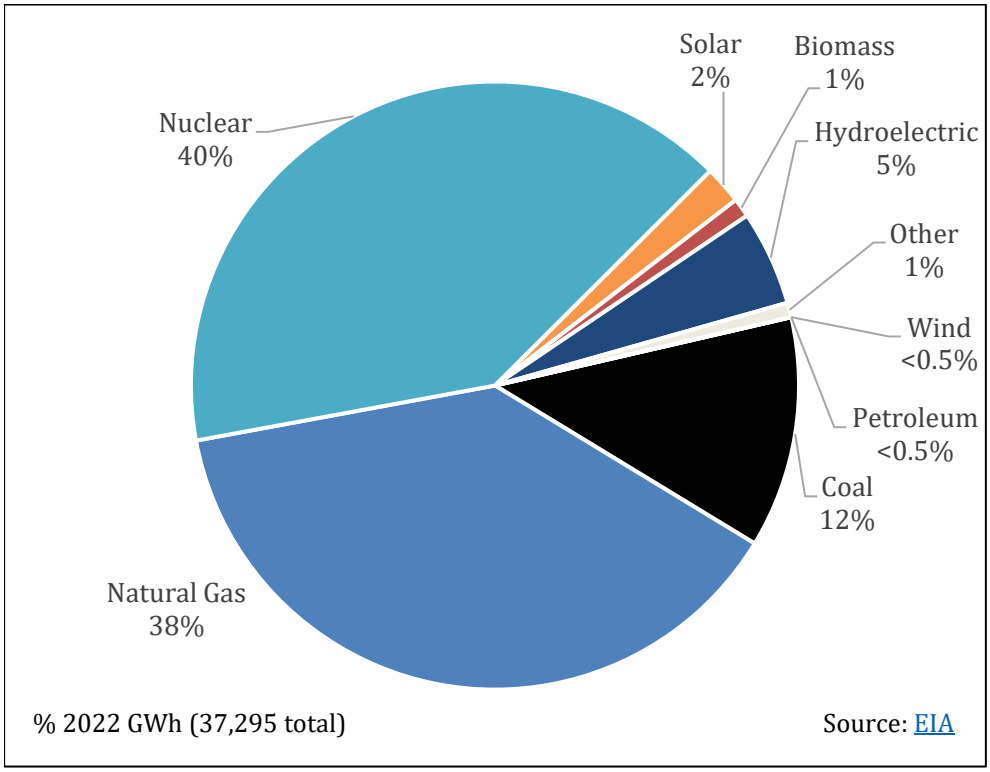
# State Brief: Maryland

## BACKGROUND

Maryland's Estimated Net Annual Electric Generation, 2022




% 2022 GWh (37,295 total) Source: EIA

Maryland has only small reserves of oil, coal, and natural gas. Baltimore is one of the largest ports in the U.S. and sees imports of coal and petroleum. Historically, coal made up at least 50% of the state's net generation but has been below 50% since 2012 and hit 12% in 2022.

Maryland was the third state to enact a permanent ban on hydraulic fracturing. Natural gas is imported into the state through pipelines and a liquid natural gas (LNG) port. The electric sector was the top consumer of natural gas in 2021, making up 38% of the state's natural gas use. The majority (73%) of Maryland's in-state electricity generation comes from nuclear and natural gas. Maryland has only one nuclear plant, while natural gas generation has tripled since 2015.

The Old Line State generated approximately 12% of small- and utility-scale electricity from renewable resources in 2021. Hydropower made up the largest portion of the state's renewable energy; the majority of this energy comes from the Conowingo hydroelectric plant on the Susquehanna River. Although solar accounts for only approximately 2% of the state's net electricity generation, solar generation capacity nearly quadrupled between 2015 and 2021. In 2022, the Solar Energy Industries Association (SEIA) ranked the state 18th in the country in terms of installed solar capacity (1,701 megawatts (MW)). SEIA also ranks the state 31st for projected growth over the next five years with 1,643 MW in expected installations.

The 2022 U.S. Energy and Employment Report found that in 2021, Maryland had an estimated 123,101 energy workers (4.8% of total state employment), which includes 66,167 workers employed in energy efficiency. In 2021, Maryland ranked 13th nationally for clean energy jobs, with approximately 77,842 Marylanders employed by the industry.[1]

The Maryland Public Service Commission (PSC) has full jurisdiction over the state's gas and electric utilities. The PSC has five appointed commissioners, three of whom are currently members of the Republican Party. The state is under unified control with the Democratic Party holding majorities in both chambers of the General Assembly and Democratic Governor Wes Moore leading the executive branch.

[1] To see clean energy job numbers for your Congressional District, visit: https://cleanjobsamerica.e2.org/#map.

## POLICY STRENGTHS AND OPPORTUNITIES

The National Renewable Energy Laboratory (NREL) developed the notion of "policy stacking,"[2] an important framework for policymakers to consider. The basic idea behind policy stacking is that there is an interdependency and sequencing of state policy that, when done effectively, can yield greater market certainty, private sector investment, and likelihood of achieving stated public policy objectives.

In theory, but not always in practice, clean energy policies can be categorized into one of three tiers of the policy stack. Tier 1, market preparation policies, remove technical, legal, regulatory, and infrastructure-related barriers to clean energy technology adoption. Tier 2, market creation policies, create a market and/or signal state support for clean energy technologies. Tier 3, market expansion policies, create incentives and other programs to expand an existing clean energy market by encouraging or facilitating technology uptake by additional market participants.

For example, before financial incentives for combined heat and power (CHP) will be successful, two key considerations for deployment are having clear interconnection standards and favorable stand-by rates for customers who opt to add CHP. In this example, states should adopt policies to address interconnection and stand-by rates before adopting financial incentive programs.

## INVESTING IN THE WORKFORCE

The energy sector added nearly 3.1 million net-zero aligned jobs in 2021, and these jobs currently comprise roughly 40% of total energy jobs. However, a lack of qualified candidates across occupations and education levels could impede states' abilities to modernize their grids and deploy clean energy resources. To ensure that the workforce can meet industry demand, policymakers can consider several policies to educate and train qualified candidates. This can simultaneously enhance industry employment and provide economic opportunity to individuals and local communities.

Maryland offers the Maryland Business Express, which focuses on workforce development. In 2022, the Maryland Department of Labor was awarded $22.9 million from the American Jobs Plan for a new apprenticeship model for the offshore wind industry. The money developed the Maryland Works for Wind consortium which brings together partners to promote a skilled workforce for the offshore wind industry. The Maryland Energy Administration offers incentives related to reaching the state's energy reduction, renewable energy, climate, and green jobs goals. Established by the Climate Solutions Act in 2022, the Just Transition Working Group works to support workers through the transition from fossil fuel industries to clean energy opportunities. The working group will present a report to the General Assembly by December 31, 2023.

The policies states can explore to address workforce development include:

1. **Incentive Programs –** States can attract new workers to the field by providing financial and other incentives to students who pursue education in specified trades or in the science, technology, engineering, and math (STEM) fields. States might require that graduating students remain and work in the state for a given time to remain eligible for the incentive. In conjunction with this, states might also provide economic development incentives to companies employing students with training in specified STEM and trades fields. To ensure safety in the workplace, states can adopt programs that will cover the costs of OSHA training. Maryland could build on existing workforce incentives and training program.

