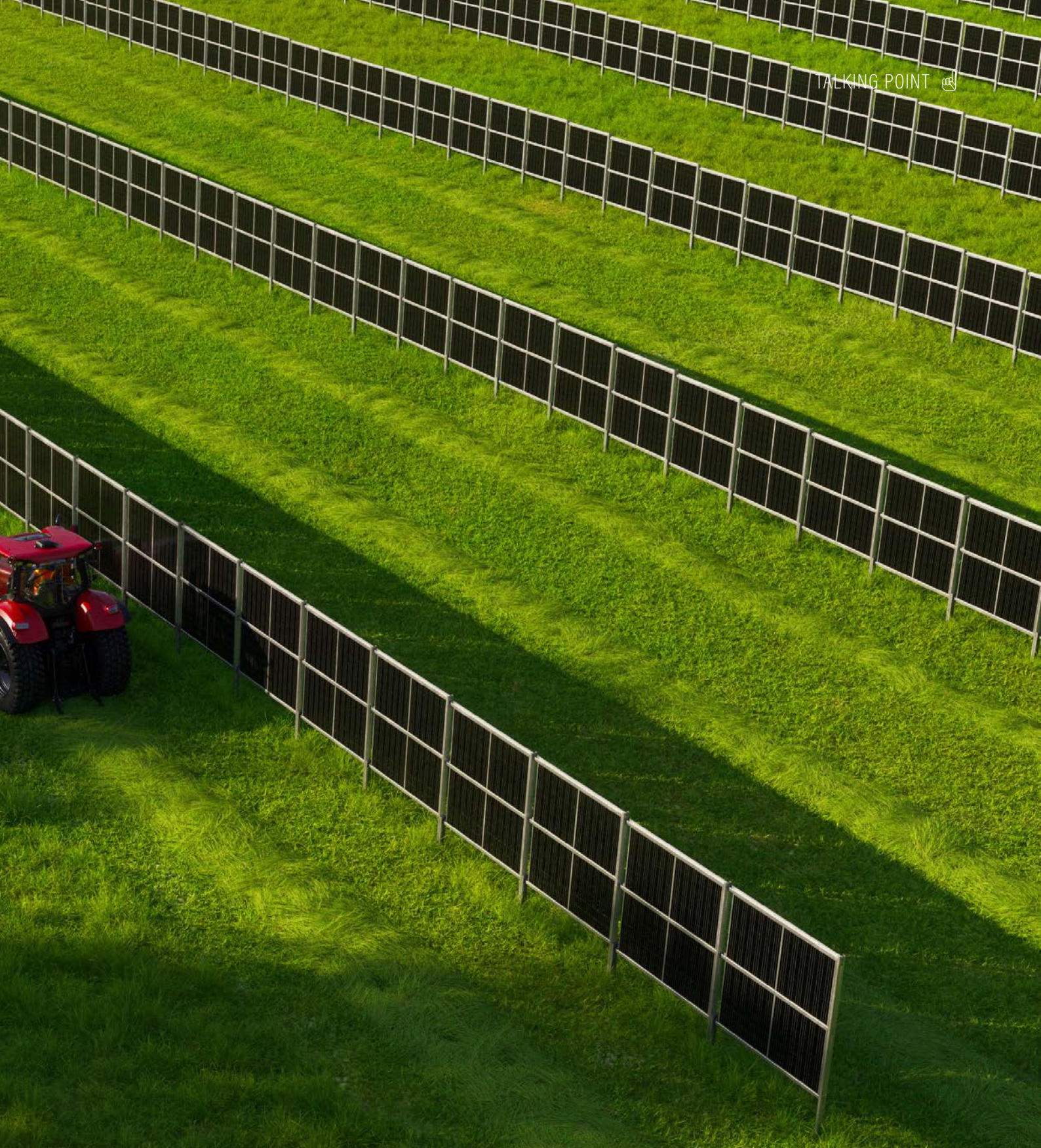


# Safe and efficient agrophotovoltaic structures in Europe



The agricultural sector in Europe and globally is undergoing an intense period of modernization, and farmers need access to inexpensive and safe electric energy. Renewable Energy Sources system producers offer numerous solutions in response to these needs. Among them is Corab S.A., a leading European producer of photovoltaic structures. Founded in Poland, the company has 30 years of experience in steel and aluminium structure production.





'Agricultural activity and photovoltaics go hand in hand and complement each other,' suggests Piotr Markowski, President of the Management Board of Corab S.A. 'Cheaper energy for the farmer means a lower price of food in stores. The interest in renewable energy in agriculture is growing, due to both the increasing awareness among farmers and food producers and the systemic financial support offered by EU states.'

In the EU Solar Strategy, the European Committee encourages development of

agrophotovoltaics. According to Fraunhofer Institute for Solar Energy Systems ISE, 14 GW of power throughout the world can be attributed to electric energy from systems installed in agrarian areas, and that number continues to grow. Many European countries use subsidies and incentive programs to grow solar energy generation in rural regions.

