
AIKO
Redefine Solar
For Carbon-free Society

Outline

- Who is AIKO
- What we provide
- AIKO Installer Supporting Program

Overview

AIKO
FIND YOUR POWER

110GW+	5bn$+	3
Solar Cell Output	2022 Revenue	Global R&D Bases

17,000+	20% +	1,000+
Employees globally	R&D experts	Patents

Production Capacity

5 Production bases

61GW

Annual Cell production capacity

25GW

ABC Module capacity

AIKO Tech Milestone

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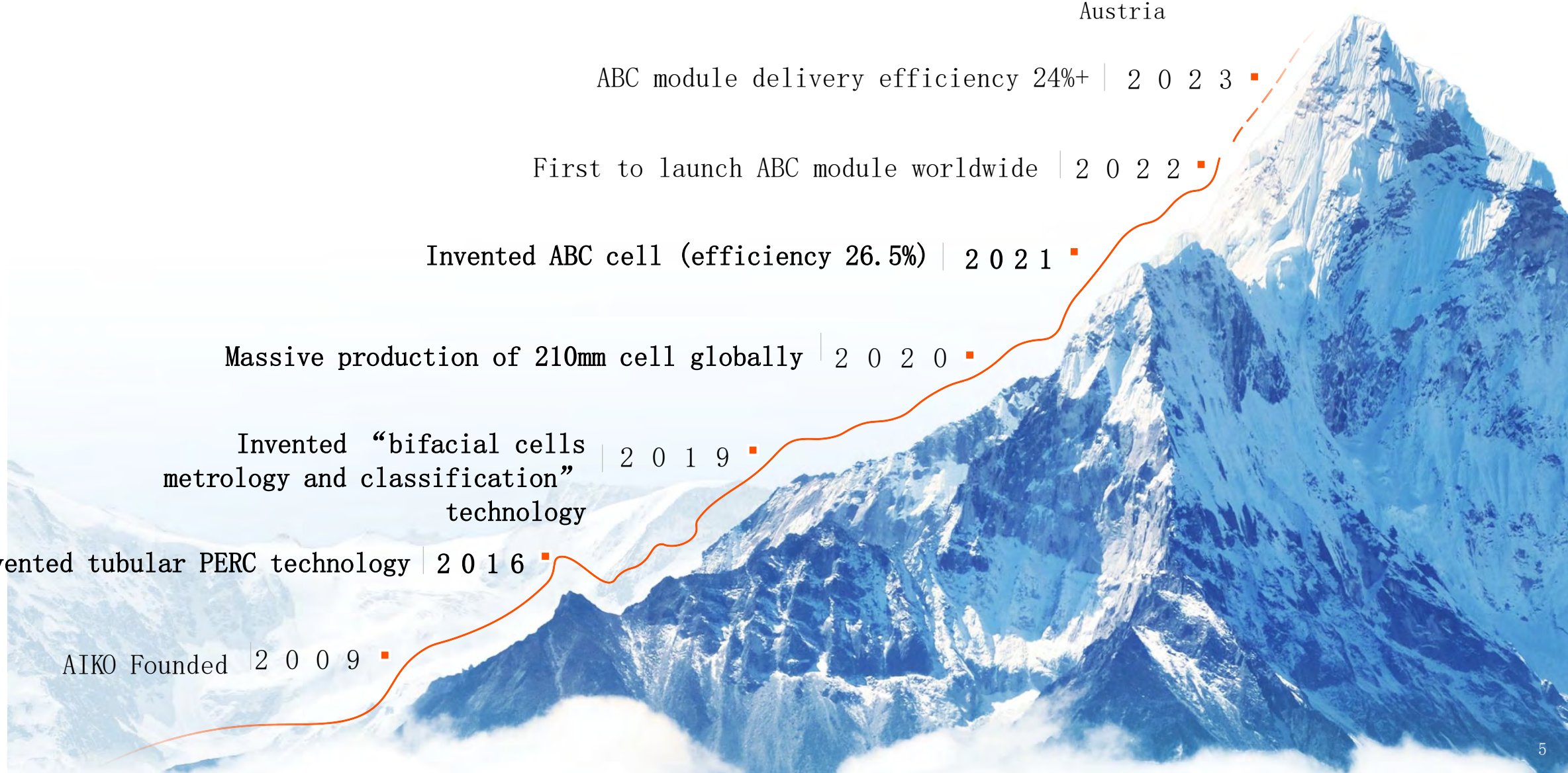


2030 — Achieve carbon neutrality with Burgenland Energie in Burgenland, Austria

2023 — ABC module delivery efficiency 24%+

2022 — First to launch ABC module worldwide

2021 — Invented ABC cell (efficiency 26.5%)

2020 — Massive production of 210mm cell globally

2019 — Invented "bifacial cells metrology and classification" technology

2016 — Invented tubular PERC technology

2009 — AIKO Founded

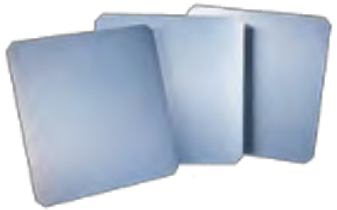
End to End Industrial Chain - Quality/Cost Control

