

Aiko Solar Company and Product Introduction

2023-04-21, Frankfurt

Contents

Company Overview

ABC Module

One Stop Solution

Open Discussion

“Pioneering a zero-carbon society through impactful contributions”

Power Up

80_{GW}

Total shipment cells

42.5_{GW}

2022 Production capacity

5.1_{B\$}

2022 revenue

9,100

Global employees

23.5%

R&D employees

1,563/884

Patent Applications/Granted

A - Advance

I - Innovation

K - Keen

O - Overturn

1st N-Type Module
with Reddot winner 2023

1st Commercial PV Module
23.6% in 2022

1st ABC Cell 26.2% in 2021

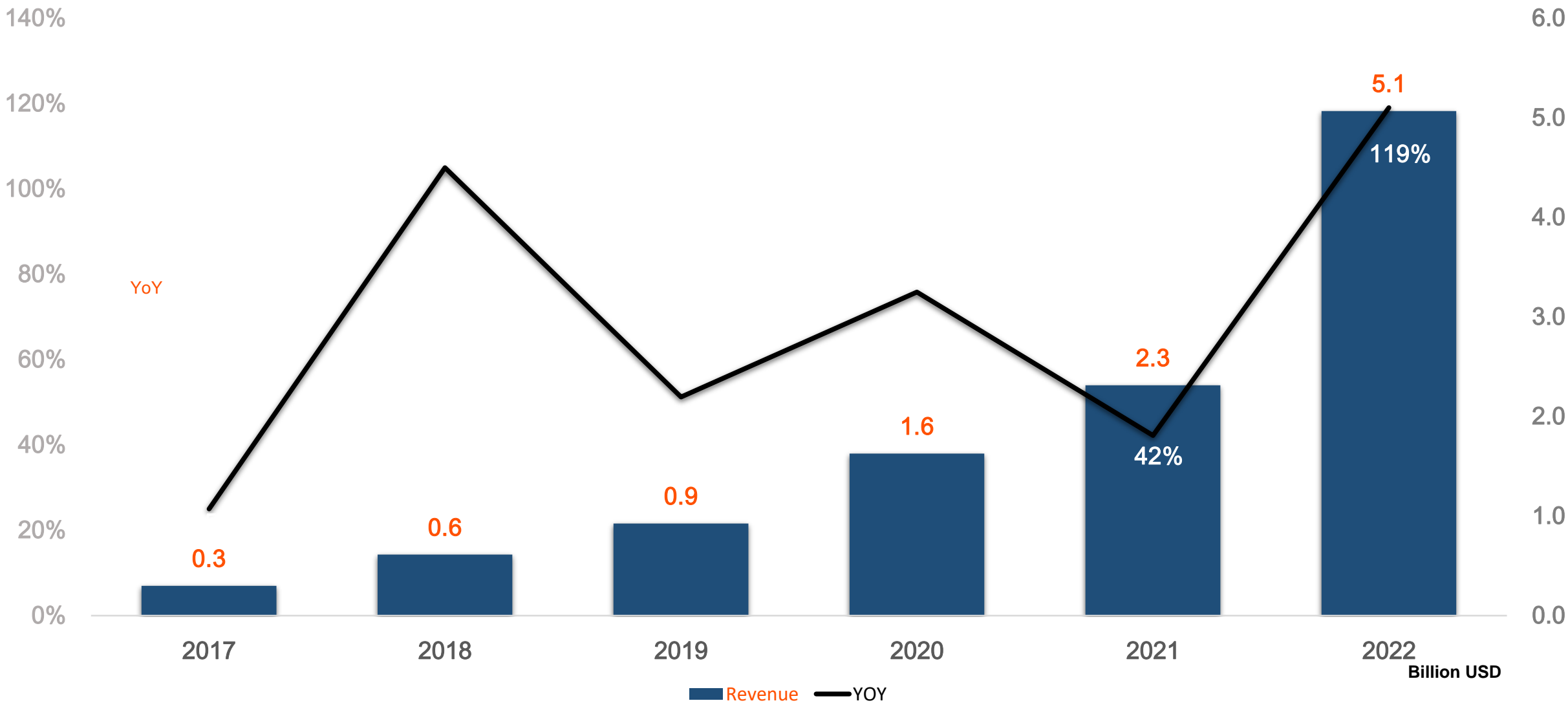
1st 210mm PERC in 2020

1st Bifacial Technology in 2018

1st Tubular PERC in 2016

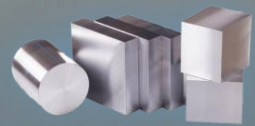
Found in 2009

Business Performance: 77% CAGR in last Five Years

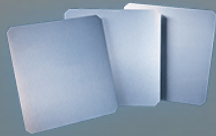


Value Chain -- Overview

Equity Investment



Silicon



Wafers



高景太阳能
Gokin Solar

Residential



450W

460W

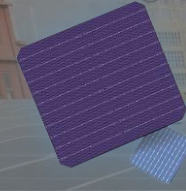
power

23.1%

23.6%

Efficiency

Aiko Energy



Cells



PV Module



One Stop Solution

C&I



power

600W

610W

Efficiency

23.2%

23.6%

Aikosolar ranked 1st in global PV cell shipment in 2021

2016 ▶

①Trinasolar	4,998
②JA Solar	4,920
③Hanwha	4,046
④Jinko	3,890
⑤Motech	2,925
⑥First Solar	2,650
⑦Longi	2,60
⑧Canadian Solar	2,440
⑨Yingli	2,360
⑩Suntech	2,228
Top 10	33,107
Total Shipment	69,460

2020 ▶

①Longi	14,683
②Tongwei	12,100
③JA Solar	10,751
④ AIKO	10,521
⑤Trinasolar	9,001
⑥Jinko	8,655
⑦Canadian Solar	8,337
⑧Talesun	7,435
⑨Suntech	6,313
⑩First Solar	5,500
Top 10	93,294
Total Shipment	131,709

2021 ▶

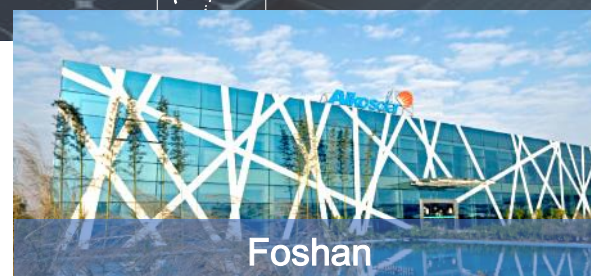
① AIKO	31,274
②Tongwei	27,334
③Longi	19,637
④Jinko	16,849
⑤Talesun	10,731
⑥JA Solar	10,658
⑦Canadian Solar	8,675
⑧Runergy	8,017
⑨Hanwha	7,614
⑩First Solar	7,611
Top 10	148,410
Total Shipment	193,966

