

## Maryland Electricity Consumption

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Maryland end-use customers consumed about 59.7 thousand GWh of electricity during 2022.<sup>1</sup> Between 2010 and 2022, the annual average growth rate in electricity consumption in Maryland was lower than in the U.S. as a whole (negative 8.7 percent in Maryland versus a positive 4.6 percent in the U.S.). Figure 1 compares some of the key factors contributing to growth in electricity demand in Maryland and the U.S. from 2009 through 2022.

Maryland's year-over-year rate of population growth has declined more than in the U.S. overall as depicted in Figure 2. The U.S. rate of population growth recovered slightly in 2022. Despite overall growth in population and per capita income, electricity consumption has continued to decline in Maryland. In general, slower population and per capita income growth will negatively affect electricity use, other factors held constant; however, the recent decline in electricity consumption can be attributed to businesses and households investing in more efficient energy technology, effectively reducing their energy usage. As noted later in this section, there are emerging signs that load growth in Maryland and throughout PJM is accelerating, driven by increasing electrification of the transportation and building sectors and increasing development of data centers.<sup>2</sup>

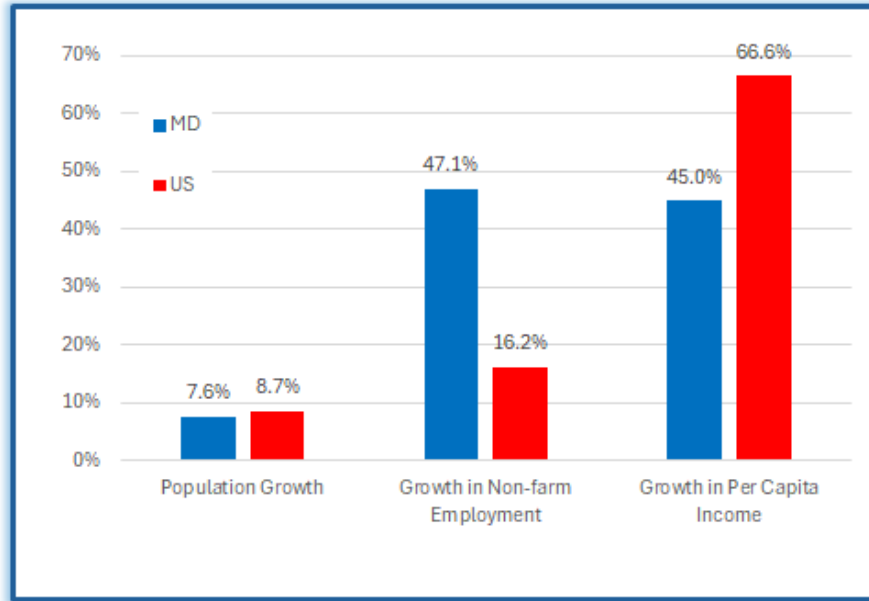
The shares of electricity consumption in Maryland used by residential and commercial sectors exceeded the consumption levels of the United States as a whole (see Figure 3). Conversely, the industrial sector's electricity use in Maryland is significantly lower than the rest of the country. In 2010, the industrial sector accounted for 7.8 percent, or 5.1 thousand GWh, of Maryland's energy consumption; comparatively, in 2022, the industrial sector consumed approximately 3.6 thousand GWh, or 29 percent less electricity than in 2010.

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<sup>1</sup> U.S. Energy Information Administration, Annual Data by Sector, by State, by Provider: <https://www.eia.gov/electricity/data.php>.

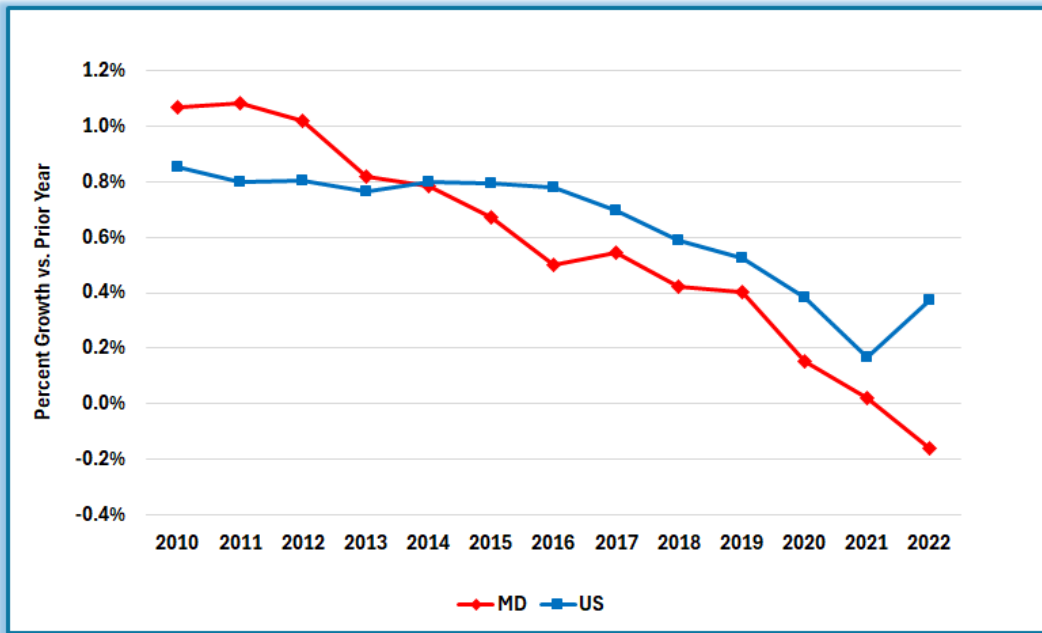
<sup>2</sup> "PJM Publishes 2024 Long-Term Load Forecast," *PJM Inside Lines*, January 8, 2024, <https://insidelines.pjm.com/pjm-publishes-2024-long-term-load-forecast/#:~:text=Peak%20winter%20load%20for%20the%202024%20winter%20is,800%2C000%20gigawatt-hours%20%28GWh%29%20to%20about%201.1%20million%20GWh.>

