abora
Advanced Solar Technology

Hybrid Solar Panel

Energising the future: Combined light and heat generated by the sun!

www.abora-solar.com/en

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aHTech®, hybrid solar panel

The hybrid solar panel with aHTech® technology sets a new standard in the solar industry.

A 2-in-1 solution for cost-effective, clean energy for your business.

- Double energy production
- Higher performance
- High efficiency cells
- Highest quality and reliability on the market

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aHTech®

The world's most efficient and cost-effective solar panel

Maximum energy production

Hybrid solar panels combine the advantages of photovoltaic and thermal technologies. T**hey produce electricity from sunlight while capturing thermal energy, providing you with a dual energy production system.** This means you can maximise energy production and optimise your solar investment by harnessing both electricity and heat with the same panel.

Higher performance

Hybrid solar panels can achieve higher overall efficiency than traditional solar panels. **By using thermal energy, they can convert more of the sun's energy into usable energy, increasing the overall efficiency of the system and maximising energy savings.** This increased efficiency is especially valuable in locations where weather conditions vary and the space available for solar installations is limited.

Space optimisation

They save space by combining two energy production technologies in a single panel. This is especially advantageous when space on the roof or plot is limited. By installing hybrid panels, **you can optimise the use of space and produce more energy,** making them ideal for urban areas or properties with limited space.

aHTech®

The world's most efficient and cost-effective solar panel

Reducing energy costs

Hybrid solar panels allow you to significantly reduce your energy costs. By producing both electricity and heat, you can offset a greater proportion of your energy needs, making you less dependent on the grid or other heating sources. **This can lead to substantial long-term savings on electricity bills and heating costs, helping you to achieve energy independence and financial stability.**

Performance in all weather conditions

Unlike traditional photovoltaic solar panels, which rely solely on sunlight to produce electricity, **hybrid** panels can produce power even in low light or on cloudy days. The thermal component of hybrid panels allows them to capture thermal energy from the environment, enabling them to generate electricity even when sunlight is limited. **This means that you can benefit from constant energy production throughout the day, whatever the weather conditions.**

Durability and longevity

Abora Solar panels are built to last, using high quality materials and robust construction techniques. They are rigorously tested to ensure they can withstand adverse weather conditions, temperature variations and mechanical stresses. **When you invest in hybrid panels, you benefit from long life and reliable performance, which translates into a solid return on investment.**

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HYBRID SOLAR PANEL

aHTech®

Abora Solar designs, develops and manufactures the world's most cost-effective solar panel with an efficiency of 89%, achieving a certified world record.

The hybrid solar panel with aHTech® technology produces the same energy as 4 photovoltaic panels.

