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Agrivoltaics: Dual Land Use Gains Momentum in Agriculture – and at EnergyDecentral

Agrivoltaics, which enables farmers to harvest both crops and solar power from the same land, is gaining momentum across European agriculture. The topic will feature prominently at EnergyDecentral, the leading international trade fair for decentralized energy supply, taking place from 10 to 13 November 2026 at the Hanover Exhibition Grounds in Germany.

By combining crop cultivation or livestock farming with photovoltaic systems, agrivoltaics makes it possible to use agricultural land simultaneously for food production and renewable electricity generation—without displacing agricultural activity. As climate pressure and economic challenges intensify, growing numbers of farmers are exploring this form of dual land use. At EnergyDecentral, organized by the **DLG (German Agricultural Society)**, exhibitors will demonstrate how agrivoltaic systems are moving beyond pilot projects into everyday agricultural practice.

Agriculture remains the priority

Agrivoltaic systems are designed so that agriculture remains the primary land use. Photovoltaic modules are installed above or between crops, or integrated into grassland and livestock systems, in a way that preserves access for machinery and ongoing farm operations. Crops such as winter wheat, cereals, berries, grapes and certain horticultural crops can be cultivated beneath or between modules while electricity is generated above them.

Practical experience from operating systems shows that agricultural production is not displaced and can, under certain conditions, even benefit from moderated temperatures and reduced water evaporation beneath the modules. When system design is carefully aligned with crop requirements and farm operations, agrivoltaics can significantly increase land-use efficiency by enabling the parallel production of food and energy on the same area.

Crop choice is a decisive factor for agrivoltaic success. Research shows that C3 crops such as wheat, barley, potatoes, lettuce and many vegetable crops generally tolerate partial shading

well. In hot and dry seasons, these crops can even benefit from moderated microclimates and reduced evapotranspiration beneath photovoltaic modules. By contrast, C4 crops such as maize and sorghum have higher light and temperature requirements and react more sensitively to shading, making them less suitable for agrivoltaic systems under Central European climatic conditions. As a result, agrivoltaics are currently considered particularly promising for fruit crops, berries, vineyards, leafy vegetables and selected cereals, where yield stability and crop protection effects can outweigh limited shading impacts.

“Agrivoltaics is developing from a niche topic into a rapidly growing agricultural sector,” says Marcus Vagt, Show Director of EnergyDecentral. “In recent years, installed agrivoltaic capacity in Germany has increased several-fold. Research clearly shows that the potential extends far beyond pilot projects.”

According to current assessments, dozens of agrivoltaic installations are already in operation in Germany, with many more in planning. Studies further indicate that, depending on system design and site conditions, several hundred gigawatts of agrivoltaic potential could theoretically be developed on suitable agricultural land—without undermining food production.
“What we are seeing now is a shift in perspective,” Vagt continues. “Farmers increasingly view agrivoltaics not as a compromise, but as a realistic way to increase value creation per hectare by combining agricultural production with renewable energy generation.”

Reducing land use conflicts while increasing acceptance
Unlike conventional ground-mounted solar parks, agrivoltaic systems explicitly prioritize ongoing agricultural use. This principle is also reflected in regulatory and scientific assessments. In Germany, the Federal Environment Agency (UBA) considers agrivoltaics a suitable instrument for expanding solar power while reducing land-use conflicts and increasing social acceptance, precisely because farming remains central to land management.

For agricultural businesses, this means crops or livestock production can continue with minimal restrictions, while renewable energy generation becomes an additional economic pillar. Electricity generated by agrivoltaic systems is primarily used on farms—for example for cooling, irrigation, processing or charging electric machinery—with surplus power fed into the grid.

Agrivoltaics at EnergyDecentral 2026

How dual land use works in practice can be explored first-hand at EnergyDecentral 2026. Held in parallel with EuroTier, the world’s leading trade fair for livestock management,

EnergyDecentral will present a wide range of agrivoltaic system designs tailored to arable farming, grassland, livestock husbandry and specialty crops.

Exhibitors will showcase elevated, inter-row and flexible system concepts, while accompanying research presentations demonstrate that agricultural yields generally remain stable—and may increase for selected crops under specific climatic conditions. The technical program provides in-depth insights into how agrivoltaics can be integrated with biogas, combined heat and power (CHP) systems and energy storage, strengthening on-farm energy autonomy and economic resilience.

Agrivoltaics also features prominently in the DLG Spotlight “Solar Initiative + Energy from the Farm”, where practical examples illustrate how farms can develop into central nodes of regional, decentralized energy systems. The focus is on system integration, economic viability and long-term operational stability.

Held alongside EuroTier, EnergyDecentral brings together more than 2,100 exhibitors from over 50 countries, several hundred of whom present solutions specifically for decentralized energy supply in agriculture.

Further background on the practical implementation of agrivoltaics is available here:
Agrivoltaics – Dual land use - Energy-Decentral

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About DLG
With more than 30,000 members, DLG is a politically independent and non-profit organisation. DLG draws on an international network of some 3,000 food and agricultural experts. DLG operates with subsidiaries in 10 countries and also organizes over 30 regional agricultural and livestock exhibitions worldwide. DLG’s leading international exhibitions, EuroTier for livestock farming and Agritechnica for agricultural machinery, which are held every two years in Hanover, Germany, provide international impetus for the local trade fairs. Headquartered in Frankfurt, Germany, DLG conducts practical trials and tests to keep its members informed of the latest developments. DLG’s sites include DLG's International Crop Production Centre, a 600-hectare test site in Bernburg-Strenzfeld, Germany and the DLG Test Centre, Europe's largest agricultural machinery test centre for Technology and Farm Inputs, located in Gross-Umstadt,

Germany. DLG bridges the gap between theory and practice, as evidenced by more than 40 working groups of farmers, academics, agricultural equipment companies and organisations that continually compare advances in knowledge in specific areas such as irrigation and precision farming.

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