   Initiatives to improve access to broadband and public transportation in underserved communities can boost access to educational and employment opportunities.

2. **Education and Continuing Education –** Existing electrician training and mentorship programs can be expanded to encourage more young people to enter the industry. Policymakers can direct public colleges and universities, with input from industry, offices of economic and workforce development, and other interested

[2] V.A. Krasko and E. Doris. 2012. "Strategic Sequencing for State Distributed PV Policies: A Quantitative Analysis of Policy Impacts and Interactions." *National Renewable Energy Laboratory*. Available: http://www.nrel.gov/docs/fy13osti/56428.pdf.

parties, to create new trades and STEM programs. This could include the development of "green" credentialing programs. States can also provide financial resources to organizations that educate or retrain students in STEM and trades professions.

For the state's existing energy workforce, policymakers might direct state departments of workforce services or their equivalent to work with utilities and other interested parties to develop continuing education and training programs for existing utility employees to remain in their field or to transition to a new role. Incentive programs might also be developed for employers that design roles that include ongoing skills development and continuous learning to help keep pace with evolving roles.

3. **Establishing an Office of Workforce Development –** States might also consider establishing a dedicated workforce development office. In some states, these have been established to specifically address training needs in energy transition communities.

## MODERNIZING UTILITIES AND EMPOWERING CONSUMERS

The electric grid is a complex system of generation, transmission, and distribution. Aging infrastructure and emerging technologies are forcing the grid to modernize to keep pace with historic and emerging expectations. Grid modernization encompasses a broad range of actions intended to make the electrical system more resilient, interactive, and capable of meeting current and future demand.

The transition to a digital economy requires affordable, sustainable, and reliable electricity and creates challenges and opportunities for grid management. Emerging physical and cybersecurity threats and increased demand for faster outage response times require, at minimum, real-time incident tracking and response capabilities. Increased grid penetration of distributed energy resources (DERs) such as renewable energy coupled with increasing adoption of energy efficiency, energy storage, microgrids, and other technologies will provide economic benefits, increase security, and ensure more reliable, resilient, and clean energy. Utility-scale renewable energy may require expanded transmission capabilities. As adoption of these innovations increases, so too will the need for modern grid technology to strengthen the grid, the implementation of which will require substantial planning and investment by states and utilities.

By allowing a two-way flow of information between the electric grid and grid operators and between utilities and their customers, new technologies enable utilities to better manage the grid and provide opportunities for consumers to customize their services to fit their priorities and to reduce their electric bills. By enabling better tracking and management of resources, emerging technologies improve system reliability and resiliency. These technologies also allow grid operators to incorporate central and distributed energy resources, energy storage technologies, and electric vehicles (EVs). This all assists in addressing the challenges associated with planning, congestion, asset utilization, and energy and system efficiency.

On the customer's side of the meter, dynamic pricing, advanced metering infrastructure (AMI), and other technologies allow a more dynamic exchange of information and electricity between a consumer and their electric provider. Grid modernization is associated with greater consumer choice by allowing customers to meet their energy priorities by producing and storing their own energy or through contracting for innovative clean energy services from different providers.

Grid modernization will require a suite of policy changes to support advancements in grid technologies, grid management, and utility regulation.

In 2021, Maryland announced plans for an Electric Grid of the Future after two years of participating in an electricity planning imitative hosted by NARUC and NASEO. The plan will be led by the Maryland Energy Administration and Maryland PSC. Both BGE and Pepco have released their 2024-2026 Multi-Year Plans; the plans will need to be approved by the PSC. BGE's Multi-Year Infrastructure Plan outlines investments to enhance resilience, reliability, and safety through updated infrastructure, smart automation equipment, and preparing for extreme weather events. Pepco's Climate Ready Pathway MD Multi-Year Plan outlines plans for a climate ready grid, which can take on renewable energy sources while increasing resiliency, reliability, and security.

The Infrastructure Investment and Jobs Act of 2021 (IIJA) is a landmark federal spending bill that includes funding earmarked for grid modernization projects. This includes $11 billion for Department of Energy (DOE) grants directed specifically towards electric infrastructure resiliency projects (including grid hardening against severe weather and cybersecurity improvements), $2.5 billion for transmission development, and $3 billion for the Smart Grid Investment Matching Grant Program.[3] Enacted August 2022, the Inflation Reduction Act (IRA) set aside $2 billion for loans for constructing new high-capacity transmission lines and upgrading interties. The bill includes funding for technical assistance and grants for states and tribal governments, which includes assistance for siting transmission projects. The bill also directs DOE to undertake interregional transmission planning, modeling, and analysis, including analysis of transmission for offshore wind and the use of grid-enhancing technologies (GETs).[4]

There are policies that Maryland's policymakers could adopt to support in-state grid modernization efforts:

1. Develop a grid modernization strategy through a collaborative process. Alternatively, states might decide to require that utilities develop and propose a ten-year grid modernization plan to the PSC within a specified timeframe. Utilities would then be required to implement that plan within another specified timeframe. Strategies and/or plans should outline a clear set of grid modernization goals and describe methods to measure, report, verify, and enforce progress towards those goals.

2. States might also provide incentives or cost recovery mechanisms for utilities that meet grid modernization goals. Policymakers could consider directing the PSC to evaluate alternative ratemaking mechanisms, performance-based regulation, and/or new utility business models that support grid modernization.

3. State policy should include measures to protect data regarding customer behavior but can also encourage the use of this information to facilitate additional improvements in grid management and customer service. To address this, policymakers can develop legislation or direct commissions to promulgate rules that clarify that the customer owns the energy data associated with their energy usage; protect customer privacy; outline the process for allowing direct access to data by third parties; and promote access to the highest resolution of data possible. Maryland only allows third-party access to utility data when permitted by the customer. Customers can grant access through Green Button Connect My Data ports on utility websites.

The adoption of incentives for or a requirement to integrate a certain amount of renewable energy and energy storage on the grid alongside enhanced building energy standards and electric vehicle policies can support grid modernization efforts.

## MAINSTREAMING RENEWABLES

Renewable energy is increasingly seen as the least cost and lowest risk form of energy (excluding energy efficiency). With increased deployment, utilities are learning more about how to integrate renewables effectively, investors are becoming more comfortable with the technologies, and building code officials are recognizing common standards and best practices for integrating distributed renewable energy resources. In the U.S., the expansion of renewable energy has been one of the most consequential shifts in electricity generation over the last decade. According to the EIA, renewable energy generation surpassed coal and nuclear generation in 2022, and more than half of all new generation capacity in 2023 is expected to be solar. As of 2021, there were more than 450,000 jobs in the wind and solar industry. Accordingly, it is in the interest of policymakers to ensure that their states are well positioned to benefit from this shift.