Efficiency

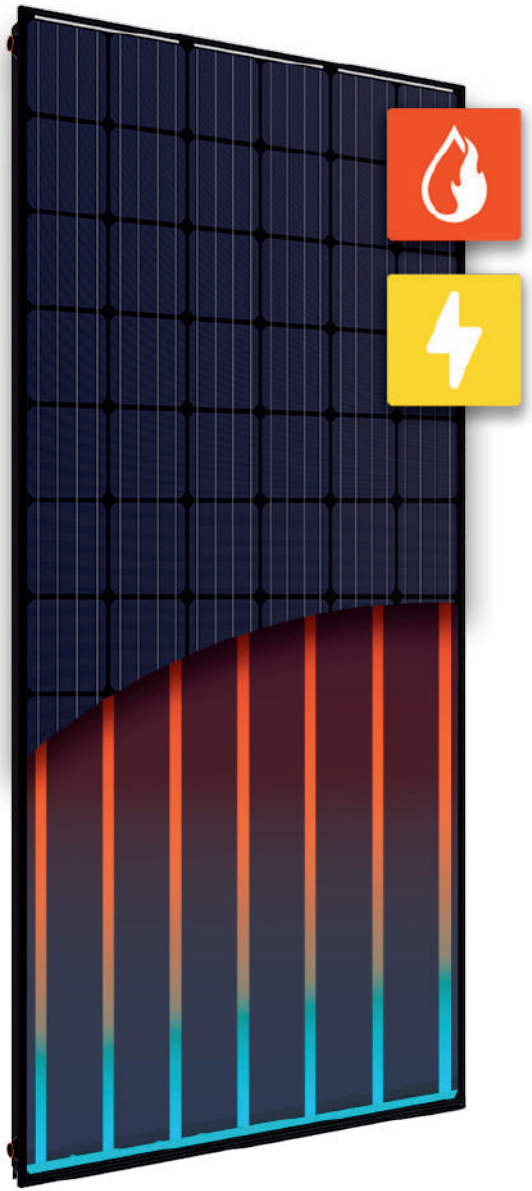
89%

Manufacture

MADE IN SPAIN

Quality

The Solar Keymark
CEN Keymark Scheme



Product
Hybrid solar panel

Energy
Thermal production
Electricity production

Compatible auxiliary systems
Biomass boilers
Gas boilers
Heat pumps

Application
Industrial sector
Tertiary sector
Residential sector

Benefits
Higher efficiency
Higher savings
Best reduction of CO2 emissions

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TECHNICAL DATA
HYBRID SOLAR PANEL

General specifications

Length x width x thickness	1.970 x 995x (85+22) mm
Total area	1,96 m²
Opening area	1,88 m²
Number of cells	72
Weight	50 kg
Front glass	3,2 mm. tempered
Framework	Aluminium
Connection box protection	IP65
Number of diodes	3 dio des
Dimensions of the cell	156 x 156 mm
Connection type PV / length cables	Solar lok PV4/ 1m

Electric specifications

Cell type	mono-
Rated power (W)	crystalline
Maximum power voltage (Vmpp)	350W
Maximum power current (Impp)	39,18V
Open circuit voltage (Voc)	8,98A
Short circuit current (Isc)	48,82V
Module efficiency (%)	9,73A
Power tolerance (W)	17,8
Maximum system voltage	+/- 4%
Backsheet	DC 1000V(IEC)
Temperature coefficient of Pmpp	Black
Temperature coefficient of Voc	-0,36%/ºC
Temperature coefficient of Isc	-0,28%/ºC
Maximum reverse current	+0,06%/ºC 15A
NOCT Temperature	45+/-2 ºC

Standard test conditions STC: AM 1.5. irradiation 1000 W / m2
Cell temperature 25 Cº

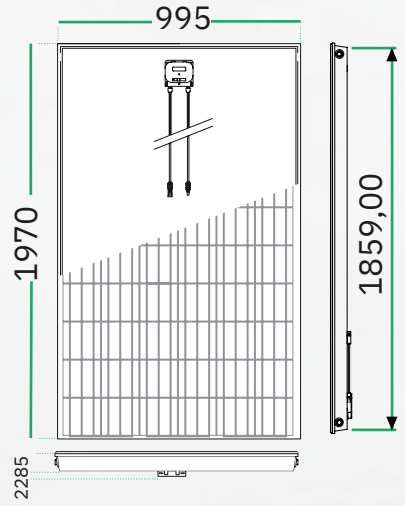
Thermal specifications

Optical performance	0,7
Coeffiicient of thermal losses, a1	5,98W/m².K²
Coefficient of thermal losses ,a2	0,00W/m².K²
Internal liquid capacitante	1,78L
Stagnation temperature	126ºC
Number of hydraulic connection	4 Conexions
Measure hydraulic connectios	Quick connection
Maximum permissible pressure	10bar
Nominal flow	60L/h

Standard test conditions STC: AM 1.5. irradiation 1000 W / m2
Cell temperature 25 Cº

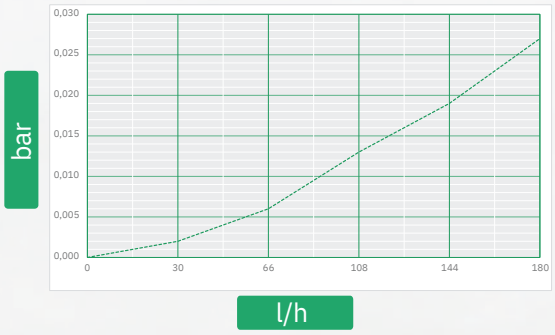
*Subject to technical modifications without prior notice.