Unit: MW



Source: NREL 2021 , <https://www.nrel.gov/docs/fy22osti/82854.pdf>

Production Capacity – 42.5GW



Strong R&D Investment

R&D Employees

23.5%

Patents

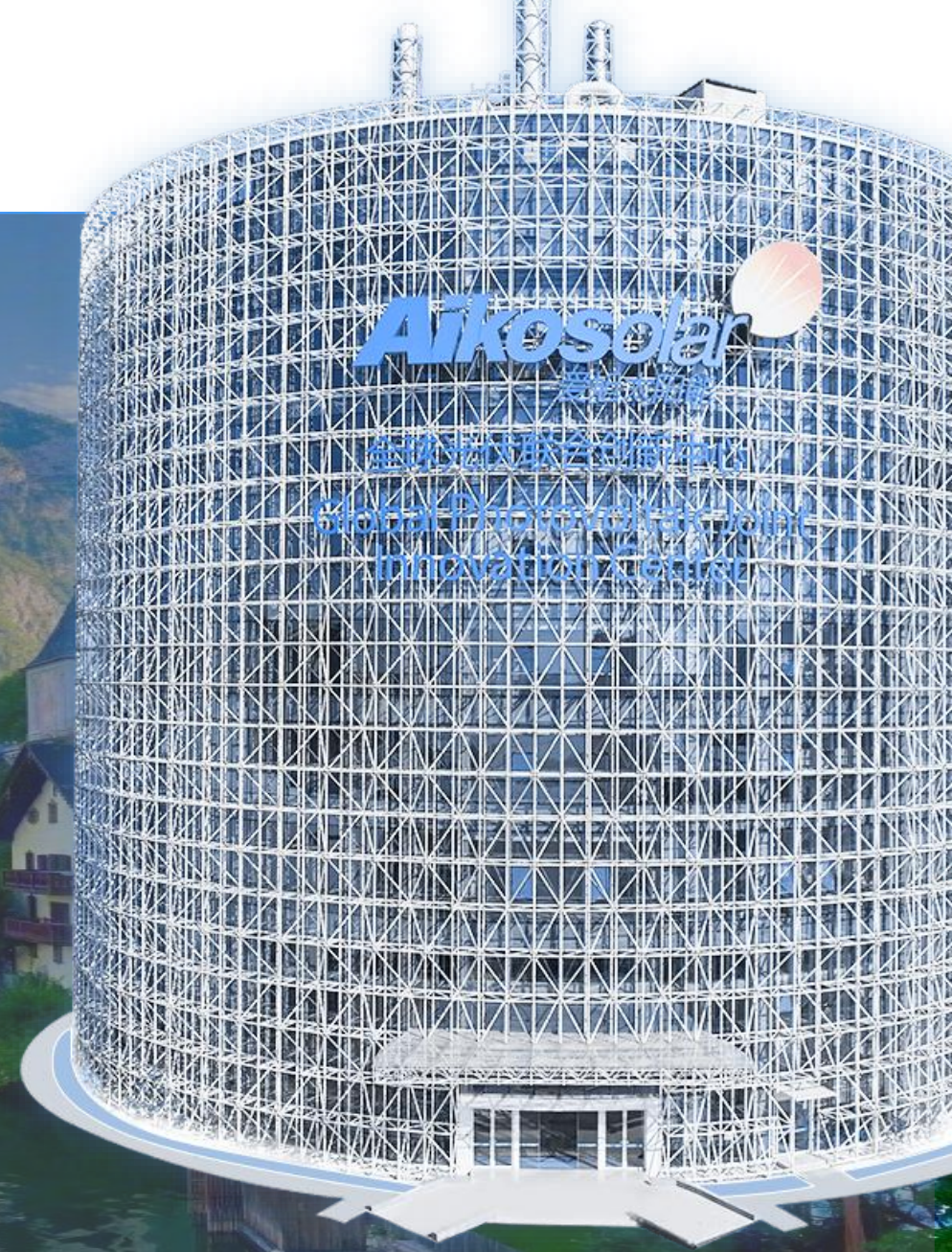
Application-1,563

Granted-884

R&D Investment

(2020-2022)

280,000,000.00 €



R&D Partnership with Industry Leaders



Aiko Solarlab @ Freiburg
2020



Intelligent Manufacture Base Developed with German Technology



Sales and Supply Partnership with Industry Leaders

LONGi

CHNT
正泰新能源

Hansol
technics

Technology Revolution
CIC
長州産業

国家电投

Trinasolar
天合光能

阿特斯

中国三峡
CHINA THREE GORGES CORPORATION

国家能源集团
CHN ENERGY

HYUNDAI
HEAVY INDUSTRIES CO., LTD.

JA SOLAR
晶澳太阳能

TCL 中环

中广核 **CGN**

中国节能环保集团有限公司
CHINA ENERGY CONSERVATION AND ENVIRONMENTAL PROTECTION GROUP

国投电力控股股份有限公司
SDIC POWER HOLDING CO., LTD.

Jinko Solar

Hanwha

Heckert Solar
Die Energiewerkstatt

Silfab
SOLAR

中国华能集团有限公司
CHINA HUANENG GROUP CO., LTD.

Customer

risen
东方日升

S-Energy

CMIG
New Energy

大唐集团公司
CHINA DATANG

华能电力
CR POWER

Supplier

APPLIED MATERIALS
make possible

LEAD 先导

GIGA SOLAR MATERIALS CORP.
碩禾電子材料股份有限公司

R|E|N|A|

仓和股份有限公司
BRAVE C&H SUPPLY CO., LTD.

centrotherm

Heraeus

ScreenTec

VOSTRO

Rutech
儒兴科技

European Logistics Center- Up to 10,000m² in the Netherlands



Zone	Delivery Days	Coverage
1	1-2	Netherlands, Belgium Germany NRW
2	2-3	Germany Others, Austria, Poland, France
3	3-4	Italy, Spain, UK
4	4-6	Others

