

LARGE-SCALE SOLAR WHILE PROTECTING NATURAL RESOURCES

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WHY IT MATTERS

Utility-scale solar is a key piece of Virginia's transition to a clean energy future. Utility-scale solar is the cheapest form of new generation available,¹ and its environmental impacts pale in comparison to the fossil fuels we are transitioning away from. While **distributed energy resources (DERs)** play an important role in decarbonization, demand management, and grid resiliency (see Rooftop Solar & Distributed Generation), Virginia will not be able to meet our energy needs with these sources alone.²

Utility-scale solar projects will play a critical role in Virginia. On average, in Virginia, utility-scale solar requires less than 7 acres per megawatt of electricity produced, with the average site in Virginia being 47 MW.³ Most utility-scale solar projects are being constructed in rural communities where such projects are often the most significant land use change to have occurred in such communities. These rural localities often have little experience permitting large construction projects, with some of these localities lacking an established solar ordinance. Having protections in place can help avoid impacts to Virginia's natural resources and minimize such impacts where they cannot be avoided.

CURRENT LANDSCAPE

The **Virginia Clean Economy Act (VCEA)** requires **Dominion Energy** to propose 16,100 MW of solar by the end of 2035, and **Appalachian Power** must propose 600 MW of solar by the end of 2030 (see *Charting Virginia's Clean Energy Path*, page 95).⁴ The nearest term targets are a total of 6000 MW for Dominion and 400 MW for **Appalachian Power** by December 31, 2027,⁵ requirements that both utilities appear to be poised to meet.⁶

Including solar approved prior to the passage of the VCEA, counties have already approved nearly 17,000 MWs statewide, a significant figure.⁷ However, given explosive load growth, utilities are planning for far more solar in order to meet decarbonization mandates; for example, ApCo projects an intention to acquire up to 3603 MW of solar by 2044, over 500% of the VCEA petition target.⁸

Over half of these projects have yet to commence construction and some may fail to come to fruition due to financing or interconnection issues.⁹ In some cases, misinformation has given rise to local resistance to utility-scale solar projects. Likewise, inadequate construction practices at some projects have caused negative environmental impacts. Legislation from the 2026 General Assembly seeks to address

these challenges by standardizing solar project parameters at the local level, including allowable ranges for setbacks and buffers, while preserving local authority to deny or approve individual projects.¹⁰

The **Virginia Department of Environmental Quality (DEQ)** recently finalized regulations to incentivize avoiding siting utility solar on our highest-value ecological forest cores while also providing a flexible mitigation process where such siting is unavoidable.¹¹

OPPORTUNITIES

Many localities receiving solar project applications do not have the resources necessary to appropriately review, monitor, and regulate projects. Especially as all localities are now required to consider applications for utility-scale solar projects that meet outlined criteria in light of 2026 legislation,¹² state-supported technical assistance could provide localities with the tools they need.

Agrivoltaics, or projects that combine solar and agricultural production, is an area ripe for growth. As many utility-scale projects will be sited on agricultural lands, incentivizing dual-use can connect clean energy while continuing to contribute to the local agricultural economy. The earlier mentioned DEQ regulations allow for a decrease in mitigation requirements for dual use practices and recent legislation created a definition for agrivoltaics.¹³ A subsequent workgroup will inform incentives for projects that conform to this definition.

The **Governor's Energy Plan** is due in October of their first term, and amended two years later. The Energy Plan process should involve significant community input and align with state requirements, including clean energy procurement and decarbonization of the electric grid. Policymakers, as well as individual Virginians and organizations, can engage with the Energy Plan process to ensure that it meets the needs of communities housing energy infrastructure.

Between the updated VCEA goals and the **Brownfield and Coal Mine Renewable Energy Grant Fund and Program (Brightfields Program)**, Virginia's law has structures to incentivize the development of utility-scale solar on brownfields, previous coal mines, landfills, and parking lots. Virginia could continue to incentivize projects in these locations to the maximum extent possible and fund the Brightfields program to minimize impacts to natural resources from energy buildout.

Resource modeling conducted by intervenors in Dominion's recent **Integrated Resource Planning**

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(IRP) proceeding found that the benefits of utility scale solar can be maximized through complementary investments in battery storage, thereby significantly reducing land use requirements, as compared to the portfolios that allowed less storage to be built. These findings underscore the efficiencies—in terms of land use and cost—that can be gained by adding storage to complement existing solar.¹⁴

TOP TAKEAWAYS

Utility-scale solar will be a key component of meeting Virginia's energy needs. Complementary investment in battery storage maximizes its value while minimizing impacts. To build environmentally responsible projects, developers can use best-management practices that minimize grading, tree removal, and impacts on topsoil.

Agrivoltaics can be encouraged and incentivized as an effective dual use of land that maintains agricultural production. Incentivizing projects on previously-disturbed lands and the built environment helps mitigate pressures on natural resources. Benefits to permitting and interconnection can encourage shared solar projects on these sites.

The state could provide technical assistance to localities to relieve administrative burdens.

ENDNOTES

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