MARYLAND Compatible Energy Siting

What is the Maryland Statewide Compatibility Energy Siting Project?

The Maryland Department of Commerce, Office of Military and Federal Affairs, led the Maryland Statewide Compatible Energy Siting project to coordinate and balance two significant assets and priorities in the state — renewable energy development and the sustainability of military missions. The siting project provides the state with strategic tools and recommendations to address compatibility through a collaborative process with various stakeholders from state departments and agencies, the renewable energy industry, county and local governments, the military, and regional military partnership organizations.

The project focused on two initiatives – publishing the Maryland Military Operations and Renewable Energy Considerations report; and secondly the creation and integration of military and compatibility layers within the existing state SmartDG+ renewable energy screening tool, adding geographic data for all military operational areas. A coordination tool with points of contact was added to assist developers with early coordination of renewable energy project siting.

What Does the Project Achieve?

The project promotes compatible renewable energy development with long-term military sustainability by:

1. **Identifying** the relationship between renewable energy siting and military operations.
2. **Assessing** the current renewable energy siting process in the State of Maryland.
3. **Creating** a web-based energy siting mapping tool for developers, the military, state and local agencies, and other stakeholders.
4. **Providing** recommendations to streamline the siting process through proactive identification of potential impacts on military operations while facilitating early coordination with the military.

Why is Compatible Energy Siting Important?

The DoD recognizes the need to incorporate climate considerations into future planning to manage risks associated with the changing climate. Renewable energy development directly aids in achieving this goal by reducing overall carbon emissions. As renewable energy development opportunities increase, compatibility with military research, testing, training, and operations require greater levels of coordination. Early coordination of renewable energy siting in Maryland is necessary to ensure military missions and renewable energy development continue to thrive. Compatible energy siting with military operations is essential to:

- Promote compatible growth and development
- Facilitate and streamline renewable energy development
- Protect military readiness
- Achieve State of Maryland clean energy goals
- Sustain economic prosperity
- Protect public health and safety

Why are Renewable Energy and the Military Important?

Renewable Energy is a High Priority for the State of Maryland

per the 2019 Maryland Clean Energy Jobs Act

50% of electricity from renewable sources by **2030**

100% of electricity from renewable sources by **2040**

Increase the **$10.2 billion** current state output from renewable energy and sustainable industry

Importance of the Military to Maryland's Economy

per latest Economic Impact Analysis of Maryland's Military Installations (Fiscal Year 2016)