While the IIJA doesn't provide money for specific renewable energy projects, the funding in the Act will benefit renewable energy development as grid resiliency, increased deployment of energy storage, and modernized transmission are all essential to the successful integration of renewable energy generation. The IRA appropriated $369 billion to fund a variety of energy and climate initiatives – the largest climate investment in U.S. history. The

[3] For more information on the grid-related earmarks included in the IIJA, see Potomac Law Group's January 2022 analysis: "The Infrastructure, Investment & Jobs Act of 2021: What's in It for You? (Part V: Grid Infrastructure and Resiliency)." Available: https://www.potomaclaw.com/news-Infrastructure-Investment-Jobs-Act-of-2021-Whats-In-It-For-You-Part-V-Grid-Infrastructure-and-Resiliency.

[4] J. Runyon and J. Engel. 2022. "The Inflation Reduction Act is Signed into Law." *PowerGrid International*. 16 August. Available: https://www.power-grid.com/td/the-inflation-reduction-act-is-signed-into-law/#gref.

bill also extended the investment tax credit (ITC) and the production tax credit (PTC) through the end of 2024 and revived the PTC for solar projects. For projects placed in service in 2025, the bill "effectively extended" the ITC and PTC by creating new tax credits for zero emission facilities. The bill also extended the residential energy property tax credit through 2034 and created a new advanced manufacturing production credit, to apply to sales of components for constructing wind and solar energy facilities beginning in 2023.[5]

The IRA also includes several provisions related to energy equity, including $3 billion to the Environmental Protection Agency (EPA) for grants for community-led projects in disadvantaged communities and $27 billion for nonprofit, state, and local climate finance institutions supporting the deployment of low- and zero-emission technologies. In support of rural communities, the bill also includes a $1 billion appropriation to the U.S. Department of Agriculture (USDA) for loans to finance renewable energy projects, $1 billion for USDA's Rural Energy for America Programs, and $9.7 billion to USDA to finance rural electric cooperatives' purchases of renewable energy.

Maryland's interconnection rules went into effect in 2008. The rules were updated in 2017 by the PSC, which examined recommendations made by a working group. The interconnection rules cover distributed generation of less than 10 MW, except for those projects covered by PJM Interconnection. The state's net metering law was originally enacted in 1997 and was most recently amended in 2022. Net metering is allowed statewide until the aggregate capacity reaches 3,000 MW. Installations are generally limited to 5 MW. Any net excess generation is carried over at the retail rate. Maryland allows physical and virtual net metering for agricultural, non-profit, or municipal governments. In 2022, the PSC released a Report on the Status of Net Energy Metering, which oversees the state's net metering program and decides if changes are recommended. The report doesn't recommend alterations, though it does note an increase in installations.

The Maryland Commission on Climate Change's Mitigation Working Group released recommendations for the state in 2022. One of the priority recommendations was that the state construct more in-state clean energy resources, with a particular focus on solar. Another recommendation highlights potential modifications to be made to the thermal renewable energy credit system. Additional recommendations in the report suggest codifying a zero-emissions electricity commitment and mandating a PSC process for the energy transition.

In April 2023, Maryland became the 23rd state in the U.S. to adopt a statewide community solar program with the passage of House Bill 908. The new program updates the existing community solar program to be permanent, more equitable, and less restrictive on siting regulations.

To reduce barriers to customer and utility participation in the renewable energy market, and to build upon the federal initiatives, policymakers in Maryland might consider several options.

**Customer-Oriented Policies**

1. **Interconnection, Net Energy Metering (NEM), and Streamlined Permitting –** In general, customers want a clear, streamlined, affordable, and predictable system for connecting renewable energy systems to the grid. To ensure this, Maryland's policymakers could consider adopting the Interstate Renewable Energy Council's (IREC)'s model interconnection procedures, removing NEM system size limitations and the aggregate capacity limit. The state might also consider establishing either statewide standards for streamlined permitting processes, or resources to support local governments that voluntarily implement a streamlined program. In May 2021, NREL launched the SolarAPP+, an online platform designed to automate the solar permitting process. By running compliance checks and processing permit approvals, the service is intended to drastically reduce permit wait times. Currently restricted to rooftop solar, thirty-two communities in five states have adopted the platform, processing over 15,000 permits for more than 100 MW of generation with an estimated 15,000 hours saved in permit review time. Montgomery County piloted the SolarAPP+ program in 2021.

2. **Shared Renewables –** Due to building and property attributes and ownership issues, many customers are unable to install renewable energy technologies where they live or work. Allowing shared, or community, renewable energy projects addresses these barriers. These projects have multiple owners or subscribers who

[5] For a detailed discussion of the IRA's tax provisions, see: A.S. Levin-Nussbaum. 2022. "Update: President Biden Signs Historic Legislation Providing Expansive Clean Energy Tax Incentives." *The National Law Review*. 17 August. Available: https://www.natlawreview.com/article/update-president-biden-signs-historic-legislation-providing-expansive-clean-energy.

pay for a portion of the project or the generation provided by the system. To expand program participation, the state might consider expanding their virtual net metering policy. Virtual net metering allows a customer to receive credits from a shared system as if the generation were on site. Virtual net metering is different from a power purchase agreement (PPA), which pays the customer for the proportion of power they produce. Because it is treated as a credit on the customer's bill, the customer can avoid the tax implications of a PPA payment – which can adversely affect the economics of the system (and may come as a surprise to the participant).

Low credit ratings often deter participation in renewable energy markets; this can affect LMI households' adoption of renewable energy solutions. Supportive policies for shared renewables can be designed to encourage participation by LMI households; this can increase adoption of renewable technologies and reduce energy costs. Low-income participation can be encouraged either through a percentage mandate for the overall annual contracted capacity, or by offering a higher rate of payment for the portion of shared solar capacity attributed to low-income customers. States that have a shared renewables program may want to coordinate this program with implementation of the federal Weatherization Assistance Program (WAP) to provide recipients of assistance with access to participation in a shared system.

3. **Adapt Energy Assistance Programs –** Programs such as the Low-Income Home Energy Assistance Program (LIHEAP) and WAP provide assistance for paying utility bills and reducing household energy costs. Including distributed energy resources as eligible for funding under these programs can reduce energy costs and increase energy security for those LMI families who are able to benefit from WAP and LIHEAP. Colorado, for example, includes rooftop solar in their WAP program. For approval to add solar to a state's implementation of WAP, a state must show that the investment would be cost-effective – achieving a Savings to Investment Ratio (SIR) of 1.0 or more.[6] Since 2015, Maryland has received $24.6 million from WAP and $7.3 million from the State Energy Program (SEP) which has helped to fund a number of energy initiatives in the state.

4. **Fund Distributed Generation (DG) for Community Organizations –** Organizations or groups that provide support services for LMI communities can be provided funding to install solar or other distributed energy resources. Sites such as homeless shelters, food banks, clinics, and community centers often have enough rooftop area for solar installations. After installation, these resources can reduce an organization's utility bills, freeing up funds for other activities that support the community. The Resilient Maryland Program offers competitive grants for distributed energy resource system development. The program is open to Maryland communities and organizations, and the state could give community organizations priority in awarding funds.

5. **On-Bill Financing/Pay As You Save (PAYS) –** On-bill Financing and Repayment programs enable consumers to invest in energy upgrades with no upfront payment. The utility or a third party will pay the initial costs to install the upgrade with the cost of that upgrade recovered through the utility bill. Because repayment includes consideration of the cost savings resulting from the energy upgrade, customers can see monetary benefits almost immediately. Once equipment costs are recovered, the equipment belongs to the customer. State policies that reduce lending risk by creating a loan loss reserve and/or a credit enhancement fund can encourage lending to customers that might otherwise not qualify for a loan and can keep interest rates low.

