

ACCELERATING LARGE-SCALE SOLAR

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WHY IT MATTERS

Utility-scale solar facilities are a necessary piece of Virginia's transition to a clean energy future. Utility-scale solar is the cheapest form of new generation available, and its environmental impacts pale in comparison to the fossil fuels we are transitioning away from.¹

While distributed energy resources (DERs) play an important role in decarbonization, demand management, and grid resiliency, we 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.⁴ These rural localities often have little experience permitting large construction projects, with some of these localities lacking an established solar ordinance.⁵ Having protections in place can help avoid impacts to Virginia's natural resources and minimize such impacts where they cannot be avoided.

CURRENT LANDSCAPE

Virginia has created an attractive environment for utility-scale solar through potential tax exemptions and revenue-sharing models for localities.⁶ The Virginia Clean Economy Act (VCEA) requires Dominion Energy to propose 16,100 MW of onshore wind and solar by the end of 2035, and Appalachian Power must propose 600 MW of onshore wind and solar by the end of 2030.⁷ Since the VCEA's passage, Dominion has petitioned for approval of roughly 4,336 MW (including both Company-owned and third-party owned power)⁸ and APCo has petitioned for approval of almost 155 MW of Company-owned and 471 MW of third-party owned solar.⁹ Counties have already approved a significant amount of solar, roughly 15,100 MW.¹⁰ However, over two-thirds of these projects have yet to commence construction. There is no guarantee that they will be used for our utilities' compliance with the VCEA and some may fail to come to fruition due to financing or interconnection issues.

Misinformation has fueled local resistance to approving solar facility siting.¹¹ Likewise, ongoing inadequate construction practices at some projects have raised local concerns. An increasing number of Vir-

ginia localities have enacted restrictive ordinances that limit or ban the development of utility-scale solar.¹² Fortunately, cost-effective technologies, such as all-terrain trackers, can help developers minimize grading disturbance that increases stormwater runoff and delays vegetation growth. The Virginia Department of Environmental Quality (DEQ) finalized a new stormwater handbook in 2024 that addresses utility-scale solar as well as regulations that mitigate impacts to prime agricultural soils and contiguous forest lands for solar projects that seek approval through the permit by rule process.¹³ Forthcoming regulations will focus on additional protections for our highest-value ecological forest cores.¹⁴

Resource modeling conducted by intervenors in Dominion's recent Integrated Resource Planning (IRP) proceeding found that the benefits of existing solar development and new utility-scale solar required through the VCEA can be maximized through complementary investments in battery storage, to meet long-term demand projections. The modeling found that doubling the amount of storage available in the model resulted in a portfolio that saves ratepayers approximately \$11 billion and builds 3 gigawatts of less solar, thereby 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.

Many of the localities that are seeing an increasing number of solar projects do not have the resources necessary to appropriately review projects. State-supported technical assistance could provide localities with the tools they need, and regional planning to meet Virginia energy needs with clean energy may help areas of the Commonwealth smartly plan for solar deployment in their regions. This will ensure that localities can operate from a position of strength and facilitate successful projects, and have access to a peer-reviewed database that can address misinformation.

Agrivoltaics, or projects in which solar production and agricultural production occur on the same site,¹⁵ is an area ripe for growth. As many utility-scale projects will be sited on agricultural lands, incentivizing beneficial dual-use can reduce the impact of these projects on soils while continuing to contribute to the local agricultural economy. Grazing and growing crops under panels will help preserve prime agri-

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cultural soils, conserve water, and provide economic benefits to the owner, while dispelling the perception that agriculture and clean energy cannot co-exist.

Community Benefit Agreements (CBAs) are legally enforceable contracts in which a project developer agrees to fund or implement programs in exchange for community support. Benefits can include hiring directly from the community, local workforce training, contributions to local environmental remediation projects, and benefits to local agricultural networks and facilities. These benefits, in addition to the revenue generated for the locality from projects, can help balance local budgets. For example, Charlotte County was able to balance its \$3M budget deficit in 2025 with revenue from recently approved solar projects.¹⁶

Between the VCEA and the Brownfield and Coal Mine Renewable Energy Grant Fund and Program, Virginia's law has structures to incentivize the development of utility-scale solar in the built environment. This includes brownfields, previous coal mines, landfills, parking lots, and industrial sites. Virginia should continue to incentivize projects in these locations to the maximum extent possible. Virginia Energy's 2024 Shared Solar Workgroup Report found implementation will remain severely limited without incentives.

ENDNOTES

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TOP TAKEAWAYS

Utility-scale solar will be a key component of meeting Virginia's energy needs. Its value is maximized and impacts minimized through complementary investment in battery storage.

To build environmentally responsible projects, developers can use practices that minimize grading, tree removal, and impacts on topsoil. Agrivoltaics can be encouraged and incentivized as an effective dual use of land and preserve future viability.

Incentivizing projects on the built environment would help mitigate pressures on natural resources. The allocation of renewable energy on "previously disturbed project sites" in the VCEA could be increased and funding for the Brownfield and Coal Mine Renewable Energy Grant Fund and Program to speed the development of these projects.