Dimensions

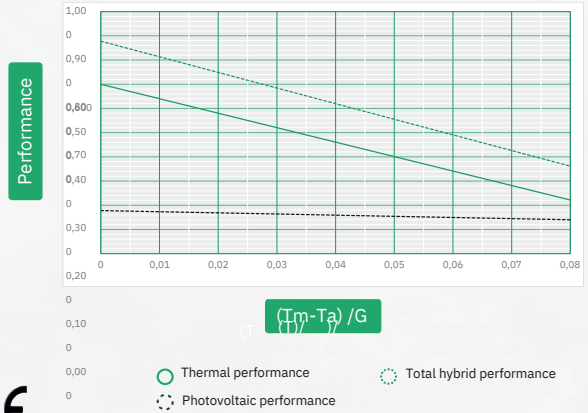


Head loss

Pressure drop:Tª max:20,13 ºC/ Tª min: 19,39 ºC



Yield curve



Complies with product standards: : DIN EN 12975-1:2011-01; DIN EN ISO 9806:2018-04
SolarKeymark Schema Rules (2021-07)DIN EN IEC 61730-1,-2:2018-10; EN IEC 61730-1,-2:2018+AC:2018; IEC 61730-1,-2:2016
IEC 61215-1,-2: 2016

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aHTech®

Technical features

Specifications

- Higher energy output per m2
- Higher durability
- Higher market profitability
- Environmental sustainability
- Performance in all weather conditions

MADE IN SPAIN

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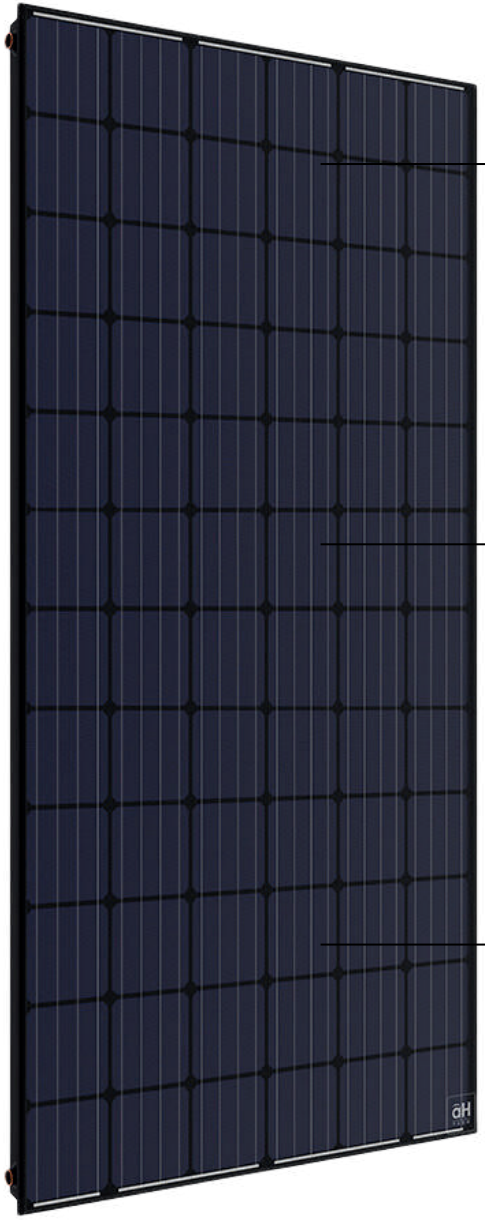

Double production

They produce electricity and heat simultaneously. They convert sunlight into usable electricity using photovoltaic cells and, at the same time, capture and use the excess heat generated by the photovoltaic cells.

Higher performance

They are certified and patented as the most efficient solar panel in the world, with an efficiency of 89%. This high efficiency translates directly into profitability, as our panel will produce more energy in a smaller space.

Energy savings

The ability of our **hybrid** solar panels to capture and utilise heat reduces overall energy demand for space or water heating as well as capturing light to produce electricity, which translates into energy savings and greater cost-effectiveness.

