscal years, the amount of surplus settled at the hourly market rate becomes less over the fiscal year. Pre-purchased blocks account for approximately 60% to 65% of the load at the start of the fiscal year and around 80% toward the end of the fiscal year.

Power Purchasing Agreements

A PPA is a contract with a power producing entity to provide energy in certain amounts and at certain rates for a fixed period of time. Often used to support renewable energy producers, PPAs provide price certainty to the purchaser and provide guaranteed baseline revenue for the producer. Such agreements can lock in discounted prices in the short run but provide less flexibility to the purchaser when an energy source becomes more affordable over time. For example, the U.S. Department of Energy reports solar PPA prices decreased from approximately \$0.15/kWh in 2010 to less than \$0.03/kWh in 2021. **Exhibit 3** summarizes the three PPAs currently held by the State of Maryland.

Exhibit 3
State of Maryland Power Purchasing Agreements
August 2023

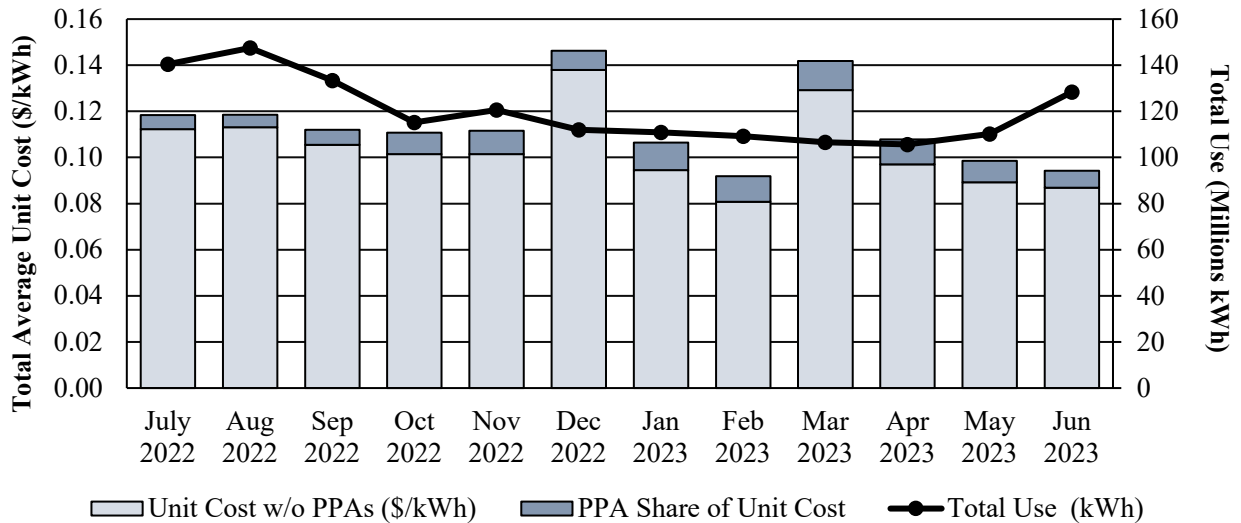
<u>PPA Partner</u>	<u>Location</u>	<u>Source</u>	<u>Start</u>	<u>End</u>	<u>Rate (per kWh)</u>
Pinnacle Wind	West Virginia	Wind	December 2011	December 2031	\$0.082
Synergies Roth Rock Constellation –	Maryland	Wind	December 2011	December 2031	0.089
Mount St. Mary’s	Maryland	Solar	December 2012	November 2032	0.223

PPA: Power purchasing agreement
kWh: kilowatt-hour

Source: Department of General Services

Exhibit 4 shows the State wholesale total use and unit cost per month for fiscal 2023, not including University System of Maryland accounts. PPA electricity comprised approximately 7.8% of total State wholesale electricity costs in fiscal 2023. Monthly PPA share of total cost ranged from a low of 4.5% in August 2022 to 12.2% in February 2023.

**Exhibit 4
PPA Share of Wholesale Electricity Use
Fiscal 2023
(\$ Dollars/kWh)**



PPA: power purchasing agreement
kWh: kilowatt-hour

Source: Department of General Services

Budgeting

DGS estimates overall purchasing and budgeting needs based on prior year expenditures and advises DBM on how much energy funding to allocate to each agency in the proposed budget each year. All estimated utility expenditures for the fiscal year appear in each State agency budget under Object 6 for Fuel and Utilities. While most agency budgets include all the agency’s estimated utility expenditures in Object 6, the DGS agency budget also covers estimated utility expenditures for a group of 52 buildings occupied by DGS and other agencies, which are overseen by DGS’s Office of Facilities Management. Under the Office of Design, Construction and Energy, the DGS agency budget also includes funding for PPAs, which serve all State agencies. Use of PPA energy is allocated to the various agencies by WGL Energy; agencies pay their share of monthly PPA costs to WGL Energy, which is then remitted to DGS.

It is important to note that funding that appears in the public budget remains an estimate of actual expenditures. An agency may spend less than the appropriation, in which case the surplus is reverted or canceled in the fiscal year closeout process. If an agency were to spend more than

the appropriation, DBM may process a budget amendment or include a deficiency appropriation in the next budget bill. The funding allocated in an agency budget is then used by the agency to directly pay utility bills that it receives from companies with which it has contracts.

Billing and the Online Energy Database

DGS reports that there are six major electricity providers and hundreds of smaller utility suppliers working with agencies to provide utilities in addition to gas and electricity, such as water, fuel oil, and propane. Some commodity purchases and associated bills are irregular because they are used as needed or on a seasonal basis. However, in most cases, there is a monthly bill cycle for a given utility commodity. Commodity usage and expenditure data from utility bills is supplied to a third-party vendor managing an online energy database, which provides publicly accessible data and graphs of usage and expenditure for analysis by the State or public⁷.

