



SolarPower  
Europe



# Agri-PV best practices in Europe

Lina Dubina – Policy Advisor for Sustainability

**Clean Energy for EU islands Forum 2024**

**The energy transition for enhancing the resilience of  
economic activities on islands**



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A portrait of Lina Dubina, a woman with long brown hair, wearing a blue sweater with a white collar. She is smiling slightly and looking towards the camera. The background is white with yellow vertical bars on either side.

**Lina Dubina**

**Policy Advisor for Sustainability**  
SolarPower Europe

→  
Dual-use of land, incl. Agri-PV, biodiversity  
PV, floating PV



**SolarPower  
Europe**

- **Representing the whole solar value chain - 300 organisations**
- **Working closely with 30+ national associations**
- **Based in Brussels**



# Global impact on agriculture in the context of climate, environment and economy



- **Water scarcity** is expected to **increase in more than 80% of croplands** worldwide.



- **Energy prices** in agricultural production were **86% higher in 2022** in comparison to 2020, where **price increase for electricity was 72%**.



- **50% of crops** are estimated to decrease in yield by 2050 due to climate change in Europe.
- **About 11%** of EU agricultural land is under **high risk of abandonment**.



- **Global food prices** grew by **60% in 2022** in comparison to 2020; food price volatility creates risks for farmers in the EU.



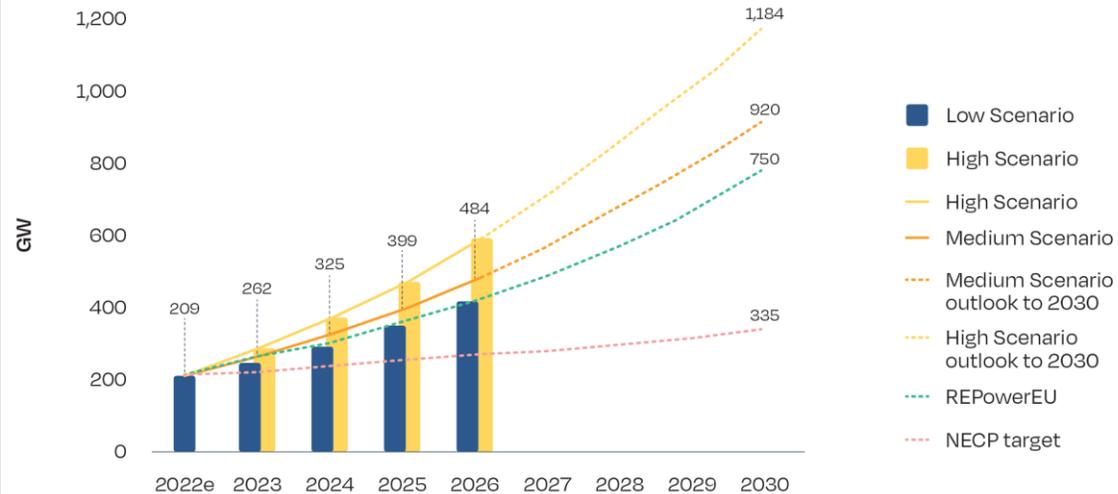
- **Growing population** is expected to reach **8.6 bn** by 2030 – **2x** more agriculture production will be needed.



- **Higher unemployment rate** among young people in rural areas, reaching **13.4%**.
- **Rural areas** on average **have older population** & will decline in coming decades.