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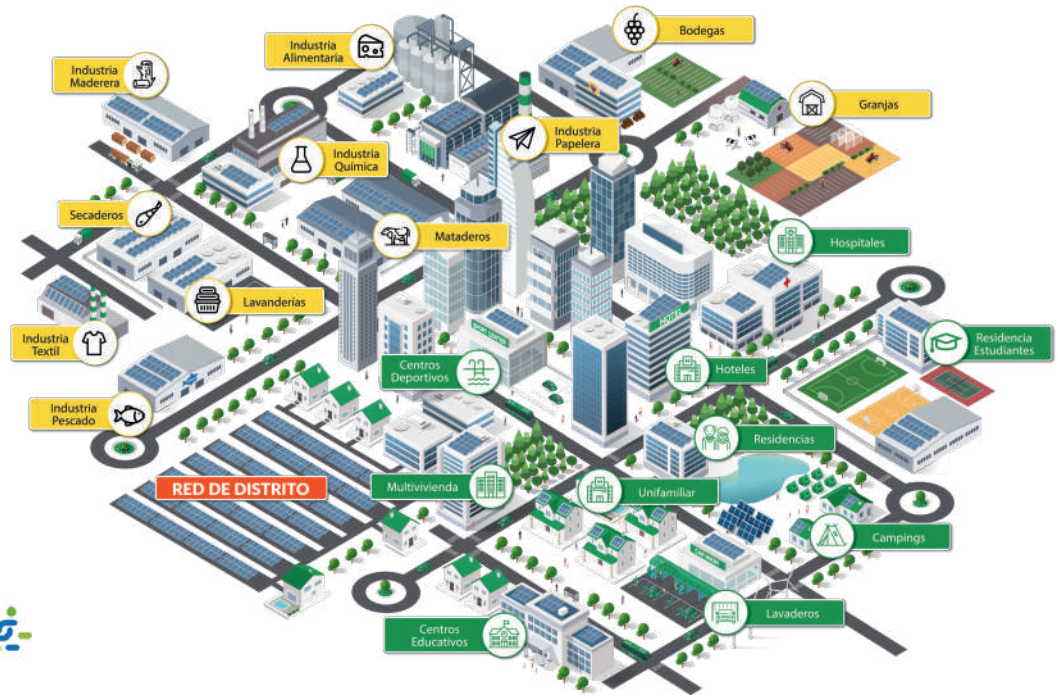
The right solution for your sector.

The **most efficient and cost-effective** solar panel, 100% made in Spain, in the world.
More than 40,000 m2 installed in more than 38 countries.



They already trust Abora.

endesa · quirónsalud · vitalia HOME · Ayuntamiento de TAUSTE · Hoteles SantoS
CESTE Escuela Internacional de Negocios · Naturgy · IBEROSTAR HOTELS & RESORTS · Akelius · Rebi
SYTA · Fundeen · Zaragoza · Tereos · Boltaña Pirineo Vivo · Forus

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More than 40 000 m² installed

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HYBRID SOLAR PANELS

SUCCESS CASE STUDIES

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HYBRID SOLAR PANEL INSTALLATION

