



Renewable Energy

Increase the generation, use and access to affordable, reliable and clean energy systems. Low-carbon energy sources such as wind, solar, and geothermal are key to a climate-friendly future.

 Advocate to increase Maryland Renewable Portfolio Standard by 2030					
Action C-07					
Objective	Advocate the Maryland Legislature to increase the Renewable Portfolio Standard (RPS) by 2030				
Metrics	% renewable energy				
Target	Community emissions, residential and commercial	Development Stage	Monitor legislation for proposed bills		
Lead	Public Works (Environment)	City Upfront Cost	-		
Partners	Environment Commission	City Operating Cost	-		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+++	N	+	+	To Be Determined	Environment

The electricity consumed in Rockville is primarily generated by a mix of fossil fuel (coal and natural gas) and nuclear resources. A renewable portfolio standard (RPS) is a regulatory mandate to increase production of electricity from renewable sources such as wind, solar, biomass and other alternatives to fossil and nuclear electric generation. The most straightforward approach to cleaning the electric grid is to require utilities providing electricity in the Maryland to generate electricity from renewable sources.

The current Maryland RPS requirement sets to increase the percentage of renewable energy to 50 percent by 2030. Fuel sources approved by Maryland’s RPS are divided into two categories, Tier 1 and Tier 2. Tier 1 includes solar, wind, qualifying biomass, methane from a landfill or wastewater treatment plant, geothermal, ocean, fuel cell that produces electricity from a Tier 1 source, hydroelectric power plants of less than 30 MW capacity, poultry litter-to-energy, waste-to-energy, and refuse-derived fuel. Tier 2 includes hydroelectric power other than pump storage generation.

Supporting an increase in a cleaner electric grid is a crucial step in meeting the emissions reduction goals of the State, County and City. Rockville has a historically advocated for changes in Maryland’s RPS and has recommended Legislative Action Requests (LARs) for the Maryland Municipal League (MML) to prioritize engagement in climate policy initiatives, such as renewable energy. The city can continue to monitor legislation and lobby for bills that increase the RPS from Tier 1 resources that are carbon-free, such as solar and wind.

Equity Considerations

The State will need to balance the costs and percent of renewables in the electricity mix. If there is a premium associated with offering a higher level of renewable electricity, the State will need to consider ways to offset the premium for low-income residents.



**Action
C-08**

Coordinate with Montgomery County on development of the Community Choice Energy Program to aggregate green power purchasing

Objective	Increase the percent of renewable energy in the energy supply serving Rockville residents and businesses.				
Metrics	Aggregate green power purchased (% green power, kWh)				
Target	Community emissions, residential and commercial	Development Stage	House Bill 768 adopted in 2021; monitor program development in 2023.		
Lead	Maryland Public Service Commission, Montgomery County	City Upfront Cost	-		
Partners	Public Works (Environment)	City Operating Cost	-		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+++	N	++	N	To Be Determined	Environment

The electricity consumed in Rockville is primarily generated by a mix of fossil fuel (coal and natural gas) and nuclear resources. As Maryland’s Renewable Portfolio Standard (RPS) only requires 50% renewable energy by 2030, the City will need to look at other options to reduce its electricity-related greenhouse gas (GHG) emissions. An “opt-out” Community Choice Energy (CCE) program would allow Montgomery County to purchase renewable energy on behalf of electricity customers in the County (including Rockville).

The CCE program would allow the County to aggregate the electric loads of residents and small businesses to negotiate more favorable terms with an electricity supplier or enable the direct purchase of power from a renewable generation source. In a CCE program, the electricity of participants would continue to be distributed by Pepco, which serves Rockville. However, the CCE program would enable the County to choose an electricity supply that is greener than the default service. An opt-out CCE program would replace the basic service offered by Pepco, and residents and businesses would need to opt out if they did not want to participate. Through a CCE program, important energy decisions can be made at the local level rather than by an investor-owned utility or a for-profit competitive electricity supplier. In addition, a CCE program could potentially deliver price stability and cost savings to residents and small businesses.

The Maryland General Assembly adopted House Bill (HB) 768 during the 2021 session, which gives Montgomery County the right to create a CCE program. Regulations governing the implementation of the program will be developed by the Public Service Commission (PSC), and a County CCE program could begin no earlier than December 31, 2023. The City will need to monitor program development during this time.

