Photovoltaic systems and configurations

This list includes a variety of photovoltaic systems with different configurations and panel types, including

- solar parks / farms where the sole output is energy,
- agrivoltaics systems where photovoltaic panels are combined with crops or livestock.

Bi-axial tracking panels, stilt mounted

In this agrivoltaic system, the panels track the sun on two axes (allowing movement in 3D) and are mounted higher up on stilts, with gaps between panel rows that allow access to the land for large pieces of agricultural equipment, e.g. harvesters.

These systems are installed in Monticelli, Italy and are combined with agricultural production of wheat and rice

There are two short films showing tilling, harvest, and movement of panels in similar agrivoltaic set-up in Italy here:

- *REM tec agrivoltaics and harvesting*
- *REM tec rice harvest on Monticelli plant*

Photo credits: *REM Tec* (a Value4Farm partner)

Bi-axial tracking panels, stilt mounted

These panels are in Virigilo, Italy. Combined with vines, they provide some shading with gaps between rows for access. However, gaps between rows and panel mounting height can be lower than that needed for harvesters for grain crops.

Photo credits: *REM Tec* (a Value4Farm partner)

Static, vertical ground mounted panels

Arable crops with ground-mounted fixed panels in a "hedgerow" vertical set-up, facing east-west (to capture sunlight morning and late afternoon) at the Aarhus University research site in Denmark.

A variety of crops (including soybean, wheat and grass-clover mix) are grown alongside to test the impact of panels and panel placement on crops and soils.

Find out more at:

- *Vertical solar panels and crops*
- *Grass harvesting*

Static, tilted ground mounted panels

Arable crops with ground-mounted fixed panels, tilted to face south at the Aarhus University research site in Denmark. These panels have a variety of crops grown with them to test the impact of solar panels and panel placement on crops and soils. Crops grown include soybean, wheat and grass-clover mix. Panels in a similar configuration may also be used with livestock.

Mono-axial, canopy mounted panels

A farm in Picardy, France, with solar panels above wheat, potatoes and flageolet beans. The panels are set on a 27m wide canopy with 5m tall poles and can rotate to track the sun.

The installation is co-financed by the EU's Innovation Fund to promote the use of innovative and energy-efficient solutions in European farming. The system also includes an innovative irrigation system that reduces water use by 30%.

More about the site: *Agrivoltaic Canopy: crops and solar panels sharing sunlight*

More photos of the site: *Audiovisual Service - Solar panels over agriculture crops*

Photo credits: *European Commission Audiovisual Service*

Static, ground mounted panels

Braine-l'Alleud photovoltaic park, Belgium. Panels are ground mounted, there are no crops or livestock on the site. This project was undertaken by the town to meet current and future electricity supply needs. With 8,500 solar panels over 18 hectares, the panels produce around 10% of the region's household electricity needs.

More photos of the site: *Audiovisual Service - Braine-l'Alleud photovoltaic park*

Photo credits: *European Commission Audiovisual Service*

Floating panels

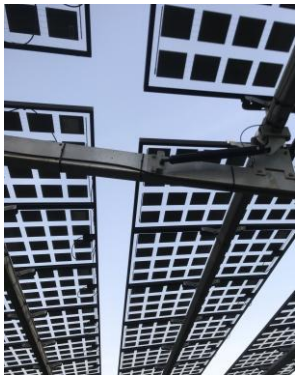
Floating solar park in Dessel, Belgium, with 17256 solar panels.

The plant is built on a five-hectare lake created by sand extraction. The installation has a power of 7 MWp and produces electricity for around 2000 households.

More photos of the site: *Audiovisual Service - Floating solar park in Dessel, Belgium*

Photo credits: *European Commission Audiovisual Service*

Folding and tracking panels



Research site at Hochschule Geisenheim University in Germany, experimental sites with panels over vines

Site 1 - partially transparent panels that track east to west during the day, providing about 50% shading on average, shown in the first 2 photographs.

Site 2 – partially transparent panels that can open and close like a blind (in the steel boxes shown in the last photograph). These can be retracted in times of intense wind or to allow maximum rainfall to reach the vine in drier times.

More about the site: *Agrivoltaics and viticulture*

Photo credits: University of Reading

Solar powered agricultural equipment

A solar powered weeding machine in the fields, with wind turbines in the background at the Westhof Bio farm, in Friedrichsgabekoog, Germany.

More information about the site: *Audiovisual Service - Westhof Bio farm, Friedrichsgabekoog and Wöhrden, Germany*

Photo credits: *European Commission Audiovisual Service*

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