Contents

Company Overview

ABC Module

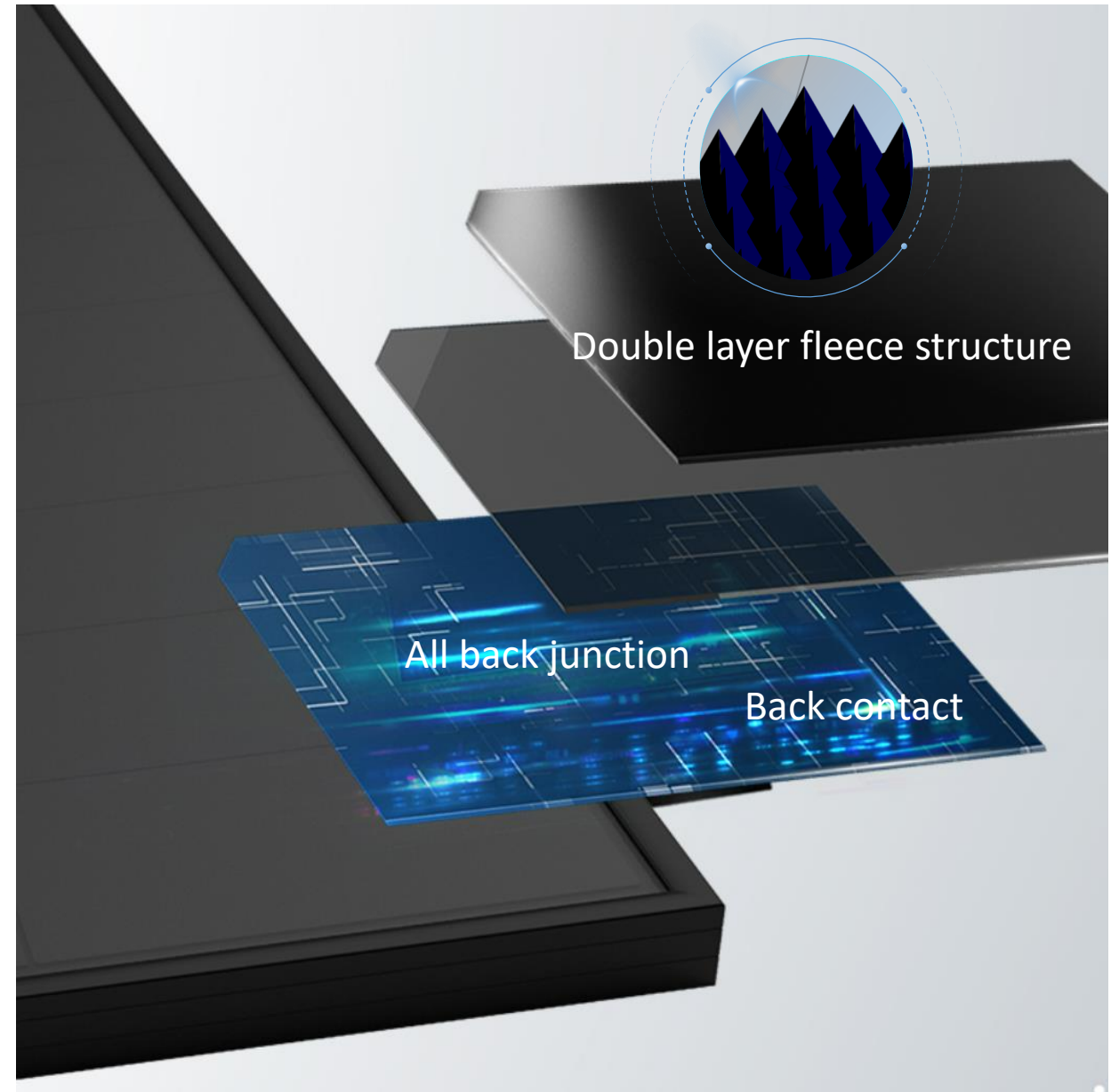
One Stop Solution

Open Discussion

ABC

All Back Contact

Front: All Area is Effective to Absorb Sunlight



Elegant and Powerful ABC Module: More than +15% Yield with +7% BOS Reduction



Technical Report No:704062319105-00 2023-02-19









reddot design award

Higher Yield

1. 2m² 460+W
2. Efficiency up to 23.6%
3. Temp. coef. $\leq -0.29\%/K$
4. 1st Year $\leq 1\%$, 2nd-30th Year $\leq 0.35\%$
5. 30 Year Performance Warranty

Aiko Solar ABC – Industrial Leading Efficiency

Rank	Company	Series	Model	Wafer Type	Cell Size	Cells No.	Cell Tech	Module Technology	Power (W)	Efficiency (%)
1	 Aikosolar	ABC White hole	AIKO-A610-MAH72Mw	n-type	182	144	ABC	Halfcell, Back Contact	610	23.6
2	 LONGi	Hi-MO 6	LR5-72HTH-590M	-	182	144	HPBC	Halfcell, Backcontact	590	22.8
2	Maxeon	Maxeon 6	SPR-MAX6-440-E3-AC	n-type	-	66	IBC	Back Contact	440	22.8
4	 Jinko Solar	Tiger Neo	JKM585N-72HL4-V	n-type	-	144	TOPCon	Halfcell, MBB	585	22.65
5	 HUASUN	Himalaya	HS-210-B132	n-type	210	132	HJT	Bifacial, Halfcell, MBB	700	22.53
5	 中来股份 JOLYWOOD	Niwa Light	JW-HT108N	n-type	182	108	TOPCon	Halfcell, MBB	440	22.53