PolySilicon

丽豪半导体 LIHAO SEMICONDUCTOR

Asia Silicon

Wafer



高景太阳能 Gokin Solar

Cell

Module

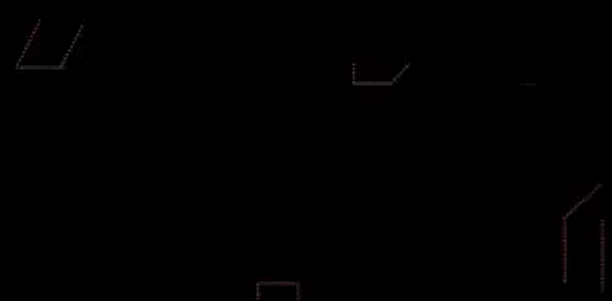
One-stop Solution

In EU for EU - Local Team

EU local Team-more than 60 local employees

- UK, Ireland, Nordic
- Benelux, France
- Europe Regional Office, DACH
- CEE
- Austria
- Italy, Greece
- Spain, Portugal

In EU for EU - Logistics Storage



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AIKO ABC Product Portfolio

Neostar Series

Residential

23.8% Delivery Efficiency

440-465W Delivery power rate

ABC Dual-Glass White Module- 54cell

ABC Dual-Glass Black Module-54cell

ABC Single-Glass White Module-54cell

ABC Single-Glass Black Module-54cell

Commet Series

C&I

24.0% Delivery Efficiency

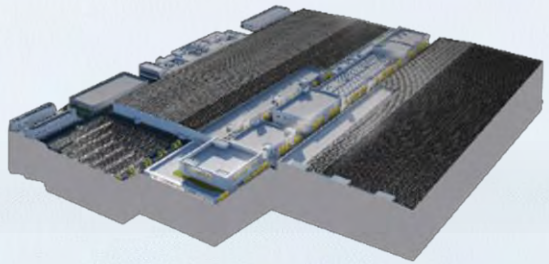
595-620W Delivery power rate

ABC Single-Glass White Module-72cell

ABC Single-Glass Black Module-72cell

ABC Dual-Glass White Module-72cell

ABC Light Weight Module-54cell



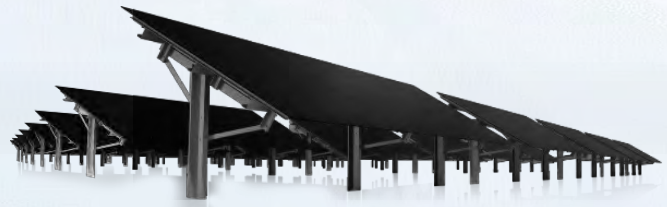
Stellar Series

Utility

23.9% Delivery Efficiency

625-645W Delivery power rate

ABC Bifacial Dual-Glass White Module-72cell



AIKO ABC Key Features

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Anti-Fire
Safety & Security

Extreme safety feature to protect the investment over 30-yrs lifetime

Shading
Unique Optimization

Avoid shading loss of traditional solar module

Suitable for different application scenarios

Micro-crack
Resistance

Single-side Welding, 0 crack risk on edge

300% Extra Welding Strength to Avoid Micro-crack risk

Super Busbar Design to Reduce Minorities Travel Distance

+15%
Higher Yield
Same Roof

Industrial Top Deliverable Efficiency up to 24%
Lower Degradation
≤1.0% @ 1-yrs
≤0.35% Annually

-0.26%
Temp Coefficient

1% Extra Production as Every 10℃ Degree Increase

Harvest the Most Energy in Summer (best irradiance season of the year

Maximize Yield per m2 : +18.8% vs PERC , +9.2% vs TOPCON

	TOPCON	AIKO ABC	PERC
Nameplate	430W	465 W	410W
Efficiency	22.0%	23.8%	21.0%
Pmax Temp Coefficient	-0.30%	-0.26%	-0.34%
1st year Degradation	<1.0%	<1.0%	<2.0%
Annual Degradation	<0.40%	<0.35%	<0.55%
Power Density /m2	220 W/m2	238 W/m2	210 W/m2
Lifetime Production /m2	6,065 kWh	6,623 kWh	5,574 kWh

The World Highest Commercial Efficiency

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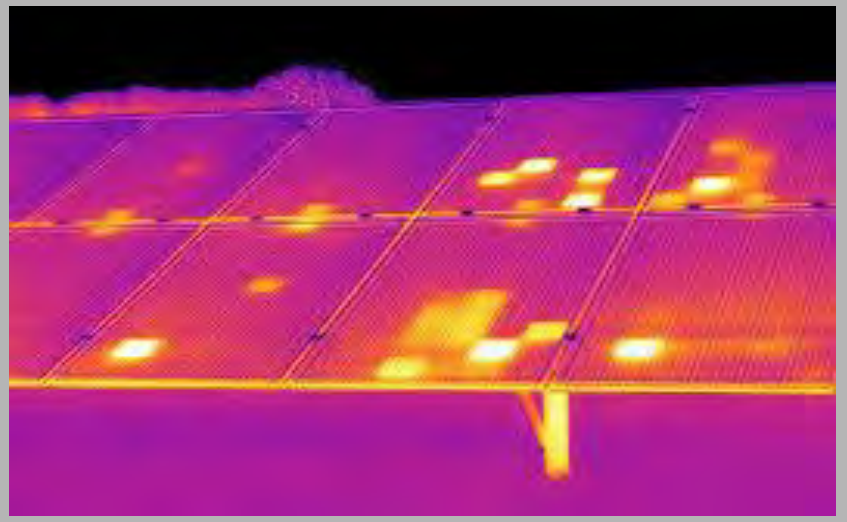
TAIYANGNEWS
ALL ABOUT SOLAR POWER

