



Sheep grazing at Susquehanna University solar farm
3.9-megawatt solar array supplies 30 percent of the university's electricity needs,
Selinsgrove, PA (Snyder County)

Renewable Energy Benefits Agricultural Communities

Pennsylvania is losing farms. More than 6,000 closed between 2012 and 2017 on a total of 40,000 acres. Lancaster County alone lost more than 500 farms, about a 10% drop. However, some farmers are starting to lease a portion of their land to renewable energy development and continuing to farm the remaining land. This is called “agrivoltaics,” when used with solar.

Watch this Channel 10 Philadelphia [NBC video](#) about farmer Gerald Kreider in Lancaster County who leased about a third of his land for the Keystone solar grid-scale project enabling him to keep his farm. **Solar and wind projects pay consistent rent at 3 to 5 times the annual income from farming, guaranteed for at least twenty-five years, allowing farmland to remain in the family even during times of economic hardship.**

RENEWABLE ENERGY PROVIDES ECONOMIC BENEFIT TO FARMERS

Farms are often sold entirely for housing or shopping mall development and forever lost. With the land lease payments from renewable development on a portion of their land, farmers can continue farming. A decommissioning bond will ensure that the technology will be removed at the end of its life -after 25 to 30 years- and the improved farmland will be ready to farm again.

If Pennsylvania built enough grid-scale solar to generate 10% of our electricity, farmers would be paid about \$1.7 billion in land leases, and solar development would increase local tax revenues by an estimated \$95.7 million.



PennState

EXAMPLE: Penn State University will be purchasing power from a 70-megawatt (MW) solar project to be installed on 500 acres of **land leased from three local landowners in Franklin County**. The project will provide 25% of Penn State's statewide electricity over 25 years while maximizing the impacts of sustainable solar and providing a living laboratory for students. The project is estimated to save Penn State about \$14 million over the contract term. It also will employ more than 250 people during the construction period and provide farmers with an additional source of income. The facility is being constructed in a regenerative fashion – taking steps to minimize damage to the land, improve soil health and create wildlife habitat.



DISTRIBUTED SOLAR ENERGY SYSTEMS ALSO SAVE FARMERS MONEY

Distributed solar energy systems (rooftop and ground-mount solar for which the energy is used onsite) also provides farmers with a low cost and predictable price of energy for 25-30 years. USDA REAP grants, the 30% federal tax credit, and the state solar credit program have helped many farmers across Pennsylvania take advantage of low cost solar energy.

Increasing the renewable energy standards in the Alternative Energy Portfolio Standard (AEPS) would provide a higher renewable energy credit for them, making the solar energy even more economical, allowing more farmers to go solar, particularly with the federal tax credit stepping down.



GRID-SCALE SOLAR AND WIND PROJECTS CAN IMPROVE SOIL HEALTH, PROVIDE WILDLIFE HABITAT AND REDUCE STORM RUNOFF

Cover crops like deep-rooted fescue grass or pollinator friendly native grasses and flowers can be planted beneath and around the solar and wind projects. This ground cover improves the organic content of the soil over the 25- to 30-year life of the project as the farmland lies fallow, allowing microorganisms and soil fauna to recover after years of intensive compaction, pesticide and fertilizer application. The land can then later be returned to farming. In addition,

- Compared to row crops, stormwater runoff is reduced 23 percent for the 2-year storm and 8 percent for the 100-year storm period. The deep root systems help reduce stormwater runoff, prevent erosion, and promote groundwater recharge in addition to restoring soil health.
- Creating pollinator-friendly habitat by planting native grasses and flowers, provides food sources and nesting habitat for a variety of songbirds and insects such as bees and butterflies. Pollinators bring direct economic benefit to many agricultural sectors that require pollination to grow fruit, vegetables, nuts and even some row crops.
- Wind and solar projects are sited outside of floodplains, wetlands, and protected areas, such as endangered species habitat, conservation easements and historical monuments.
- Solar panels are installed with posts and racking without grading or removing topsoil and without concrete foundations.



HOW MUCH LAND IS NEEDED TO GET TO 10% PENNSYLVANIA SOLAR?

Only 124 square miles (79,200 acres) of land would be needed to increase grid solar sufficiently to generate 10 percent of the state's electricity. This is **less than three-tenths of 1 percent of Pennsylvania's total land area** of 46,055 square miles or less than 1% of the 7 million acres of the state's farmland and less than one-third (1/3) of the 200,000 acres of abandoned mine land in PA.

