Smart Solar Siting on Farmland: Achieving Climate Goals While Strengthening the Future for Farming in New York

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SAVING THE LAND THAT SUSTAINS US

Executive Summary

New York's Climate Leadership and Community Protection Act of 2019 (CLCPA) sets ambitious goals into law to dramatically reduce carbon emissions. This includes achieving generating 70% renewable energy for the electric grid by 2030 and 100% clean energy by 2040. Meeting these targets will involve a major shift in New York's energy profile; in 2020, New York produced 27% of its total energy from existing renewable sources, mostly generated by hydroelectric power, with wind accounting for almost 4% of all utility-scale net generation in New York, and solar accounting for only 2.5%. Two-thirds of the solar generation came from small-scale systems with capacities of less than 1 megawatt (MW).[1]

The amount of new generation from solar will need to grow dramatically over the next two decades, with large-scale solar installations permitted through New York state's Office of Renewable Energy Siting expected to play a key role in meeting these energy targets. Widespread deployment of utility-scale solar, including both distributed generation and large-scale projects, presents opportunities and challenges for farmers and rural communities across New York. With the right planning, project design, and farmer and community engagement, utility-scale solar can be developed in ways that reduce or avoid significant impacts to active farmland and agricultural communities.

New York state must develop and implement smart solar siting strategies to meet state climate goals while supporting its agricultural economy and future food security. To better define smart solar siting strategies in New York, American Farmland Trust (AFT) engaged with farmers, local government officials, solar developers, land trusts, and environmental organizations across the state to develop a smart solar siting framework and recommendations designed to avoid, minimize, and mitigate the impacts of solar development on New York's most productive farmland and on farm viability. AFT's proposed framework and recommendations reflect key findings and themes from surveys of nearly 750 farmers, local government officials, and land trusts, as well as from roundtable discussions with regional stakeholders and solar developers.

AFT found that the economic benefits of solar leases are not well distributed within or across agricultural communities and vary according to farmer land tenure arrangement and concentration of solar development within a community. At the individual farm level, solar leases can provide a vital secondary source of income to farmers that own their land to help their farm operations remain viable and keep farmland within families to transfer to the next generation. AFT's survey results also indicated concern that solar projects could take tens of thousands of acres out of production and negatively impact local farming communities. For example, it appears that solar development is already making farmland more scarce and costly for some farmer-renters, particularly in places with many proposed large-scale projects. In some cases, solar development is causing farmers to lose access to rented land, a particularly troubling challenge for New York's dairy farmers.

At the farm community level, solar siting on farmland can have harmful cumulative impacts by creating costly challenges for farmer-renters, removing active farmland from production in the short-term, and potentially reducing the availability, quality, and productive capacity of farmland in the long-term. The loss of active and high-quality farmland can also negatively impact farm viability by making it less profitable for agricultural service providers and other support systems to stay in business, therefore raising the cost of doing business for remaining farms, many of whom are already struggling.

Some farmers are also expressing interest in dual-use solar where agricultural activities and solar energy production are maintained simultaneously on the same piece of land. Agrivoltaic projects, a kind of dual use

[1] US EIA. "New York State Energy Profile." Accessed January 5, 2022. https://www.eia.gov/state/print.php?sid=NY.

solar, are specifically designed to support a viable farm operation and may include features that require additional investment, such as elevated panels and wider spacing to allow for crop or forage production or for livestock grazing within the facility area. Robust dual use solar applications may offer a potential path forward to expand solar production without negatively impacting farm and agricultural viability by allowing agricultural production to continue. However, further applied research will be needed to determine feasibility and best management practices.

AFT incorporated survey responses and stakeholder roundtable feedback into the development of a recommended 3-step solar siting framework designed to encourage solar developers to avoid, minimize, and mitigate impacts to farmland. The first step of the framework categorizes solar projects based on the impact of the project facility area to New York mineral soil groups (MSG) 1-4, which largely align with prime farmland. The resulting categorization (Orange, Yellow, or Green) determines the per acre farmland conversion mitigation fee to be applied to the project. The per acre fee is based on a multiplier of the average cost to protect farmland in the county or region where the project is located. The second step of the framework allows developers to achieve discounts on their mitigation payment through practices that minimize or mitigate the impacts of solar siting on farmland, such as genuine incorporation of agrivoltaics. The third step provides recommendations on agency implementation and verification of the criteria developers must meet to receive the mitigation fee discount.

Recognizing that the fees are collected to mitigate impact to high quality farmland, based on stakeholder conversations, AFT strongly recommends that mitigation fees be primarily used to permanently protect farmland. Where appropriate, a portion of the revenues could be invested in programs that support local farmland protection planning, agricultural viability projects, land access programs, or implementation of soil health best management practices. Survey respondents and roundtable participants expressed a strong preference for funds to be spent within host communities. AFT also recommends development of local cumulative farmland conversion thresholds from all development to ensure a sufficient base of farmland to sustain farm viability. In 2020, a solar law passed in New Jersey restricting grid-supply solar siting to no more than five percent of prime farmland acres in an agricultural development area. Similar policies in New York could prevent any one community, particularly in areas seeing high levels of development, from bearing disproportionate negative impacts.

AFT makes additional recommendations to advance smart solar siting in New York, including prioritizing siting on alternative or non-agricultural sites, working with farmers and communities to support agricultural viability, and implementing best management practices to protect soil health when siting solar on farmland. AFT also recommends investing in farmland protection and land transition programs and creating a system to track impacts of solar on farmer-renters to inform strategies that can reduce and address farmer displacement. Finally, AFT identifies various opportunities for future research. This includes more feasibility studies for utility scale agrivoltaic systems, and analyses of solar project construction, operations, and decommissioning impacts on agricultural soils.

Solar siting is advancing rapidly in New York to meet the state's climate goals of 70% renewable energy by 2030 and 100% clean energy by 2040, and much of that development is targeted towards farmland. However, with the right policies, incentives and research, solar development can avoid or minimize the most serious negative impacts on the availability and viability of New York's best farmland and the strength of its agricultural economy and food security. Implementing the smart solar siting strategies recommended in this report can help farmers and agricultural communities capitalize on the benefits of solar development, explore new markets, participate in cutting-edge research partnerships, and continue growing the food we need now and in the future, all while combatting climate change.