Club Natació Barcelona

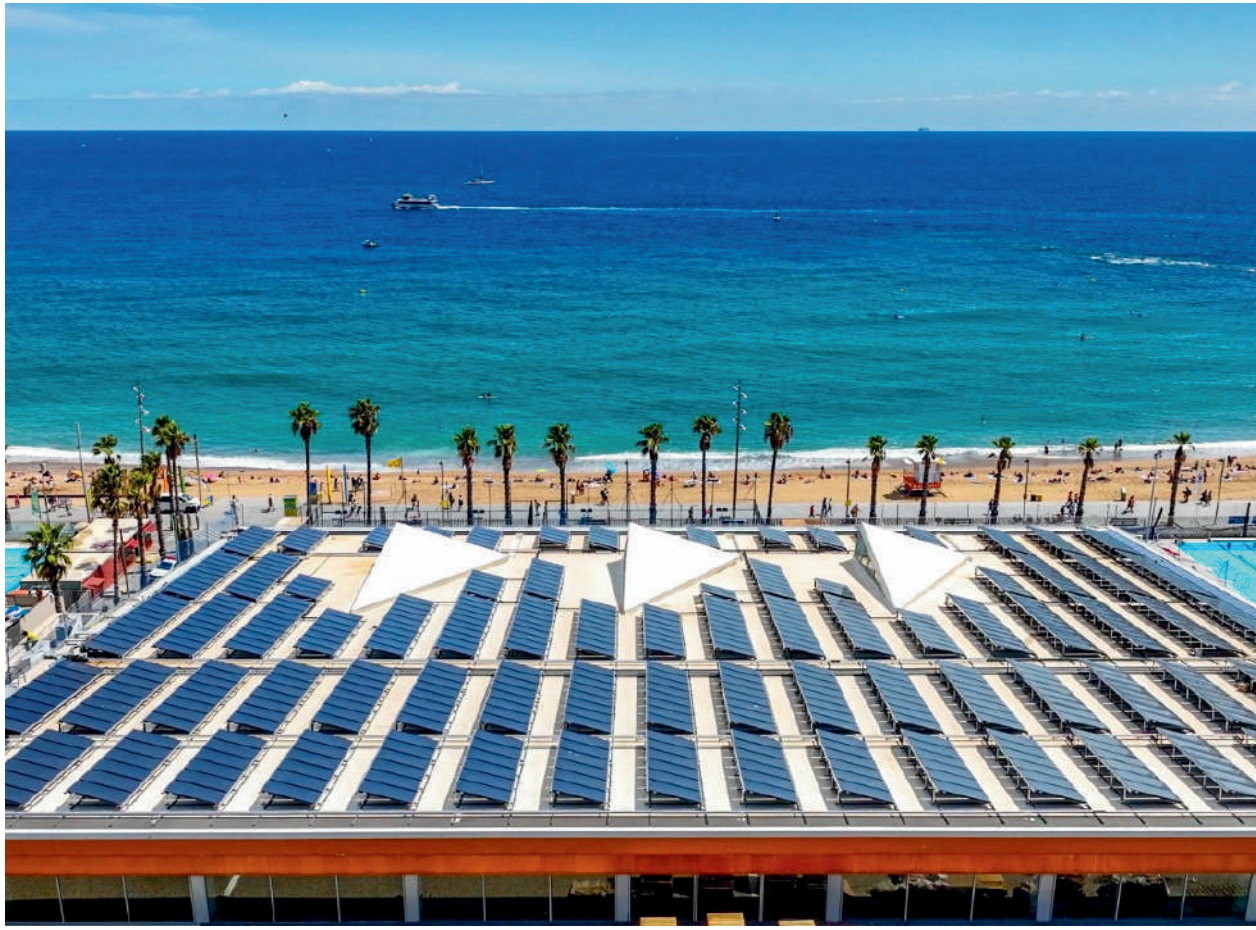
Sector
Sports Centre

Hybrid solar panels
1041

Year of installation
2023

Emissions avoided
774.809 KgCO2/year

Location
Barcelona



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HYBRID SOLAR PANEL INSTALLATION

Building OECD

Sector
Other

Emissions avoided
52 955 KgCO2/year

Hybrid solar panels
140

Location
Paris

Year of installation
2021

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HYBRID SOLAR PANEL INSTALLATION

Hotel Hacienda Na Xamena

Sector
Hotel

Emissions avoided
61 070 KgCO2/year

Hybrid solar panels
63

Location
Ibiza

Year of installation
2023

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HYBRID SOLAR PANEL INSTALLATION

Hotel Ibertostar Royal Andalus

Sector
Hotel

Hybrid solar panels
300

Year of installation
2020

Emissions avoided
204 785 KgCO2/year

Location
Chiclana de la Frontera

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HYBRID SOLAR PANEL INSTALLATION

Hotel Netherlands

Sector
Hotel

Emissions avoided
5 693 KgCO2/year

Hybrid solar panels
12

Location
La Haye

Year of installation
2021

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HYBRID SOLAR PANEL INSTALLATION

Hotel Ibertostar Jardín del Sol

Sector
Hotel

Hybrid solar panels
162

Year of installation
2022

Emissions avoided
170 325 KgCO2/year

Location
Mallorca

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HYBRID SOLAR PANEL INSTALLATION

Hotel Ruigrok

Sector
Hotel

Hybrid solar panels
44

Year of installation
2023

Emissions avoided
14 723 KgCO2/year

Location
Ruigrok, Netherlands

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HYBRID SOLAR PANEL INSTALLATION

