
AIKO
Redefine Solar
For Carbon-free Society


AIKO
Who is AIKO

Overview

120GW+	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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Achieve carbon neutrality with Burgenland Energie in Burgenland, Austria | 2030

ABC cell delivery efficiency 27% | 2024

ABC module delivery efficiency 24%+ | 2023

First to launch ABC module worldwide | 2022

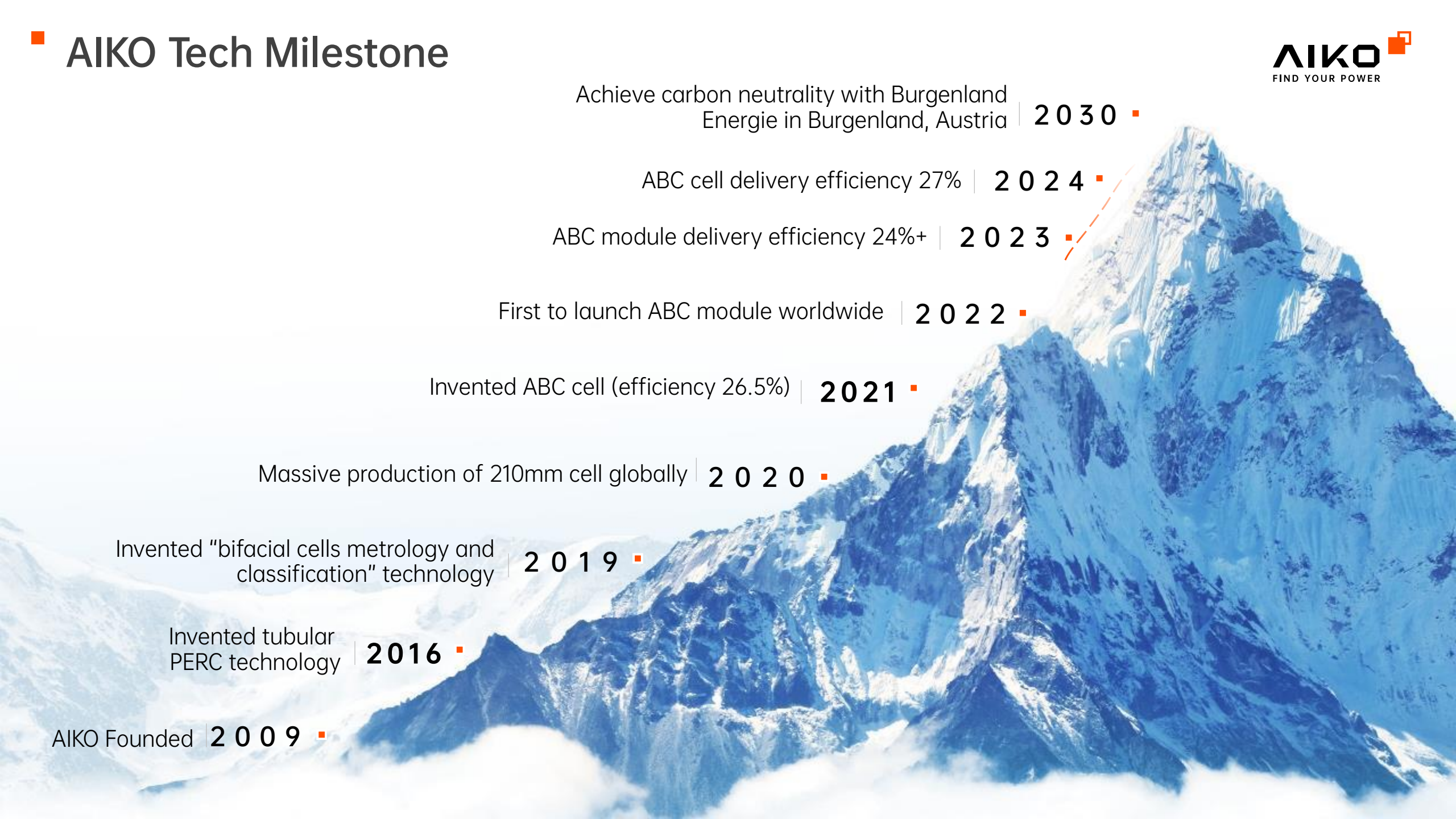
Invented ABC cell (efficiency 26.5%) | 2021