TaiyangNews Top Modules: Highest Efficient Commercial Solar Modules 10-2023

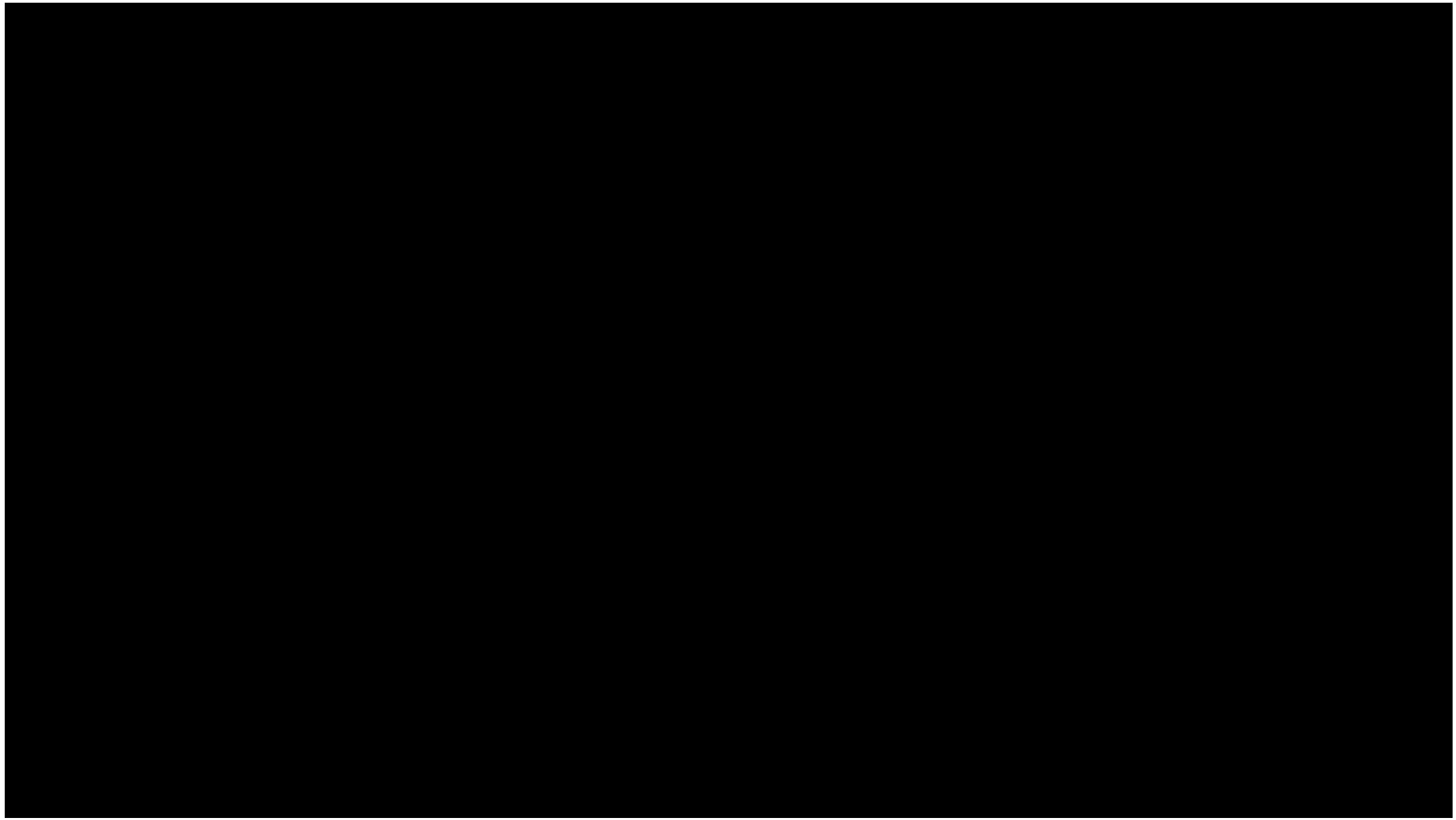
Rank	Company	Series	Model	Wafer type	Cell Size	Cells No.	Cell Tech	Module Technology	Power (W)	Efficiency (%)
1	AIKO	ABC White hole	AIKO-A620-MAH72Mw	n-type	182	144	ABC	Halfcell, back Contact	620	24
2	LONGi	Hi-MO 6	LR5-72HTH-600M	p-type	182	144	HPBC	Halfcell, back Contact	600	23.2
3	HUASUN	Himalaya	HS-210-B132DS	n-type	210	132	HJT	Bifacial, halfcell, MBB	715	23.02
4	Maxeon	Maxeon 6	SPR-MAX6-445-E4-AC	n-type	-	66	IBC	Back Contact	445	23
5	SPIC	ANDROMEDA 3.0	SPICN6(LDF)-60/BIH	n-type	166	120	TBC	Backcontact, halfcell, MBB	410	22.8
6	JinkoSolar	Tiger Neo	JKM585N-72HL4-V	n-type	-	144	TOPCon	Halfcell, MBB	585	22.65
7	ASTRONERGY	Astro N5	CHSM72N(DG)/F-BH	n-type	182	144	TOPCon	Bifacial, Halfcell, MBB	585	22.6
8	JOLYWOOD	Niwa Pro	JW-HD108N	n-type	182	108	TOPCon	Bifacial, Halfcell, MBB	440	22.53
9	risen	Hyper-ion	RSM132-8-700BHDG	n-type	210	132	HJT	Bifacial, halfcell, MBB	700	22.5
9	Trinasolar	Vertex N	TSM-NEG21C.20	n-type	210	132	TOPCon	Bifacial, halfcell, MBB	700	22.5
9	DASOLAR	-	DAS-DH156NA	n-type	182	156	TOPCon	Bifacial, halfcell, MBB	630	22.5
9	JA SOLAR	DeepBlue 4.0	JAM72D42 630/LB	n-type	182	144	TOPCon	Bifacial, halfcell, MBB	630	22.5
9	Canadian Solar	TOPHiKu6	CS6W-560-580T	n-type	182	144	TOPCon	Halfcell, MBB	580	22.5
9	TW SOLAR	-	TWMND-72HS560-580W	n-type	182	144	TOPCon	Halfcell, MBB	580	22.5
9	Canadian Solar	HiHero	CS6R-420-440H-AG	n-type	182	108	HJT	Halfcell, MBB	440	22.5