Figure 1 Comparison of U.S. and Maryland Growth Factors Affecting Electricity Consumption (2009-2022)



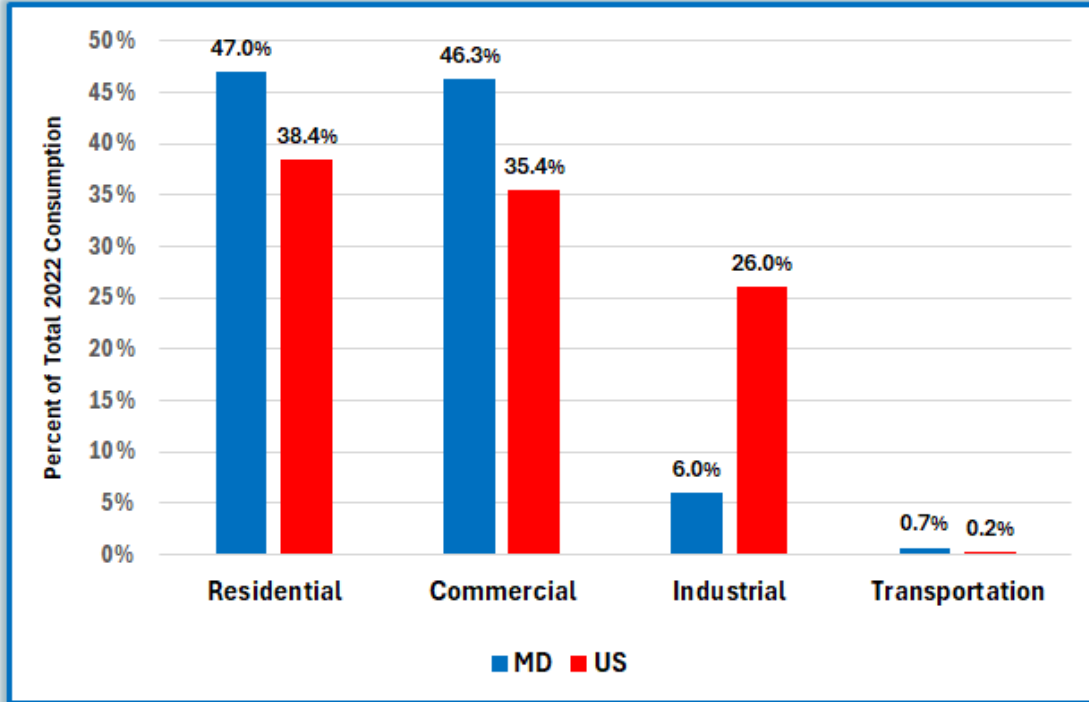
Source: Bureau of Economic Analysis Regional Data, Bureau of Labor Statistics. [apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1&acrdn=2](https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1&acrdn=2).

Figure 2 Population Growth Trends in Maryland and the U.S. (2010-2022)



Source: Bureau of Economic Analysis Regional Data, SAINC1.

Figure 3 Electricity Consumption by Customer Class for 2022



Source: U.S. Energy Information Administration, “Retail Sales of Electricity, Annual.” [eia.gov/electricity/data/browser/#/topic/5?agg=0,1&geo=g0000008&endsec=vg&linechart=ELEC.SALES.US-ALL.A&columnchart=ELEC.SALES.US-ALL.A&map=ELEC.SALES.US-ALL.A&freq=A&ctype=linechart&ltype=pin&rtype=s&maptype=0&rse=0&pin=.](https://www.eia.gov/electricity/data/browser/#/topic/5?agg=0,1&geo=g0000008&endsec=vg&linechart=ELEC.SALES.US-ALL.A&columnchart=ELEC.SALES.US-ALL.A&map=ELEC.SALES.US-ALL.A&freq=A&ctype=linechart&ltype=pin&rtype=s&maptype=0&rse=0&pin=)

### Maryland Electricity Consumption Forecast

The economic recession that began in 2008 resulted in a downward trend for electricity consumption in Maryland. While Maryland was not as seriously affected by the recession as many other states, it was not immune to the higher unemployment levels and lower levels of economic activity more generally. Electricity sales in 2009 were about 1 percent below 2008 levels, largely explained by the recession-induced declines in economic activity. Electricity consumption in Maryland has continued to decline in most years since 2010. This decline is largely due to the impact of the EmPOWER Maryland legislation.

EmPOWER Maryland targeted a 15 percent reduction in per capita electricity consumption by 2015 from 2007 levels. Since 2018, electricity consumption in Maryland has continued its downward trend, decreasing annually by an average of 3.7 percent.<sup>3</sup> Table 1 compares the average change in electricity consumption by sector for both the United States and Maryland from 2018 through 2022. Residential sector electricity consumption in Maryland has been relatively flat compared to the increase in the United States. In the commercial and industrial sectors, electricity consumption has fallen at a faster rate in Maryland compared to the U.S. In

<sup>3</sup> Note that the COVID-19 pandemic depressed energy consumption across the U.S., making 2020 an outlier in terms of the level of annual electricity consumption.

Maryland, the industrial and transportation sectors make minimal contributions to overall electricity consumption.