Massive production of 210mm cell globally | 2020

Invented "bifacial cells metrology and classification" technology | 2019

Invented tubular PERC technology | 2016

AIKO Founded | 2009



End to End Industrial Chain – Quality/Cost Control

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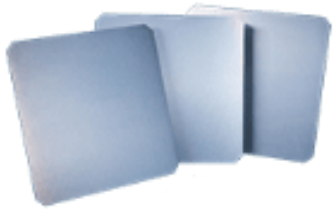
PolySilicon

丽豪半导体 LIHAO SEMICONDUCTOR
Asia Silicon

Qinghai China

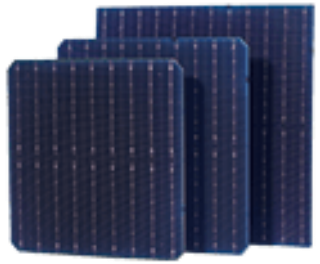
Wafer



高景太阳能 Gokin Solar

Qinghai China

Cell



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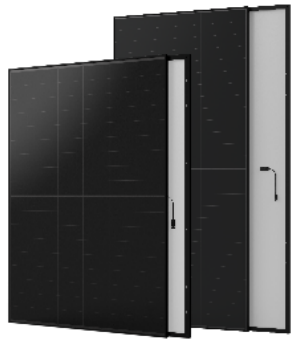
Guangdong China

Module



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Guangdong China

One-stop Solution

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Guangdong China

In EU for EU – Local Team

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


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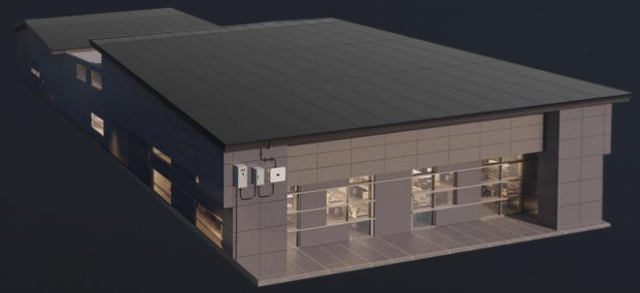
AIKO ABC Module