Equity Considerations

The County will need to balance the costs and percent of renewables in the electricity mix. If there is a premium associated with offering a higher level of renewable electricity, the County will need to consider ways to offset the premium for low-income residents.

 Promote private solar and geothermal installations through the solar co-op program, streamlined permitting, and expanding access to low-to-moderate income residents					
Action C-09					
Objective	Increase local renewable energy installations				
Metrics	Number of installations				
Target	Community emissions, residential and commercial	Development Stage		Proposed expansion	
Lead	Public Works, Planning and Development Services, Housing and Community Development	City Upfront Cost		-	
Partners	Montgomery County, Non-profits, Montgomery County Green Bank	City Operating Cost		To Be Determined Cost-share with C-02, C-03	
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
++	+	++	N	+	Economic, Environment

One way to reduce reliance on fossil-fuel based electricity is to increase the number of on-site solar photovoltaic (PV) and geothermal systems on private property. Especially with the increase in electricity demand from vehicle and building electrification, on-site renewable energy is needed to augment grid-based renewable generation to meet demand. To do this, a combination of voluntary measures and code requirements is needed. The City has issued approximately 750 electric permits for solar systems. Recognizing that not all homes and businesses are prime candidates for solar due to orientation, shading, trees, and structural concerns, the greenhouse gas reduction pathway has a conservative goal of 1,800 solar installations.

- Voluntary program outreach.** The City should continue to support regional solar co-op programs that promote education, existing incentives, tax credits and financing resources. Since 2015, Rockville has participated in six solar co-ops to help residents install solar on their homes. In 2020, the co-op model expanded to help residents install solar and Level 2 electric vehicle charging stations. The solar co-op model helps residents better understand the process of going solar and leverages group buying power to get discounted prices. While each participant signs an independent contract with the installer for their own system, pooling together to purchase larger quantities reduces the total cost of installation for both the group and individuals.
- Building code and permits.** Permitting processes and fee structures should ensure equity to encourage solar. The City’s building code could require all new developments to install solar or meet solar-ready requirements, subject to appropriate and well-defined exemptions (ex. trees and shading from nearby buildings, rooftop space availability). A net-zero energy code (C-03) would further support energy efficiency and renewable energy installations. Site

Equity Considerations

Renters, multi-family, and income restricted property owners typically do not have easy access to on-site renewable energy. Programs should be designed to help those with less means to be better positioned to work through the process of procuring renewable energy systems and accessing financial incentives.

plan and permitting for solar canopies over parking lots could be streamlined to facilitate new installations.

- **Incentives and Financing:** The City can work with community partners to identify financing opportunities. For example, Montgomery County Green Bank offers additional financing assistance for residential and commercial property owners to install renewable energy systems (solar photovoltaic, geothermal, and energy storage). Montgomery County's Climate Action Plan also identifies the needs for solar incentives, such as tax credits and grants, to reduce the upfront financial barriers to solar installations.
- **Low and moderate income and small business opportunities:** Some property owners, residential and commercial, need more information and assistance to install solar. Strategies to connect residents, landlords, and commercial property owners with low-income programs as part of Action C-02. The program could be designed to work with the County and local communities to help guide stakeholders towards the appropriate financing strategies and connect them with others who have installed solar or geothermal to help mentor them through the process.



 Identify and install feasible solar photovoltaic systems on city property					
Action M-04					
Objective	Increase local renewable energy generation, reduce reliance on the electric grid, and reduce electricity costs.				
Metrics	Number of installations; installed renewable energy capacity				
Target	Municipal emissions	Development Stage		Proposed	
Lead	Recreation and Parks	City Upfront Cost		Pending MEA study. A solar power purchase agreement (SPPA) provides access to solar with no to low upfront costs	
Partners	Public Works (Environment), solar contractor/developer, Maryland Energy Administration	City Operating Cost		Contract management support. The SPPA requires the purchase of electricity for the term of the contract	
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+	+	+	N	N	Environment, Economic

The City's annual electricity bills cost more than \$2 million annually. Installing solar photovoltaic (PV) panels on City property only generate clean renewable energy, reduce reliance on the electric grid, and reduce energy costs.