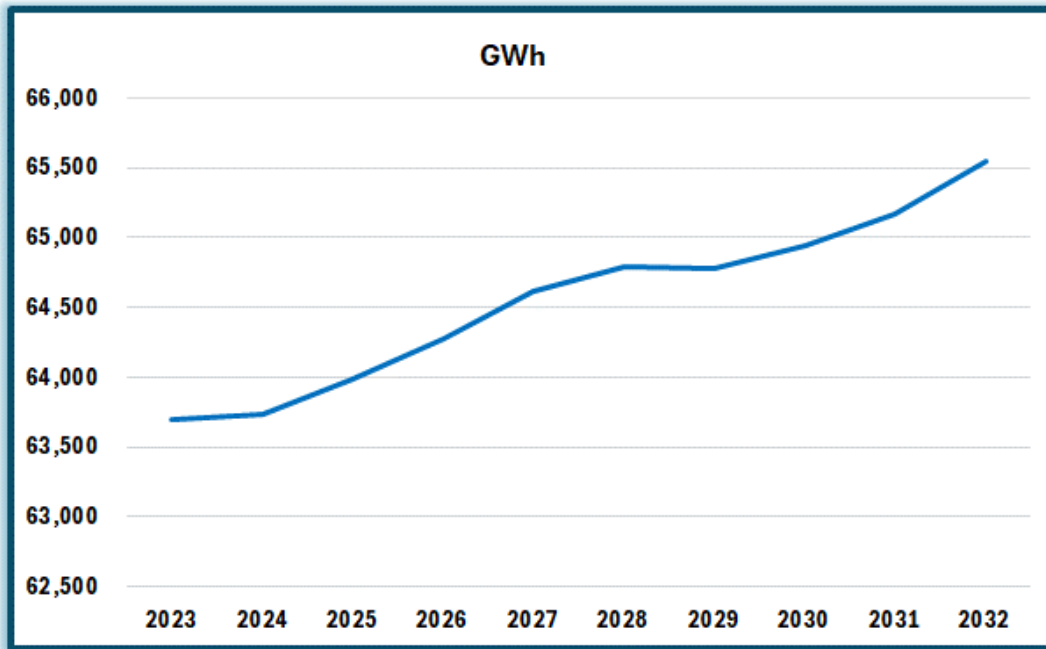
*Table 1 Average Change in Retail Sales of Electricity by Sector, 2018-2022*

	<b>All Sectors</b>	<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Transportation</b>
Maryland	-3.9%	-0.3%	-6.5%	-6.9%	-26.0%
United States	1.8%	2.7%	0.7%	2.0%	-13.9%

Source: U.S. Energy Information Administration, “Retail Sales of Electricity, Annual.”  
[eia.gov/electricity/data/browser/#/topic/5?agg=0.1&geo=g0000008&endsec=vg&linechart=ELEC.SALES.US-ALL.A&columnchart=ELEC.SALES.US-ALL.A&map=ELEC.SALES.US-ALL.A&freq=A&ctype=linechart&ltype=pin&rtype=s&maptype=0&rse=0&pin=.](https://eia.gov/electricity/data/browser/#/topic/5?agg=0.1&geo=g0000008&endsec=vg&linechart=ELEC.SALES.US-ALL.A&columnchart=ELEC.SALES.US-ALL.A&map=ELEC.SALES.US-ALL.A&freq=A&ctype=linechart&ltype=pin&rtype=s&maptype=0&rse=0&pin=)

Figure 4 illustrates the most recent forecast for future electricity consumption in Maryland, as projected by the utilities serving loads in the state. The growth rate in electricity consumption in Maryland averages an increase of 0.32 percent per year over the 10-year forecast period. By comparison, the average annual growth rate in electricity consumption in Maryland was around 2 percent during the 1990s and less than 1 percent between 2000 and 2010. The slower growth in recent and forecasted electricity consumption compared to historical growth during the 1990s is largely attributable to increases in the real price of electricity, slower growth in population and employment, and the impacts of EmPOWER Maryland. Higher electricity prices dampen the demand for electric power in two ways. First, the existing stock of electricity-consuming equipment and appliances is used less intensively because operation is more costly. Second, consumers more commonly replace their stock of electricity-consuming equipment and appliances with more energy-efficient appliances to reduce energy costs.

Figure 4 Maryland Forecasted Consumption, 2023-2032



Source: Maryland Public Service Commission 2022 Ten-Year Plan [Ten-Year Plan \(2023-2032\) of Electric Companies in Maryland \(state.md.us\)](https://www.state.md.us/pscc/ten-year-plan-2023-2032/).

PJM produces an independent forecast of electric energy consumption, and PJM’s most recent forecast covers the 15-year forecast period of 2023 through 2038. The relatively slow growth in electricity consumption in Maryland is projected by PJM to persist throughout the PJM 15-year forecast period. Over this period, consumption in PJM’s Mid-Atlantic region is expected to grow at an average annual rate of approximately 0.8 percent, whereas Maryland’s forecast calls for a more modest annual consumption increase of 0.3 percent over the 10-year period ending in 2032, as forecasted by the Maryland utilities.<sup>4</sup>