With so many utility bills across State agencies and no program dedicated directly to the monthly collection of bills from agencies, it has been difficult for DGS to ensure that each bill is received and entered into the online energy database. A pilot program was launched at the end of fiscal 2023 to allow agencies to change the mailing address of utility accounts to DGS' third-party vendor managing the energy database, allowing access by the agency to the bill for the purpose of payment and, at the same time, sharing information with the database manager to update the database. This has been successful for a participating subset of agencies, and DGS intends to continue working to expand this program to other State agencies.

State Policies and Goals Affecting Energy Procurement

Energy procurements by State government occur within the context of the broader energy policies and goals of the State, such as greenhouse gas (GHG) reduction targets, the use of renewable energy sources, and energy efficiency standards. These policies and goals have impacts on State energy procurements going forward, as discussed below.

Climate Solutions Now Act of 2022

The Climate Solutions Now Act of 2022 (Chapter 38) made significant changes to the State's approach to reducing GHG emissions and addressing climate change. Notably, Chapter 38 accelerated previous statewide GHG emissions reductions targets originally established under the Greenhouse Gas Emissions Reduction Act by requiring the State to develop plans, adopt regulations, and implement programs to (1) reduce GHG emissions by 60% from 2006 levels by 2031 and (2) achieve net-zero statewide GHG emissions by 2045. Among a variety of far-reaching energy policy provisions, Chapter 38 required that, by January 1, 2030, each primary procurement unit of the State government ensure that at least 75% of the electricity supply

⁷ The energy database can be accessed at: <https://app.energycap.com/app/dashboards/>

procured by that unit of government for use in State facilities is derived from no- or low-carbon energy sources.

Executive Order 01.01.2023.07

In May 2023, Governor Wes Moore signed Executive Order 01.01.2023.07, titled “Leading By Example in State Government,” which included several provisions relating to energy efficiency goals for State facilities. Among these provisions is a goal of reducing the energy consumption in State-owned buildings by 20% compared to a fiscal 2018 baseline. To promote greater energy efficiency in State facilities, DGS is also tasked with overseeing an annual energy and GHG emissions audit of State-owned facilities and managing a utility database including State agency utility bill data and data on energy consumption and greenhouse gas emissions.

Renewable Energy Portfolio Standard

The State renewable energy portfolio standard (RPS) was enacted in 2004 to facilitate a gradual transition to renewable sources of energy by requiring that certain percentages of in-state electricity sold is sourced from renewable sources. There are specified eligible (“Tier 1” or “Tier 2”) sources as well as carve-outs for solar, offshore wind, and new geothermal systems. RPS percentage requirements escalate to a minimum of 50% of electricity sourced from Tier 1 sources by 2030. In program compliance year 2024, RPS percentage requirements are 33.7% from Tier 1 sources, including 6.5% from solar, 0.14% from offshore wind, and 0.15% from post-2022 geothermal systems, plus 2.5% from Tier 2 sources.

In order to demonstrate compliance with the RPS program, utilities and other competitive energy suppliers submit RECs equal to a percentage of their retail electricity sales specified in statute each year or else pay an alternative compliance payment equivalent to their shortfall. Generally, a REC is a tradable commodity equal to one megawatt-hour of electricity generated or obtained from a renewable energy generation source. Although the State is not required to report annual RPS compliance by statute or PSC regulation, it has generally done so in the past through the submission of RECs due to its role in supplying electricity purchased through the wholesale market for use at State facilities. Consequently, as RPS program percentages gradually increase through 2030, the electricity that is procured by the State will be sourced from increasingly greater percentages of renewable energy.

Offshore Wind

The Promoting Offshore Wind Energy Resources Act of 2023 established a statewide goal of 8,500 megawatts of offshore wind energy capacity by 2031. The Act also required DGS, in consultation with PSC, to issue a competitive sealed procurement solicitation for offshore wind energy and authorized DGS to enter into at least one contract for a PPA to procure up to 5 million megawatt-hours annually of offshore wind energy and associated RECs from one or more qualified offshore wind projects, for a term of not less than 20 years. These provisions were modified by Chapter 431 of 2024 to add a second procurement, remove the 5 million megawatt-hour limit, and require the use of certain contract terms to facilitate low-cost project development and traditional project financing terms. Chapter 431 also required PSC, with the assistance of the Maryland Energy Administration, DGS, and other interested State units, to develop a plan for achieving the 8,500-megawatt goal by 2031. The amended provisions establish the following timeline:

- **By July 31, 2024:** The State must issue a procurement for offshore wind energy.
- **By September 1, 2025:** The State may enter into one or more contracts for the procurement of offshore wind energy. The State may alter the date if an unforeseen circumstance adversely affects the procurement submission process.
- **By December 31, 2025:** The State must issue a second procurement for offshore wind energy.
- **By March 31, 2027:** The State may enter into one or more contracts for the procurement of offshore wind energy. The State may alter the date if an unforeseen circumstance adversely affects the procurement submission process.

Energy procured by the State under such agreements must be used to meet the State's energy needs, as identified by DGS, and the State must retire the associated RECs to meet obligations under the State RPS and the Climate Solutions Now Act.

According to preliminary estimates by DGS, anticipated future offshore wind procurements may potentially supply either a majority or the entirety of the electricity procured by the State to meet its energy needs, thereby significantly reducing or eliminating the need to procure energy from other sources. As a result, future offshore wind procurements have the potential to replace most current DGS energy procurements now in effect outside of current PPAs, which, according to the terms of the agreements, will remain in effect through their conclusion in the early 2030s.