



Complete PV Solution for Optimizing the Dual Use of Farmland



The growing global demand both for sustainable energy and food production has created competition for land use between solar energy and agriculture. To reach their national renewable energy targets and ensure food security, policymakers are introducing new regulations and incentives to promote **agrivoltaics**—the co-location of solar energy infrastructure on farmland.

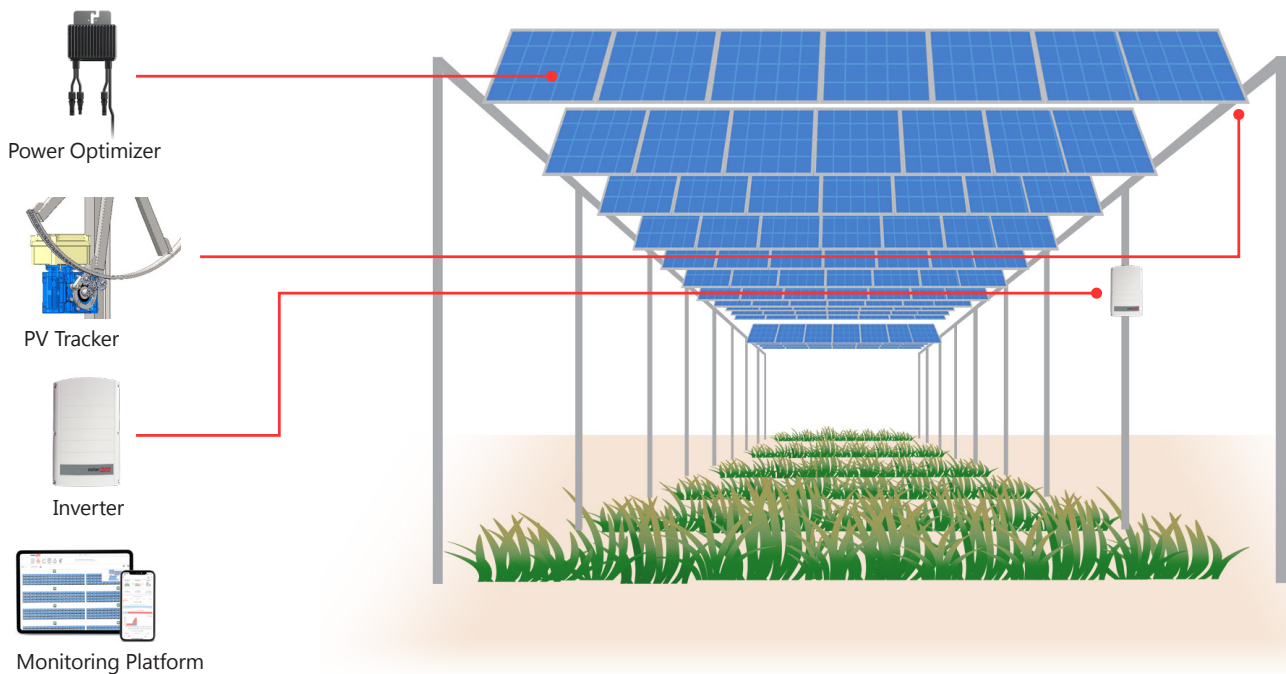
This fast-growing segment shows promising investment potential for developers and is expected to play a critical role in the expansion of global photovoltaic capacity. Current studies are already reflecting the many benefits of solar energy systems for agriculture.

The main challenge of **agrivoltaics** is that energy production must not jeopardize agricultural yield during the construction, operation and maintenance of the PV system.

The SolarEdge solution for agrivoltaics creates compelling opportunities for both PV developers and farmers by ensuring the synergistic production of energy and crops.

/ Win-Win Combination of Solar and Farming

The **SolarEdge agrivoltaics** solution offers a comprehensive approach that maximizes the production of renewable energy and crop yield simultaneously with minimal interruption to farming.



Optimizing Quantity of Energy and Crop Yield

The **SolarEdge agrivoltaics system** increases the efficiency of dual use farming by achieving a perfect balance between electricity generation and agricultural yield. It's comprised of a **DC-optimized PV inverter**, **Power Optimizers**, and an **AI-powered solar tracking system** that maximizes sunlight capture for the modules and for the crops, according to the need.