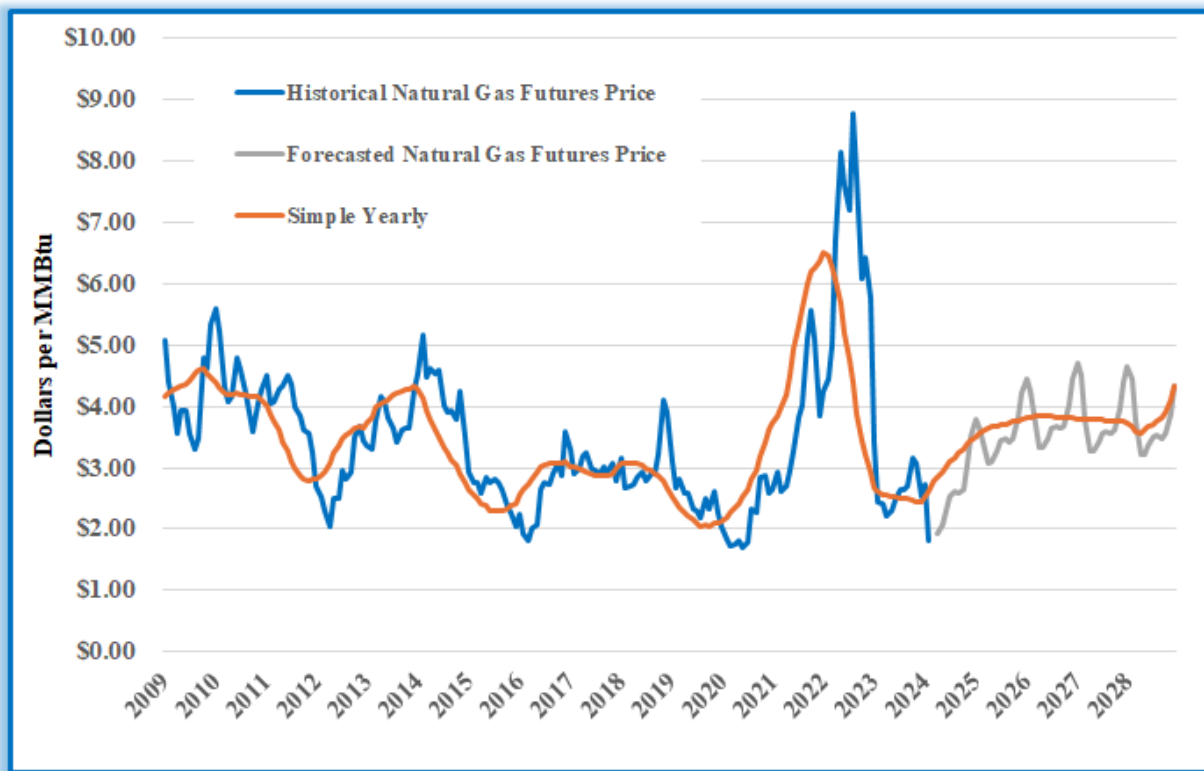
Future electricity prices (and hence consumption of electricity) are affected by wholesale natural gas prices, in addition to a range of other factors. Wholesale natural gas futures contracts priced on the New York Mercantile Exchange (NYMEX) are based on the delivery price at the Henry Hub in Erath, Louisiana. Henry Hub is a major intersection of pipelines and the crossroads for a significant amount of natural gas moving to locations across the country. Wholesale natural gas is priced and traded at over 30 hubs throughout the country where major pipelines intersect. The difference between the Henry Hub price and another hub is based on supply and demand at that particular point.

As shown in Figure 5, natural gas prices reached \$6/MMBtu in 2014 during the Polar Vortex but declined shortly afterward, hovering between \$3 and \$4/MMBtu or below. Natural gas prices remained in this range until Russia’s invasion of Ukraine in February 2022 when fears that

<sup>4</sup> [Ten-Year Plan \(2023-2032\) of Electric Companies in Maryland \(state.md.us\)](https://www.state.md.us/pscc/ten-year-plan-2023-2032/).

Russia would cut supplies of natural gas compelled many European countries to import liquefied natural gas (LNG) to build inventories in advance of the 2022-23 heating season. The resulting LNG demand sent natural gas prices higher globally. Henry Hub prices exceeded \$8/MMBtu in summer 2022. Prices dropped later in 2022 when it became clear that Europe’s natural gas supplies would be adequate, and dropped even further in 2023 because of record natural gas production, flat consumption of natural gas and high inventories of natural gas. Natural gas prices in 2023 dropped 62 percent, to \$2.57/MMBtu, as compared to 2022.<sup>5</sup> EIA projects that Henry Hub spot prices will remain below \$3.25/MMBtu through 2025.<sup>6</sup>

Figure 5 Historical and Future NYMEX Henry Hub Natural Gas Prompt Month Futures Prices, 2009-2028



Source: Historical prices: U.S. Energy Information Administration; futures prices: The CME Group.

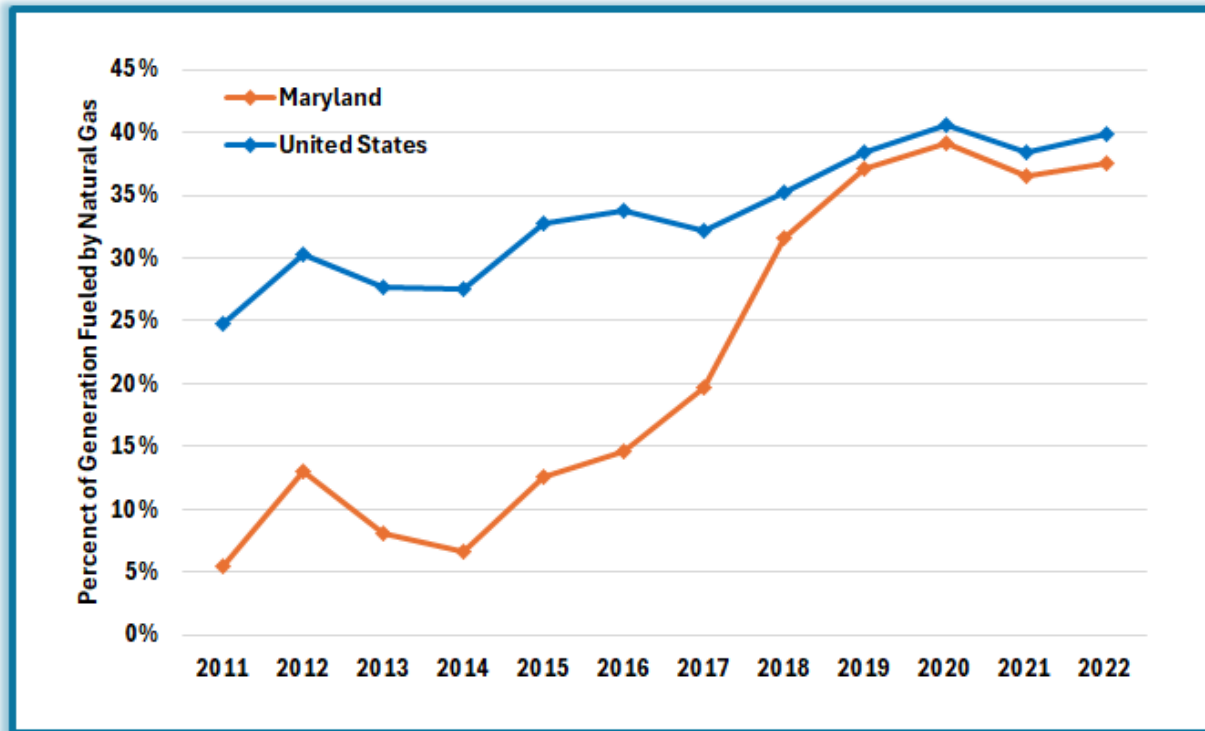
As shown in Figure 6, natural gas has been steadily growing as a share of fuels used for electricity generation in the United States. From 2014 through 2020, the proportion of electricity generated from natural gas increased significantly in both the United States and Maryland, owing primarily to fuel switching, the retirement of coal plants, and natural gas generating facilities operating for more hours of the year. In Maryland, there has been a significant increase due to