Unique Shading Optimization

Anti-Fire Safety & Security

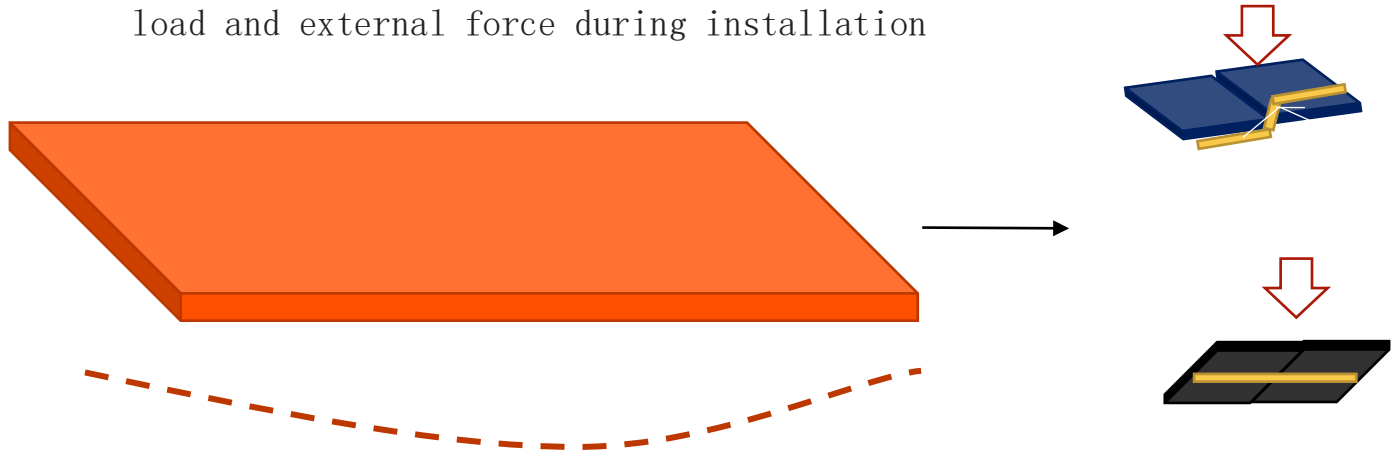


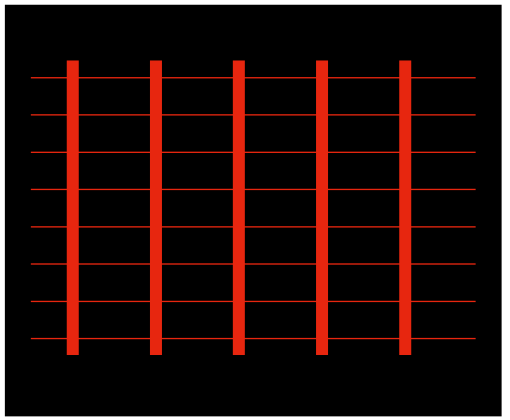
Anti-Fire Safety & Security



Micro-crack Resistance

The traditional module is venerable to deform when it is subjected to external stress, like snow load, wind load and external force during installation





Single-side Welding

Full back welding instead of ‘Z’ shape front & back welding, 0 crack risk on edge between connected solar cells

Triple Welding Strength

300% welding strength vs traditional technology, substantially decrease the risk of detachment and micro-cracks

Super Busbar Design

20 busbars, reduce the minorities travel distance to minimize the production loss caused by micro-cracks

Industrial Top -0.26% Temp Coefficient

-0.26% Industrial Top Temp Coefficient

Certified by PV Magazine Test Report

CEA | Investment Confidence

CEA I PV MAGAZINE PROGRAM TEST REPORT

SUPPLIER | Aiko

3.4. Pmax temperature coefficient test

Table 9 and Figure 5 depict the Pmax temperature coefficient test results.

Table 9 Pmax temperature coefficient test result

AIKO-A-MAH72MW	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Grade
Pmax Temperature coefficient (%/°C)	-0.26%					107