The **Power Optimizers**, connected to the solar modules, eliminate module mismatch-related power losses that are typical of farming environments due to sloped terrain, abundant dust, and shading from trees. Module-mismatch is even more acute when bifacial modules (2-sided) are used. The SolarEdge solution increases return on investment by enabling 2-5% more energy production in the first year and up to 10% more energy over the system's lifetime compared to PV installations with string inverters. The inverters and Power Optimizers are ammonia resistant, so they're unaffected by fertilization in nearby areas.

The **AI-powered tracking system**, which automatically adjusts the angle of the solar modules can increase PV system performance by as much as 6%. To maximize sunlight exposure for optimal growth of crops and fruit trees underneath the modules, the tracking system utilizes a weather-responsive deep-learning algorithm for tracking solar and agricultural seasonal patterns and shifts.

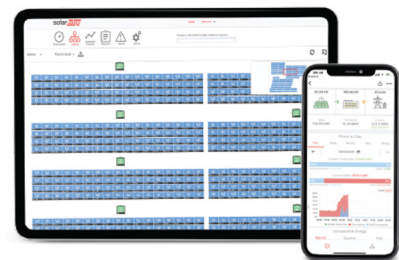
Constructing Elevated PV Systems Above Farmland

Typically, a PV system elevated above crops would require a heavy structure, which is costly and complex to install. The **SolarEdge agrivoltaics solution** includes small, lightweight trackers that are easily installed above crops, lowering CAPEX and seamlessly integrating in the farm environment without interfering with crop development or farming activities.

Lower Operation and Maintenance Costs

Elevated PV structures must provide farmers and their machinery with easy access to the fields, for cultivating the crops. These structures are positioned high above the crops—a physical environment that makes it complicated to maintain the PV system properly, to troubleshoot and clean it, and ensure its cost effectiveness.

The **SolarEdge Monitoring Platform** provides remote module-level tracking and reporting of energy production. The real time monitoring and immediate module fault detection enables higher system uptime, resulting in higher revenues. Accessed from any mobile device or computer, the SolarEdge Monitoring Platform minimizes the need for onsite servicing of hard-to-reach modules. It provides remote troubleshooting with minimal interference with agricultural activity and saves O&M costs. In addition, the smart tracking system also enables the modules to rotate vertically (240 degrees) for easier access and cleaning.



Enhanced Safety for Farmers and Livestock

The safety of agrivoltaic systems is critical to protect workers tending crops and operating farming machinery beneath the solar modules. These systems are exposed to irrigation and rain, posing possible electrical hazards for farmers, service crews, and livestock. SolarEdge's patented **SafeDC™** functionality ensures a safe work environment for farming activities and roaming livestock. In the event of grounding or disconnection issues occurring either in the AC or DC circuits, or if the PV system must be shut down for maintenance, the SafeDC™ prompts the system's high DC voltage to be reduced to a touch-safe level within 5 minutes during the day, when necessary. In addition, an Arc Fault Detection and Interruption feature combined with temperature sensing features throughout the system identify imminent arc threats and prevent them from intensifying.





/ Deploy a More Cost-Effective Investment

As in every energy related investment, here too—it is critical to optimize the agrivoltaics system so that the investment maintains long-term cost-competitiveness. The levelized cost of energy (LCOE) calculation, based on the CAPEX, OPEX and energy output, is affected directly by the technologies used in the system. Therefore, when choosing the agrivoltaics system components, it's imperative to understand the challenges and constraints of each physical location, the specific farmers' needs and the different optional solutions available on the market to maximize the benefits of dual land use.

The **SolarEdge agrivoltaics** solution provides a higher return on investment. It lowers the LCOE by increasing the energy revenues, and by reducing construction and ongoing maintenance costs.

/ About SolarEdge

SolarEdge is a leading global innovator of smart energy solutions that power our lives and drive future progress. The Company's DC optimized intelligent inverter solution that changed the way solar power is harvested and managed, generates more electricity per solar module. There are more than 2.75 million monitored SolarEdge PV systems worldwide in the commercial, residential and utility segments, covering such applications as rooftop, ground mount and floatovoltaics.

SolarEdge is listed on S&P 500 and is approved by major banks, insurance companies and financial institutions worldwide. More than 30% of Fortune 100 companies use SolarEdge systems.

f SolarEdge

🐦 @SolarEdgePV

📷 @SolarEdgePV

📺 SolarEdgePV

in SolarEdge

✉ www.solaredge.com/corporate/contact

solaredge
solaredge.com