

**swiss solar** QUALITY  
TECHNOLOGY

# High technology solar modules

E N G I N E E R E D   I N   S W I T Z E R L A N D



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swiss solar



# 01 About SWISS SOLAR AG

- Profile
- Business Scope
- Business Philosophy
- Annual Capacity
- Top Brand Facilities
- Market Strategy





## > About SWISS SOLAR AG

SWISS SOLAR AG – is an independent European solar module manufacturer represented in Europe, Asia and North America in the respective key markets and has subsidiaries and own service centers in China mainland and Taiwan, Germany, India, Japan, Korea, Malaysia, Switzerland, Singapore and the USA.

Company is a leading and globally active technology company. It is specialized in innovative systems and production of solar cells and solar modules.

Currently the annual production capacity is 800MW for cells and 800MW for modules, with a new automatic factory under construction now and expected capacity of 1GW in 2021.

From simple beginnings, Swiss Solar has expanded globally. We now sell our products in more than 100 countries.

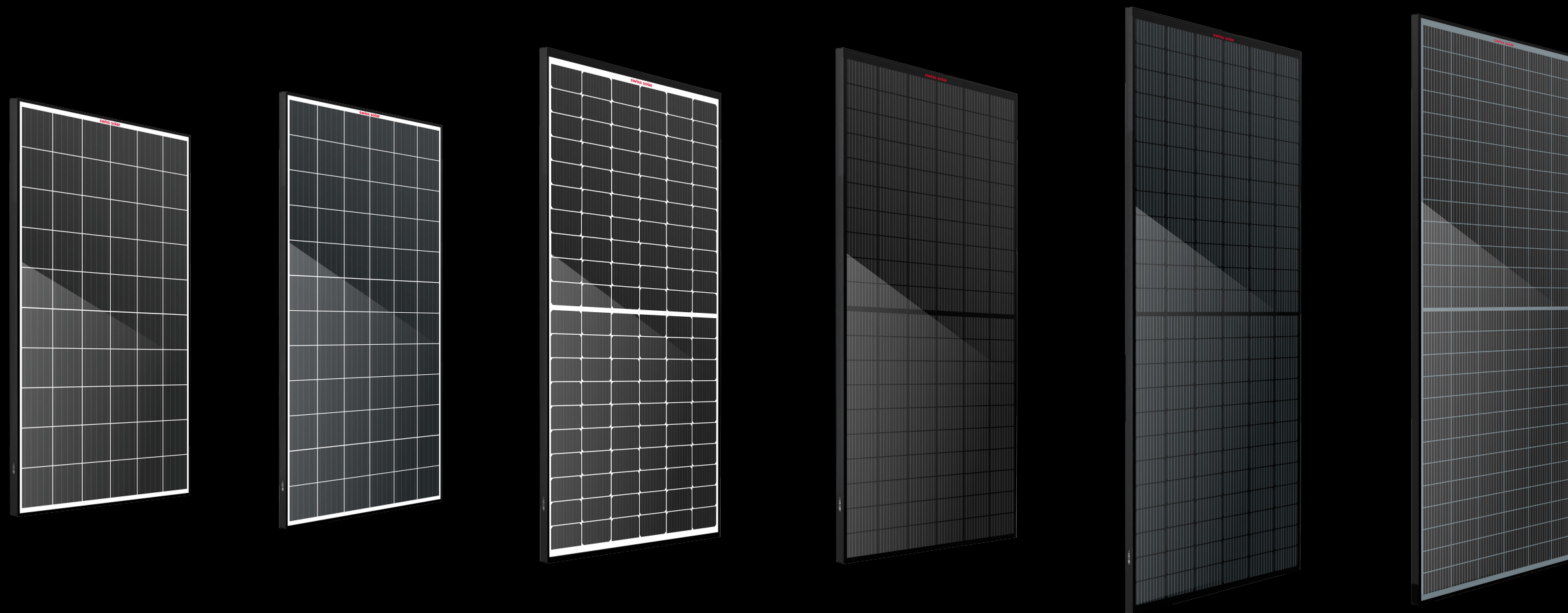
180 employee on the factory and 30 employee on the main office





## > Business Scope

The product covers a wide range both mono-crystalline and poly-crystalline, from 5BB to 12BB and Half-Cut 9BB, from silver frame to full black and double glass bifacial panels, suitable for on-grid and off-grid application.



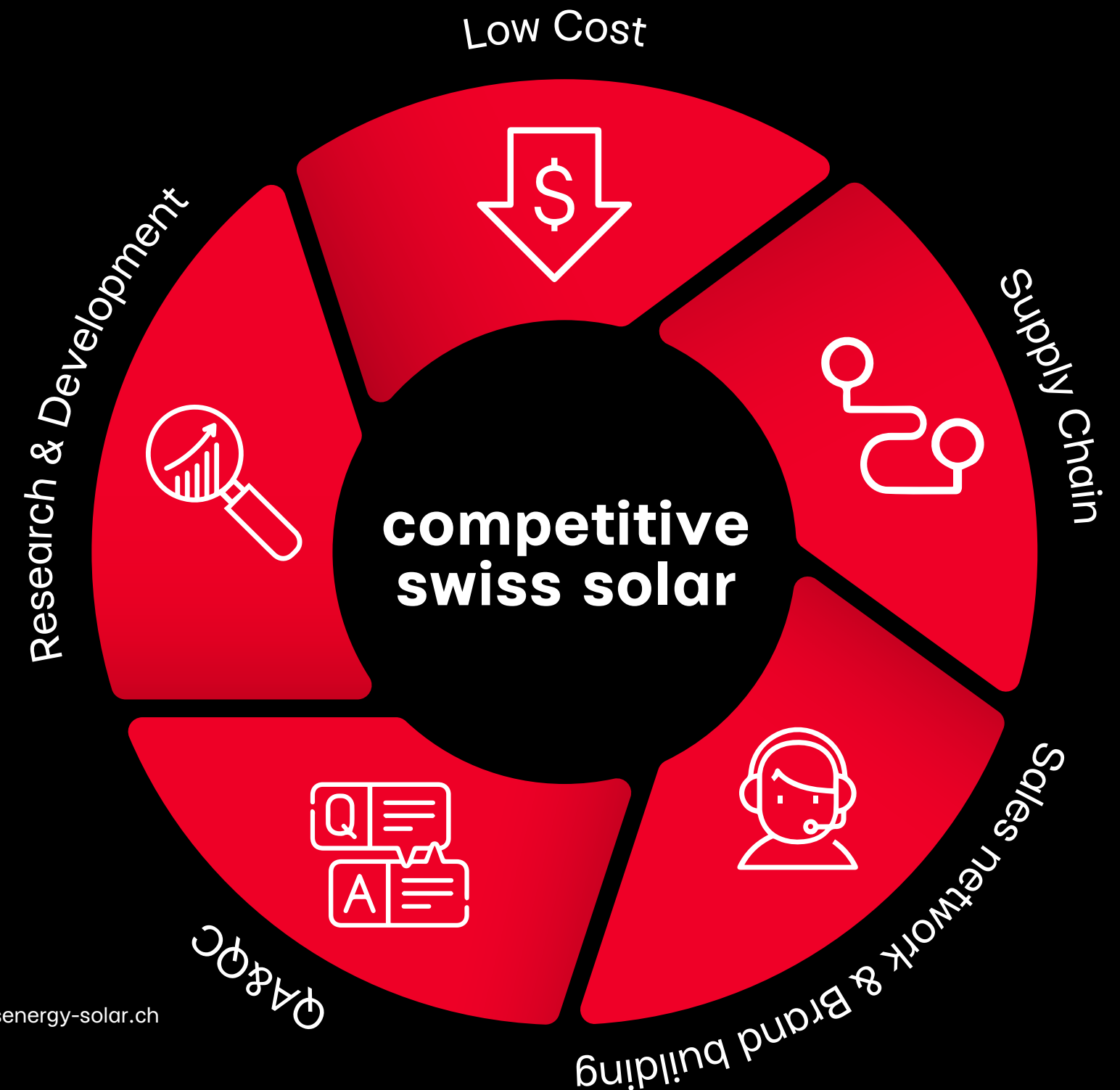
**SWISS SOLAR**  
**has started production**  
**of new modules**  
**up to 670W**

