Intersolar Europe Restart 2021
Munich, Oktober 6-8, 2021

INTERSOLAR EUROPE TREND PAPER: AGRI-PHOTOVOLTAICS

Munich/Pforzheim, June 29, 2021: Efficient dual land use for agriculture and solar power generation via agri-photovoltaics (agri-PV) is developing dynamically and attracting increasing interest. Agri-PV has long ceased to be a niche product. New incentive programs are being created in countries such as Italy and Germany, and the world's first Agri-PV association was founded in France. Standardization, which is considered a prerequisite for broad-based promotion and market ramp-up, is also making progress. The international online conference AgriVoltaics 2021, which took place from June 14-16, 2021, dealt with these topics related to Agri-PV. The online event was supported by Intersolar Europe as a partner and highlighted the importance of increased European and international exchange of experience to establish this still comparatively young technology even more firmly.

The online conference was hosted by the Fraunhofer Institute for Solar Energy Systems ISE, the French Institut National de la Recherche Agronomique (INRAé), and PSE Conferences & Consulting, and was aimed at those who want to dive deeper into the world of Agri-PV. A key driver for Agri-PV is the avoidance of land use conflicts with agriculture when expanding solar power production via ground-mounted systems. This is illustrated by the example of France. There, the solar market is developing very dynamically. Newly installed PV capacity increased significantly to 546 megawatts (MW) in the 1st quarter of this year compared to 197 MW in the 1st quarter of 2020. But increasingly, large-scale solar farms are seen as a threat to farmers and farmland preservation due to overall high land-use pressures, reported Christian Dupraz, senior researcher at INRAé. Sustainable, dual land use via agri-PV offers a solution here, he said. Rooftop systems alone would not be able to meet the expansion targets for photovoltaics, which are geared to climate protection.

Accordingly, interest in Agri-PV is growing. Through innovation tenders, a total of 52 innovative solar projects with a capacity of 124 MW were promoted in France last year, of which the 48 Agri-PV projects - mainly in southern France (Occitania), according to Dupraz. A wide range of different Agri-PV systems are now commercially available, and the trend is toward so-called tracker systems, according to Dupraz.

Agri-PV establishes itself in Europe
Larger companies from the energy sector were now also increasingly getting involved in Agri-PV. On June 9, four solar companies founded the world's first dedicated Agri-PV association. Among other things, it aims to develop a "Projet Agrivoltaique Positif" label aimed at increasing agricultural yields in combination with solar power generation, Dupraz said. Margot Vanrenterghem of consulting firm CETIAC reports that the French governmental environmental agency (ADEME) is now also working on a definition and standardization of Agri-PV, which aims to be in line with agricultural production. So far, Agri-PV has not been defined by law in France.

The standardization of Agri-PV in Germany has now also taken a step forward. In April, industry representatives from agriculture, the solar industry, research and certification organizations agreed on a DIN-SPEC 91434, a preliminary stage for a DIN standard. It addresses fundamental aspects of Agri-PV such as the scope, terminology, criteria or requirements for technology, planning, installation, operation and maintenance.

By October 1, the Federal Network Agency will now specify the requirements for Agri-PV based on this preliminary standard as a basis for the innovation tenders under the EEG that will start in spring

2022. Eligible are plants with an installed capacity of 100 kilowatts (kW) to 2 MW. Due to industry demands, including those of Fraunhofer-ISE, the German Farmers' Association and the German Solar Industry Association, the government factions in the German Bundestag agreed to increase the originally planned tender volume from 50 MW to 150 MW. In addition, the area covered was expanded to include perennial crops and permanent crops, which also includes fruit-growing areas.

Things are also happening in Italy. Conflicts over the use of agricultural and natural land and the correspondingly complex and lengthy approval procedures for conventional solar parks are also driving agri-PV there. However, as in other countries, the challenge of standardization is currently underway, as Alessandra Scognamiglio from the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) reported. This is also a prerequisite for a multi-billion euro funding program to be launched soon. With a total of 1.1 billion euros, the government wants to promote agri-PV and thus get the installation of 2 gigawatts of agri-PV systems underway. The funds are part of the EU's 220 billion stimulus package for post-Corona pandemic reconstruction. The goal for Agri-PV should be a "sustainable energy landscape approach," according to Scognamiglio.

Great potential in fruit, berry and wine growing

Agri-PV is seen as having great potential, especially in fruit, berry and wine growing. In addition to the dual use of the area, the solar modules protect the crops from hail, heavy rain, sunburn and frost and can replace existing structures such as hail protection systems or foil tunnels. To demonstrate and optimize the possibilities of Agri-PV in fruit growing, a 200-kW trial system also started in spring 2021 on an apple orchard in Rhineland-Palatinate (Ahrweiler). A total of 14 agri-PV systems with a capacity of 18,400 kW are currently installed in Germany, reported Lisa Pataczek, from the Center for Organic Agriculture at the University of Hohenheim. These include quite a few research and development projects as well as commercial applications in vertical systems on grassland or combined with grain cultivation. Compared with the technical potential of around 1.7 terawatts of agri-PV in Germany, these are only a few systems. However, lawyer Jens Vollprecht from the law firm BBH also emphasized the positive dynamics in the field of Agri-PV, especially due to the starting standardization as well as innovation tenders. Increasingly the legislator recognizes the potential of the still young technology, standards are adapted accordingly for their promotion. Vollprecht sees opportunities for Agri-PV projects to also be eligible for EU direct payments for agriculture if they do not severely restrict agricultural use.

At the international conference, representatives from the USA, among others, pointed out the great importance of Agri-PV for water-saving agriculture, citing the increasing water shortage in southwestern states such as Arizona and California as a result of climate change.

Agri-PV at Intersolar Europe Restart 2021 and the accompanying conference

This year, Intersolar Europe will take place from October 6 to 8 as Intersolar Europe Restart 2021 at Messe München as part of The smarter E Europe Restart 2021. During the last scheduled event period, from July 21 to 23, 2021, The smarter E Industry Days, including the awards ceremony for The smarter E AWARD, Intersolar AWARD and ees AWARD 2021, will take place digitally. As a driving force for the industry, Intersolar Europe Restart 2021 will also be dedicated to the exciting field of Agri-PV in the halls of Messe München:

AWARD Finalists:

- BayWa r.e. Solar Projects GmbH (Germany) is nominated for The smarter E AWARD 2021 in the category Outstanding Projects with the project "Fruitvoltaic".

All finalists can be found in our Hall of Fame: https://www.thesmartere-award.com/en/hall-of-fame/hall-of-fame

Exhibitors Intersolar Europe Restart 2021

- BayWa r.e. Solar Projects GmbH
- Fraunhofer ISE
- Next2Sun GmbH
- IDEEMATEC GmbH
- STEAG Solar Energy Solutions GmbH
- our partner SolarPower Europe
- and many more

Intersolar Europe Conference:

- „Agri-Photovoltaics: Harvesting the Sun While Cultivating Crops"
- „Vertical Farming and Renewables: The Nexus of Water, Energy, and Food"

You can find more information on the Internet at
www.intersolar.de
www.TheSmarterE.de

Last updated: July 2021