<sup>5</sup> U.S. Energy Information Administration, “U.S. Henry Hub natural gas prices in 2023 were the lowest since mid-2020,” *Today in Energy*, January 4, 2024, <https://www.eia.gov/todayinenergy/detail.php?id=61183#:~:text=Record%2Dhigh%20natural%20gas%20production,in%20May%20at%20%242.19%2FMMBtu>.

<sup>6</sup> U.S. Energy Information Administration, Short-Term Energy Outlook - February 2024 [5btab.pdf \(eia.gov\)](#).

the addition of 2,880 MW of natural gas capacity since 2017. Over 35 percent of electricity generation in Maryland is from natural gas as compared to 5 percent in 2011. Refer to [Chapter 4](#) for more information on natural gas and electricity markets.

*Figure 6 Natural Gas Share of Fuel for Electricity Generation in the U.S. and Maryland, 2009-2022*



Source: U.S. Energy Information Administration, “U.S. and Maryland Natural Gas Generation Data.” [https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.eia.gov%2Felectricity%2Fdata%2Fstate%2Fannual\\_generation\\_state.xls&wdOrigin=BROWSELINK](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.eia.gov%2Felectricity%2Fdata%2Fstate%2Fannual_generation_state.xls&wdOrigin=BROWSELINK).

### *Generation: Comparison with Consumption*

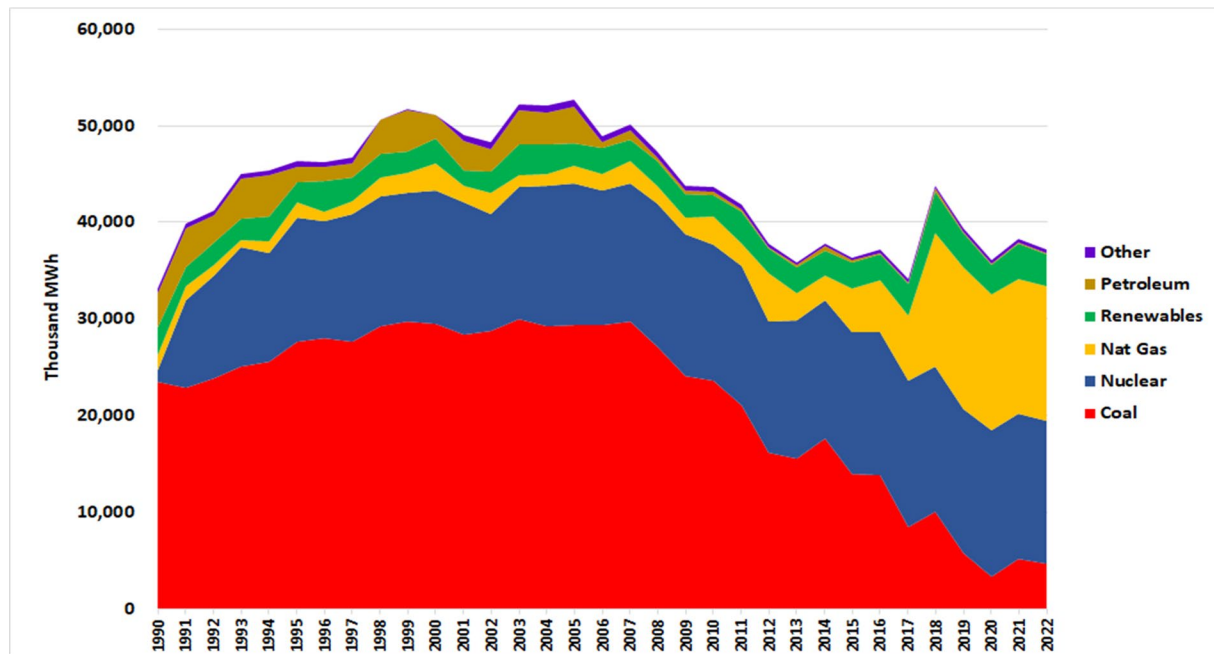
The provision of adequate levels of electric power generation for Maryland consumers does not require that the level of power generation within the state’s geographic border match or exceed the state’s consumption. Historically, Maryland’s consumption of electricity has exceeded the amount of energy generated within the state, necessitating imports from out-of-state resources. Maryland, as part of PJM, often relies on lower-cost generating resources from within PJM as a whole, as well as electric power that can be imported into the PJM footprint. Consequently, imbalances between Maryland consumption and generation should not be viewed as adversely affecting reliability or availability of electricity in Maryland.