**500W 670W 1000W**



## > Business Philosophy

- 1 Reliable quality**
- 2 Long-term relationship**
- 3 Flexible service**



## > Save planet

SWISS SOLAR AG, which is manufacturer of solar modules, thinks about making it easier to recycle solar panels to ensure the most environmentally friendly products. Many chemicals are recyclable due to their value. When manufacturers are interested in recycling these materials, they cut costs. For sure, we are struggling for sustainable development of solar energy. We are confronting the traditional dirty industries that cause CO<sub>2</sub>, as a result, global climate change.

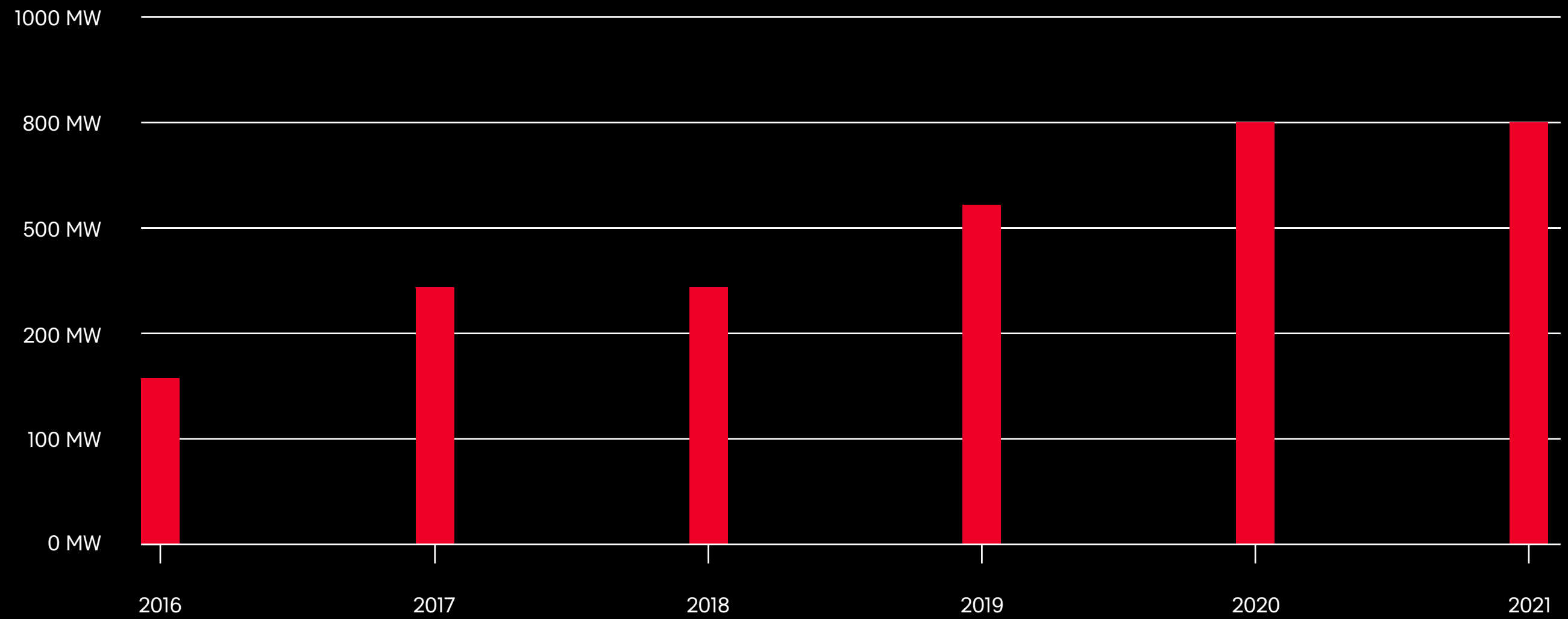
But what about the production and recycling of PV modules; how else can we support the environment?

We are working to minimize the amount of hazardous waste that is damaging to the environment. One of our main tasks is to be environmentally friendly with everything. From souvenirs for our customers to production, we try to make the most of eco-friendly materials and recycle hazardous waste in production in an environmentally friendly way.