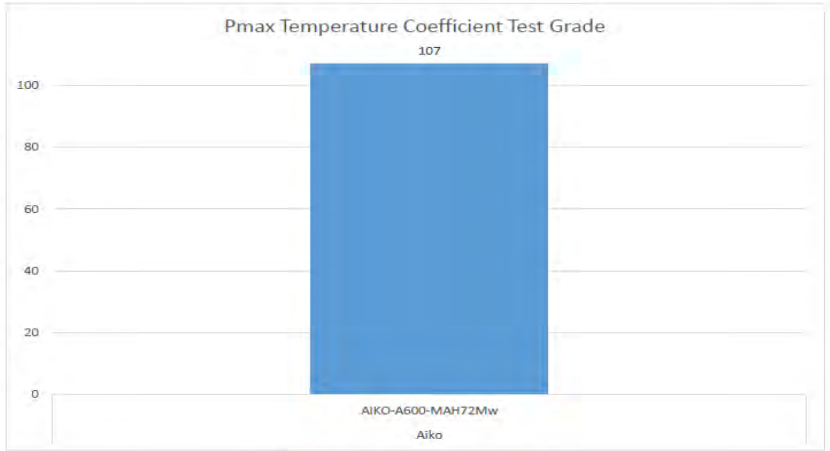
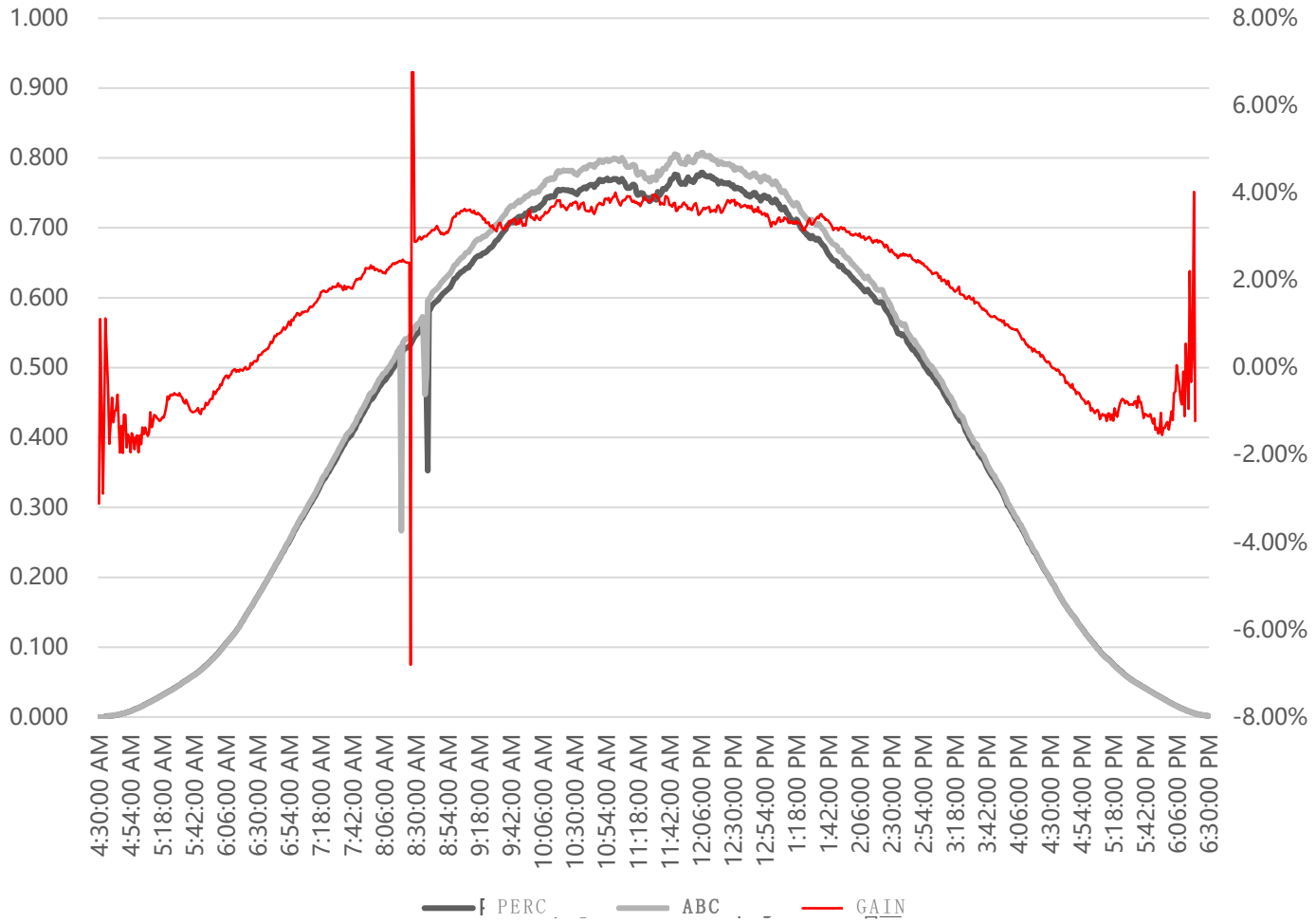