Residential Scenario

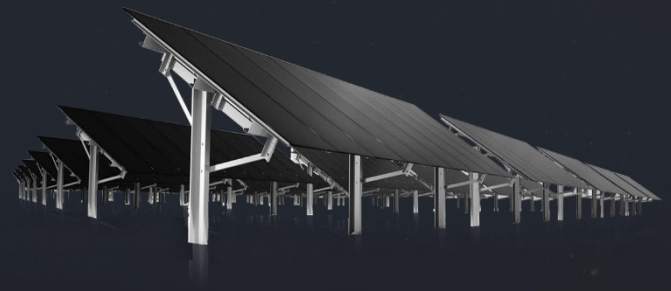
Neostar Series

C&I Scenario



Comet Series

Utility Scenario



Stellar Series

Neostar Series

Neostar 2 S+ 460W

Neostar 2 S 460W

Neostar 2 P 470W

Neostar 2 N 470W

Residential Scenario

Comet Series

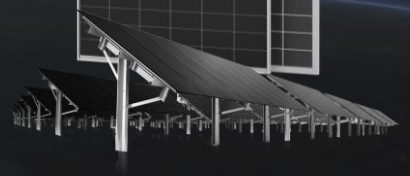
Comet 2 N+ 625W

Comet 2 N 630W

C&I Scenario

Stellar Series

Stellar 1 N+ 640W



Utility Scenario

ABC Module Upgrades

Higher Power Output

Partial Shading Optimisation

High Temperature Restriction

BetterTemperature Coefficient

Higher Bi-faciality Rate

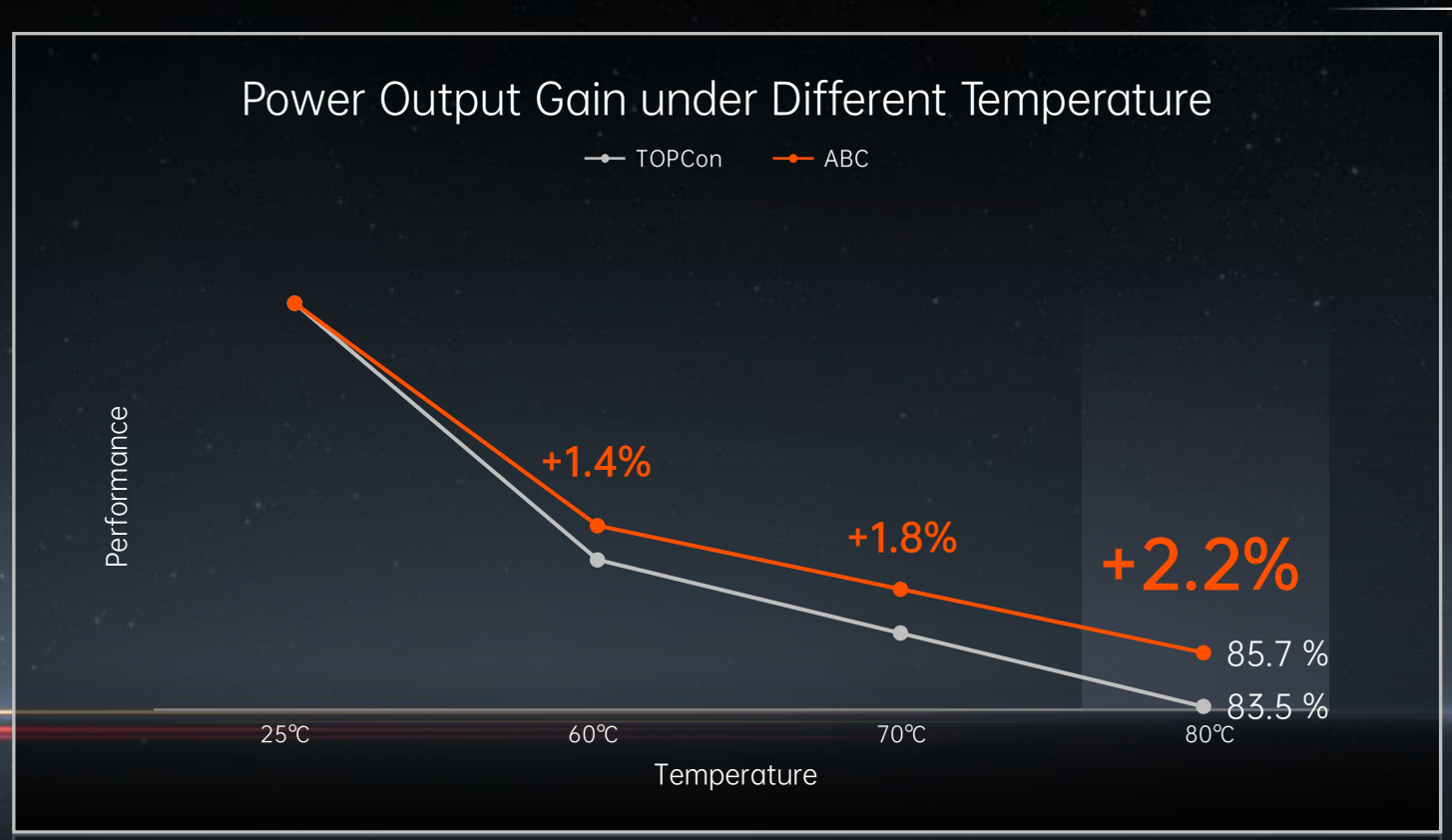
The World Highest Commercial Efficiency

TAIYANGNEWS
ALL ABOUT SOLAR POWER

TaiyangNews Top Modules: Highest Efficient Commercial Solar Modules 12-2023

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	Half-cell, Back Contact	620	24.0
2	LONGi	Hi-MO X6	LR5-72HTH-600M	p-type	182	144	HPBC	Half-cell, Back Contact	600	23.2
3	HUASUN	Himalaya	HS-210-B132DS	n-type	210	132	HJT	Bifacial, Half-cell, MBB	715	23.02
4	TW SOLAR	-	TWMHF-66HD715	n-type	210	132	HJT	Bifacial, Half-cell, MBB	715	23.0
4	Maxeon	Maxeon 6	SPR-MAX6-445-E4-AC	n-type	-	66	IBC	Back Contact	445	23.0
6	SPIC	ANDROMEDA 3.0	SPICN6(LDF)-60/BIH	n-type	166	120	TBC	Back Contact, Half-cell, MBB	410	22.8