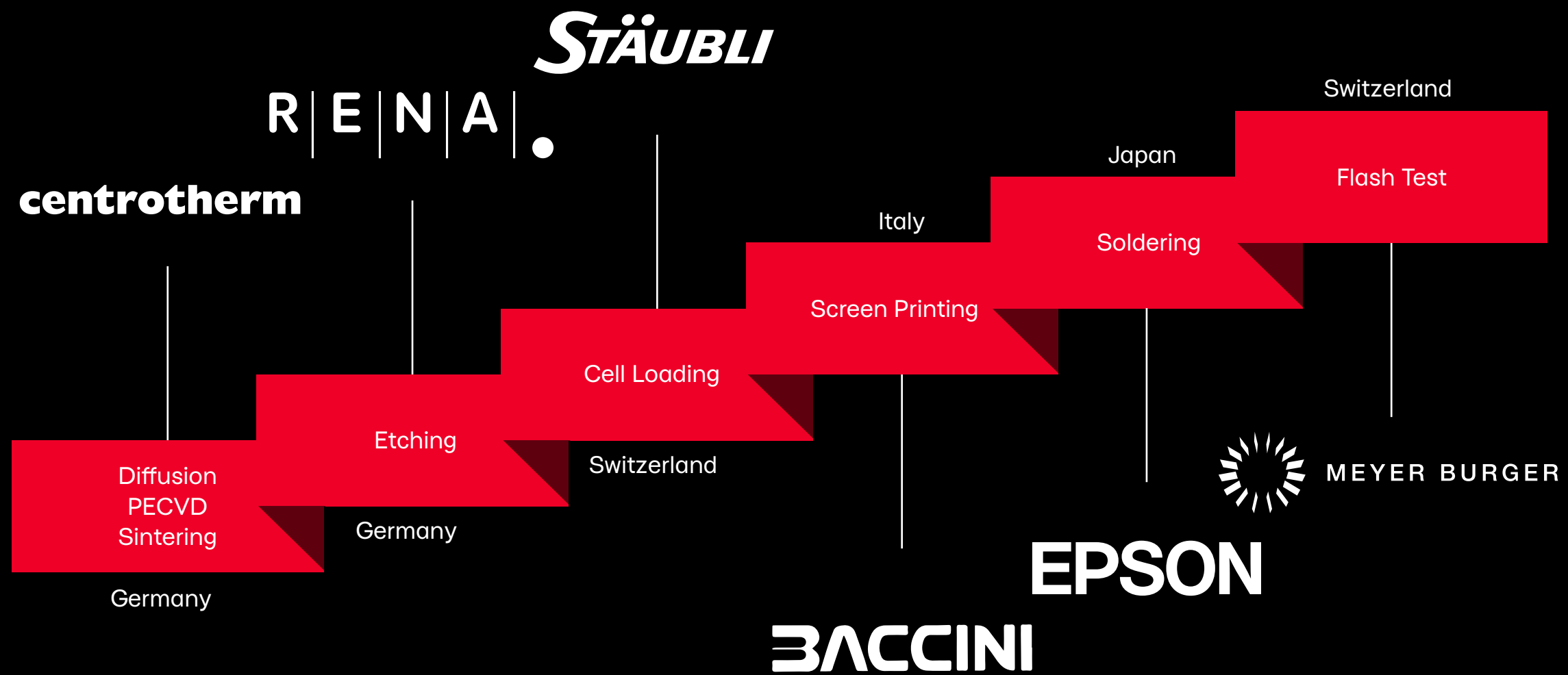


## > Annual Production Capacity

■ Panel



## > Top Brand Facilities





## > Market Strategy

### SWISS SOLAR AG customer focus

#### Wholesalers and distributors

- 8 official distributors in Europe
- 4 warehouses in Europe ( Rotterdam, Germany, Poland, Ukraine)
- always on the stock in Europe more than 1 MW solar modules
- fast production (production of modules in 14 days after payment)

#### PV system integrators and large installers

- contracts with large European project companies
- exclusive price for the project