7	 JA SOLAR	DeepBlue 4.0	JAM72D40 580/GB	n-type	182	144	TOPCon	Bifacial, Halfcell, MBB	580	22.5
7	 TW SOLAR	-	TWMND-72HS560-580W	n-type	182	144	TOPCon	Halfcell, MBB	580	22.5
7	Canadian Solar	HiHero	CS6R-420-445H-AG	n-type	182	108	HJT	Halfcell, MBB	440	22.5
10	 ASTRONERGY	Astro N5	CHSM78N(DG)/F-BH	n-type	182	156	TOPCon	Bifacial, halfcell, MBB	625	22.4
11	Canadian Solar	TOPBiHiKu6	CS6W-575TB-AG	n-type	182	144	TOPCon	Bifacial, Halfcell, MBB	575	22.3
11	 Trina solar	Vertex S+	TSM-NEG9R.28	n-type	210	144	TOPCon	Halfcell, MBB	445	22.3
11	 SPIC	ANDROMEDA 2.0	SPICN6(LAR)-66/IH	n-type	166	132	IBC	Halfcell, MBB	440	22.3
11	 FASOLAR	-	DAS-DH108NA	n-type	182	108	TOPCon	Bifacial, halfcell, MBB	435	22.3
11	REC	Alpha Pure-R	RECxxxAA Pure-R	n-type	210	80	HJT	Halfcell, SWCT	430	22.3
16	Akcome	Ak iPower	SKA611HDGDC	n-type	210	132	HJT	Bifacial, halfcell, MBB	690	22.22
17	Eging PV	Aurora Pro	EG-685NT66-HU/BF-DG	n-type	210	132	TOPCon	Bifacial, halfcell, MBB	685	22.05
18	Qcells	Q.TRON	Q.TRON BLK-G1+	n-type	-	120	TOPCon	Halfcell, MBB, Zero Gap	395	22
19	Meyer Burger	Meyer Burger Glass	Heterojunction Bifacial	n-type	-	120	HJT	Bifacial, halfcell, SWCT	390	21.8
20	Canadian Solar	HiKu7	CS7N-645-675MS	p-type	210	132	PERC	Halfcell, MBB	675	21.7