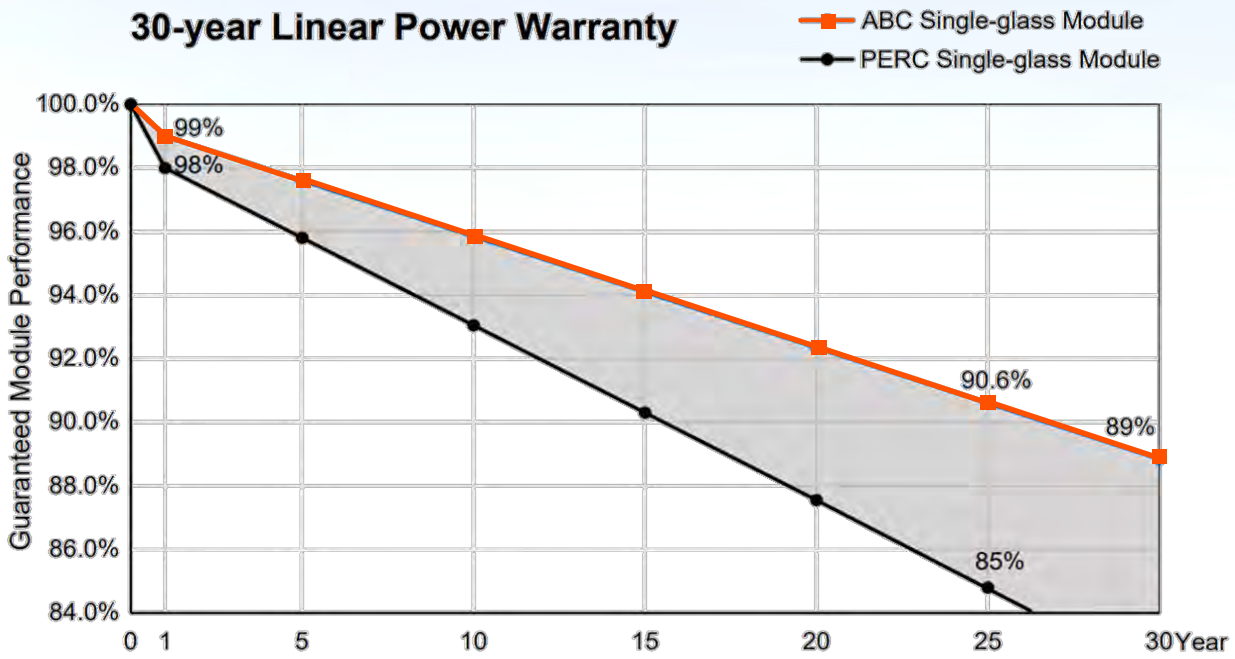
Figure 5 Pmax temperature coefficient test result

+2.43% Extra Gain per Wp due to Better Temp Coefficient

Real-life Test @Quartar Doha



Premium Quality, Lifetime Free Mind



Ultimate Aesthetic Design


Certificate
Red Dot Winner 2023

ABC Modules

ABC Vs. PERC Comparison

Lifecycle Benefit Maximization: Residential Scenario

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ABC vs. PERC

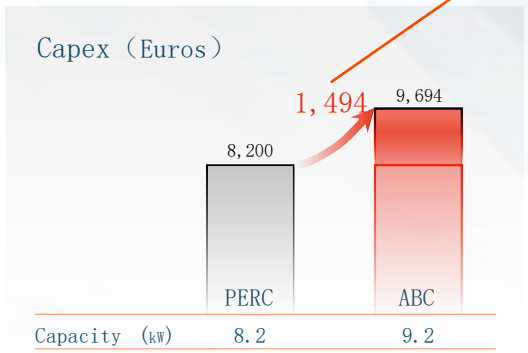
Installed Capacity+ Capex+ 3yr+ Benefits+