6. **Corporate Procurement –** Many Fortune 100 and 500 companies have established either climate goals or commitments to purchase renewable energy. Since 2014, over 64 gigawatts (GW) of renewable energy has been procured by corporate entities. In the first half of 2022, corporations entered contracts for 21 GW. This is leading policymakers to provide additional avenues for businesses to procure renewable energy. To increase corporate access to renewable energy, policymakers in Maryland might authorize utilities to offer green tariffs to businesses. Maryland allows businesses, non-profits, and governmental organizations to install or lease renewable energy projects. The state offers a non-competitive rebate program for these projects.

[6] For guidance on the state approval process, see WAP Memorandum 024 (2017), the Solar Template for Incorporating Solar Photovoltaics into WAP, and the Preliminary Assessment Guide for Integrating Renewable Energy into Weatherization (2019).

**Utility-Oriented Policies**

Some states have created programs that aim to reduce greenhouse gas (GHG) emissions and increase investments in clean energy resources. Utilities are also setting their own GHG reduction goals and are increasingly investing in clean energy resources. Baltimore Gas and Electric (BGE) and Potomac Electric Power Company (PEPCO), subsidiaries of Exelon Corporation, have both set goals of 50% emissions reduction for operational emissions by 2030 and a goal of net-zero by 2050. Potomac Energy Company, a subsidiary of First Energy, has pledged to be carbon neutral by 2050 with an interim goal of 30% reduction of GHG emissions by 2030.

While Maryland has an ambitious statewide emissions reduction goal, 60% reduction economy-wide by 2031, it does not set utility emissions standards. Maryland does participate in the Regional Greenhouse Gas Initiative (RGGI), a regional cooperative of nine states to reduce emissions from electricity generating plants. The state does have a Renewable Energy Portfolio Standard (RPS), which was first established in 2004. The Clean Energy Jobs Act expanded the RPS to require utilities to procure at least 25% of their electricity from eligible sources by 2020 and 50% by 2030. The RPS includes carveouts for solar and offshore wind. Maryland exceeded (30% reduction) their 2020 emissions reductions goal, and a 2022 report shows the state is on track for meeting its 2030 goal. An updated Greenhouse Gas Emissions Reduction Act Plan is due by the end of 2023.

Maryland is part of the PJM Interconnection, a regional transmission organization (RTO) that coordinates transmission between 13 states and D.C. The PSC can issue a Certificate of Public Convenience and Necessity relating to a utility's application to build or modify high-voltage transmission.

Maryland offers its residents energy choice through the MD Electric Choice program, which allows utility customers to pick the utility or retail energy supplier of their choice based on price or green energy preferences.

To increase utility adoption of clean energy technologies, Maryland's policymakers might consider the following:

1. **Accelerating and Amending Renewable Portfolio Standards –** One of the oldest and most successful advanced energy policy tools, renewable portfolio standards (RPSs), usually set a target for a specific percentage of renewable electric generation to be achieved by a specific date (for example, 50% renewable energy by 2030). The RPS was designed to build the market for renewable energy, which, at the time when most states were adopting these standards, was more expensive than conventional electricity sources. Today, states and utilities are in a much different situation for most land-based, utility-scale renewable energy resources (primarily wind and solar). These technologies are increasingly economical on a direct kilowatt hour (kWh) cost and are being aggressively pursued by most utilities for this reason. In general, RPSs require utilities to procure the lowest-cost qualifying resources and cap expenses under the program, which has helped deployment of more mature wind and solar technologies. However, this does not automatically promote resource diversity necessary to enhance system resilience and invest in emerging but promising clean energy technologies of the future like offshore wind, storage, and others. The Maryland Mitigation Working Group released recommendations such as amending Maryland's RPS to improve environmental and emissions impacts; more specific recommendations are noted in the report.

   States can update existing RPSs to increase targets and/or accelerate target dates to continue to spur the development of renewable resources and save ratepayers money. States might add one or more carve-outs to incentivize the development of distributed resources. Embedding an RPS within a broader clean electricity or emissions standard can allow technological flexibility.

2. **Transmission Development Policies –** Renewable energy resources rely heavily on robust transmission networks that connect generation to demand. For states within RTOs, state governments can fund utility commission and energy office engagement in RTO processes, and generally support transmission build-out through these channels. In non-RTO states or single-state RTOs like New York and California, one successful model has been the creation of a state transmission authority, which handles state transmission planning in cooperation with incumbent utilities. New Mexico's Renewable Energy Transmission Authority provides an instructive example – it informs transmission investments to push forward key transmission projects that achieve the state's clean energy goals cost-effectively.

3. **Competitive Procurement Requirements –** In most states, consumers have little choice about where their electricity comes from. As utilities find that renewable energy is increasingly the lowest-cost electricity source, they have to decide how much they should buy and when. Unfortunately for customers, utilities may have either a vested interest in continuing to operate fossil plants, or they doubt the efficacy of new renewable resources. States can overcome reluctance to renewable energy by requiring utility procurement decisions to undergo a competitive process, revealing the lowest cost alternatives to the utility's existing contracts and fleet of power plants. A best practice is "all-source procurement," a process that allows all resources to compete to fill a system need identified by the utility. Policymakers in Maryland might consider revisiting planning and procurement rules and asking whether the current process results in policy-aligned procurement.

## ENERGY STORAGE

Energy storage offers a unique opportunity to dynamically manage supply and demand while also maximizing the value of grid resources. By deploying storage to strategic locations, utilities can more effectively manage their energy portfolios. First, storage allows utilities to manage intermittent demand – helping reduce peak demand requirements. Because the generation resources that provide peak power are the system's most expensive, reducing peak demand can save consumers money. Second, the responsiveness of energy storage can allow utilities to implement voltage regulation and other ancillary services, which improve system efficiency. Third, because storage technologies can both store and dispatch power, storage enables better integration of intermittent power generation resources, like wind and solar, to the grid.

The flexibility of battery storage combined with advanced metering infrastructure can allow customers to control how and when they use energy from the grid or from solar panels installed on their home or business. In most cases, this can provide greater cost savings than standalone solar systems. Combined with time-varying rates or real-time pricing programs, state policy can further support customer choice and open a new market for energy services. Prices that better reflect the time-varying and location-dependent costs of producing and delivering electricity can also lead to a number of economic and environmental gains.

Energy storage can also help the commercial sector avoid demand charges, which establish an incremental cost above energy usage based on the highest period (highest 15 minutes, for example) of demand during the month. Eliminating spikes in demand with storage can reduce these costly charges for businesses. As utilities around the country consider implementing or extending demand charges to other sectors, energy storage will become more relevant as both a customer cost-saving investment and a system efficiency measure.

Declining costs and technological advancements in battery storage have contributed to increased deployment. The EIA expects total battery storage deployment to nearly triple from 7.8 GW in 2022 to 30 GW in 2025. State policies can further encourage this by establishing both a framework for easy integration of energy storage resources onto the grid and a marketplace that monetizes the benefits of energy storage for cost-effective investment.