# What is the potential for Agri-PV in Europe?

EU27 TOTAL SOLAR PV MARKET SCENARIOS 2022 - 2030



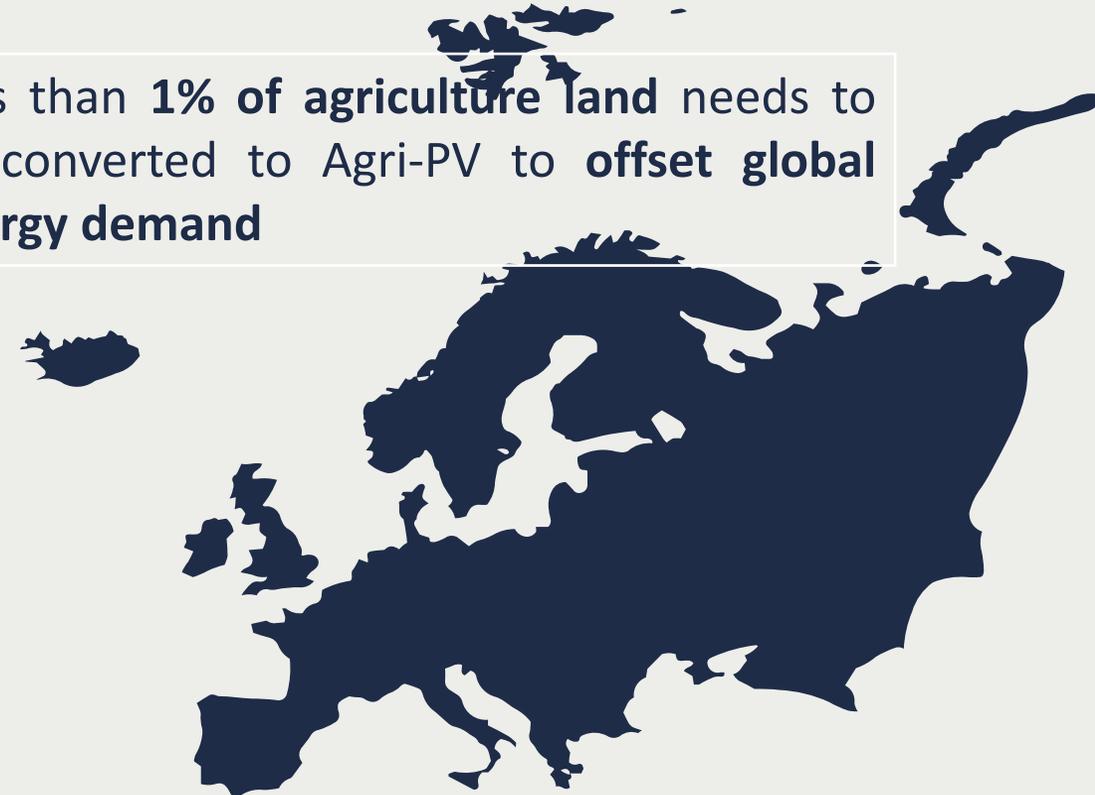
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EU 2030 High scenario for solar: >1 TW

Agri-PV can contribute to the EU target:

- 1 TW solar target by 2030
- 5 TW solar target by 2040

Less than 1% of agriculture land needs to be converted to Agri-PV to offset global energy demand



# 1. Agrisolar: PV deployed in the farm territory



© Amarenco

## PV integrated into the roofs of agricultural buildings

- Decarbonises the farm's energy usage
- Provides financial support through selling of excess energy
- Provides clean energy supply to power agricultural activities such as farm machinery

## PV integrated into the irrigation systems

- Provides supply of clean energy
- Enables more efficient water usage
- Provides long-term cost savings

## 2. Agri-PV: PV installations collocated with agriculture and nature conservation



© BayWa r.e.



**Interrow PV:** PV systems where the farming activity takes place between the rows

- Crops can be grown in between the rows
- Livestock grazing can take place between the rows



**Overhead PV:** elevated PV systems, where the farming activity takes place underneath the panels

- Crops can be grown beneath the PV panels and provide partial shading
- PV panels can provide shade for livestock and thus improve the welfare of the animals



**Solar Greenhouses:** a closed agrivoltaics system where PV panels are placed on the roofs of greenhouses and are designed for agricultural production

- Systems are equipped with PV panels that are partially transparent and can be built on horticulture glass, plastic, windbreak or insect-proof nets.

# How does agrisolar benefit farmers?



## Economic benefits

- **Revenue** from the energy sold
- Financial benefits of crop increase
- Rent of the roof or land for agrisolar activities
- **Reduced energy use** and hence cost-savings for irrigation
- **Use of green energy** to power agricultural activities



## Social benefits

- **Job creation** in rural areas
- **New qualifications** and **trainings** in agricultural sector
- Establishment of RES communities
- **Creating sustainable** and **attractive rural areas** for next generations
- **Locally sold food** produce

# What does agrisolar offer to the farmers?



## Environmental benefits

- Water savings up to **20-30%**
- Increase in soil moisture **up to 15%**
- **Reduced energy use** for irrigation due to decrease in evapotranspiration
- Reduction in use of plastic crop protection systems
- Increase in **pollinator habitats by 10%**
- Increase in protected species on site
- **Less pesticide and fertiliser use** on AgriPV sites

# Other environmental benefits to the farmers



## Climate adaptation and resilience

- Reduction of temperature under PV panels **by 51%**
- Increase in **carbon storage by 80%** with sheep grazing ([Source](#))
- **Protection of flora and fauna** during climate-related events



## Land efficiency

- Land productivity increase between **30 to 186 %** ([Source](#))

# Case examples of agrisolar



## Agrisolar barns; Corsica France

### Key aspects:

- Barn designed to provide storage for fodder, funded by the rooftop PV system
- Empowered farmers;
- Increased food, agriculture, and energy independence for Corsica