Car wash

Sector
Industry

Hybrid solar panels
36

Year of installation
2023

Emissions avoided
9 tCO2/year

Location
Hanko

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HYBRID SOLAR PANEL INSTALLATION

Industry Arpa

Sector
Industry

Hybrid solar panels
112

Year of installation
2018

Emissions avoided
59 360 KgCO2/year

Location
Zaragoza

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HYBRID SOLAR PANEL INSTALLATION

Car wash

Sector
Industry

Hybrid solar panels
63

Year of installation
2020

Emissions avoided
40 715 KgCO2/year

Location
Huesca

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HYBRID SOLAR PANEL INSTALLATION

Hospital La Maz

Sector
Hospital

Hybrid solar panels
90

Year of installation
2023

Emissions avoided
66 684 KgCO2/year

Location
Zaragoza

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HYBRID SOLAR PANEL INSTALLATION

CIBA - Biomedical Investigation Centre

Sector
Hospital

Emissions avoided
83 020 KgCO2/year

Hybrid solar panels
58

Location
Zaragoza

Year of installation
2023

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HYBRID SOLAR PANEL INSTALLATION

Rest Home Vitalia

Sector
Rest Home

Hybrid solar panels
64

Year of installation
2018

Emissions avoided
33 920 KgCO2/year

Location
Málaga

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HYBRID SOLAR PANEL INSTALLATION

Rest Home Vitalia

Sector
Rest Home

Emissions avoided
33 920 KgCO2/year

Hybrid solar panels
64

Location
Zaragoza

Year of installation
2018

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HYBRID SOLAR PANEL INSTALLATION

Rest Home

Sector
Rest Home

Hybrid solar panels
126

Year of installation
2023

Emissions avoided
55 640 KgCO2/year

Location
Kungsbacka

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HYBRID SOLAR PANEL INSTALLATION

Rest Home Campotejar

Sector
Rest Home

Emissions avoided
27 030 KgCO2/year

Hybrid solar panels
51

Location
Granada

Year of installation
2019

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HYBRID SOLAR PANEL INSTALLATION

Multi-dwelling

Sector
Multi-dwelling

Emissions avoided
21 137 KgCO2/year

Hybrid solar panels
32

Location
Zaragoza

Year of installation
2019

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HYBRID SOLAR PANEL INSTALLATION

Multi-dwelling

Sector
Multi-dwelling

Emissions avoided
15 552 KgCO2/year

Hybrid solar panels
28

Location
Zaragoza

Year of installation
2018

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HYBRID SOLAR PANEL INSTALLATION

Sports centre Bilbao

Sector
Sport Center

Hybrid solar panels
72

Year of installation
2023

Emissions avoided
53 640 KgCO2/year

Location
Bilbao

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HYBRID SOLAR PANEL INSTALLATION

Sports centre San Cugat

Sector
Sport Center

Hybrid solar panels
160

Year of installation
2018

Emissions avoided
84 800 KgCO2/year

Location
San Cugat

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HYBRID SOLAR PANEL INSTALLATION

Residence single-family

Sector
Home

Emissions avoided
6 376 KgCO2/year

Hybrid solar panels
14

Location
Zaragoza

Year of installation
2018

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HYBRID SOLAR PANEL INSTALLATION

Residence single-family

Sector
Home

Emissions avoided
18 811 KgCO2/year

Hybrid solar panels
38

Location
Marseilla

Year of installation
2019

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HYBRID SOLAR PANEL INSTALLATION