7	ASTRONERGY	Astro N5	CHSM72N(DG)/F-BH	n-type	182	144	TOPCon	Bifacial, Half-cell, MBB	585	22.65
7	JinkoSolar	Tiger Neo	JKM585N-72HL4-V	n-type	-	144	TOPCon	Half-cell, MBB	585	22.65
9	中来股份 JOLYWOOD	Niwa Pro	JW-HD108N	n-type	182	108	TOPCon	Bifacial, Half-cell, MBB	440	22.53
10	risen	Hyper-ion	RSM132-8-700BHDG	n-type	210	132	HJT	Bifacial,Half-cell, MBB	700	22.5
10	Trinasolar	Vertex N	TSM-NEG21C.20	n-type	210	132	TOPCon	Bifacial, Half-cell, MBB	700	22.5
10	DAS SOLAR	-	DAS-DH156NA	n-type	182	156	TOPCon	Bifacial, Half-cell, MBB	630	22.5
10	JA SOLAR	DeepBlue 4.0	JAM72D42 630/LB	n-type	182	144	TOPCon	Bifacial, Half-cell, MBB	630	22.5
10	Canadian Solar	TOPHiKu6	CS6W-560-580T	n-type	182	144	TOPCon	Half-cell, MBB	580	22.5
10	RUNERGY	-	HY-DH144N8	n-type	182	144	TOPCon	Bifacial, Half-cell, MBB	580	22.5
10	TW SOLAR	-	TWMND-72HS585W	n-type	182	144	TOPCon	Half-cell, MBB	580	22.5
10	Canadian Solar	HiHero	CS6R-420-440H-AG	n-type	182	108	HJT	Half-cell, MBB	440	22.5

Better Temperature Coefficient -0.26%/°C



ABC Module

107/100 score

CEA Test Report

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

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

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

		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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Scenario Analysis