370,000+
jobs supported throughout the state

$22.1 billion
in employee compensation

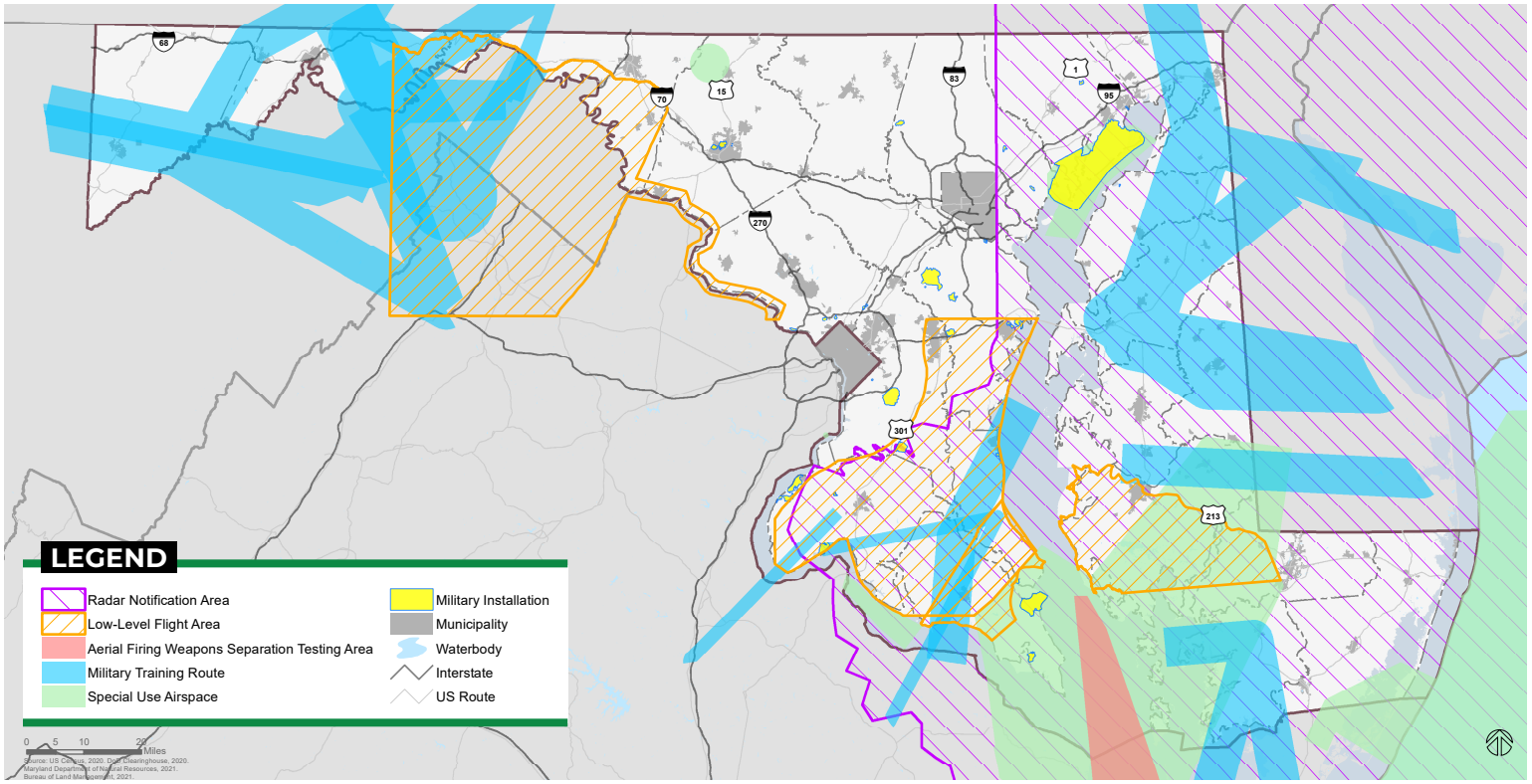
$55+ billion
economic output

15%
Maryland's Gross Domestic Product

Where are the Military Operational Areas?

Each military installation conducts training, testing, and other related mission activities within and outside installations to meet operational requirements necessary to accomplish national security objectives. These military operational areas include the airspace above and beyond the installation consisting of Military Training Routes (MTRs), Special Use Airspace (SUA), specialized testing areas, and radars requiring unobstructed viewsheds as depicted in the map below.