In April 2023, Maryland passed House Bill 910, which established an energy storage goal of 750 MW by the end of 2027, and 3 GW through 2033. The bill also requires the PSC to create a Maryland Energy Storage Program, which will be presented by the end of 2023 and implemented by July 2024. A recent report found that Maryland could build more than 3.5 GW of energy storage by 2033.

In 2022, three new solar-plus-storage projects came online in Maryland backed by Convergent Energy + Power. In 2021, Maryland became the first state to host a residential virtual power plant (VPP) pilot program which will participate in ancillary services for PJM Interconnection.

Maryland's PSC updated its interconnection rules for connecting distributed resources including storage and solar to the grid. The updated rules are expected to increase efficiency and transparency within the interconnection process.

The IIJA provides a unique opportunity for funding energy storage projects. The IIJA provides $505 million for grants to support energy storage demonstration projects, more than $7 billion for building out the U.S. battery supply chain, and $14 billion for grid resilience programs that include energy storage as a qualified technology. The IRA extended the ITC to include standalone energy storage systems. When the ITC is replaced by the technology neutral Clean

Electricity Investment Tax Credit (CEITC) in 2025, qualified storage facilities placed in service after 2024 will remain eligible. The advanced manufacturing production credit will apply to battery cells and modules and the critical minerals used in their production. The $27 billion GHG Reduction Fund, also established by the bill, will provide funding enabling low-income or disadvantaged communities to adopt zero-emission technologies including energy storage.

There are several policy opportunities to take advantage of the growing technological advances in and declining costs of energy storage and build upon recent federal initiatives. The recommendations here draw heavily from IREC's 2017 report, "Charging Ahead – An Energy Storage Guide for Policymakers." Policymakers in Maryland could consider the following:

1. Clarify the classification of energy storage as an energy management technology and not as "generation" to encourage utility investment in restructured markets. Most states that have restructured utility markets exclude utility ownership of generation.

2. Instruct the utilities commission to evaluate the value of energy storage in multiple strategic locations across the utility system and consider a requirement to deploy storage where it is cost-effective or identify the price point at which it will be cost-effective. Ensure that cost-effectiveness calculations include all of the benefits storage can deliver to the system, including frequency regulation and avoided investments in new infrastructure.

3. Require the inclusion of energy storage as a critical piece of the energy system as both a demand and supply management resource. Some states have required that utilities evaluate the cost effectiveness of non-wires alternatives to large transmission and generation investments. Alternatively, states might want to require that utilities develop a distribution investment plan that identifies the locations on the distribution system where energy storage or other distributed resources would offer the greatest value.

4. Consider creating a mandatory energy storage procurement target or requirement for energy storage with a documented process for periodic review of progress towards that goal. Procurement targets can limit the amount of utility-owned storage; require that a certain amount of storage be targeted to low-income customers; and create carve-outs for storage at the transmission, distribution, and customer levels. Procurement targets can jump-start market creation, spur fast learning, and guide the development of a regulatory framework.

5. Add energy storage as an eligible technology under existing clean energy policies like renewable portfolio standards or energy efficiency programs. Massachusetts was the first state in the nation to include energy storage in its three-year energy efficiency plan in 2019.

6. Finance and incentivize energy storage for customers and utilities. Incentives can enable customers to use storage to manage their electric load and store locally produced renewable energy. Incentives in the form of rebates, grants, and tax credits can provide a bridge to scalable deployment of storage. Incentives can be designed to decline as storage values become more readily monetized and/or as the cost of storage decreases. Policymakers could allow utilities that provide incentives to customers to recover the costs of installing smart meters. This would enable dynamic and time-varying energy management from multiple distributed battery systems. This could also signal to customers the value of leveraging storage and better align customer costs with system costs. Financing energy storage installations for commercial customers could help reduce their demand charges. Policymakers might want to start first with a policy that provides grants to pilot projects. Incentive programs might also target solar system owners. Financial incentives should be designed to ensure that the state will meet other goals including emissions and peak demand reductions, and equitable access to clean energy. Maryland offers an income tax credit for residential and commercial energy storage installations, and the program is currently authorized through 2024. The income tax credit for storage could be extended and funding increased.

7. Clear data access policies that allow third parties to provide energy management services based on signals from the utility can greatly increase the value of efforts to monetize the value stream offered by energy storage. State policy should include measures to protect customer data, while also encouraging the use of this information to facilitate additional improvements to grid management and customer services. To address this, policymakers can develop legislation or rules that clarify who owns the energy data associated with customer energy usage;

protect customer privacy; outline the process for allowing direct access to data by third parties; and promote access to the highest resolution of data possible.

8. Consider taking advantage of the "direct pay" option available to state and local governments for energy storage investment tax credits (ITC) available in the IRA. The direct pay option allows states (or other qualified entities without tax obligations) to be directly refunded a 30% ITC from the federal government after the project is online. The IRA also allows for up to a 70% credit for projects that incorporate domestic components, low-moderate income projects, or projects located in energy communities.

## THE BUILT ENVIRONMENT

In the U.S., buildings consume nearly 40% of total energy used.[7] Because it reduces energy demand and emissions and creates savings for utility customers, energy efficiency[8] often plays a prominent role in state energy and climate policies. Coupled with beneficial electrification, which involves replacing direct fossil fuel use with electricity, there is even greater potential to reduce energy costs and pollution, and provide more resilient, comfortable, and healthy buildings. This is especially the case in states where increasing levels of low carbon resources are supplying the electric grid. When policies are adopted to shift energy sources for such things as space and water heating, to highly efficient electric alternatives, states can maximize achieving the dual objectives of increased energy efficiency and reduced emissions. In some cases, this can also result in lower energy costs.

Building energy codes in Maryland require every jurisdiction to use the same edition of international building code. The International Energy Conservation Code (IECC) must be adopted by local jurisdictions though it can be modified to be more stringent but cannot be loosened. In 2019, Maryland adopted the 2018 IECC, giving local jurisdictions until March 2020 to adopt the updated code.

Maryland first established its Energy Efficiency Resource Standard (EERS) through the EmPOWER Maryland Energy Efficiency Act of 2008, which set a statewide goal of reducing demand by 15% by 2015. The law also stated that 10% of the 15% must come from customer energy efficiency services. The goals were met statewide in 2015. In 2017 a PSC order was codified by Senate Bill 184, establishing post-2015 targets. For the most recent cycle, 2021-2023, electric utilities are required to increase energy savings by 0.2% annually until reaching a total of 2%. In 2022, House Bill 108 set a 1% annual energy savings for low-income households by 2026. The new target will be implemented by the Department of Housing and Community Development, which had previously not had an energy savings target. Also in 2022, House Bill 772 updated the state's appliance efficiency standards for 11 appliances including air purifiers, commercial dishwashers, and residential ventilation fans.

In 2007, Maryland began using Energy Saving Performance Contracting (ESPC) to reduce energy consumption in state buildings. The Department of General Services manages the operation of ESPCs. As of July 2023, 41 energy performance contracting projects had been completed, leading to over $19 million in energy savings. Enacted by Senate Bill 528, the Climate Solutions Now Act of 2022 requires the development of building energy performance standards that achieve a 20% reduction in GHG emissions by 2030 compared to 2025 levels. The Act also aims for the net zero building energy performance standards to achieve net-zero direct emissions by 2040. The building energy performance standards have been drafted and a final regulation is expected to be published for public comment in Fall 2023.

