

# Agro Photovoltaics

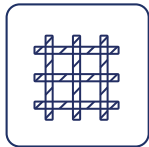
Agro photovoltaics (AgroPV) is the simultaneous use of areas of land for both solar photovoltaic power generation and agriculture.



Crop protection  
+water saving  
+energy generation  
+land saving



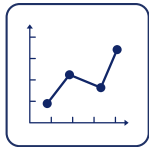
Size fits to  
most crops



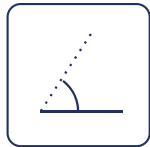
Load-bearing  
steel construction



Various pole  
foundations



Generation  
and yield  
monitoring



Adaptable  
transparency  
and angles



Payoff in **5 years** \*

**800 kW**  
Power per 1 ha

**1000 MWh**  
Generation per 1 ha/year\*\*

**250 k Eur**  
Revenue per 1 ha/year\*\*\*

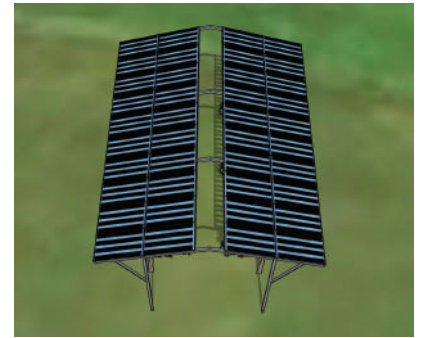
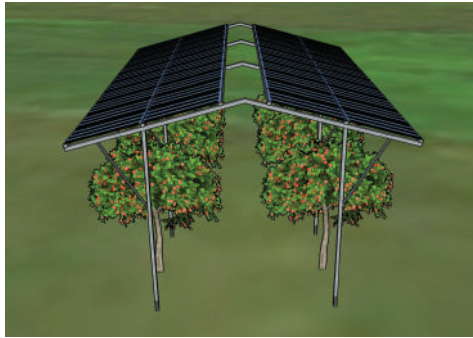
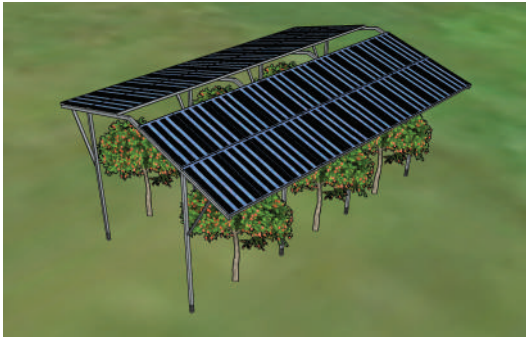
\* Payoff from 1 ha plot (without investment in grid connection and infrastructure). \*\* South Italy location.  
\*\*\* When price - 0.25 Eur/kWh.

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# AgroPV general data

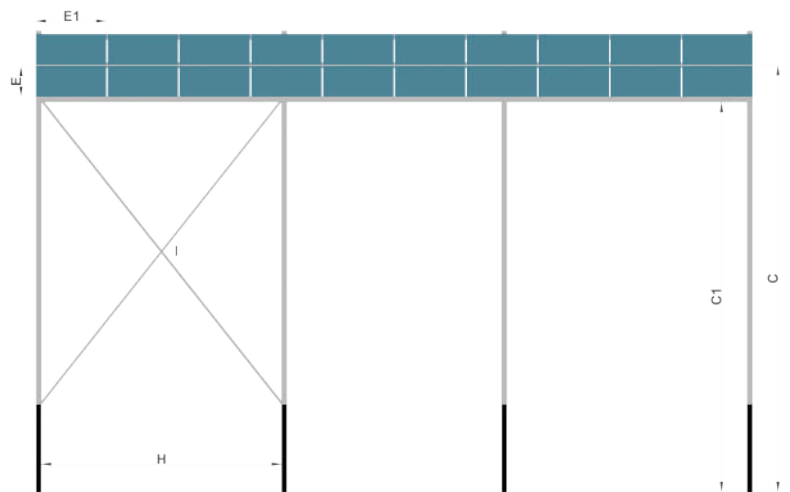
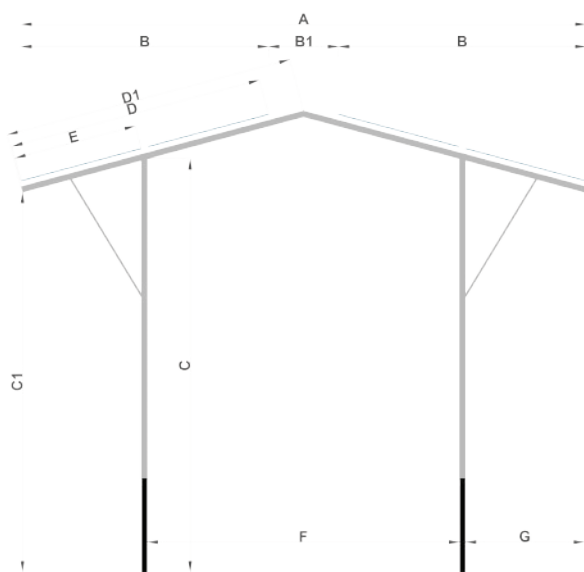
- Adaptable system light transparency: 40 - 80%
- Available system height: 2 - 5 m
- Available max width: 5 m