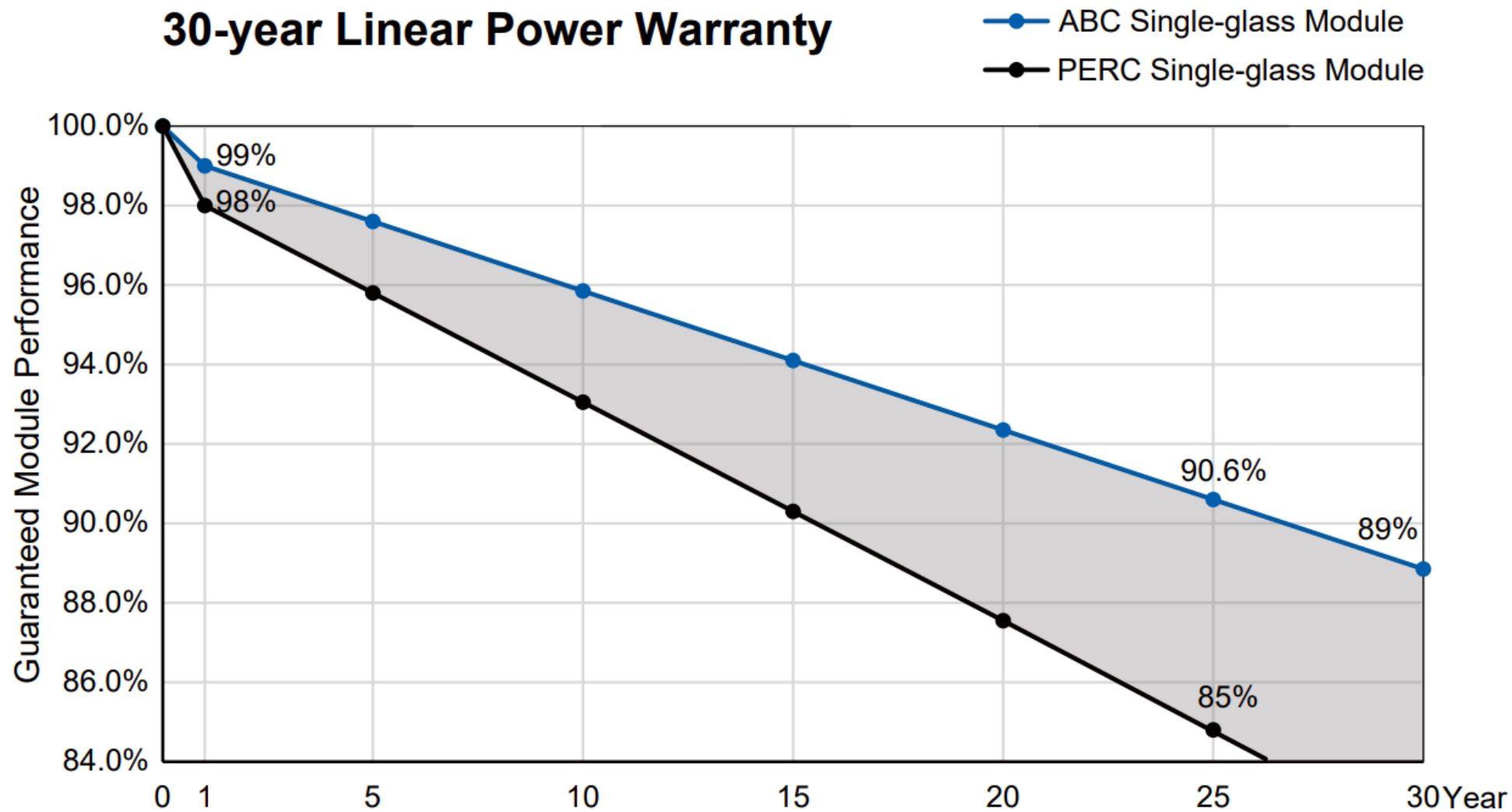
Module efficiency(%)