Embassy of Belgium in Spain

Sector
Home

Emissions avoided
16.102 KgCO2/year

Hybrid solar panels
12

Years of amortisation
7

Year of installation
2023

Location
Madrid

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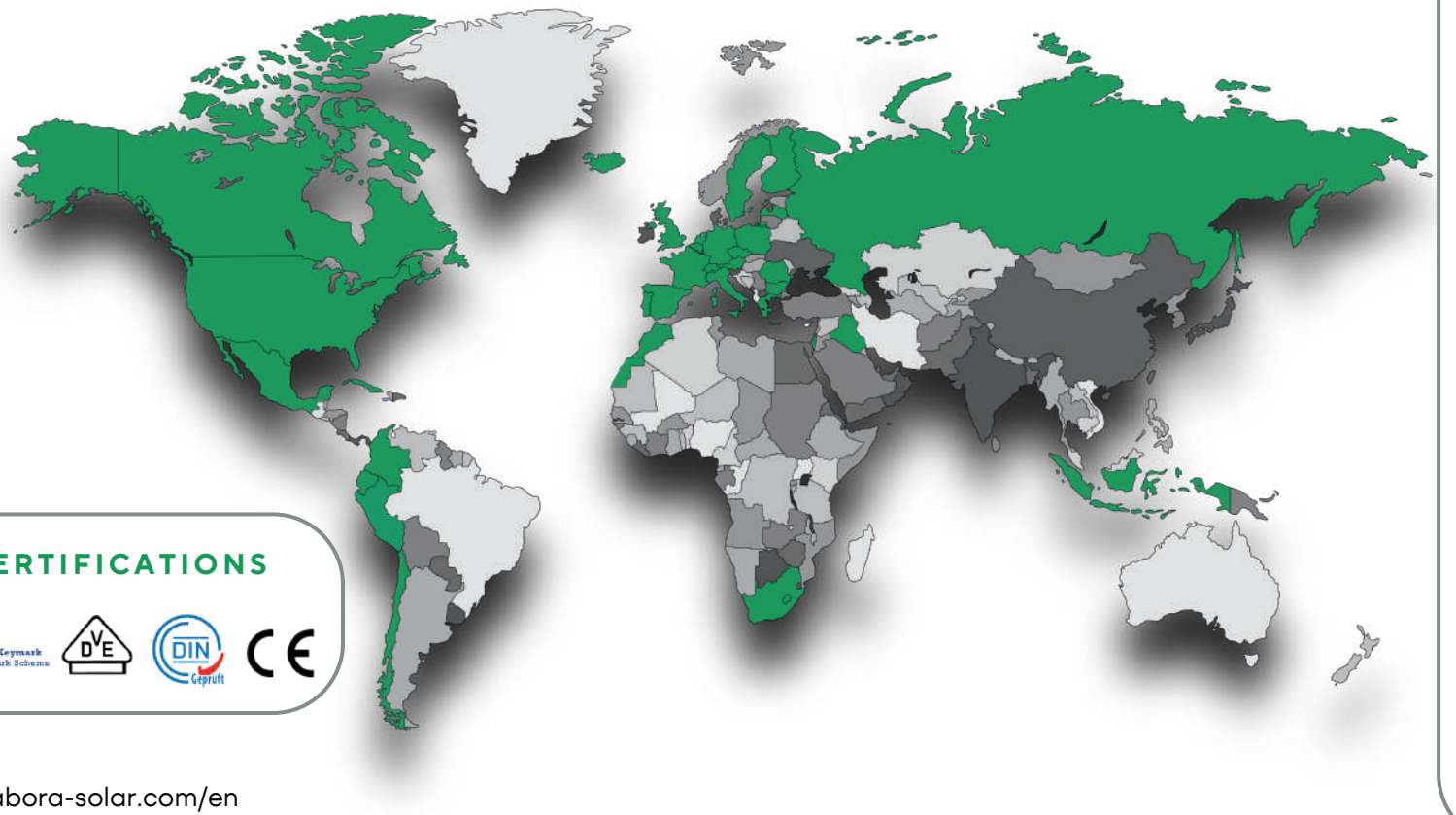
THE DATA DON'T LIE

Our panels have already reached 38 countries around the world.
Don't settle for less when you can choose the best, choose **Abora**.



CERTIFICATIONS

The Solar Keymark
CEN Keymark Scheme

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INTERNATIONAL PARTNERS

EUROPE

- Spain
- France
- Germany
- Ireland
- England
- Netherlands
- Romania
- Czech Republic
- Portugal
- Poland
- Finland

AMERICAS

- Colombia
- Peru
- Ecuador
- Canada

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The hybrid to save more with your solar installation.

Thanks to their dual power generation, electricity and heat, our **hybrid** solar panels silently convert sunlight into energy for decades. Their hybrid technology makes it possible to achieve four times as much energy as photovoltaics in a minimum of space.

ASK FOR YOUR STUDY AT ABORA-SOLAR.COM

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