Military Operational Areas

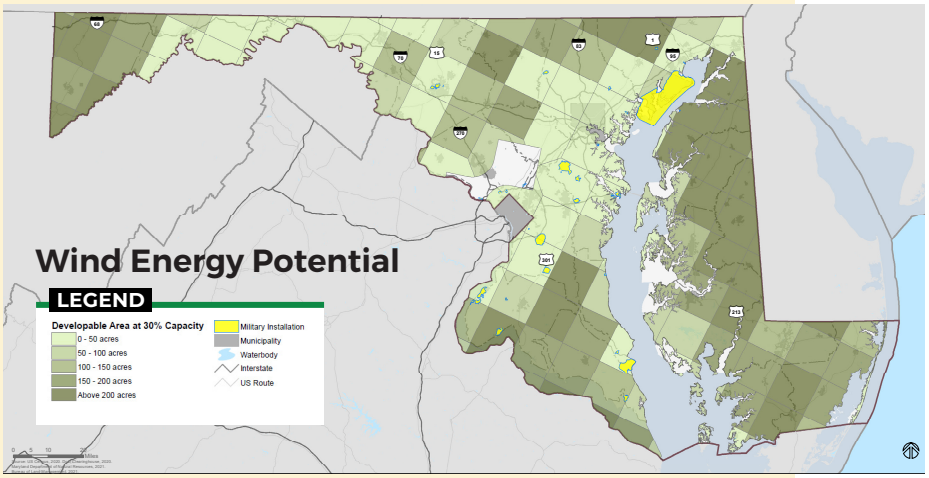


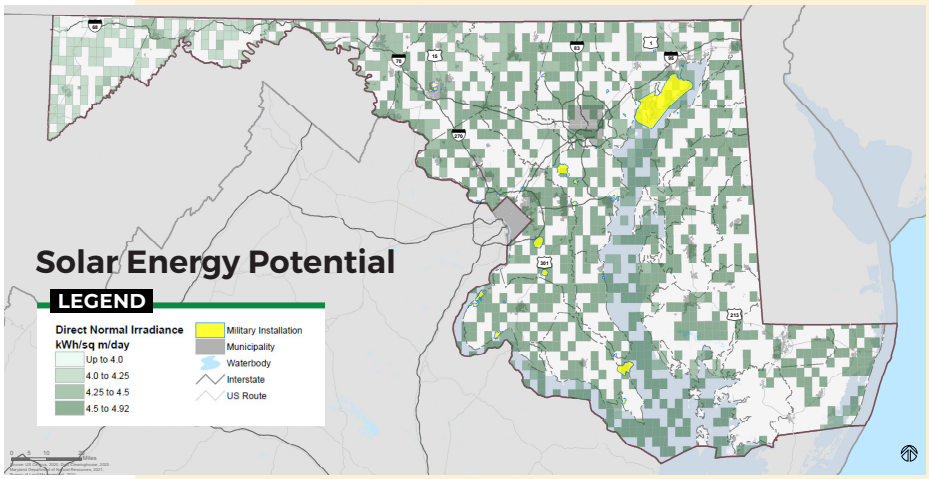
Where is Renewable Energy in Maryland?

Maryland has substantial renewable resource potential, particularly from wind and solar energy. These resources require transmission lines to transport electricity. The statewide potential for alternative energy means that many of these opportunities can occur within the expansive military operational areas.

Wind Energy

In 2021, wind energy contributed approximately 719 megawatts of installed electricity generating capacity from on-shore and off-shore turbines. Maryland anticipates an increase of 2,350 megawatts from off-shore wind energy projects by 2030. Six existing wind energy developments in western Maryland do not pose military impacts since they were sited in collaboration with the military. However, the onshore wind potential map to the right shows the extent of capacity by developable acreage at 140-meter wind turbine hub height across the state (the darker the color, the greater the potential).



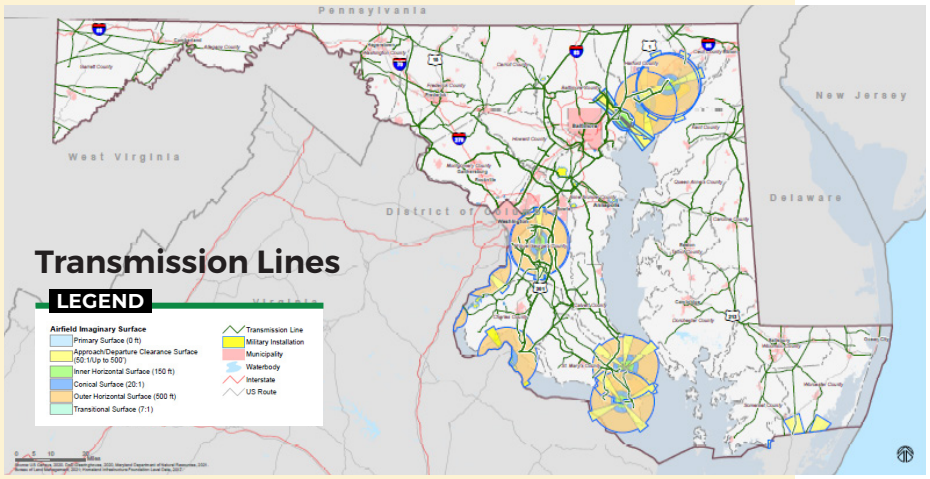


Solar Energy

Existing solar energy developments are widely dispersed across Maryland, including several facilities near military-use airports and a military communications receiver site. Since frequency and aviation impacts from solar energy projects are very localized, future siting of solar energy projects is not significantly impacted by widespread military operational areas. As shown on the solar potential map to the left, where potential is expressed as irradiance (the darker the color, the greater the potential), high solar energy potential is dispersed throughout the state in areas generally outside military operational areas where frequency and aviation impacts could occur.