Module power(W)

Source: ©TaiyangNews 04-2023

High Performance with 30 Year Linear Power Warranty





reddot winner 2023

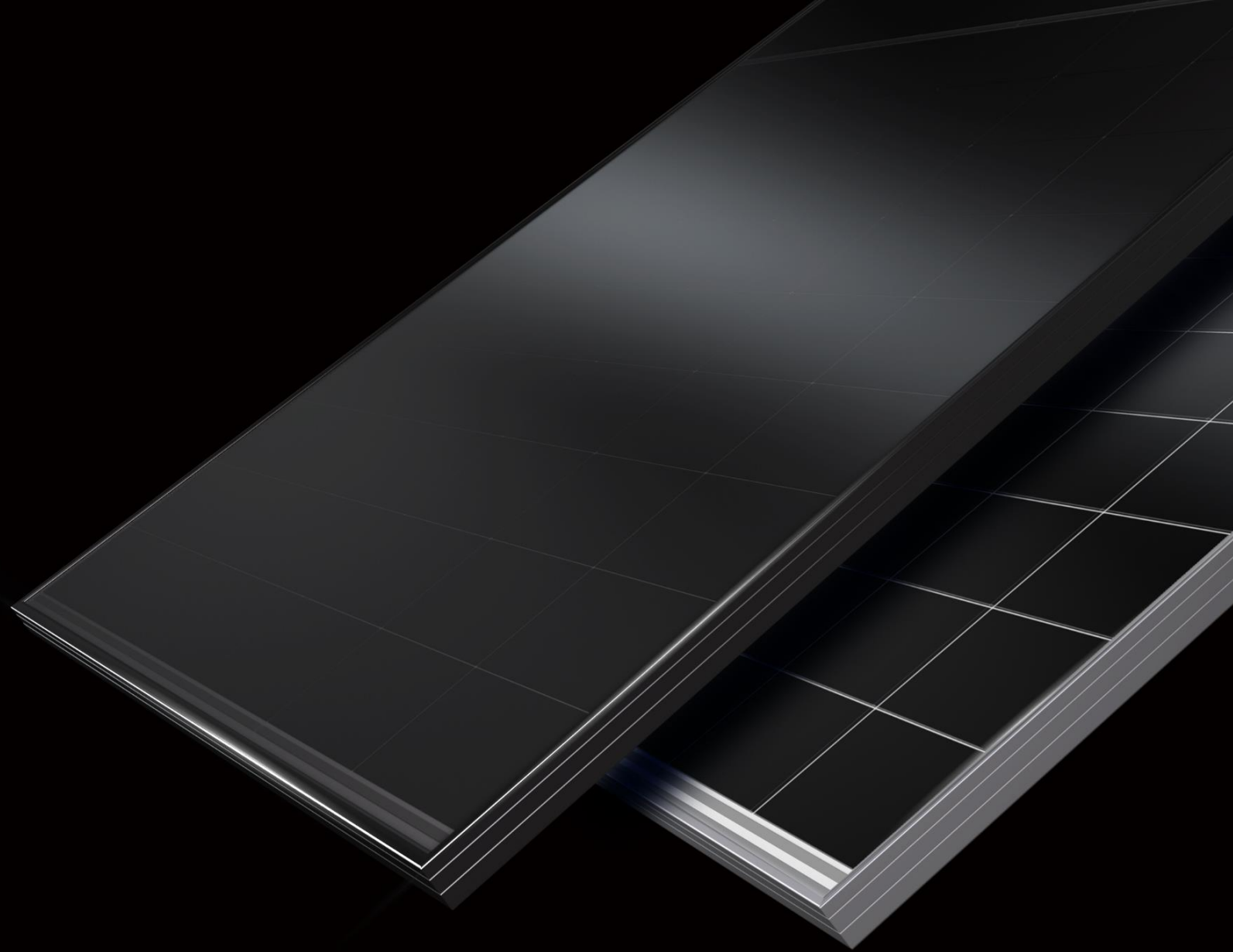
ABC Module

Product Design 2023

2m² 460w+

480w+

500w+



Elegant and Powerful ABC Module: More than +15% Yield with +7% BOS Reduction



Technical Report No:704062319105-00 2023-02-19



reddot design award

Higher Yield

1. 2m² 460+W
2. Efficiency up to 23.6%
3. Temp. coef. $\leq -0.29\%/K$
4. 1st Year $\leq 1\%$, 2nd-30th Year $\leq 0.35\%$
5. 30 Year Performance Warranty