## AgroPV layout possibilities

Portrait layout		Landscape layout	
Single	Double	Single	Double

## Construction scheme and dimensions



A	8520 mm	C	4500 mm	D1	4410 mm	F	5000 mm	I	Every 25 m
B	3419 mm	C1	4050mm	E	1770 mm	G	1760 mm		
B1	1682 mm	D	3540 mm	E1	1050 mm	H	3000 mm		

Note: dimensions adaptable to plants measurements

# Construction parameters

Material data	
Construction material:	Steel
Coating:	Zn coated

Construction data	
V-profile ramming posts allows easy height adjustment during assembly:	<ul style="list-style-type: none"> <li>• For ramming obstacles</li> <li>• Ramming inaccuracies</li> <li>• Adaption to the slope</li> </ul>
Module inclination:	5° to 20°
Connected rows:	2 rows connected

Construction data	
Max pole step length (m):	3
Available height (m):	2,1 - 5
Tube layout:	<ul style="list-style-type: none"> <li>• Main tube in each planting row</li> <li>• On each main tube one east and one west module row</li> </ul>
Safety:	Meets applicable local norms
Dynamic force:	Wind tunnel test and comprehensive report

# Ground foundation



Forged foundations



Screwed foundations



Concrete foundations

# Application

(Agriculture under module rows)

Trees	Berry / shrubs	Vegetables
Apples, Pears, Plum, Peaches, Orange, Lemon, Fig, Avocado, Apricot, Cherries, Olives, Peach, etc.	Raspberries, Blueberries, Strawberries, Blackberries, Currents, Kiwi, Grapes, etc.	Tomatoes, Paprika, Chili, etc.

# Optional

- Fittings for hail net wires
- Water drainage system
- Other

# Additional information

Requirements for project implementation
<b>Plot layout</b> (drone footage, etc.): for exact system positioning and layout planning.
<b>Topography survey:</b> for evaluation of plot relief for system planning.
<b>Geological investigation:</b> for soil evaluation and necessary foundation planning.
Official <b>conditions for connection</b> to substation: to know connection requirements and availability to have required power.
<b>Client questionnaire</b> filled: all related project information to start project management.

# Research

Necessary tests for pilot project
Yield forecast and AgroPV system customization
Yield change analysis before/after, under photovoltaic/ in control zone: <ul style="list-style-type: none"> <li>• Test equipment</li> <li>• Data collection and processing</li> <li>• Evaluation and result conclusions</li> </ul>

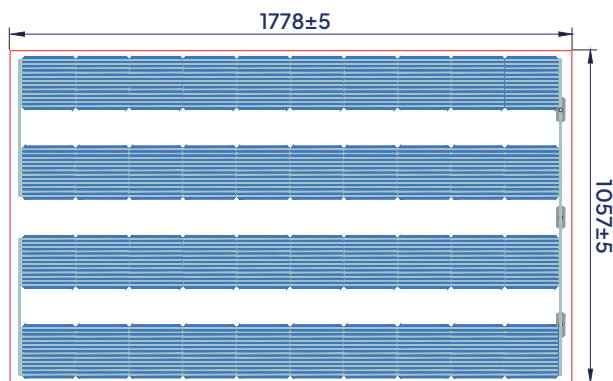
# Photovoltaics parameters\*

Module mechanical data	
Cells	40
Cell type	Bifacial
Cell configuration	4x10
Weight (kg)	30
Dimensions (mm)	1770 x 1049 x 7,1
Glass front/back	3mm/3mm
Frame	Frameless
Junction box	Split junction box / IP68
Transparency (%)	40

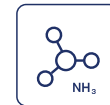
Module electrical data	
Maximum power (W)	245
Max system voltage (V)	1500
Max current (A)	15
Power tolerance (W)	0/+5W
Inverter	
Efficiency	Max 99%
Protection degree	IP66
Communication	Display, USB, MBUS, RS485, (4G)
Nominal Output Voltage	480V / 400V / 380V / 800V

\*For more technical data, please refer to Solid Agro module data sheet

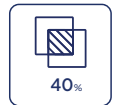
## Solar module scheme



Hail resistance



Ammonia resistance



Transparency



Extreme load resistance



Fire class A



Self-cleaning effect

## Guarantee

- Construction - 10 years
- Solar modules - 30 years
- Inverter - 10 years
- Mounting system - 10 years
- Works - 5 years

## Certificates

AgroPV Construction	Modules
<ul style="list-style-type: none"> <li>UL 2703:2015</li> <li>CE EN1090</li> <li>ISO 9001:2015</li> <li>ISO 14001:2015</li> <li>Grounding (LCIE)</li> <li>Durability (Innoco)</li> </ul>	<ul style="list-style-type: none"> <li>Cradle to Cradle</li> <li>ISO 9001; ISO 14001; ISO 45001</li> <li>IEC 62716 (resistance to ammonia)</li> <li>IEC 61701 (resistance to salt)</li> <li>IEC 61215</li> <li>IES 61730</li> </ul>