Transmission Lines

As shown in the map to the right, transmission lines in Maryland traverse all corners of the state. Although they are critical infrastructure to transport electricity from all types of electric generating facilities, the siting of these lines can potentially create vertical obstructions and cause radio frequency issues for low-level flight operations. These concerns are most relevant near airports, within MTRs, and in low-level operational areas.



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What are the Project Tools?

Project Report

The Maryland Military Operations and Renewable Energy Considerations report was developed to characterize military operations across the state, explain their relationship with renewable energy, and provide recommendations to improve existing coordination processes. The report finds that early coordination between military, industry and community stakeholders is pivotal to ensuring renewable energy development is compatible with military operations, which minimizes delays in project siting and ultimately reduces the financial bottom line for energy developers.

The report provides:

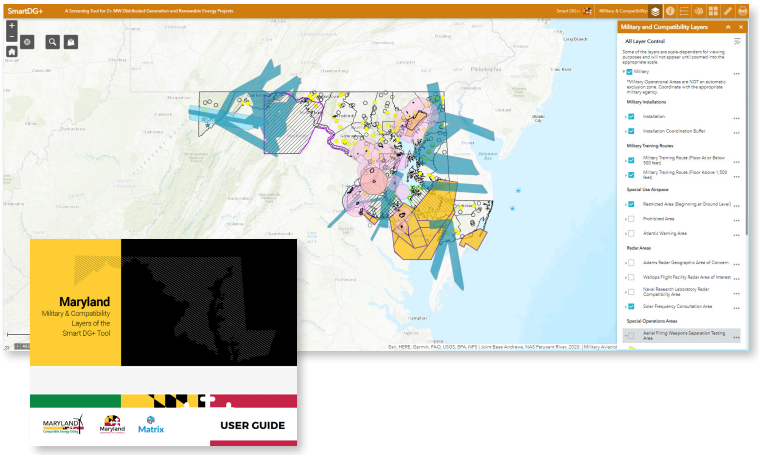
- 18 Best Practice Recommendations focused on enhancing existing coordination and review processes for early military coordination of renewable energy project siting. The recommendations focus on small-scale and utility-scale renewable energy projects and include options for administrative, regulatory, or legislative enhancements to current siting processes
- Two case studies of how Maryland counties can integrate Smart DG+ as part of the renewable energy siting and development process
- Model ordinances with suggested language for localities to consider in framing a small-scale wind energy ordinance and utility-scale and small-scale solar energy ordinance. The ordinances are intended to guide the development or enhancement of existing renewable energy regulations.

The report can be viewed at:
https://commerce.maryland.gov/compatibleuse

Smart DG+ Military and Compatibility Layers

The military and compatibility layers of Smart DG+ provide renewable energy developers, military, and other federal, state, and local stakeholders with information to facilitate compatible renewable energy project siting. The layers include military operational areas, military and non-military airspace structures, renewable energy potential, environmental and cultural resources, and land ownership. A coordination report tool allows users to create or upload custom areas of interest that outputs a set of relevant agencies to contact for every layer within the selected area. The reports can be exported as a PDF, Excel workbook, or an HTML file. A companion User Guide was also created for using the military and compatibility layers.

The military and compatibility layers in SmartDG+ are located at:
https://dnr.maryland.gov/pprp/Pages/smartdg.aspx



Questions or Comments About This Project?

For general questions or comments on military compatibility in Maryland, contact:
Maryland Department of Commerce, Office of Military and Federal Affairs ■ (410) 767-6300

For questions specifically about SmartDG+, contact:
Maryland Department of Natural Resources, Power Plant Research Program ■ (410) 260-8660

For more information about this project, visit:
https://commerce.maryland.gov/compatibleuse

This document was prepared under contract with the Maryland Department of Commerce with financial support from the Department of Defense Office of Local Defense Community Cooperation. The content reflects the views of the Maryland Department of Commerce and does not necessarily reflect the views of the Office of Local Defense Community Cooperation.