Premium Appearance









ABC Cell

Silver Free Metal Coating
With Reliable Supply Chain

820,000,000 Moz

Silver Demand in 2030 Solar Industry

ABC Module Portfolio

Scenario	Residential		Commercial & Industry	
				
Model	AIKO-A450-MAH54Mb	AIKO-A460-MAH54Mw	AIKO-A600-MAH72Mb	AIKO-A610-MAH72Mw
Pmax [W] @STC	450	460	600	610
Voc [V] @STC	40.30	40.35	53.60	53.60
Isc [A] @STC	13.78	14.03	13.78	14.03
Efficiency @STC	23.0%	23.6%	23.2%	23.6%
Dimension	1722 x 1134 x 35 mm	1722 x 1134 x 35 mm	2278 x 1134 x 35 mm	2278 x 1134 x 35 mm
Weight	22.2kg	22.2kg	28.6kg	28.6kg
Pmax Temp Coef	-0.29%/K	-0.29%/K	-0.29%/K	-0.29%/K

ABC Frameless Light Module($\leq 4\text{kG/m}^2$) for Light Load Roof (Metal roof, old building) and Curve Roof

Type of Solar Cell	N-type ABC Cell		P-type PERC Cell	
Cells No.	108(6x18)	120(6x20)	108(6x18)	120(6x20)
Dimension (mm)	1758x1142x2.8	1946x1142x2.8	1740x1142x2.8	1926x1142x2.8
Pmax(W)	420-440	470-490	380-400	425-445
Module Efficiency	$\geq 20.9\%$	$\geq 21.1\%$	$\geq 19.1\%$	$\geq 19.3\%$
Installation	Quick-Bonding or Fixture installation			

Reference Project - Full Coverage 12kWp



Build in 2022-12-23

NanJing

Contents

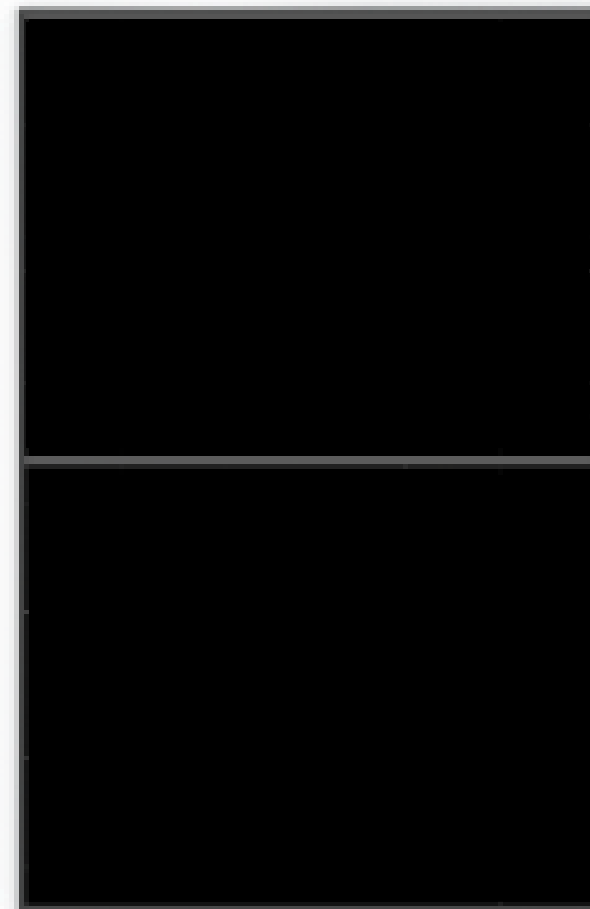
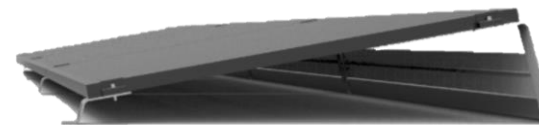
Company Overview

ABC Module

One Stop Solution

Open Discussion

Residential Solution Overview



Residential Reference Project —Foshan, +15% Power Performance

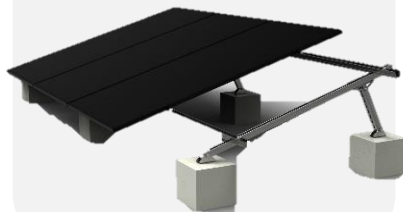
kWh	2022-Nov	2022-Dec	2023-Jan
PERC 537.2W	13.98	60.09	51.70
ABC 596.5W	16.10	69.63	59.09
Total Gain	15.2%	15.9%	14.3%
Gain Per Watt	3.8%	4.4%	2.9%