Maryland's PSC approved revenue-per-customer decoupling for three investor-owned utilities. Natural gas decoupling has been permitted for Washington Gas Light since 2005. While the PSC has the power to approve financial incentives for gas and electric companies, none have been approved.

The Maryland Commission on Climate Change's Mitigation Working Group released recommendations for the state in 2022. One recommendation focused on accelerating the use of heat pumps in buildings.

The IIJA provides $500 million for grants to fund energy efficiency and renewable energy upgrades in public schools, $3.5 billion for the Weatherization Assistance Program, and increases funding for the Energy Efficiency and

[7] For additional information, see ACEEE Building Policies and Codes.

[8] Energy efficiency includes a multitude of measures to reduce energy consumption. These measures range from behavioral changes to installing energy efficient appliances to full building renovations, including updating a building's envelope.

Conservation Block Grant program by $550 million and the State Energy Program by $500 million. The IRA appropriates $4.3 billion to DOE for an energy efficiency rebate program that will be administered through state energy offices. Another $4.3 billion appropriation will fund electrification rebates for single- and multi-family homes. The bill also extends the tax credits for residential energy efficiency improvements and new efficient home construction and increases the maximum deduction for energy efficient commercial buildings. A $837.5 million appropriation will be used by the Department of Housing and Urban Development (HUD) for resiliency, energy efficiency, renewable energy, and grid integration projects at public housing units.

Policymakers in Maryland can consider a variety of policies to encourage energy efficiency and beneficial electrification:

**Energy Efficiency Policies**

1. **Building Codes –** The DOE projects that, over time, improvements in building codes can have the greatest single impact on energy efficiency within the built environment. On average, commercial buildings waste 30% of energy used.[9] Because buildings will be around for generations, energy efficiency within the built environment is a matter of statewide and long-term importance. States can set requirements for energy systems, require statements of energy use, and set performance standards for energy use or emissions. Building codes can be required by state legislation or implemented through 'home rule', where local governments set their own standards or adopt more strict building codes than those mandated by the state. Maryland sets the general energy code standard as discussed above and allows local governments to implement stricter standards.

   The IIJA includes a $225 million appropriation for a competitive grant program to support the "sustained cost-effective implementation of updated building energy codes." The grant program will run for five years, through fiscal years 2022 – 2026. In December 2022, DOE issued the Resilient and Efficient Codes Implementation Funding Opportunity Announcement to support the adoption of updated building energy codes. Approximately $45 million is available for this competitive grant program. The program requires the participation of a "relevant state agency" and projects must be tied to "an updated building energy code."

2. **Appliance Efficiency Standards –** Appliance efficiency standards set minimum requirements for efficiency in everything from washing machines to water heaters. Efficiency standards save consumers money on utility bills and reduce energy demand on the grid, most importantly reducing peak energy demand. Some states have elected to adopt the federal appliance standards that were in effect on January 1, 2017.[10] These include, among other things, standards on metal halide lamp fixtures, residential furnaces and boilers, and external AC to DC power supplies. While Maryland has implemented some efficiency standards as mentioned above, policymakers could consider implementing additional efficiency standards for other types of appliances.

3. **Energy Saving Performance Contracts (ESPCs) –** ESPCs are a financing mechanism for energy efficiency upgrades. ESPCs are often used within large institutions, such as college or government campuses, allowing them to meet their energy and environmental goals. An energy service company will pay the upfront cost of efficiency upgrades and execute the project, often guaranteeing the projected energy savings. The large institution will then pay back the service company with savings from their utility bills. This allows institutions to pay for their upgrades from their operating budget, instead of finding new financing, such as loans or bonds, for capital upgrades. Essentially, they pay their upgrade costs with their energy savings. As noted above, Maryland has authorized ESPCs.

4. **Low-Income Energy Efficiency Programs –** While equity should be incorporated into all policy development, it is often necessary to ensure that specific programs are targeted towards historically underserved populations. Recent research suggests that weatherization improvements can reduce energy use by 25-35%, allowing households to reduce their financial energy burden. The federal WAP program provides energy efficiency upgrades for income qualified homeowners. However, there might be difficulty in reaching individuals who are eligible. Policymakers might require outreach and education programs targeted at eligible groups.

[9] For more information, see the Office of Energy Efficiency & Renewable Energy's Commercial Buildings Integration (CBI) Program.

[10] Based upon research conducted by the Center for the New Energy Economy.

Maryland's Energy Assistance Program, which includes LIHEAP, offers assistance with energy bill payment and prevention of loss and restoration of home energy services.

5. **Energy Efficiency Resource Standards (EERS)** – EERSs require utilities to demonstrate a reduction in energy demand from programs offered to their consumers. Because this means selling less energy and reducing revenues, there is not always an incentive for the utility to make their consumers more productive or efficient users of energy. If legislatures want to ensure a more productive and efficient energy distribution system that takes advantage of the latest technological innovations, they may want to require that a utility demonstrate a percent reduction in demand through efficiency or "demand side" programs. Legislators can also instruct their utility commissions to consider energy efficiency when approving rate cases by allowing cost-recovery of energy efficiency improvements through utility bills. Maryland's EERS is discussed above.

6. **Revenue Decoupling and Performance-Based Incentives –** Utilities earn revenue by selling energy. As a result, there is little to no incentive for them to promote energy efficiency because it leads to a reduction in sales, and therefore a reduction in revenue. Revenue decoupling disconnects revenue from the amount of energy sold. This provides utilities a set amount of revenue regardless of the amount of energy sold. While this does not directly incentivize energy efficiency, it does remove the inherent disincentive to promote energy efficiency. Maryland allows decoupling for specific utilities as outlined above.

   Incentive policies can be layered on top of a decoupling policy. For example, if a utility meets set energy reduction targets, then performance-based incentives can provide monetary rewards for meeting those targets. While Maryland allows decoupling, as noted above, as the energy mix changes, it is important to incorporate a regular review of decoupling and other incentive policies to ensure they are still meeting their intended purpose.

**Electrification Policies**

1. **Strategically Target Beneficial Electrification –** Target areas of beneficial electrification in buildings include space and water heating systems and other systems and appliances that typically use natural gas or another fossil fuel as an energy source. According to the Environment and Energy Study Institute, new electric heat pump technology can heat space and water at efficiencies of 200 to 300 percent, compared to 67 percent efficiency in typical Energy Star gas water heaters.[11] This not only allows savings on energy bills, but it also results in reduced GHG emissions and improved indoor air quality.

   The Maryland Commission on Climate Change released the Building Energy Transition Plan, which was approved by the Mitigation Work Group in 2021. The plan sets out a roadmap for policymakers on how to support building decarbonization through four core recommendations, one of which suggests establishing a clean heat retrofit program.

