



Agrivoltaics. You've probably been seeing this word pop around various energy news recently and it's no wonder. Agrivoltaics is an innovative approach that combines solar energy generation with agricultural land use.

The rate of solar power generation is increasing globally at a significant increase in the net electricity demand, leading to competition for agricultural lands and forest invasion. Agrivoltaic systems, which integrate photovoltaic (PV) systems with crop production, are potential solutions to this situation.

As the energy transition accelerates and climate challenges intensify, agrivoltaics offers a promising solution for optimising land use by combining agriculture with solar power generation.

To address competition for land, it is possible to combine the installation of a solar photovoltaic (PV) plant with agricultural production on the same area. This new production system was first devised and proposed in the 1980s to allow additional use of agricultural land.

Agrivoltaic systems should respond effectively to both the ability to increase solar panel efficiency and the ability to expand land utilization. The temperature of the solar panels could be reduced by using agricultural humidity, evaporation from agricultural activities, and plant transpiration.

Conventional solar power generation emitted more GHGs than that of the agrivoltaic system, given that the agrivoltaic system used 14 %-29 % less water. Solar power generation with grape production had no negative effects on the growth or sucrose content.

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Agricultural solar power generation system

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