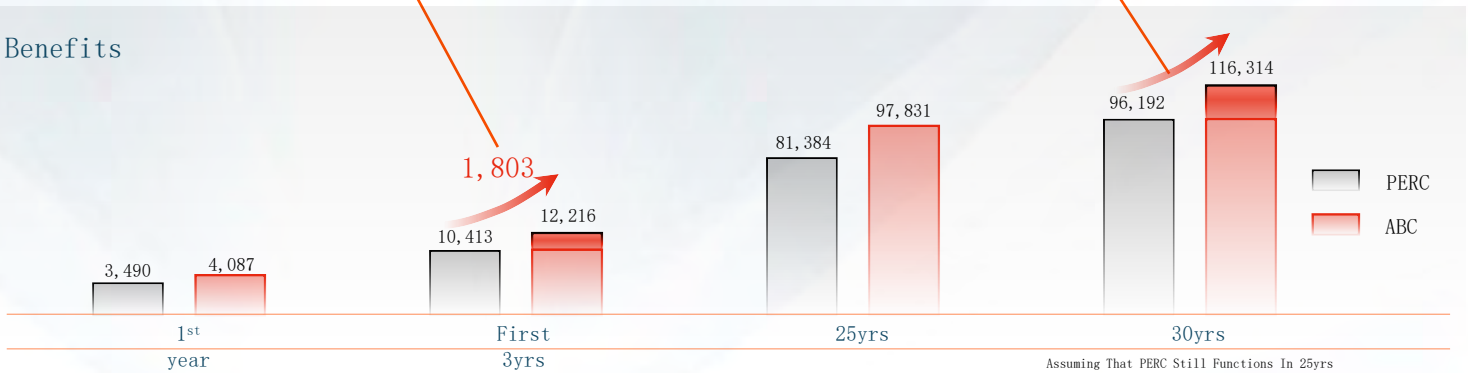
12.2% €1,494 €1,803

30yr ABC vs. PERC

Benefits+

21% €20,122





Annual Power Usage - kWh

Example: Single Family Home In The Netherlands

Lifecycle Benefit Maximization: C&I Scenario

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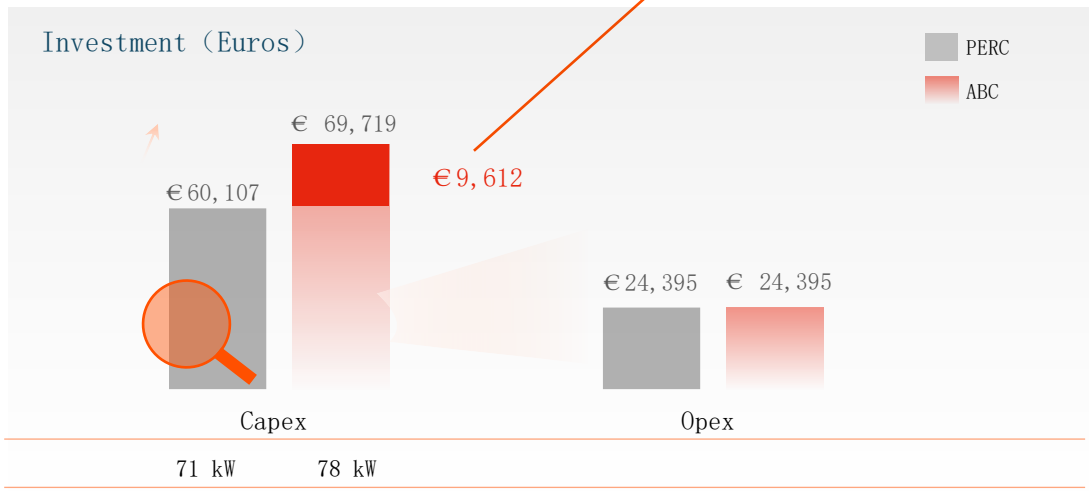
ABC vs. PERC

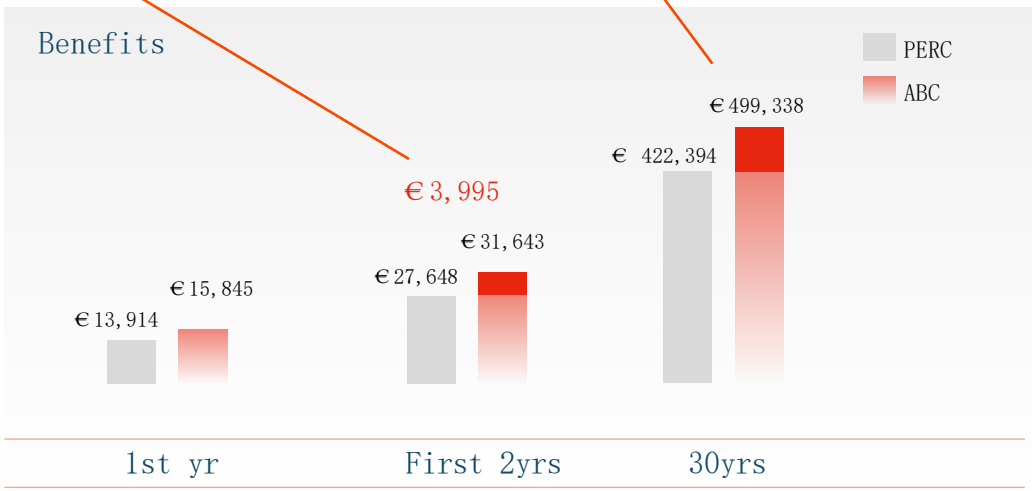
8.6%	€ 2,403	€3,995
Install capacity	Upfront(25%)	2yr-benefit+