# 02 Advanced Technology & Superior Quality

- > Product Range + Quality Control Tests
- > Warranty



## > Product Range

**mono** perc

DUO

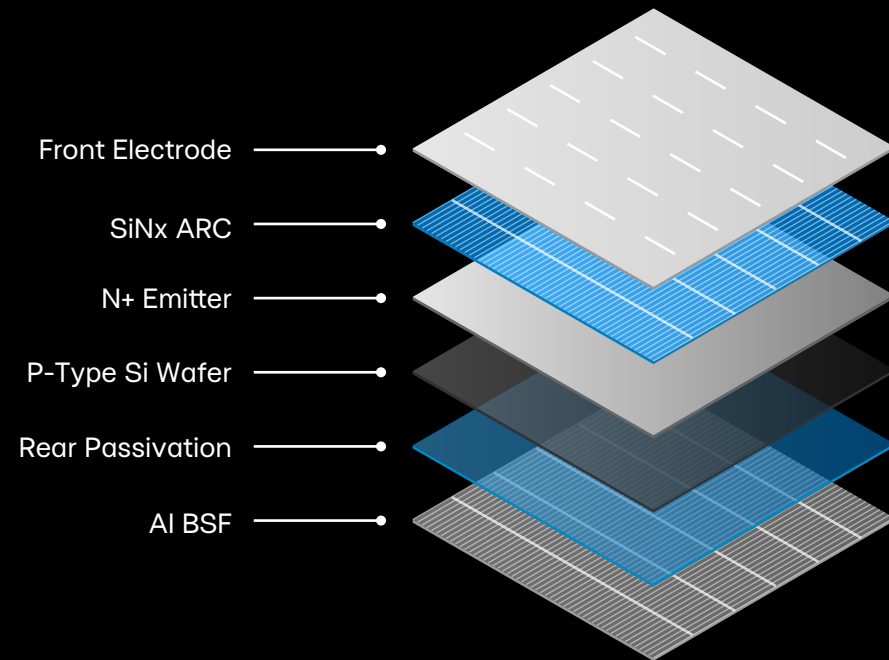
**COSMOS**

AEON

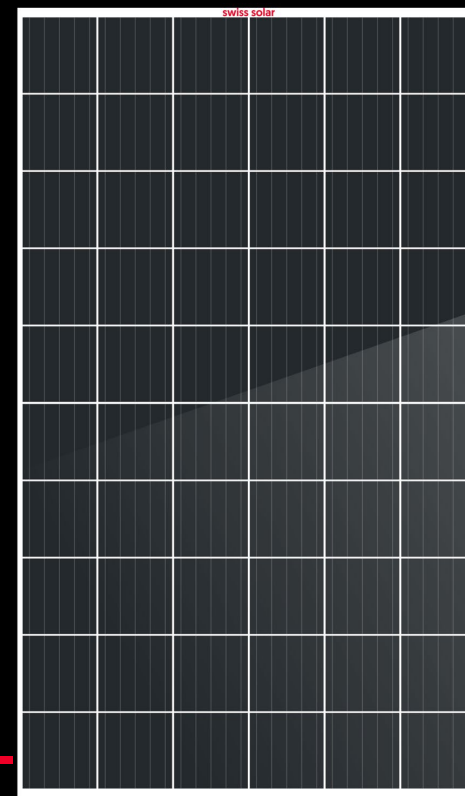
***EIGER***

## > PERC technology

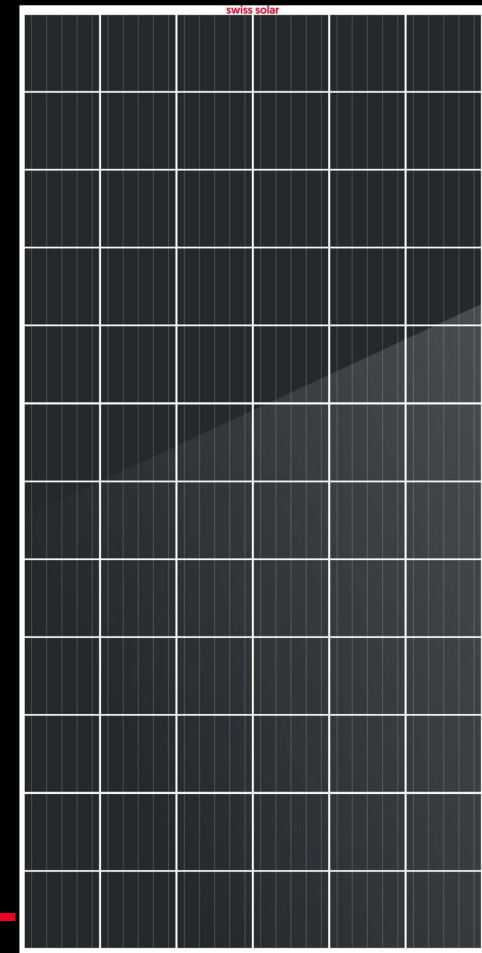
- The application of a passivation film to the back surface of the cell increases the light absorption capacity of the back surface, which greatly improves the efficiency of the solar cell.
- As the previous cell (158.75 x 158.75mm and 166 x 166mm) P-type monocrystalline and polycrystalline wafer standard is rapidly becoming obsolete, there is a quick and significant transition to a range of larger wafers requiring half-cell cutting using a multilayer bus (MBB). As we know, full cell technology comes out of the solar market with an interest rate of only 10% of the total worldwide turnover.



**IBEX 60M-PERC**  
from 315 up to 335 Watt



**IBEX 72M-PERC**  
from 380 up to 400 Watt





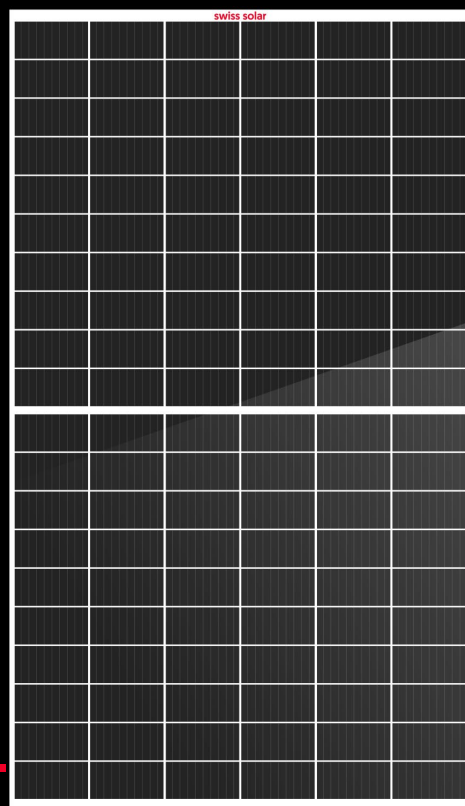
## > DUO series

• IBEX DUO Technology - for this series we use Half-cut cell technology is to cut the cell into two separate parts by mature infrared laser, hence halve the working current. The thermal loss on the ribbon will be remarkably reduced and the modules power increases by 2%. And for this modules we also use PERC technology

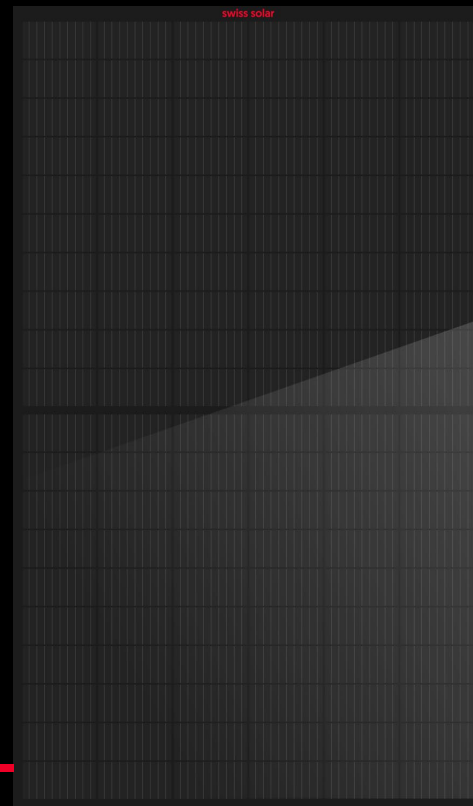
### Properties

- Lower hot spot temperature
- Lower Operating temperature
- Lower Shading Loss

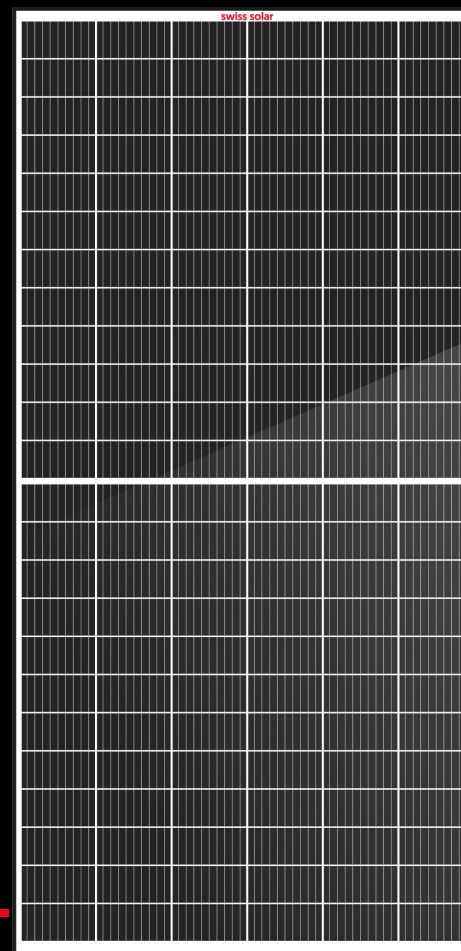
**IBEX 120 MHC-DUO**  
from 330 up to 355 Watt