2. **Adopt Tools for Advancing Electrification –** Building codes and financial incentive programs can be used to advance beneficial electrification. While in some states, local governments are primarily responsible for adopting and implementing building energy codes, in other states, a state legislature, or a code commission tasked by the legislature, adopts and implements statewide standards. Incentive programs established and implemented by states, local governments, or utilities can target replacing systems and appliances that traditionally rely on fossil fuel resources with high efficiency electric systems and appliances including water heaters, furnaces, ovens, and ranges. As an example, heat pump water heaters and space heating systems can serve as high efficiency replacements for traditionally fossil-based equipment. In conjunction with utility regulatory policy, these technologies can also serve as demand response tools.

   The Building Energy Transition Plan also includes a core recommendation that Maryland establish an all-electric construction code and a building emissions standard. The plan also notes these recommendations could be coupled with financial incentive programs.

   As a note, cities across the country are implementing new building codes promoting beneficial electrification by limiting or banning the installation of natural gas in new construction. State legislatures can pass enabling legislation, allowing municipalities to make independent decisions on beneficial electrification. On the other

[11] For more information, see EESI's Beneficial Electrification.

hand, some states have adopted pre-emptive legislation, banning local governments from adopting policies that limit utility service.[12]

Programmatically, there will always be greatest benefit by combining measures – incentives that bundle improvements will generate greater gains than individual measures. For example, a high efficiency heat pump will be much more effective and efficient when coupled with improved building insulation. Rather than only realizing the gains of the new mechanical component, this combination of measures will increase the efficiency of the entire system.

## ELECTRIFICATION OF THE TRANSPORTATION SECTOR

Bloomberg New Energy Finance estimates that nearly 80% of new car sales in the U.S. will be electric by 2040. Therefore, a key part of building a modernized grid involves designing infrastructure that will facilitate easy connection of electric vehicles (EVs) to the grid. One of the most important barriers to increased adoption of EVs is the consumer's awareness of the availability of EV charging stations. Ultimately, drivers want to be sure that their car will get them where they need to go. The good news is that both supportive policies for developing charging infrastructure and technological advancements have eased this "range anxiety."

The American Council for an Energy Efficient Economy (ACEEE) published a State Transportation Electrification Scorecard in 2021 that evaluates states' progress in electrifying transportation in six key policy areas and offers nationally applicable policy recommendations. Maryland ranked 4th in the 2021 report.

Maryland joined the Mid-Atlantic Region Electric Vehicle Support Partnership which is a regional EV system between Virginia, D.C., Maryland, and West Virginia. The partners will work to connect major cities through EV charging pathways while educating communities near the hubs. The partnership began in 2020 and is set to run through 2023.

Maryland offers many EV and EV charging infrastructure incentives. In June 2023, through House Bill 123, Maryland reinstated a program allowing EVs to operate in the HOV lane regardless of the number of passengers, so long as they display an HOV permit sticker. The previous rule expired in September 2022. The state also works to encourage the expansion of EV and alternative fuel fleets. In March 2023, Governor Moore announced Maryland's adoption of California's Advanced Clean Car II Rule, which sets a goal for manufacturers to ramp up EV production until they hit 100% EV sales of passenger cars and light trucks in 2035.

In 2019, House Bill 1255 established the Zero Emissions School Bus Transition Grant Program, which funds infrastructure and EV bus purchasing. In 2021, the Maryland Department of Transportation Maryland Transit Administration launched a plan to transition to a zero-emissions bus fleet. The plan requires all new buses procured by the state to be zero-emission beginning in 2023, and the state must build charging infrastructure to support the transition to ZEV buses. The first seven zero-emissions buses will be piloted in 2023. Montgomery County boasts the largest electric school bus fleet in the nation. Montgomery County also completed the nation's largest solar bus charging station in 2022. The charging station is the nation's third solar microgrid to be used for charging public buses. Highland Electric Fleets is partnering with CPower to use the EV school buses to provide grid demand response solutions by increasing reliability, lowering costs, and stabilizing demand. In April 2023, Baltimore City Schools partnered with Highland Electric Fleets to engage 25 electric school buses. The Clean Fuels Incentive Program provides grants to instate fleet owners that transition their fleets to alternative fuel vehicles.

In 2021, the Electric Vehicle Recharging Equipment for Multifamily Units Act went into effect, stating that condominiums and homeowners' associations (HOAs) cannot prevent or unreasonably restrict the installation and use of EV charging infrastructure.

The Electric Vehicle Infrastructure Council (EVIC) was first established in 2011; it has since been expanded and its termination extended to 2026. The Council tracks ZEV ownership, investment, and policies necessary for facilitating

[12] See: See: "States That Outlaw Gas Bans Account for 31% of U.S. Residential/Commercial Gas Use." S&P Global, 9 June 2022. Available: https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/states-that-outlaw-gas-bans-account-for-31-of-us-residential-commercial-gas-use-70749584.

ZEVs into the state's transportation sector. The EVIC has an electric vehicle charging siting tool which was developed to decide best placement of new charging infrastructure.

The Maryland Commission on Climate Change's Mitigation Working Group released recommendations for the state in 2022. One of the six priorities in the recommendations was that the state should rapidly accelerate the adoption of ZEVs.

The IIJA provides nearly $5 billion over the next five years to support the electrification of the transportation sector. In 2022, $615 million was made available for the installation of charging stations along designated alternative fuel corridors, through a new National Electric Vehicle Infrastructure (NEVI) formula grant program. To be eligible to receive this funding, states must have submitted a NEVI plan to the Federal Highway Administration (FHWA) by August 2022. All 50 states plus D.C. and Puerto Rico submitted a NEVI plan. Maryland will receive an estimated $13,380,042 in Fiscal Year 2023.

The Act also provides approximately $1.1 billion for grants to state and local governments to assist with the purchase or lease of low- or no-emission vehicles for transportation fleets. To be eligible, a state must have a Zero-Emission Fleet Transition Plan in place.

The IRA extended the $7,500 EV tax credit for purchases of new plug-in EVs through 2032 and removed the eligibility cap based on number of vehicles sold by manufacturers. The Act includes requirements for material sourcing that must be met by manufacturers starting in 2027. The IRA also created a new $4,000 refundable tax credit for the purchase of used EVs and a new credit for commercial EVs. Appropriations in the Act include $1 billion for replacing medium- and heavy-duty vehicles with EVs, $3 billion to fund projects to reduce transportation sector emissions, and $3 billion to procure alternatively fueled vehicles for the federal fleet.

There are several policy opportunities to further encourage and prepare for increased market penetration of EVs in the state, including:

1. **Utility Investment in "Make-Ready" Infrastructure and Utility-Run Programs –** "Make-ready" means building and upgrading the infrastructure necessary for the installation of a charging station. RMI recommends that policies providing incentives for utilities to invest in make-ready infrastructure or charging infrastructure itself should be performance-based and encourage investments in locations that are unlikely to be targeted by the private sector, such as low-income and multi-unit dwellings. Additionally, utilities can incentivize EVs by incorporating charging rate incentives and time of use rates to reduce the cost of electricity used for charging. Eligibility for a charging rate incentive may be limited to users with separate or advanced metering systems. Some utilities also offer financial incentives for the purchase of EVs or EV charging equipment. In some states, enabling legislation might be required to direct or authorize a public utilities commission to allow regulated utilities to recover the costs of providing these incentives. House Bill 830 requires that beginning in October 2023, all new residential buildings with a garage or driveway must have a Level 2 EV charger or wiring to facilitate use of a Level 2 charger. Buyers must be informed of the make-ready options and provided with information regarding purchase and installation of EV chargers.