In 2012, the City coordinated with the U.S. Environmental Protection Agency (EPA) and a solar consultant to screen 18 City facilities and assess the technical, operational, and economic feasibility of solar. The study identified barriers at 14 facilities, including roof age, size, orientation, and structural conditions. The study identified four sites as potential candidates for solar installations under a solar power purchase agreement (SPPA) that could generate long term savings on electricity bills: Gude Maintenance Facility, Swim and Fitness Center, Thomas Farm Community Center, and Mattie Stepanek Park and recommended installing solar canopies over existing parking spaces to generate electricity without sacrificing valuable real estate, parking, and open space. While the 2012 study identified potential feasible locations for solar and provided general system estimates, the study did not include actual system designs, detailed specifications, or system cost estimates. Upon further site evaluation and public outreach, constraints were identified at Thomas Farm Community Center (natural gas easement), Mattie Stepanek Park (potential future school), and the Swim and Fitness Center (tree canopy and roof structure).

In 2015, solar planning efforts for the Gude Maintenance Facility encountered a barrier with adjustments to parking lot greenspace and landscaping zoning requirement that prevented the project from moving forward. Since that time, new technologies and codes have evolved to reduce barriers to implementation. While other commercial properties in the region have received site plan and permits for solar canopy installations, Rockville may need additional changes to the Zoning ordinance and landscape requirements to provide flexibility for solar canopy installations. These changes may allow the City to revisit the solar canopy proposal. Additionally, the City received a grant for solar technical assistance from the Maryland Energy Administration in 2021 to evaluate solar and resiliency options for 6 Taft Court and adjacent properties. The study is underway and will determine the feasibility of installing solar to serve this new

facility. The City should consider renewable energy options in other future projects and renovations, including roof, solar canopies, and ground mount installations.

Several jurisdictions, such as Montgomery County, M-NCCPPC, and Montgomery County Public Schools have utilized a solar power purchase agreement (SPPA) to install solar on government facilities with low or no upfront installation costs. A SPPA is an arrangement in which a third-party developer installs, owns, and operates a renewable energy system, and a host customer (the City) agrees to site the system on its property and purchases the system's electric output from the owner for a predetermined period. This arrangement would allow the City to install solar with no or low upfront cost and to receive stable and lower-cost electricity, while the developer receives income from the sale of electricity as well as the tax credits and renewable energy credits from the projects. Some government SPPA contracts include a cooperative rider clause, which may provide favorable pricing opportunities.



 Action M-05 Purchase renewable energy certificates (RECs) for municipal electricity						
Objective	Support demand for renewable energy systems and offset 100% of municipal emissions from clean, renewable energy sources					
Metrics	Percent of green power purchase for municipal electricity					
Target	Municipal emissions	Development Stage		Ongoing		
Lead	Montgomery County	City Upfront Cost		-		
Partners	Public Works, Recreation and Parks	City Operating Cost		Approximately \$20,000 to \$85,000/year (fluctuates with market conditions)		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits	
+	N	++	N	N	Environment	

Renewable energy certificates (RECs) monetize the environmental benefits of clean energy that a generator produces from a clean, renewable source (such as wind or solar) and transmits to the power grid. Purchasing RECs creates the demand for more renewable energy, adding clean power to the electricity grid and decreasing the amount of electricity and emissions generated from fossil fuels.

Since 2004, Montgomery County has led a coalition of Montgomery County agencies, to purchase electricity supply generated from clean national wind energy. Current participants include Montgomery County Government, Montgomery County Public Schools, Montgomery College, the Maryland National Capital Park and Planning Commission, Chevy Chase Village Section 5, City of Takoma Park, Town of Kensington, the Town of Somerset, the City of Rockville, the City of Gaithersburg, and the Washington Suburban Sanitary Commission. The County, and most of its purchasing partners, have consistently increased their purchases of clean energy. All agencies are purchasing greater than 20% of electricity consumption with the majority graduating to a 100% commitment.

In FY2021, the City purchased wind RECs to offset the GHG emissions from 100% of the electricity used by its municipal facilities, utilities, and operations. The City’s annual electricity bills cost more than \$2 million annually. Traditionally the cost to purchase RECs to offset 100% of municipal electricity was less than \$20,000 and was offset through competitive electricity supply contracts that provided savings over the standard-offer service rates from the local utility. However, recent market volatility has increased this price to \$85,000. Given the unexpected high price of wind RECs, the County is leading a cooperative purchasing effort to explore pricing for alternative products that meet Tier 1 Renewable Energy Credits and will be providing updated cost estimates for member jurisdictions.

