

Summary of Findings

Evaluating the Regional Economic Impacts of Land Conversions to Solar Energy Production

Recent regulations make regional economic impact analyses (EIAs) more salient in evaluating the consequences of solar energy in Virginia, but the regulations themselves have tradeoffs and ramifications for developers and localities, who seek impartial guidance on how to measure the economic effects—direct and indirect—of utilizing the Commonwealth’s land resources for solar electricity generation, particularly at utility-scale. The Applied Policy Project (APP) considers continuity and change in Virginia’s energy regulation atmosphere related to House Bill 206, describes the causes and consequences of insufficient EIAs and HB 206 implementation lags, and summarizes existing evidence both on land-use changes for photovoltaic production and on feasible EIA mechanisms.

Suggesting a framework for stakeholders’ conduct of objective, suitably scoped regional EIAs could protect developers from undue site rejections and prohibitively costly mitigation measures, as well as enhance localities’ capacity to accurately measure the economic effects of solar installations built in their area and adjust their comprehensive plans, zoning ordinances, and evaluations of appropriate mitigatory techniques for land and economic disturbances. The APP thus explores four policy options for improving the validity and usefulness of economic impact analyses conducted in the Commonwealth of Virginia: (1) Letting present trends continue; (2) Standardizing procedures for regional Input-Output (I/O) analysis; (3) Developing a statewide Computable General Equilibrium (CGE) model; and (4) Refining the National Renewable Energy Laboratory (NREL) Jobs and Economic Development Indicator (JEDI) for Utility-Scale Solar Photovoltaic Projects.

Applying the evaluative criteria of cost, empirical effectiveness, accessibility, administrative resilience, and implementation timeline, I recommend that developers, public research institutions, and NREL scientists partner to pursue **Alternative 4**. Although expanding the NREL JEDI’s free, web accessible I/O estimator would not necessarily expedite governing bodies’ permitting decisions for proposed solar projects, its high accessibility, moderate accuracy, and low end-user costs could root deeper discussions of other relevant site considerations among developers, local decisionmakers, and community members in reasonably accurate data, as well as offer a useful point of comparison for verifying the general accuracy of other EIAs.

Past implementation pathways for prior NREL JEDI models across other energy sectors offer insights into developing a JEDI model better suited to evaluating utility-scale solar facilities. Moreover, given Governor Youngkin’s all-of-the-above approach to energy resilience and emphasis on empirically based regulatory review, researchers’ outreach to state agencies under the proposed JEDI expansion is unlikely to undermine the current administration’s policy priorities. Governance organizations (e.g., the Virginia Association of Counties and the Virginia Municipal League) and industry leaders (e.g., the Solar Energy Industries Association) could play particularly helpful roles in information-sharing and encouraging localities’ and developers’ take-up of a final model.