

# Pollinator-Friendly Solar

*Planting vegetation that attracts pollinators on solar farms can help increase biodiversity and support pollinator populations.*



*(Photo courtesy by Solar Trade Association)*

## The Impact

Pollinator-friendly solar farms provide habitats to native species, help retain water and topsoil, and improve soil health, in addition to helping provide a food source for pollinators. At pollinator-friendly solar installations in Minnesota, pollinator habitats increased trifold over two years and beneficial pollinator insects increased by four times over three years. In addition, pollinator-friendly solar is aesthetically pleasing and can make solar installations more attractive to the surrounding communities. In fact, pollinator-friendly solar also provides opportunities for community engagement and partnership with schools in the area.

## Description

Pollinator-friendly solar is a straightforward idea — planting pollinator-friendly grasses, wildflowers and other plants on the land at solar farms. The grasses and plants can grow between rows of solar panels and even under the panels to maximize the land use of solar farms while helping retain the topsoil and soil health. Species that support pollinator populations can thrive, and pollinator populations can grow.

## Where It's Been Implemented

Minnesota has been a leading pioneer of pollinator-friendly solar, adopting the first statewide voluntary pollinator-friendly solar pledge in 2016. As of April 2023, more than 60 solar sites were listed

as meeting the standards of Minnesota’s Habitat Friendly Solar Program. In California, Marin Clean Energy (MCE), a Community Choice Aggregation (CCA) that serves communities in Contra Costa, Marin, Napa and Solano counties, became the first CCA to institute a pollinator program requirement in 2020 for all of its new solar project partners. The requirement means that all new MCE solar projects in California will have to plant pollinator-friendly ground cover as well as evaluate, every three years with use of a pollinator scorecard, the effectiveness of such planting in helping pollinators. . In Napa, Calif., the Soscol Ferry Road Solar Project, which began construction in July 2020, has a pollinator plant meadow. Rancho Seco Solar II is a solar farm in Sacramento County with a capacity of 160 megawatts, enough to power about 26,000 homes. The project, completed in February 2021, was built by the Sacramento Municipal Utilities Division. It is an example of solar grazing, a form of dual land use, where solar energy production is combined with livestock grazing.

### **Key Drivers**

One of the problems associated with renewable solar energy is the amount of needed land and the habitat destruction associated with transforming the land into solar farms. According to the National Renewable Energy Laboratory (NREL), utility-scale solar installations may use close to 2 million acres of land in the U.S. by 2030.

Honeybee populations, among other pollinator populations, are decreasing in the U.S. According to PBS in June 2023, there is an average yearly death rate of 39.6 percent in bee populations. According to the U.S. Department of Agriculture, pollinators are primarily threatened by parasites, pathogens, poor nutrition, and exposure to pesticides. Pollinators support hundreds of billions of dollars’ worth of global annual food production. In fact, pollinators are bringing humans one out of every three bites of food they eat.

### **Key Factors for Success**

One of the main key factors for the success of pollinator-friendly solar is to prioritize and consider pollinators through all steps of the solar farm’s construction and operation. It is also important to consider the types of native plants to be used and their heights and shade requirements in relation to the panels. When constructing a solar farm, it is best to preserve as much of the native, existing habitats and vegetation as possible. Once the farm is operational, maintenance of the farm should involve considering pollinators and how to protect them. For instance, pollinators should be a consideration when using herbicides, removing invasive species, watering and mowing.

### **Key Obstacles**

Starting pollinator-friendly solar projects is a big challenge. This less traditional path requires extra time and money to understand the best way to make a solar farm “pollinator-friendly” over the long run. Such projects also involve extra costs and time to obtain and plant appropriate plants. Vegetation should attract pollinators and be native to the area so that it will grow and survive easily in the natural climate. However, there are many environmental, economic and social benefits of pollinator-friendly solar once it is established.

Another obstacle that some areas face is the local climate in the area, such as in the U.S. Southwest, where there is a limited water supply and/or extreme weather conditions, meaning that large scale pollinator friendly ground cover is not feasible.

### **Return on Investment**

Healthy vegetation on solar farms can actually increase energy production by cooling the panels. Vegetation shades the ground, making it cooler, and it increases evaporation in the area.

If solar farms are built to be pollinator-friendly farms, then developers can have less work to get the ground ready because they do not need to remove topsoil, as is typically done on solar installations. The process of removing topsoil can make up as much as 20% of all utility-scale solar costs.

In addition, some pollinator-friendly solar farms harvest and sell honey from beehives on or near the farms. The Clif Family Winery sells “Solar Grown” honey from hives on pollinator-friendly solar farms in Napa, Calif.

According to an analysis from the Yale Center for Business and the Environment, pollinator-friendly solar might actually have enough benefits to justify it to developers. Policies encouraging this practice can result in quicker adoption of pollinator-friendly solar.

### References and Resources

- Marin Clean Energy’s pollinator-friendly energy generation program, [engagement@MCECleanEnergy.org](mailto:engagement@MCECleanEnergy.org)
- [Fresh Energy, Pollinator-Friendly Solar Sample Ordinance and Procurement Language](#)
- [Northern California/Oregon Pollinator-Friendly Solar Scorecard](#)
- [Wildflower Solar, solar farm in Sacramento County](#)

Document last updated January 2024