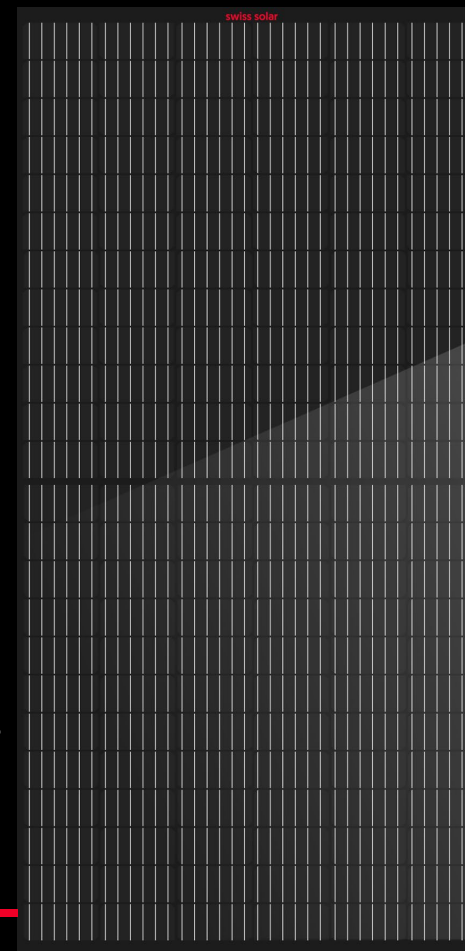
**IBEX 120 MHC-DUO BLACK**  
from 330 up to 355 Watt



**IBEX 144 MHC-DUO**  
from 395 up to 420 Watt



**IBEX 144 MHC-DUO BLACK**  
from 395 up to 420 Watt



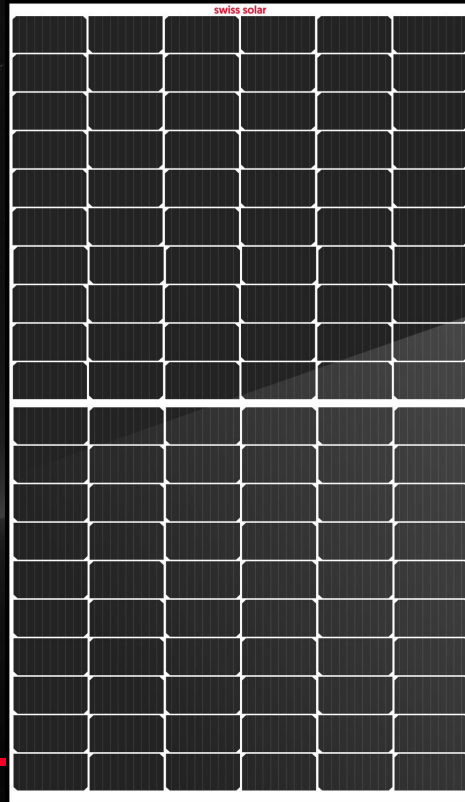
# COSMOS

## > COSMOS series

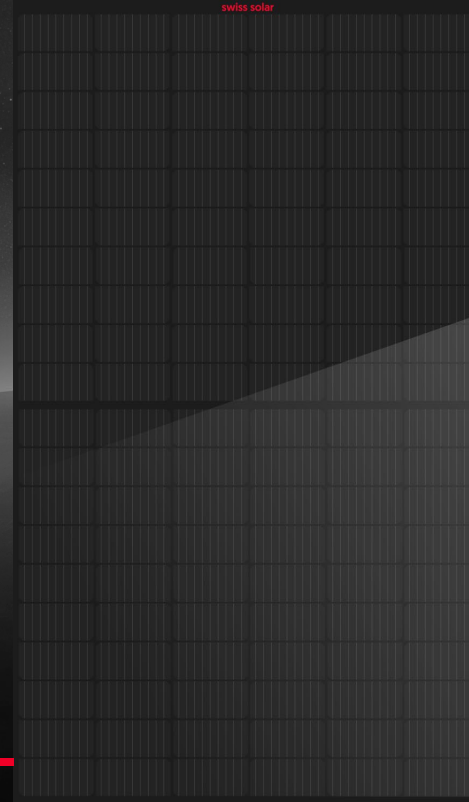
- Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 20.82%.
- IBEX COSMOS Technology supercharges ordinary crystalline solar cells and modules and does not involve a complex new cell design, nor does it require special system components.

IBEX COSMOS Technology works at cloudy, rainy days, HC technology is used to reduce the negative affection to yield caused by micro crack and shadow.

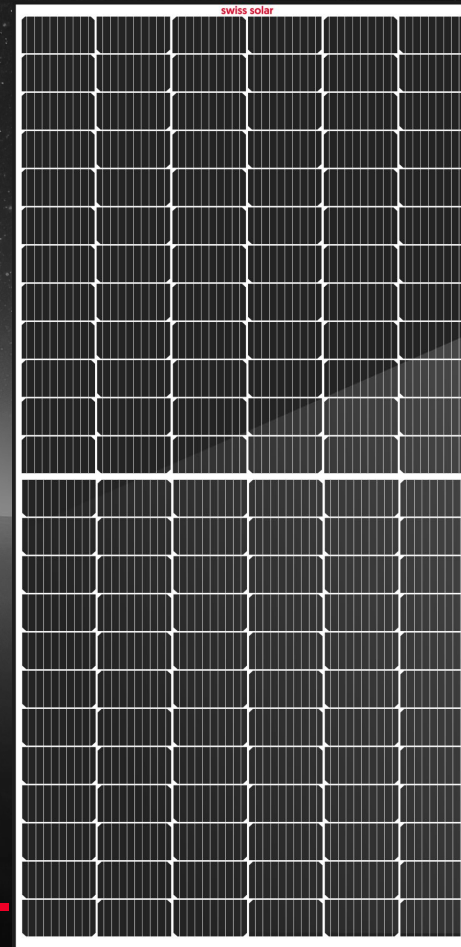
**IBEX 120MHC-COSMOS**  
from 360 up to 380 Watt