#### **Photovoltaics in the service of biodiversity**

It is worth considering that the use of photovoltaics in agriculture means not only

'green energy', but also water savings and protection of resources against unfavourable weather conditions, e.g. extreme rainfall or strong winds. This is particularly important during this time of extreme climate changes and problems with access to drinking water, as is being experienced in parts of Europe more and more often.

Agrophotovoltaics contributes to sustainable development as well as protection and improvement of biodiversity and ecosystems. According to studies by



the Oregon State University in the US, growing crops under solar panels helps decrease their temperature, thus increasing productivity by as much as 10%. This is particularly important in times of no regular rainfall and the global increase in temperatures.

'For investors, limiting the carbon footprint in agricultural activity and the increasingly important ecological aspect of growing crops are significant. As the leading source of RES, photovoltaics meets these expectations. Special agrophotovoltaic systems and structures allow inexpensive energy to be obtained and facilitate growing of some crops. Photovoltaic structures can serve as an umbrella over the crops, protecting them against excessive sunlight or storms. At the same time, they help keep the soil suitably moist,' mentions Piotr Markowski.

#### Safe and resistant PV structures

For many years, Corab has been improving its production of steel and aluminium structures. Its photovoltaic structures and systems are manufactured in Europe, to a high quality and are compatible with the most popular types of photovoltaic modules. Its systems are safe too, confirmed by numerous international certificates and successful exports. In fact, photovoltaic farms or roofs in 22 countries are based on reliable and durable structures made by Corab S.A.

'We have the know-how in Renewable Energy Sources. Our 30 year production experience; cooperation with important research centres; and our own production plant in northern Poland, continuously expanding our

capacity, these are our unquestionable advantages', says Piotr Markowski.

'We use only raw materials of the highest quality. Our structures are covered with a Magnelis layer from the technology leader ArcelorMittal. This ensures they are resistant to corrosion, and we can offer our clients a long-term, reliable warranty. We provide tested and safe structures, both stand-alone and designed for most types of roofs,' he emphasizes.

#### Innovative photovoltaic systems for the agro sector

Photovoltaic installations on agricultural land should be adapted to the given location and tailor-made, catering to the specific expectations and needs of the investor. For example, cattle breeders have different needs than plant growers. Corab S.A., one of the major European producers of photovoltaic structures, responds to market needs in this way, with a portfolio of products designed for agrophotovoltaics, including WS-A 10 and WS-A20 systems.

WS-A 10 is a vertical structure designed for bifacial modules. By equipping that system with, for example, efficient Encor panels, interesting photovoltaic solutions can be created. Agricultural land is a good place to use WS-A10. The installation method involves ramming into the ground, offering a range of possibilities for the placement of the structure in the selected area, for maximum effect. Vertical photovoltaic solutions also allow the optimization of energy yields. Thanks to the simple positioning of the PV structure, the rainwater balance is left practically unchanged.



Piotr Markowski

#### Quick assembly, double use

The installation of WS A-10 takes up only about 1% of the field surface designated for its assembly. That space enables the use of conventional agricultural machinery, which guarantees efficient work management on site, e.g. mechanical mowing of meadows using a tractor. It is worth noting that the assembly of an average installation of 8.5 kW takes only five to seven days, which saves time and money. In addition, the system can also serve as a fence, which can be another advantage.

Another type of structure dedicated to photovoltaics is WS-20. This is designed for large agricultural projects. It protects animals and plants and enables the growing of plants





and breeding of animals with solar energy generation to be combined. The system is made of reinforced steel and covered by an anticorrosive Magnelis layer. The manufacturer has ensured suitable stability of the structure by introducing additional stiffening elements. Plants need light to grow. Therefore, the installations are made in such a way that they allow some sunlight to pass through.

It is not only plants that can be grown under panels. Agrostructures can also be used in the

case of animal husbandry. Panels can be mounted at heights that allow animals to graze.

Examples from all over the world prove that, with solar installations, wastelands can be recultivated and used to grow crops, all thanks to the improved moisture level. This is an excellent solution to recultivate the surrounding area.

<https://en.corab.pl/corab-at-intersolar-2023>



Corab S.A. offers solutions designed for agrophotovoltaics. Such installations are usually tailor-made, as the choice of structure and solution must take into account location and the weather zone of the existing or future cultivation.

Dedicated PV systems meet the respective standards of resistance to weather conditions; wind and precipitation.

Safety standards and compliance with regulations concerning electrical installations are also important.

Systems designed for such purposes should be mounted in the ground and covered with a layer that is highly resistant to corrosion.

Some are also available in vertical form as well as energy production and plant protection.

They can also serve as fencing and such systems are bought by our EU clients.

'Eventually movable installations may be commonly used, but at present, photovoltaic systems mounted in the ground work perfectly well,' Piotr Markowski, President of Corab S.A.