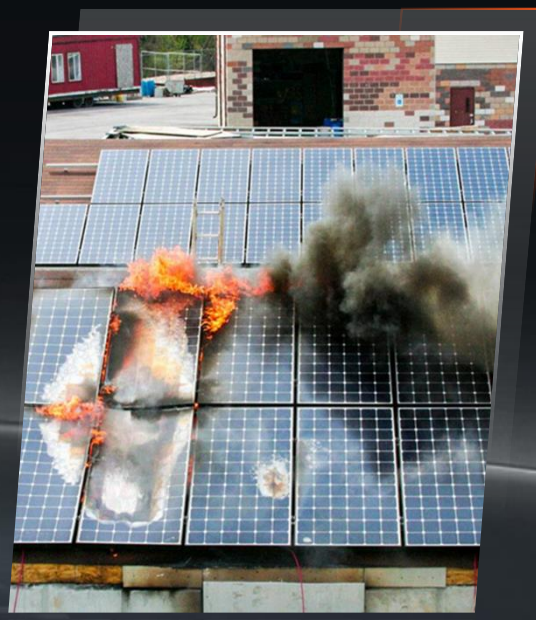
Residential Scenario Challenges

1 Architectural aesthetics

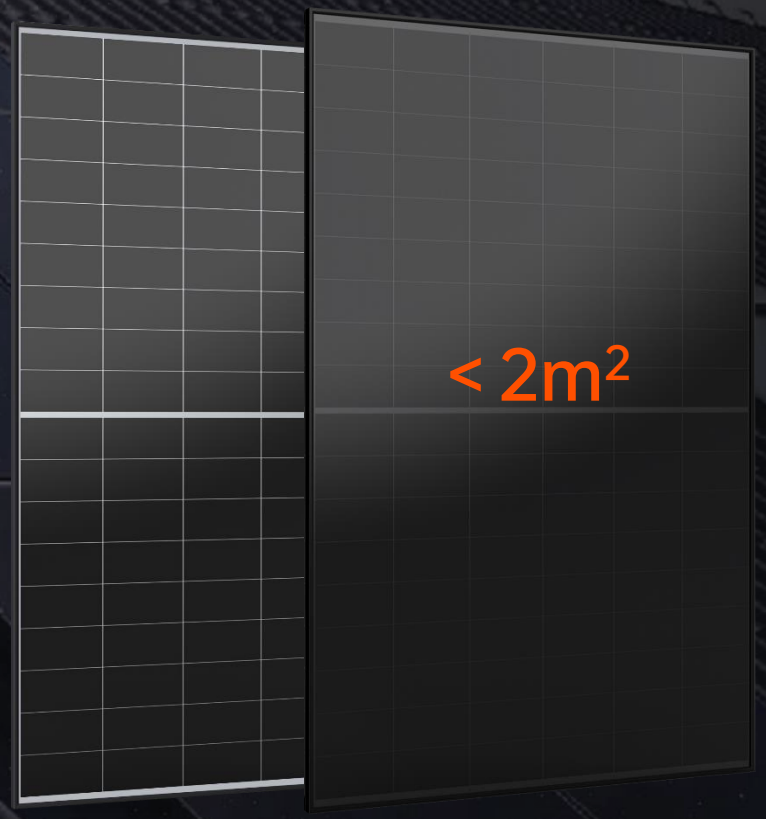
2 Limited rooftop area

3 Shading

4 Rooftop safety



ABC Module Neostar Series



1757*1134mm

470W	23.6%	≤1%/0.35%	-0.26%/℃
Delivered power output	Delivered efficiency	First year/Year by year	Temperature coefficient

Advantage I	Advantage II	Advantage III	Advantage IV
Partial shading optimisation	High temperature restriction	Micro-crack resistance	Aesthetics black

C&I Scenario Challenges

Challenge:

Limited area

Value:

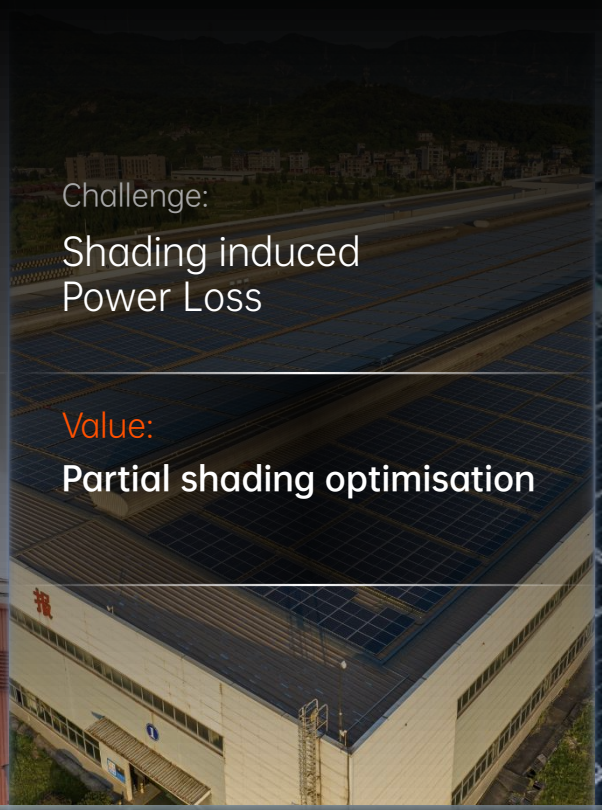
Same area, installed capacity increased 5.8% +

Challenge:

High BOS cost

Value:

BOS saving in €/Wp 5.9% +

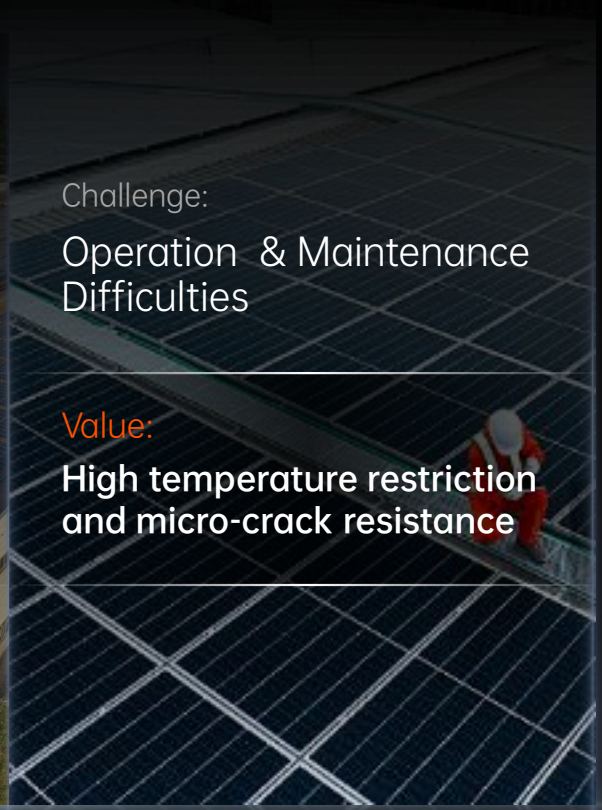


Challenge:

Shading induced Power Loss

Value:

Partial shading optimisation



Challenge:

Operation & Maintenance Difficulties

Value:

High temperature restriction and micro-crack resistance

*ABC compared to TOPCon

ABC Module Comet Series

2323*1134mm

630 W	23.9%	≤1%/ 0.35%	-0.26%/℃
Delivered power output	Delivered efficiency	First year/Year by year	Temperature Coefficient

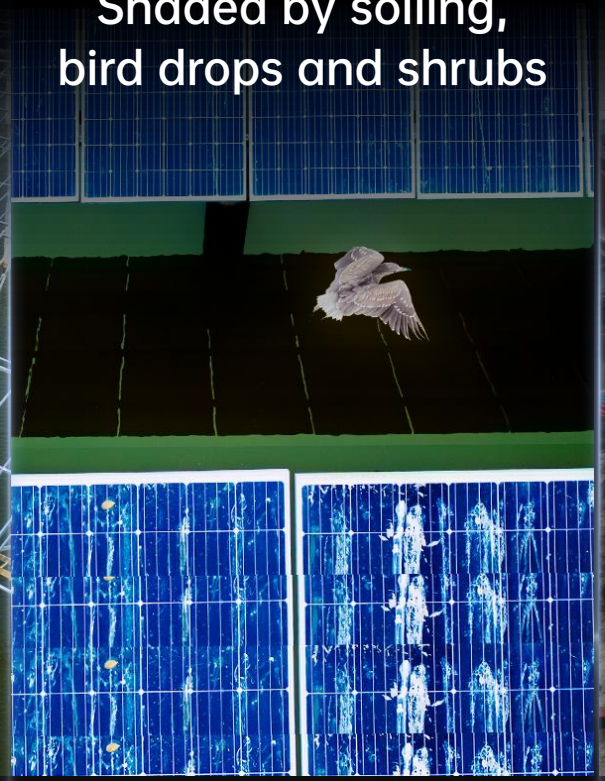
Advantage I	Advantage II	Advantage III
Partial shading optimisation	High temperature restriction	Micro-crack resistance

Utility Scenario Challenges

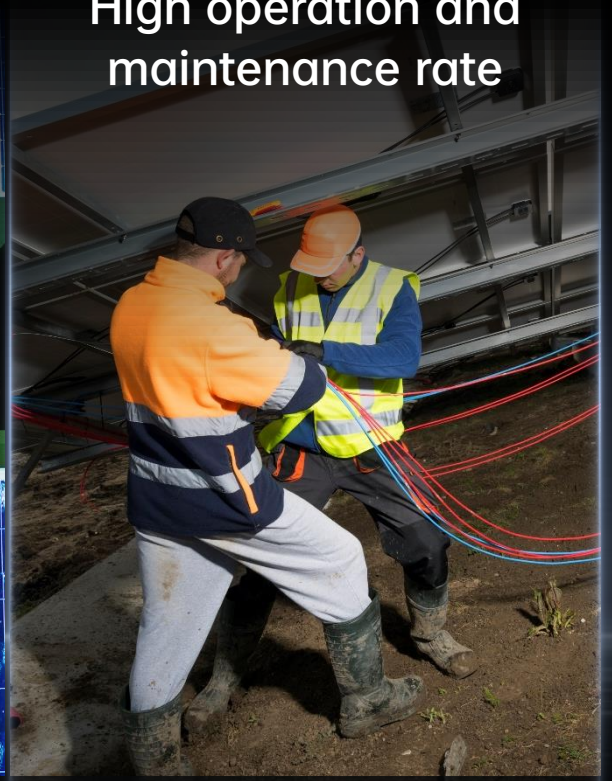
Limited land space

High BOS cost

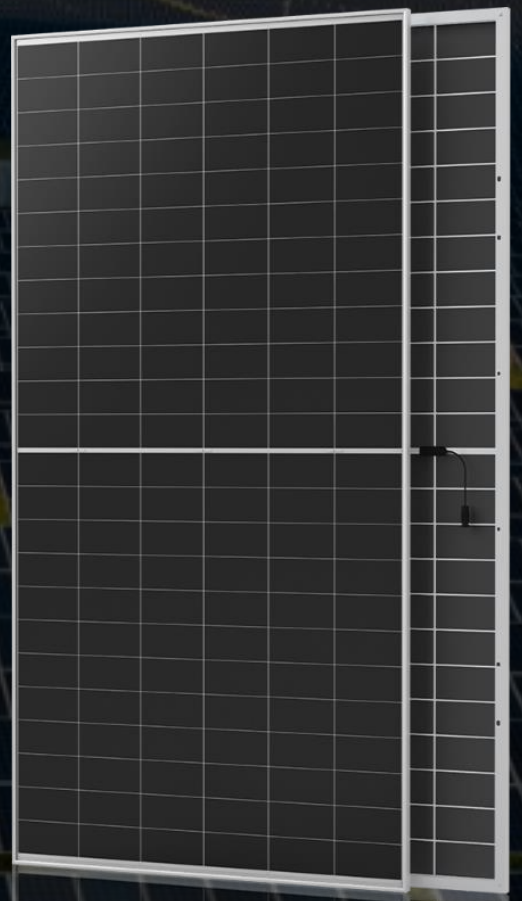
Shaded by soiling, bird drops and shrubs