Because of high import requirements, interregional transmission plays a much more critical role in sustaining reliable service. In addition, Maryland’s high electric demand relative to in-state

## Generation Fuel Mix Since 1990

Over the last several decades, the generation fuel mix in Maryland has shifted. The changes in fuel mix are the results of various factors, including plant closures, economics, technology advancements and environmental requirements. Coal once was the predominant generating fuel in Maryland; however, its share of total generation has declined since 2007 and is now below nuclear generation. In 2018, natural gas surpassed coal to become the second-highest generating fuel. In addition, the amount of electricity generated in Maryland has declined since it peaked in 2005 with 52.6 million MWh, as Maryland generated 37.1 million MWh in 2022.

**Maryland Generation Fuel Mix**



Source: U.S. Energy Information Administration Net Generation by State by Type of Producer by Energy Source (EIA-906, EIA-920, and EIA-923).

generation supply can produce high electricity prices when transmission limits and congestion require the use of higher-cost electricity resources located closer to load centers.

Electricity consumption in Maryland in 2022 exceeded electricity generation in the state by approximately 43 percent.<sup>7</sup> Table 2 compares electricity consumption and generation in Maryland since 2009. The significant decrease in net imports in 2018 coincides with three gas-fired power plants that came online in Maryland that year, which resulted in natural gas-fired

<sup>7</sup> U.S. Energy Information Administration, "Retail Sales of Electricity, Annual."



generation surpassing coal-fired power plants. Net imports increased in 2019, remained relatively constant in 2021 and increased in 2022 to 25,527 GWh.

*Table 2 Total Maryland Electric Energy Consumption and Generation (GWh), 2009-2022*

	<b>Retail Sales (Consumption)</b>	<b>Sales + T&amp;D Losses*</b>	<b>Generation</b>	<b>Net Imports</b>	<b>Percentage of Sales Imported</b>
2009	62,589	66,344	43,775	22,570	34%
2010	65,335	69,256	43,607	25,648	37%
2011	63,600	67,416	41,818	25,598	38%
2012	61,814	65,522	37,810	27,713	42%
2013	61,899	65,613	35,851	29,763	45%
2014	61,684	65,385	37,834	27,551	42%
2015	61,872	64,966	36,390	29,099	44%
2016	61,354	64,422	37,167	27,255	42%
2017	59,304	62,269	34,104	28,165	45%
2018	62,086	65,190	43,810	21,380	33%
2019	60,721	63,757	39,326	24,431	38%
2020	57,533	60,410	36,029	24,380	40%
2021	59,304	62,269	38,235	24,034	41%
2022	59,683	62,667	37,139	25,527	43%

\*Assumes Transmission and Distribution (T&D) losses of 6 percent through 2013 and then 5 percent for 2014 through 2020.

Source: U.S. Energy Information Administration, “Retail Sales of Electricity, Annual” and EIA-923 Net Generation.

PJM’s 2023 “Regional Transmission Expansion Plan” (RTEP) report notes that in 2023, PJM received 31 deactivation requests totaling 5,848 MW.<sup>8</sup> Of the 31 deactivation notifications received in 2023, nine were from plants in Maryland totaling 1,845 MW of capacity. Twenty-six plants totaling 6,830 MW actually retired in 2023. Of these, only one was located in Maryland—a 2 MW diesel plant in Easton.

In all, over 42 GW of coal-fired plants in PJM have retired since 2011. PJM noted that deactivation requests are primarily the result of the economic impact of environmental regulations and age, as many of the plant deactivations are for plants more than 40 years old. Also, in prior RTEPs, PJM noted that competition from new generating plants fueled by

<sup>8</sup> [PJM, RTEP 2023: Regional Transmission Expansion Plan, March 7, 2024, https://www.pjm.com/-/media/library/reports-notice/2023-rtep/2023-rtep-report.ashx](https://www.pjm.com/-/media/library/reports-notice/2023-rtep/2023-rtep-report.ashx).

Marcellus Shale natural gas, new renewable energy plants, and market impacts from demand response and energy efficiency programs have impacted the decision by owners to retire plants.

### *Electrification*

The goal of the Climate Solutions Now Act (CSNA) is to achieve net zero greenhouse gas (GHG) emissions by 2045, and a 60 percent GHG reduction by 2031 relative to 2006 levels. Among provisions related to the buildings sector, the CSNA identified electrification of existing buildings and new construction as a pathway for achieving the stated GHG emissions reduction goals. Pursuant to the CSNA, the Maryland PSC conducted a study to assess the electric and gas distribution system impacts of a managed transition to a highly electrified building sector. Key assumptions in the study were that utility energy efficiency plans stay consistent with the Climate Solutions Now Act and utility demand response plans; electric vehicle sales follow the trajectories in the Advanced Clean Cars Rule II and the Advanced Clean Trucks Rule; and existing and expanded utility load flexibility programs, such as managed charging, would shift 50 percent of charging demand from automobiles, school buses, medium duty and heavy-duty trucks out of the PJM system peak demand window thereby limiting the impact of vehicle charging on peak power demand.

The study was completed by the Brattle Group in December 2023 and concluded that:

- Electric systems in Maryland would see 0.6-2.1 percent per year load growth rates through 2031 with high rates of building electrification. This is higher than the 0.32 percent per year growth rate forecast by electric utilities in Maryland.<sup>9</sup>
- Electrification of building space heating could reduce natural gas demand 31 to 32 percent by 2031.
- The Maryland electric distribution system, which is currently summer peaking, would become winter peaking in 2026 or 2027.
- Additional energy efficiency and load flexibility measures could result in significant mitigation of load growth to less than 1.2 percent per year.<sup>10</sup>

The impact of data center power consumption in Maryland was not included in the scope of the electrification study. PJM expects unprecedented data center electricity demand load growth primarily in Loudon County, Virginia and surrounding counties in Maryland. This will result in significant load growth that is not reflected in the electrification study.<sup>11</sup>

### *Capacity Market Reform and Clean Energy*

Maryland has examined whether the current PJM capacity market is structured to attract enough investment in clean energy generation capacity to meet the state's GHG and renewable energy

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<sup>9</sup> [Ten-Year Plan \(2023-2032\) of Electric Companies in Maryland \(state.md.us\)](#).

