

Grafton Solar: Integrating Solar Energy & Agricultural Production

The Grafton Solar project, owned & operated by AES, is an innovative 2 MW community solar farm with 1.4 MW of battery energy storage capacity located at Knowlton Farms in Grafton, MA. This project integrates solar energy generation, onsite agricultural production, and numerous partnerships within the research community.

Grafton Solar was designed with agricultural production and research in mind. As such, the solar panels are elevated and there is larger spacing between the rows of panels for cattle and farm machinery access. Such modifications from standard solar plant design boost agricultural production opportunities while also increasing materials and construction costs.

Project Details

- **Project capacity:** 2 MW Solar + 1.4 MW Battery Energy Storage
- **Solar energy production:**
 - Project came online in April 2022 at 50% capacity
 - Is expected to reach full solar energy output in October 2022
- **Onsite agricultural production:** Cultivation of squash and lettuce, cattle grazing
- **Owner-operator:** AES
- **Developer:** Bluewave
- **EPC services provider:** Borrego
- **Utility:** National Grid
- **Offtaker:** City of Lynn, other local community solar subscribers

The Grafton Solar project is proud to serve as a Research Site Trial for the U.S. Department of Energy Solar Energy Technology Office, with the following Research Partners:



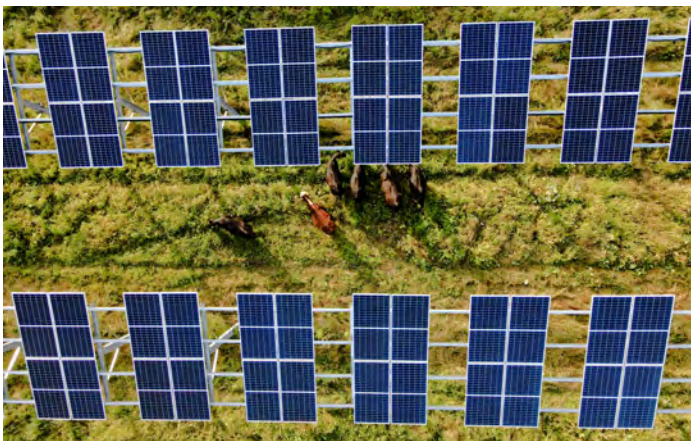
Advancing Agricultural Production at Solar Farms

There is a shortage of data on the impacts of agricultural productivity and farm viability at solar project sites, yet these sites are often located on prime farmland. At Grafton Solar, research partners UMass Amherst and American Farmland Trust are working to establish site trials and assess crop productivity, soil health, and micro-climatic conditions, to generate insights into the impact of co-locating agriculture and solar.

The Grafton Solar project incorporates rotational cattle grazing, a practice known to boost plant, soil, and animal health. In addition, shade from the solar panels helps reduce heat stress levels in cattle during the summertime. During the initial 2022 growing season, squash and lettuce are also being cultivated on the project site.

The goal for Grafton Solar is to make agricultural production at solar farms feasible and practical for more solar projects in the future. This initiative is consistent with AES' vision to provide smarter, greener energy solutions the world needs.

Leveraging partnerships to promote research and education opportunities can help advance the potential and frequency of agricultural production at AES projects and generate learnings for other energy companies, while promoting community engagement and economic development opportunities. This enables AES to continue leading the future of clean energy with innovative approaches to sustainable solar development.



Knowlton Farms

The Knowlton family has been managing a variety of crops at their farm in Grafton for over 150 years. Ensuring viability of the farmland for the next generation is their priority, and Paul Knowlton, the current operator of Knowlton Farms, works with consistent dedication to ensure the farm remains true to family tradition.



Photo: Paul Knowlton, on site at Grafton Solar

Thanks to the Grafton Solar project, the Knowltons look forward to the potential of re-entering full-time farming after a decades-long hiatus. The potential of the regenerative farming practices enacted at the site, combined with the financial benefits of solar, will pay future dividends for the farm, both improving land quality and allowing for more crop output.

The Knowltons continue to expand on their investment in the land and plan to construct a commercial-scale greenhouse next to the vegetable array to enable year-round production. Knowlton Farms has fully committed to seeing through the potential of regenerative farming and solar, ensuring the Knowlton farming legacy will continue to thrive into the next generation and beyond.



AES in Massachusetts

AES has been operating in Massachusetts since 2010 and is one of the leading owner-operators of solar generation in the state.



AES' MA portfolio includes:

- **56 operating** community solar, community solar + storage, and distributed generation projects, totaling 251 MW
- **9 community solar** + storage projects in development or construction, totaling 68 MW

AES: Delivering Clean Energy Solutions

Founded in 1981 and headquartered in Arlington, Virginia, AES (NYSE:AES) is a Fortune 500 global energy company accelerating the future of clean energy. Together with our many stakeholders, we're improving lives by delivering the energy solutions the world needs.

AES is one of the largest renewable energy companies in the United States, and we are leading the nation's energy transformation to accelerate a 100% carbon-free future. We have invested billions of dollars in decreasing global power sector carbon emissions and were the first to use grid-scale lithium-ion batteries for energy storage. Our 4.7 GW+ clean energy operating portfolio in the US consists of solar, wind, energy storage, hydropower, and hybrid solutions across 21 states.



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