30yr ABC vs. PERC

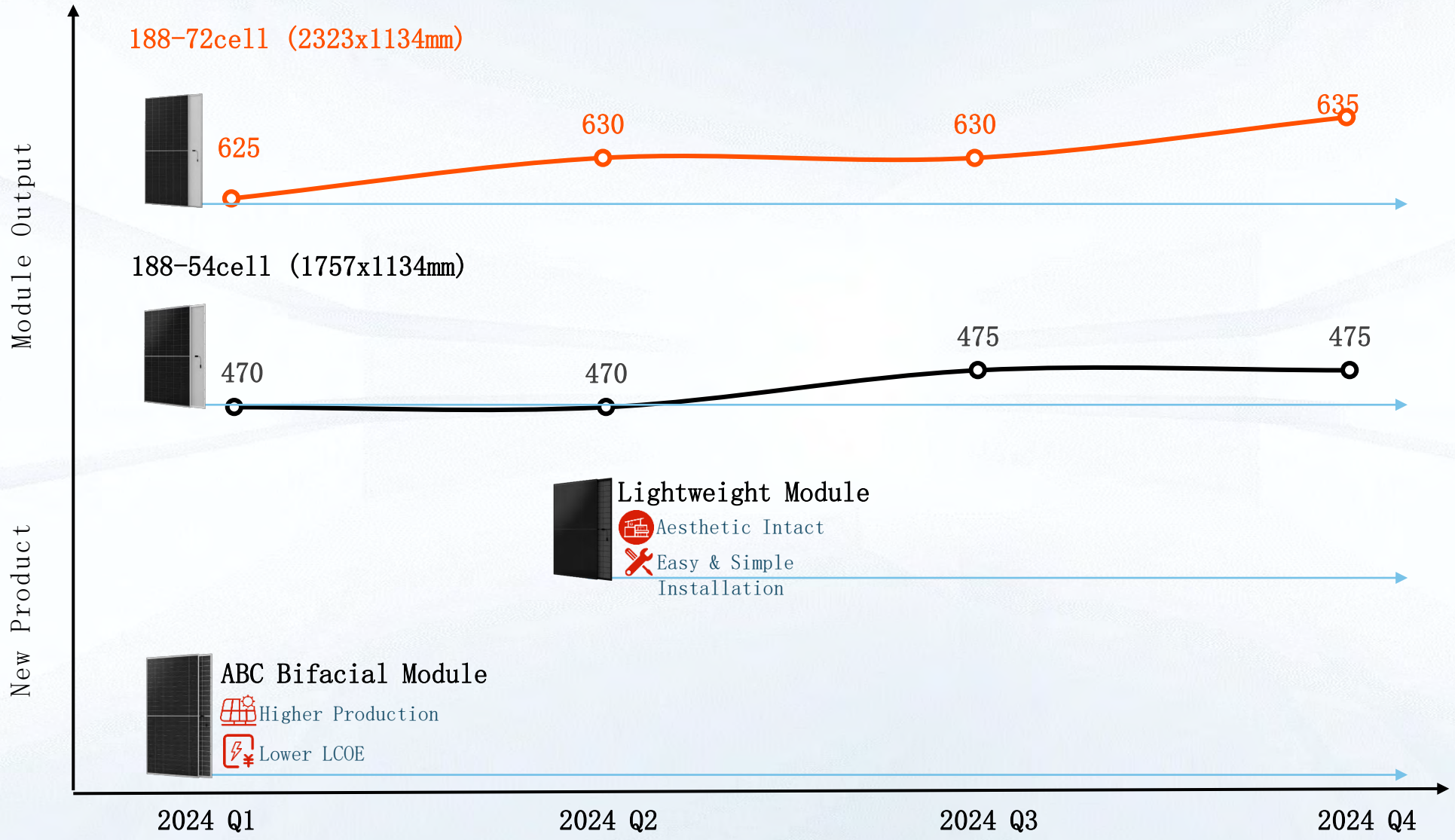
18.2% / €76,944

Benefits+





AIKO ABC Roadmap



AIKO One-Stop Solution

Maximize Energy Harvesting

System-level High Efficiency

Longer operation hours, start early in mornings and stop late in evenings

String-level tracking for max power harvesting

Easy installation, O&M

Integrated ESS for fast and convenient installation

Modular design for flexible expansion

Smart monitoring for detailed O&M

One-set delivery

One-stop delivery with no wait Kit racking package to save time

System-level factory warranty

One-stop services covering modules, racking, inverters, ESS and APP

Mountings

Inverter

5KWh/Module

APP

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The Best With The Best - AIKO Installer Awards 2023

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Event Promotion Video

Installer Awards Rules

- First Order: 100 €
- Accumulated Orders (>30 KW): 500 €
- Accumulated Orders (>1 MW) : 5000 €

Event Poster

Comprehensive Support for Installer- AIKO Alliance Program

Certificate

- ✓ Registered Installer
- ✓ PV module Certified Installer
- ✓ One stop solution Certified Installer

Marketing

- ✓ Showroom support with DEMO and decoration, Exhibition Van
- ✓ Customized Marketing materials – Scaffolding banner, PV Suitcase, Sales Materials

Enablement

- ✓ AIKO academy online courses and online exams
- ✓ Off-line professional training
- ✓ Roadshows for Installers

Information

- ✓ Quarterly E-Newsletter
- ✓ Sneak preview of AIKO new technologies and solutions release

German EIIermann-Spiegel Vineyard


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Extra Production per m2: +9.2% vs TOPCON & +6.5% vs HJT

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		ABC	HJT	TOPCON
Module Output	Efficiency	23.8%	22.3%	22.3%
	Nameplate (54-cell)	445-465W	420-450W	410-440W
	3-year ETA	25.50%	24.20%	24.00%
High Temp Performance	Pmax Temp Coefficient %	-0.26%	-0.27%	-0.31%
Unique Function	Shading Optimization	√	×	×
	Anti-Fire Safety	√	×	×
	Micro-crack Resilience	√	×	×
Sustainability	Raw Material Bottleneck	NA	YES (Ag, Indium)	YES(Ag)
Production	Lifetime Production kWh/m2	6,623 kWh	6,218 kWh	6,065 kWh

+7.2% Extra Production/m2, High Reliability with N-type Wafer, Unique Scenario based Functionalities

		ABC	PBC	ABC Benefits
Module Efficiency	Efficiency	23.8%	22.5%	Industrial Top Efficiency, Make Most from Same Dimension
	Nameplate (54-cell)	445-465W	420-440W	
	3-year ETA	25.50%	24.50%	
Reliability	Wafer Type	N-type	P-type	Higher Quality Wafer, More Resilience in Lifetime
	Power Temp Coefficient	-0.26%	-0.29%	
	1st Year Degradation	≤1%	≤1.5%	
	Annual Degradation	≤0.35%	≤0.40%	
Unique Functionality	Shading Optimization	√	×	Suitable for Different Application scenarios
	Anti-Fire Safety	√	×	
	Micro-crack Resilience	√	×	
Warranty	Performance	30 yrs	25 yrs	+5 yrs Performance Guarantee
Production	kWh/m2 in 30yrs	**6,623 kWh**	6,175 kWh	+7.2% Extra Energy Production

+4.5% Extra Production per m2, Higher Reliability, Compatible for Future Applications

		ABC	IBC	ABC Benefits
Module Efficiency	Efficiency	23.8%	22.7%	Industrial Top Efficiency, Make Most from Same Dimension
	Nameplate (54-cell)	445-465W	415-430W	
	3-year ETA	25.50%	24.00%	
Reliability	Power Temp Coefficient	-0.26%	-0.29%	More Reliable Performance
	1st Year Degradation	≤1.0%	≤2.0%	
Technical Advance	Wafer Size	G10	M2/M4/M6	Compatible for Future Applications
	Bifacialty (Y/N)	YES	NO	
Production	kWh/m2 in 30yrs	6,623 kWh	6,337 kWh	+4.5% Extra Energy Production