<sup>10</sup> [An Assessment of Electrification Impacts on the Maryland Electric Grid \(state.md.us\)](#).

<sup>11</sup> [PJM, RTEP 2023: Regional Transmission Expansion Plan, March 7, 2024, https://www.pjm.com/-/media/library/reports-notice/2023-rtep/2023-rtep-report.ashx.](#)

deployment goals. The Maryland Energy Administration retained the Brattle Group in 2021 to study various alternative capacity market designs.<sup>12</sup> None were recommended for adoption. The study recommended Maryland postpone any decision on adopting alternative capacity market designs until ongoing regional capacity market reform initiatives are completed and until FERC offers more guidance on reforms.

PJM convened a stakeholder group in April 2022 to study three alternative clean energy market designs:

- Forward Clean Energy Market (FCEM, a separate, centralized auction market);
- Integrated Clean Capacity Market (ICCM, a modification to the existing capacity market); and
- Minimum Reliability Attribute Auctions ((MRAA, a two-stage auction process within the ICCM).

All were rejected by PJM stakeholders, and none were recommended for further study.<sup>13</sup>

### *EV Charging Infrastructure Buildout*

The following legislation was passed in 2023 to support buildout of EV charging infrastructure in Maryland:

- **The Clean Trucks Act of 2023**,<sup>14</sup> passed on April 21, 2023, requires MDE to adopt regulations establishing requirements for the sale of new zero-emission medium- and heavy-duty vehicles in the state.
- **The Clean Transportation and Energy Act**,<sup>15</sup> passed on April 21, 2023, extends the duration of the Electric Vehicle Recharging Equipment Program<sup>16</sup> through fiscal year 2026 and repeals the rebates that may be issued to retail service station dealers. The Act also increases the limitation rebate amounts that MEA may issue in each fiscal year.
- **The Electric Vehicle Charging Reliability Act**,<sup>17</sup> passed on May 8, 2023, requires the PSC to expand EV Pilot Programs to allow participating electric distribution utilities to install EV charging stations in multifamily dwellings in underserved communities and ensure that EV charging stations maintain uptime standards.

The following EV infrastructure buildout activities have taken place in Maryland as reported by the Maryland Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC):<sup>18</sup>

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<sup>12</sup> [Alternative Resource Adequacy Structures for Maryland Final Brattle Study March 2021.pdf](#).

<sup>13</sup> [20231115-item-02---1-capstf-sunset---presentation.ashx \(pjm.com\)](#).

<sup>14</sup> [2023 Regular Session - Fiscal and Policy Note for Senate Bill 224 \(maryland.gov\)](#).

<sup>15</sup> [Legislation - HB0550 \(maryland.gov\)](#).

<sup>16</sup> [Electric Vehicle Supply Equipment \(EVSE\) Rebate Program \(maryland.gov\)](#).

<sup>17</sup> [Legislation - HB0834 \(maryland.gov\)](#).

<sup>18</sup> [2023\\_ZEEVIC\\_Annual\\_Report.pdf \(maryland.gov\)](#).

- Maryland has adopted a target of 600,000 EVs registered in the state by 2030 and designated 23 EV alternative fuel corridors (AFCs) for EV infrastructure build out.
- As of September 30, 2023, Maryland had 1,540 publicly accessible EV charging stations with 4,357 charging ports.
- Maryland has been awarded \$20 million in federal funds for EV charging infrastructure buildout under the National Electric Vehicle Infrastructure (NEVI) Program.
- There are 14 charging networks operating in Maryland covering 88 percent of charging ports. Three companies, ChargePoint, Blink, and Shell Recharge, are responsible for approximately 71 percent of public chargers statewide.
- The Bipartisan Infrastructure Law (BIL),<sup>19</sup> passed in November 2021, includes \$7.5 billion to build out a national network of EV chargers to accelerate the adoption of EVs, reduce GHG emissions, and support domestic jobs.
- \$2.5 billion in federal aid is available for the Charging and Fueling Infrastructure (CFI) Discretionary Grant Program for planning, installation and operations of EV charging infrastructure.
- The Electric Corridor Grant Program (ECGP) and the Charge Ahead Grant Program (CAGP) were created from the EPA's settlement with Volkswagen for violations of the Clean Air Act. The ECGP funds the installation of charging stations along EV charging corridors or at charging hubs. In Maryland, proceeds from the ECGP have totaled \$5,990,263.<sup>20</sup> The CAGP funds the installation of Level 2 chargers at workplaces or at state-owned properties. In Maryland, proceeds from the CAGP have totaled \$1,413,500.<sup>21</sup>

## *RNG and Hydrogen Production/Distribution*

### **Renewable Natural Gas and Hydrogen for Power Generation**

Landfill gas or biogas<sup>22</sup> from wastewater treatment plants can be upgraded to renewable natural gas (RNG) by removing the CO<sub>2</sub> and other contaminants such as siloxanes, volatile organic compounds and hydrogen sulfide. RNG can be injected directly into natural gas pipelines and used as a substitute for natural gas for space heating, power generation, vehicle fuel or in industrial processes.<sup>23</sup>

The steam-methane reforming (SMR) process is widely used to convert natural gas into hydrogen. The SMR process extracts hydrogen from RNG and rejects the remaining carbon into the atmosphere in the form of CO<sub>2</sub>. If the rejected CO<sub>2</sub> is recovered and either sequestered or

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<sup>19</sup> [FACT SHEET: The Bipartisan Infrastructure Deal Boosts Clean Energy Jobs, Strengthens Resilience, and Advances Environmental Justice | The White House.](#)

<sup>20</sup> [2023 ZEEVIC Annual Report.pdf \(maryland.gov\)](#), Table 9.