High operation and maintenance rate



ABC Module Stellar Series



2382*1134mm

640 W
Delivered power output

23.7%
Delivered efficiency

≤1%/ 0.35%
First year/Year by year

70%
Bi-faciality rate

Advantage I
Partial shading optimisation

Advantage II
High temperature restriction

Advantage III
Micro-crack resistance

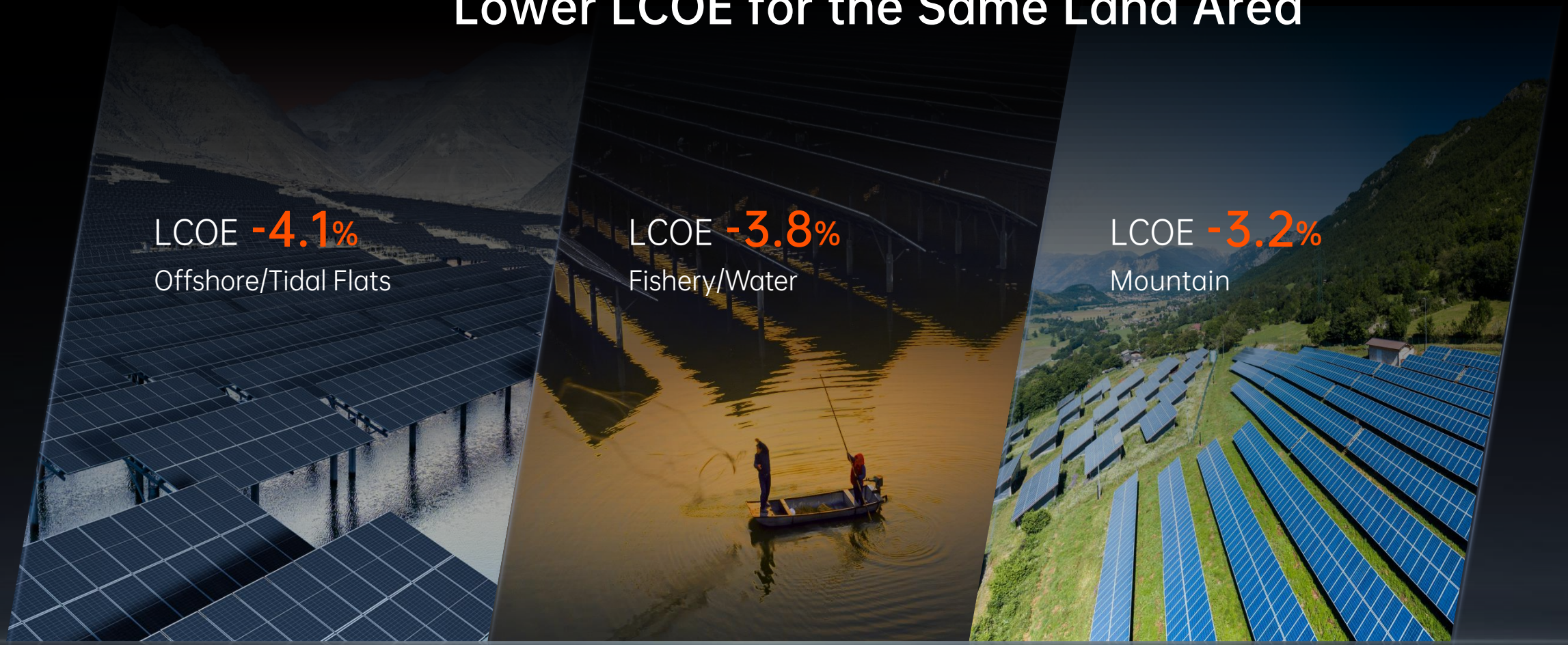