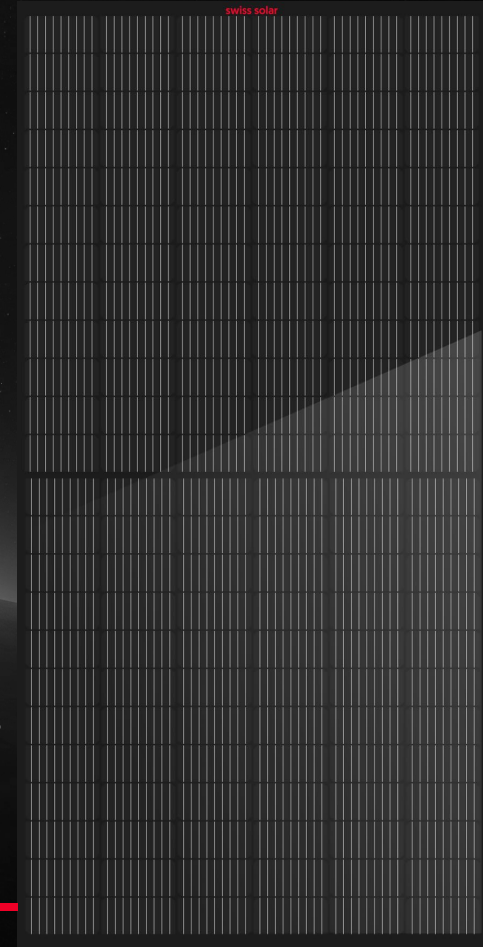
**IBEX 120MHC-COSMOS BLACK**  
from 360 up to 380 Watt



**IBEX 144MHC-COSMOS**  
from 435 up to 455 Watt



**IBEX 144MHC-COSMOS BLACK**  
from 435 up to 455 Watt



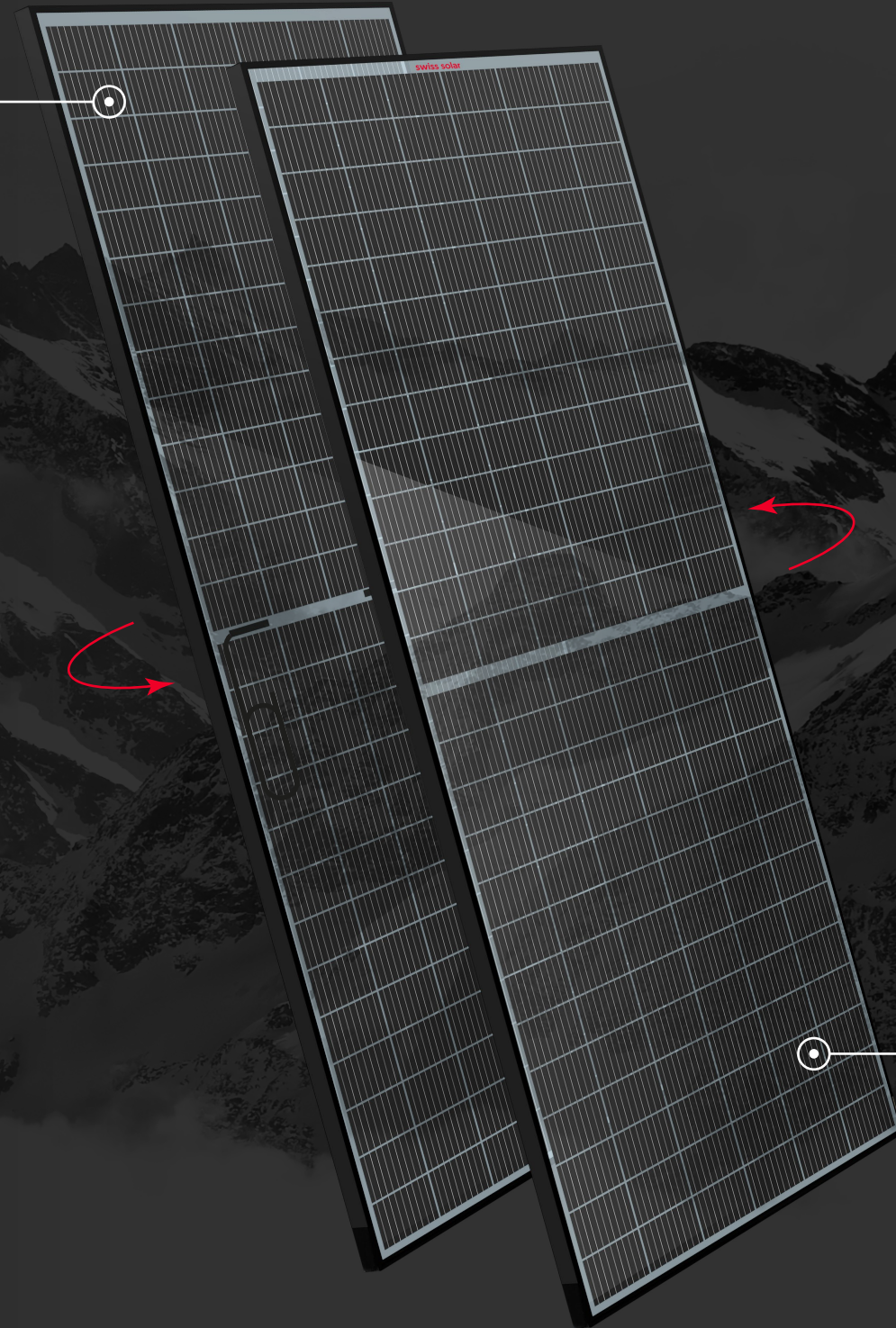


## > AEON series

- SWISS SOLAR AG launches IBEX 156MHC-AEON BIFACIAL from 435 up to 450 Watt
- BIFACIAL technology is the ability of solar cells or modules to convert light from both the front and the back into electrical energy.
- Solar trackers are ideal for bifacial solar module. Since there is enough free space under the solar modules, the sun's rays can freely reflect from the system and reach the back of the solar cell.
- Now the number of solar double glass projects is growing rapidly, there is a growing understanding of how to design and build systems that harness the core strengths of the technology.
- SWISS SOLAR AG always analyzes the markets around the world and tries to be trendy by constantly developing solar cells and solar module technologies.