<sup>21</sup> [Ibid.](#), Table 10.

<sup>22</sup> [Biogas-Renewable natural gas - U.S. Energy Information Administration \(EIA\).](#)

<sup>23</sup> [An Overview of Renewable Natural Gas from Biogas \(epa.gov\).](#)

used in industrial processes, the hydrogen would be considered clean and potentially eligible for production tax credits pursuant to the Inflation Reduction Act. The IRS plans to issue guidance on the clean hydrogen tax credits in 2024.<sup>24</sup> Hydrogen from RNG can be used as fuel in a fuel cell generator which is designed to convert hydrogen into electricity. Electricity from a fuel cell generator that uses clean hydrogen extracted from RNG as fuel would generate Tier 1 RECs in Maryland.

### *Hydrogen Hubs*

Hydrogen is an energy product that can be produced with zero or near-zero carbon emissions. Eight billion dollars were made available in the Bipartisan Infrastructure law to establish at least four Regional Clean Hydrogen Hubs (H2Hubs) which are networks of clean hydrogen producers, potential clean hydrogen consumers and connective infrastructure located near each other. Commercial-scale deployment of hydrogen will help generate clean, dispatchable power, provide new forms of energy storage, and decarbonize heavy industry and transportation. On May 1, 2023, a cross-sector coalition of more than 60 partners representing Washington, D.C., Maryland and Virginia announced that it had submitted an application to the U.S. Department of Energy to create the Mid-Atlantic Hydrogen Hub (MAHH).<sup>25</sup> On October 13, 2023, the U.S. Department of Energy (DOE) announced<sup>26</sup> its H2Hub selections. The MAHH proposal was not selected.

### *Climate Change Impacts and Resiliency*

Increased storm intensity could have devastating impacts on the Atlantic coast and the Chesapeake Bay ecosystem.<sup>27</sup> More frequent disruptions to urban and coastal power and water distribution infrastructure in Maryland caused by extreme weather events can be expected. Maryland's coastal areas are particularly vulnerable; however, all areas of the state are at risk. High temperature extremes have intensified in cities, which has compromised the operation of transportation, water, sanitation and energy systems.<sup>28</sup>

Transitions to low-carbon and resilient energy sources across all sectors and systems are necessary to achieve deep and sustained GHG emissions reductions. Feasible options for GHG emissions mitigation and climate change adaptation include:<sup>29</sup>

- Deployment of solar and wind energy and energy efficiency improvements;
- Widespread electrification of commercial and industrial heating, including alternative energy carriers such as hydrogen in applications less amenable to electrification;

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<sup>24</sup> [Treasury, IRS issue guidance on the tax credit for the production of clean hydrogen | Internal Revenue Service.](#)

<sup>25</sup> [Connected DMV and Partners Submit Application to U.S. Department of Energy to Create Mid-Atlantic Hydrogen Hub — Mid-Atlantic Hydrogen Hub \(midatlantichydrogenhub.com\).](#)

<sup>26</sup> [Biden-Harris Administration Announces \\$7 Billion For America's First Clean Hydrogen Hubs, Driving Clean Manufacturing and Delivering New Economic Opportunities Nationwide | Department of Energy.](#)

<sup>27</sup> [Climate Change Program \(maryland.gov\).](#)

<sup>28</sup> <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>, Synthesis Report , Summary for Policymakers, p. 6.

<sup>29</sup> Ibid, pp. 28-29.

- Updated design standards for robust transmission systems and improved capacity to respond to power supply shortfalls;
- Low-emissions hydrogen, and derivatives (such as synthetic fuels) to reduce CO<sub>2</sub> emissions from the shipping, aviation and heavy-duty land transportation sectors; and
- Electric vehicles powered by low-GHG emissions electricity.

### ***Funding for Emissions Mitigation and Climate Change Adaptation***

The Resilient Maryland Program (Resilient Maryland) provides funding to Maryland organizations seeking to develop mitigation and adaptation measures such as resilient microgrids, resiliency hubs and resilient facility power systems to provide reliable, affordable and sustainable power. The Program is administered by MEA and is funded by alternative compliance payments (ACPs) made under Maryland's RPS.

On September 7, 2023, \$8,790,108 in federal funding was announced<sup>30</sup> for MEA to modernize the state's power grid and invest in clean energy. The funding was authorized by the Bipartisan Infrastructure Law. MEA will distribute the funds to localities after holding a competitive selection process to fund projects that improve the resiliency and reliability of the power grid, invest in renewable carbon-neutral energy technologies, and enhance clean energy workforce development.

The Jane E. Lawton Conservation Loan Program<sup>31</sup> offers funding to Maryland nonprofit organizations, local governments, businesses and state agencies for the implementation of cost-effective energy efficiency and conservation improvements for existing or new facilities that reduce energy consumption and costs. The purpose of the Program is to accelerate energy efficiency and conservation in the built environment. Funds are provided at below-market interest rates to Maryland nonprofits and businesses, and at zero percent to local governments, state agencies and departments. The Program is administered by MEA. A total of \$4,200,000 is available in Fiscal Year 2024.

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<sup>30</sup> [Maryland Delegation Announces \\$8.7 Million for Statewide Power Grid Resiliency | U.S. Senator Chris Van Hollen of Maryland \(senate.gov\).](#)

<sup>31</sup> [FY23 Lawton Loan Funding Opportunity Announcement \(FOA\).pdf \(maryland.gov\).](#)