Optional
Waterproof package

Water Resistance Encapsulation

Anti-corrosion Frame

Waterproof Cap

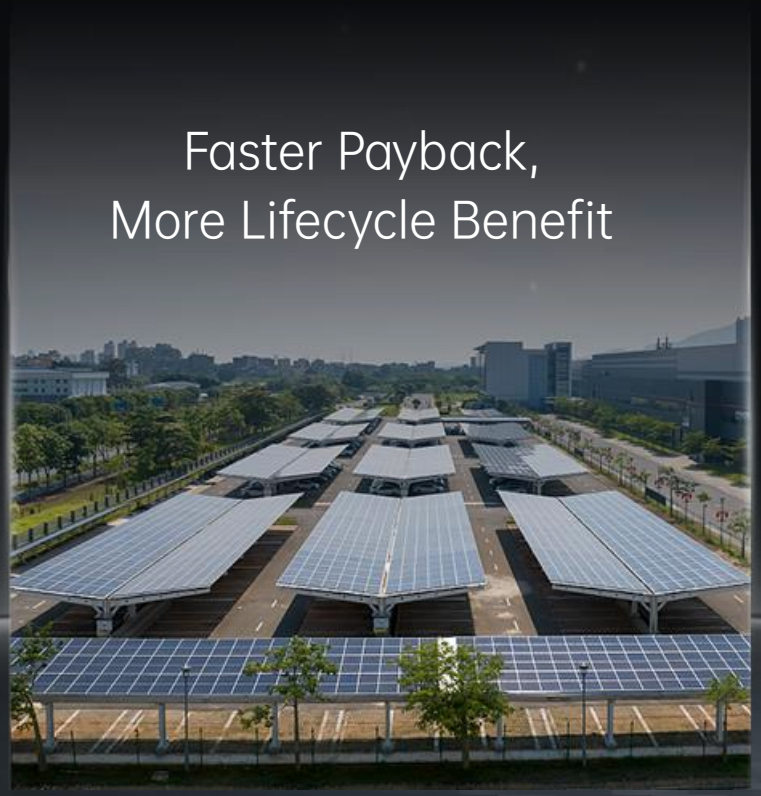
Lower LCOE for the Same Land Area



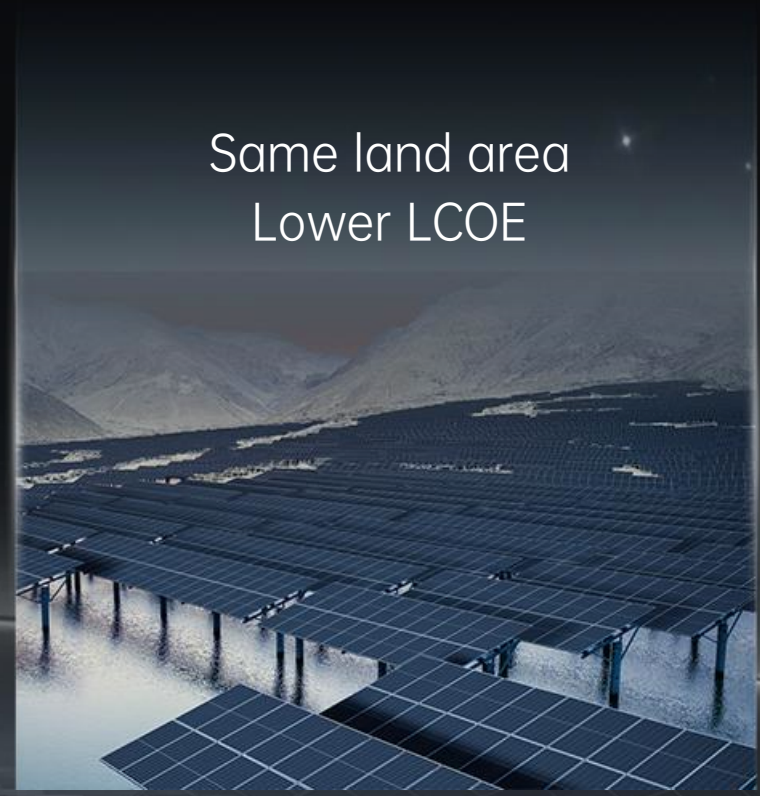
*ABC compared to TOPCon

Value Proposition

Residential Scenario



C&I Scenario



Utility Scenario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