back

front

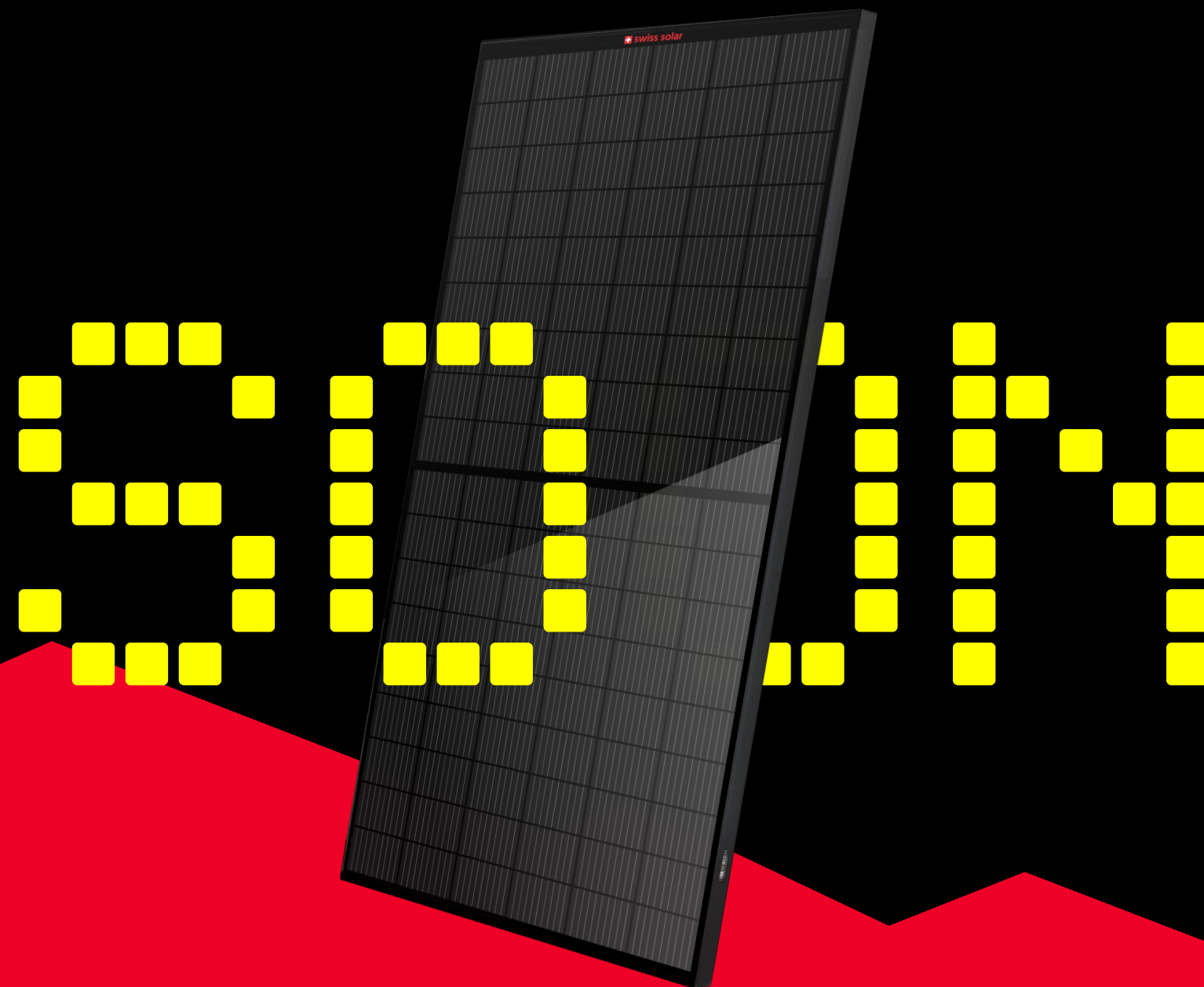


## > EIGER series up to 670 Watt

- M10 Gallium doped mono wafer.
- P-type PERC cell
- 9BB Half-cut technology
- Normal 6 rows 72 C / 66 C module design
- Power temperature coefficient  $-0.35\%/^{\circ}\text{C}$
- 21.1% module efficiency
- largest cell size (210 mm x 109,22 mm)

### Smart Soldering Technology

- Flat section achieve dense soldering with low stress
- Micro-gap
- Triangular section





## > Lowest LCOE solutions for ultra-large power plants for EIGER series

### Lower logistics cost

- Optimizes use of container space in transport.
- Logistics costs 10% lower than mainstream products.

### Improved system capacity ratio

- Matched with string inverters, cost per watt on the AC side is reduced.

### Reduced equipment & material cost

- EIGER series enables higher power per string, significantly reducing racking, pile foundation, cable, combiner box and land cost.

### Saved labor cost

- Reduced installation costs for modules, cables, etc.

### Power generation

- High module power and excellent power generation performance under low light.
- Low power temperature coefficient.
- Reliable bifacial module power generation gain.
- Industry-leading power warranty.

SWISS solar

## > Quality Control Tests

Long-term Strategic Partnership to perform in-house certification testing

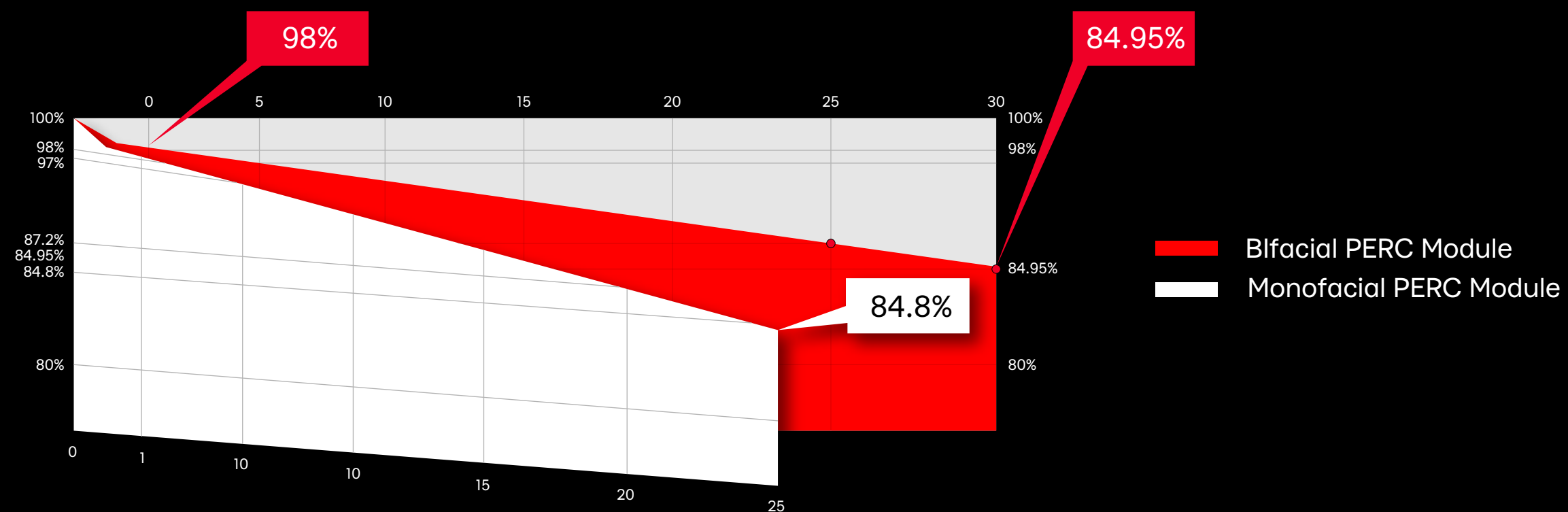


Wet Leakage test	Damp Heat test	Mechanical load test	Highly Accelerated Stress test	Humidity Freeze test	Outdoor Exposure test
UV Preconditioning test	Impact testing	Corrosive Atmosphere test	Hot-spot Endurance test	Insulation test (Dry & Wet)	Thermal Cycling test
Bypass Diode test	Materials & components testing	Q.C. throughout Manufacturing Process	Micro-crack testing	Measurement of NOCT	Flash testing

## > Warranty

The best engineers from around the world developed advanced technologies of the world's highest quality standards.