Commercial and Industry Solution Overview

EV-Charger



Mounting System



Energy Storage



Inverter

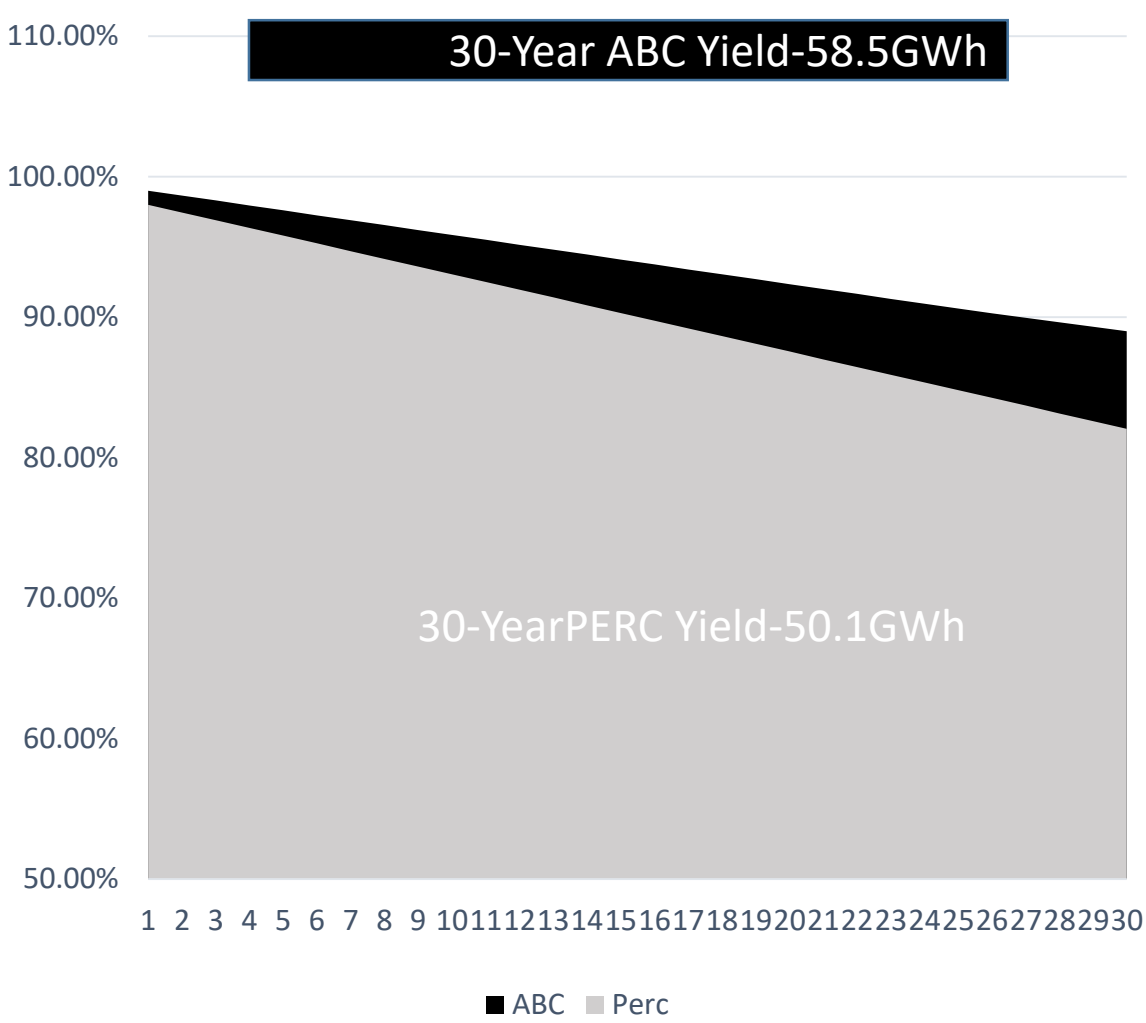


Energy Management System



C&I Reference Project —Zhuhai, 1.35MW, 13.4% Higher Yield for 30 Years

Item	Aiko Solar ABC 585W	Traditional PERC 545W
PV Module	3103 pcs	3103 pcs
Carbon Steel Stand	42.8 t	42.8 t
Shed Supporting System	9 t	9 t
Shed Mounting bracket	7 t	7 t
Solar Inverter	16	16
Inverter Mount bracket	1	1



Contents

Company Overview

ABC Module

One Stop Solution

Open Discussion



On the Way to build ABC Footprint with Global Partners