## AKUO's agrisolar projects in Reunion island

### Key aspects:

- To support ambitious goals of installing 500MW solar capacity by 2028 ;
- 30 active employees ;
- Greenhouse PV growing medical herbs ;
- Third-party investment in greenhouse installation
- Reduction in pesticides ;
- Energy used to supply islands network

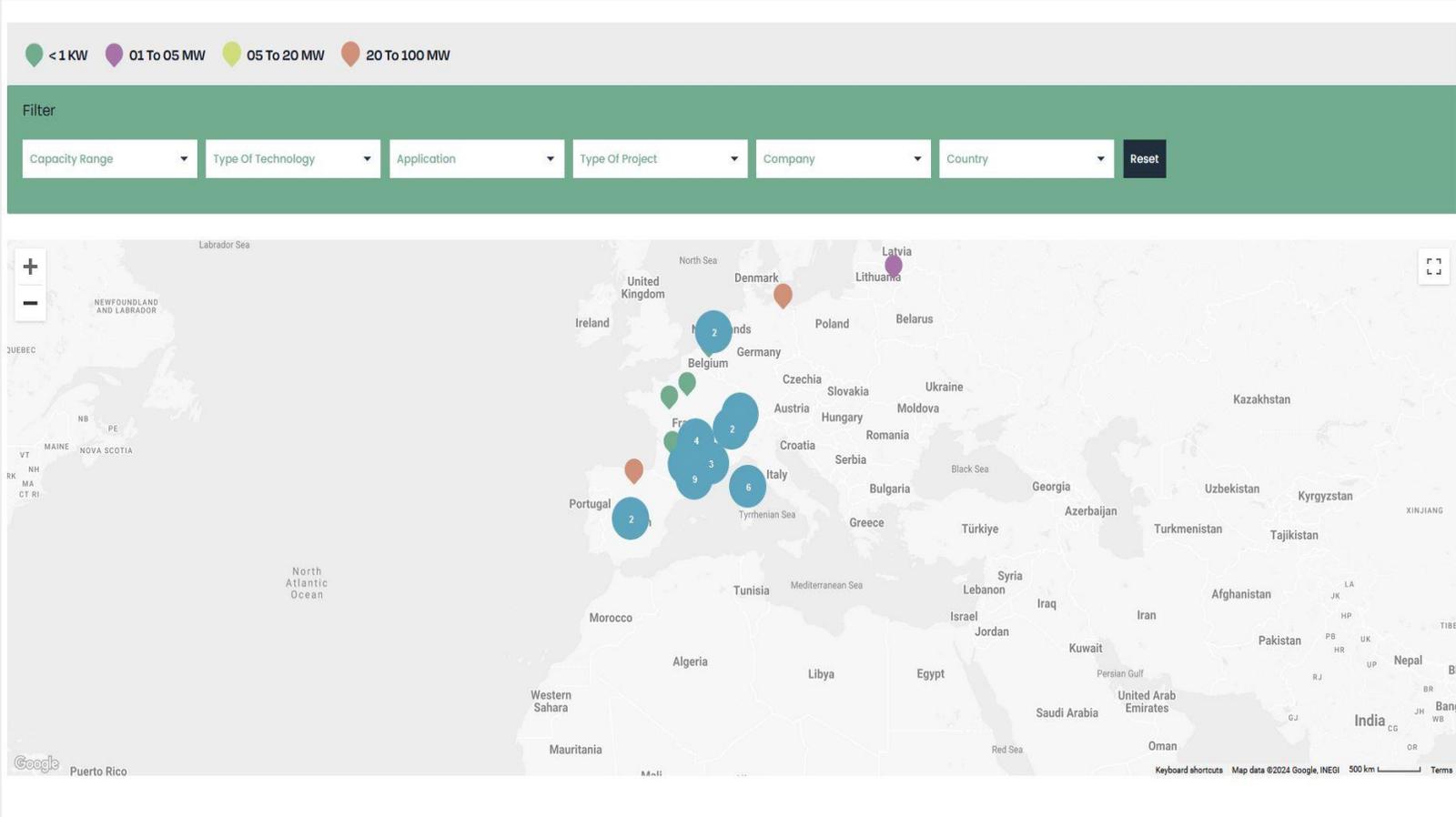


## Experimental Grapevine site; France

### Key aspects:

- High temperature reduced in summer: 51% reduction in scorching hours under dynamic shading;
- 66% reduction in temperature in periods with too much sunlight;
- Water use reduction: 32%;
- A systematically lower soil temperature under controlled shading;
- Vegetative growth: greater and longer sustained vegetative growth throughout the season.

# Agrisolar digital map



→ Check our agrisolar website for more information:  
<https://agrisolareurope.org/>



# Thanks for listening

Lina Dubina

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