2. **Parking Infrastructure Requirements –** In tandem with the implementation of Maryland's NEVI plan, legislation could set requirements for parking lots and other infrastructure. Some states have adopted permitting standards for parking lots, requiring, for instance, that for every 100 parking spaces, there must be at least one EV charging space. Legislation could also incentivize utilities to develop make-ready locations. Maryland's Statewide Building Energy Codes could also be updated to include requirements for EV charging infrastructure.

3. **EV and Charging Equipment Financing and Financial Incentives –** Providing financial incentives and innovative financing options can help spur greater market penetration of EVs. Sales, property, and income tax credits are some of the simplest methods for addressing the high up-front costs of EVs and EV charging equipment. While sales tax credits are typically applied at the time of purchase, property and income tax credits may do less to address upfront cost barriers, as the credit is not applied at the time of purchase.[13] States have adopted other financial incentives including low-interest loans, grants, vouchers, and rebates. A handful of states

[13] A study by the Congressional Research Service suggests that tax credits are important tools for ensuring increased adoption of alternative-fueled vehicles.

qualify EV charging equipment under their property assessed clean energy (PACE) programs. A simple solution is to increase and expand existing tax credits to incentivize commercial, publicly available charging stations.

States might consider adopting programs to incentivize the purchase of used EVs. With increasing battery capacities and falling prices, there are an increasing number of EVs with relatively low mileage that are being traded in. States might also consider programs that target low- and moderate-income (LMI) customers that may not qualify for a loan directly. Such a program could facilitate sales through such things as loan loss reserve and interest buy down programs.

4. **Fleet Mandates** – Some states require state agencies to acquire a fixed or growing percentage of electric, hybrid, and/or alternative fuel vehicles. For instance, Massachusetts required that its state fleet be no less than 50% hybrid or alternative fuel vehicles by 2018 and set the following state fleet targets for zero emission vehicles (ZEVs): 5% by 2025; 20% by 2030; 75% by 2040; and 100% by 2050. A City of Seattle study found that the city could save millions by switching to EVs. Maryland could build on its ZEV fleet goals by setting fixed or growing percentages for ZEV fleet adoption.

5. **Federal Congestion Mitigation and Air Quality (CMAQ) Funds** – CMAQ funds (almost $2.6 billion in fiscal year 2023) are available to states to assist them in meeting Clean Air Act requirements. State funds can be used to deploy EV charging infrastructure. There may be a unique opportunity to pair a request for CMAQ funds with a commitment from utilities to invest in charging infrastructure as a public/private partnership that would leverage the federal investment.

## NEWS

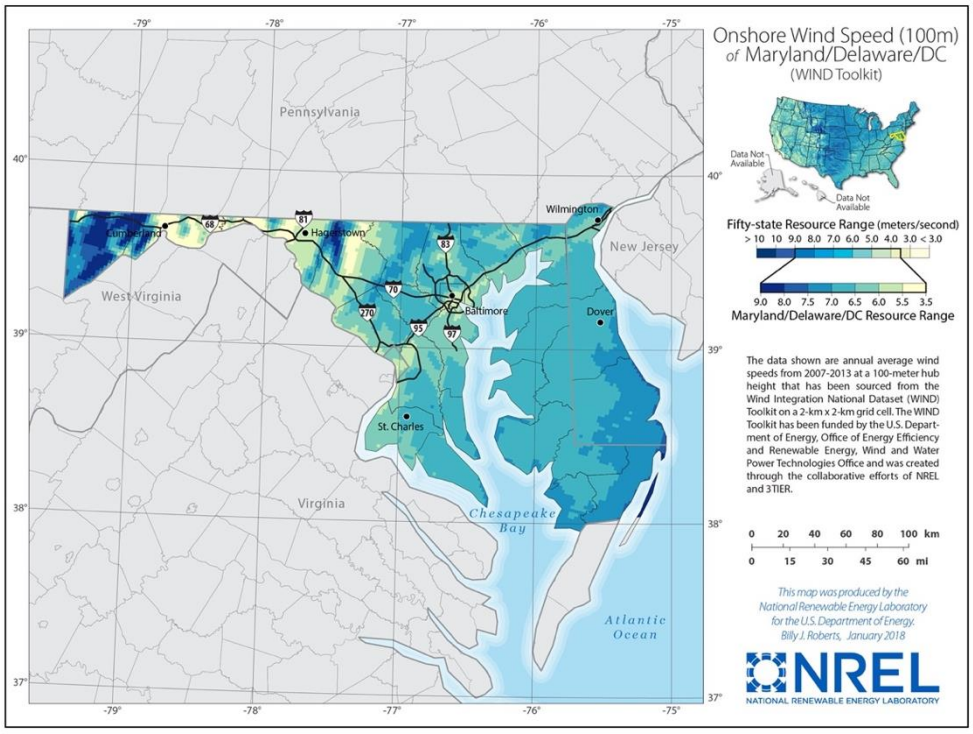
- June 27, 2023: ClearGen Funds Microgrid Project at Montgomery County Animal Services & Adoption Center in Derwood, Maryland
- June 20, 2023: Rockville Company Secures Lehigh University Solar Energy Project
- June 9, 2023: Constellation Repowers Maryland Wind Farm
- May 18, 2023: Maryland Plans Largest US Green Hydrogen Powered Bus Depot
- May 17, 2023: Maryland becomes the 23rd Community Solar State
- May 12, 2023: VA Tech Joins Coalition to Create Mid-Atlantic Clean Hydrogen Hub
- April 21, 2023: Gov. Moore Announces Maryland's Commitment 100% Clean Energy by 2035
- March 29, 2023: Governor Moore Announces Major Offshore Wind Energy Initiatives During International Forum in Baltimore
- March 13, 2023: Maryland Adopts Plan to Make All Cars Electric by 2035

## OTHER RESOURCES

- Maryland Energy Administration: https://energy.maryland.gov/Pages/default.aspx
- The American Council for an Energy-Efficient Economy State and Local Policy Database, Maryland: https://database.aceee.org/state/maryland
- The Database of State Incentives for Renewables and Efficiency, Maryland: https://programs.dsireusa.org/system/program?fromSir=0&state=md
- U.S. Department of Energy's Alternative Fuels Data Center, Maryland: https://afdc.energy.gov/states/md
- U.S. Energy Information Administration, Maryland: https://www.eia.gov/state/?sid=MD
- American Clean Power Association, State Fact Sheets: https://cleanpower.org/facts/state-fact-sheets/
- SPOT for Clean Energy, Maryland: https://spotforcleanenergy.org/state/maryland/

## MARYLAND'S WIND RESOURCES

WIND https://windexchange.energy.gov/states/md




**Our Resources**

CNEE Homepage: http://cnee.colostate.edu/

The SPOT for Clean Energy: https://spotforcleanenergy.org/

The Advanced Energy Legislation (AEL) Tracker: https://www.aeltracker.org/

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