Strict quality control as every state of production with the most advanced methods of testing checking each panel by the highest quality standards in the world. In relation to that, SWISS SOLAR AG provides an extended warranty, 20 years for materials and 30 years for power.





# 02 Reference Projects

- Europe & Others
- Global warehouse





> GERMANY | 2 MW



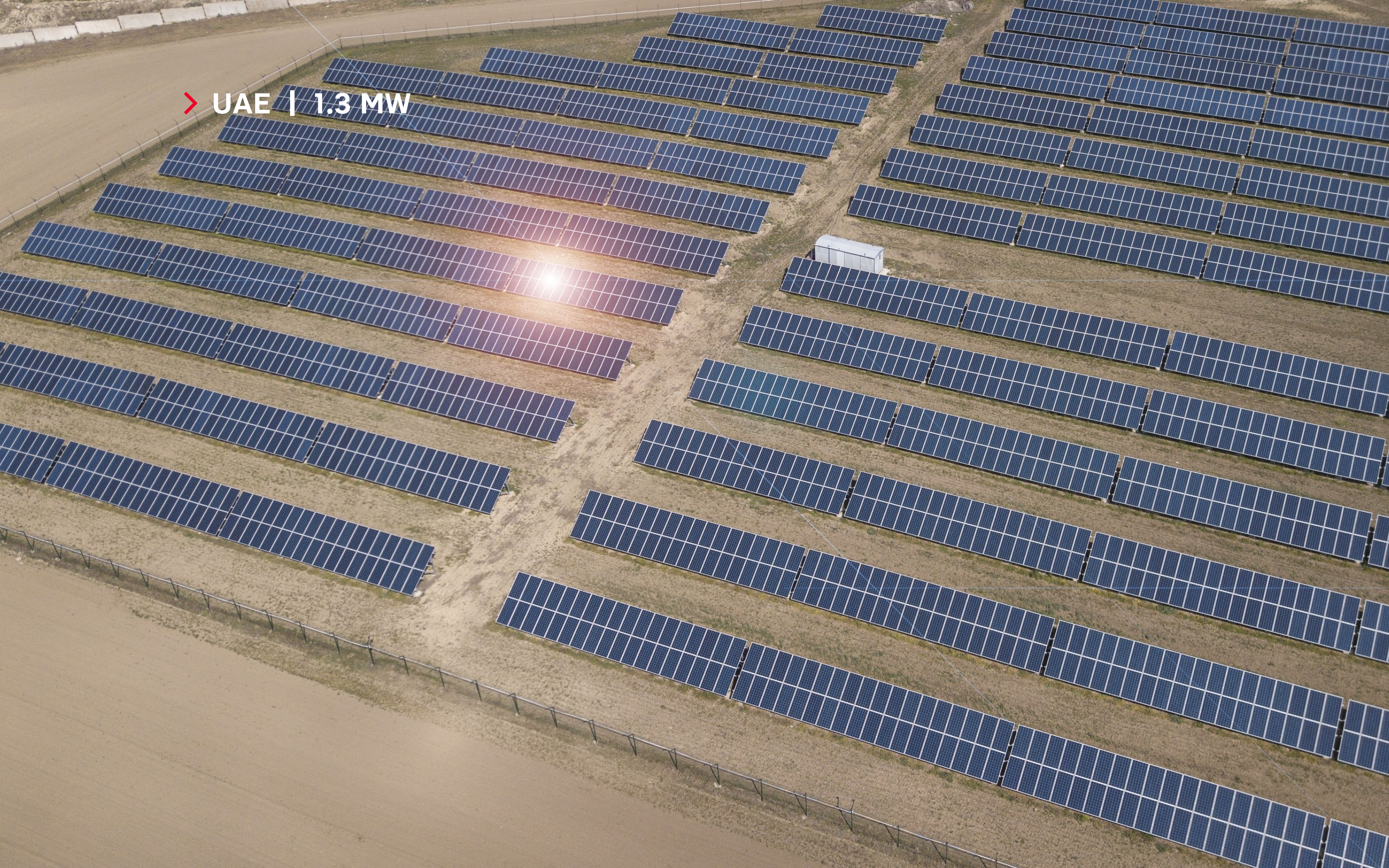


> UKRAINE | 43 MW





> UAE | 1.3 MW







> MEXICO | 8.8 MW



> NETHERLAND | 3.2 MW





> CHILE | 5.3 MW





## > Global warehouse

- **THE NETHERLANDS**

Rotterdam storage center  
Shannonweg 15  
3197 LG Botlek- Rotterdam  
Haven/ Harbour nr. 5085  
V7C5+7J Botlek Rotterdam, Holandia

- **POLAND**

22- 100 Chelm, ul. Hutnicza 35 , Poland  
4GW3+6X Chelm, Polska

- **GERMANY**

2GRF+JP Grünwald, Germany.  
Schloßstraße 19, 82031 Grünwald

- **UKRAINE**

9VV4+9W Velyka Oleksandrivka, Kyiv Oblast  
Vulytsya Kyyivs'kyi Shlyakh, 121  
Velyka Oleksandrivka, Kyivs'ka oblast,  
08320







## 02 International exhibitions and sponsorship

- Proud sponsor swimming races OCEANMAN

## > Become a partner

- SWISS SOLAR AG offers differentiated services for the success of our partners.

- With SWISS SOLAR AG, you have a financially strong partner with a secure future.

- We are one of the strongest solar brands worldwide and offer high quality, proven reliability, and financial stability.

- Our solar modules combine advanced technology with SWISS engineering to set worldwide standards.



> Fill out the form on the website to be with SWISS SOLAR AG:  
<https://www.swissenergy-solar.ch/become-a-partner/partner-register/>



# Thank you!

