

Facilitating Solar Development in Urban and Suburban Areas

By Brittany M. Bloam

Introduction

he Urban Redevelopment Authority of Pittsburgh recently announced its plans to remediate a 15-acre property in Swisshelm Park for use as a solar farm.1 The project is in the early stages, but signals an interesting opportunity for municipalities and developers - are there other urban and suburban properties that could be used for solar development? While utility-scale solar projects have received most of the headlines, and many homeowners have considered placing panels on their roof, there is another "missing middle" type of solar project that could create more opportunities for development on smaller sites in the city and surrounding suburbs.

Types of Solar Development

The general categories of solar development projects are:

Residential and Commercial Solar

Projects: Residential and commercial solar projects are smaller, "individual" solar developments that generate electricity for on-site use and are generally located on a rooftop or adjacent to an existing structure. The energy generated by these smaller projects is measured in kilowatts (kW). Many municipalities in the Greater Pittsburgh area have enacted local zoning and permitting ordinances governing rooftop solar units.²

Utility Scale Solar: (also called "grid-scale solar," "solar arrays," or "solar farms") produce electricity on-site that is transmitted into the power grid for off-site use. Significant acreage is required for these types of developments, and the energy generated is measured in megawatts (MW, which is 1000 kW). Typically, these developments generate at least 5 MW of electricity and can be sold to a single user or placed onto the electric grid.

Net Metering: Medium scale solar development is currently facilitated through "net-metering," which is a method to measure the difference

between electricity generated by a customer connected to an electrical utility and the energy used by the customer. The customer receives credit for the electricity produced by their on-site solar infrastructure and sent to the utility that is in excess of the electricity used on-site.

Community Solar: Pennsylvania is currently considering legislation to allow "community solar" development, which may be wellsuited for properties in urban and suburban areas. Community solar generates energy for off-site use within the surrounding community via distribution over the electric grid. These projects require several acres, but can be installed either on the ground, a rooftop, or in a parking lot. Community solar project generally generate between 100 kW through 5 MW and are estimated to require 15 to 30 acres of land depending on the project design.3 Community solar allows people who cannot install solar panels on their own property (perhaps because they rent, cannot afford it, or because their location isn't suitable) to benefit from solar energy generation. "Subscribers" purchase a "share" in a community solar project in exchange for credit on their electric bill. Community solar is not currently permitted in Pennsylvania because a solar array with multiple subscribers could be regulated as an energy manufacturer.

Status of Community Solar in Pennsylvania

In March 2024, the Pennsylvania House of Representatives approved House Bill 1842, which would allow for community solar facilities to produce a maximum of 5 MW, or up to 20 MW if the project is located on a brownfield site or rooftop. The legislation also provides for consumer protection for subscribers and tasks the Pennsylvania Utility Commission with regulatory duties. The bill was sent to the Senate for consideration, where it was referred to (and remains with) the Consumer Protection and Professional Licensure Committee.

Brownfield to Brightfield

Interestingly, one of the guiding principles

of the Pennsylvania Department of Environmental Protection regarding the location of utility-scale solar projects is to minimize use of agricultural and forest land and instead "prioritize reuse and repurposing of previously impacted lands." The DEP Energy Programs Office recently commissioned a study called the "Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania," which evaluated the feasibility of solar projects on brownfields, and opportunities to facilitate the transition from brownfield to "brightfield". 5

Among its many recommendations, the study concluded that legislation enabling community solar projects would help medium-sized installations to be economically viable and more easily sited on smaller parcels. This suggestion could also help facilitate solar development on other urban and suburban sites given the smaller footprint necessary to construct community solar projects.

The conversion process to brightfield is significantly expensive given the costs of environmental cleanup, additional permitting, remediation, and special construction measures that are necessary, so the study also recommends the creation of additional sources of federal, state, and local funding. Mineral Basin Solar, a 402 MW grid-scale project sited on reclaimed mine land in Clearfield County, will receive \$90 million to build the facility. Dedicated funding toward smaller solar projects would help defray the costs of remediation (if on a brownfield) or general costs of development on other sites.

Solar Ordinances and the Permitting Process

There is no statewide law governing solar development. The lack of consistency in the entitlement process increases costs and makes investment in solar projects riskier, particularly for the smaller, community solar developments that could be most appropriate for urban and suburban areas. There are over 2500

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municipalities in Pennsylvania, all with autonomy to institute their own zoning, subdivision and land development ordinances (SALDO), and permitting requirements.

As with any proposed development, solar developers will need to comply with local zoning and approval requirements. Many municipalities' zoning ordinances do not address ground-mounted solar developments. Forward-thinking municipalities should consider where solar projects would be appropriately sited in their communities and update their ordinances accordingly. This would provide clarity to the municipality, potential developers, and to neighboring property owners.

Some municipalities have adopted variations of a solar ordinance developed by the Pennsylvania State Association of Township Supervisors, which creates a framework for development of accessory solar energy systems (for generation of power for onsite use) and principal solar energy systems (PSES) for generation of power for off-site use. The ordinance addresses municipal permitting, setbacks, stormwater, screening, signage, and access. In addition, the ordinance also requires developers to provide financial security to cover the costs of decommissioning the solar panels and restoring the surrounding environment to its original condition.

Developers must also comply with a morass of permitting requirements subject to oversight by the local municipality, the County Conservation District, and the Pennsylvania Department of Environmental Protection (among others). The DEP Assessment recommended a streamlined process to facilitate solar development like the ones implemented in other states, such as New York and Virginia. Any increases in efficiency will lower development costs and help facilitate solar projects.

Conclusion

With the right mix of enabling legislation, funding opportunities, and clarity in local ordinances, urban and suburban properties - including existing brownfields - could be poised to take advantage of solar development.

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- 1 URA Announces EPA Award for Swisshelm Park Solar Remediation Project, May 21, 2024.
- 2 Western Pennsylvania Rooftop Solar Challenge Solar Installation Guidebook
- 3 "Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania, May 7, 2024, p. 48.
- 4 Commonwealth of Pennsylvania Grid-Scale Solar Siting Policy.
- 5 Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania, May 7, 2024, p. 48.
- $\,$ 6 Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania, May 7, 2024, p. 88.
- 7 Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania, May 7, 2024, pp. 89-90.
- 8 Feds funding large solar project in Clearfield County, Pittsburgh Post-Gazette, March 23, 2024.
- 9 Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania, May 7, 2024, p. 94.