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BRIDGING KNOWLEDGE GAPS IN SOLAR ENERGY'S IMPACT ON RURAL ECONOMIES

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As energy needs continue to grow across the country, rural areas have become the prime contender to host utility-scale solar photovoltaics (PV). However, many rural zoning ordinances are silent on utility-scale PV, introducing significant risks and delays for solar developers seeking to site projects.

Through previous community engagement, this research team found that many rural communities hesitate to zone for utility-scale PV because they lack objective data on its potential economic impacts. By combining stakeholder engagement, economic and power system modeling, and community-based research, this project's deliverables are designed to help communities make informed decisions about utility-scale solar development—ultimately reducing uncertainty, soft costs, and siting delays. Though focused on six states in the Great Lakes region, the insights are broadly applicable across the U.S. Learn more at **graham.umich.edu/rural-solar**.

Key findings from this project:

1. Just 30% of the 2,100 zoning ordinances in the rural areas of these six states explicitly set rules for utility-scale solar projects. Among those zoning ordinances that do mention solar, setbacks are the most common regulation; outright bans are rare.
2. Silence in local zoning ordinances is the biggest barrier to solar deployment, removing more prime solar sites from consideration than explicit bans or strict setback rules.
3. Silent or restrictive ordinances increase regional decarbonization costs by 1% and lead to significant shifting of solar to less-prime locations.
4. Solar projects built in counties with diverse local industries and a broader base tend to deliver the highest economic benefit per megawatt of solar installed, especially when sited on lower-quality farmland.
5. The local property tax revenues generated by a new solar project vary significantly between states, and sometimes even within a state, depending on the state's tax policy.
6. Prioritizing community economic benefits in solar siting significantly increases local gains with minimal impact on the cost of electricity.
7. Local government officials are key conduits of information about solar energy, and are among the first to receive information from solar developers.
8. The general public has significantly different preferences about solar energy than local government officials.

This project was launched in 2021 and funded for three years by the U.S. Department of Energy Solar Energy Technologies Office. The U.S. Department of Energy Solar Energy Technologies Office accelerates the advancement and deployment of solar technology in support of an equitable transition to a decarbonized economy. Learn more at ***energy.gov/eere/solar****.*