CD POWER

ALL N-TYPE

CDC Power

Tel: +86 166 2348 4822
Email: marketing@cdcpower.com

POWER

POWER

16 GW
n-TOPCon Bifacial Cell Production Capacity

7.0 GW
n-TOPCon Bifacial Module Production Capacity

150 MW
n-IBC Cell Production Capacity

CDC est une entreprise énergétique intégrée

spécialisée dans la fabrication et la fourniture d'énergie solaire. Elle est une filiale de YYW Technology Co., Ltd., fondée en 1996 à Shenzhen en Chine. Les activités couvrent la recherche et le développement, la production de composants de cellules photovoltaïques, d'onduleurs solaires, de systèmes de stockage d'énergie solaire, les services de vente ainsi que les investissements de la construction et les solutions de systèmes de la production d'énergie photovoltaïque.

Nous avons plus de 300 employés dans le monde entier et une usine moderne de 18 000 mètres carrés. En plus des produits photovoltaïques, nous avons également de nombreuses séries de produits indépendants de notre marque, tels que les sources d'alimentation portables. Notre entreprise a strictement établi un système de gestion de la qualité conformément à la norme ISO9001: 2008, nos produits sont conformes aux normes nationales et ont passé les certifications de produits CE, ROHS, etc.
Tous les produits sont rigoureusement testés pendant leur production, leur traitement et en tant que produit fini. Nous avons entièrement adopté des équipements de production intelligents, y compris les lignes de production automatisées, le triage, la pulvérisation, le soudage et l'emballage. La technologie de fil mince et de tranches minces permet une précision de production de wafer allant jusqu'à 0,5 mm. Le processus de test comprend plusieurs étapes telles que EL, isolation, résistance à la pression, puissance, anti-poussière, étanchéité et températures extrêmes pour assurer que chaque produit livré aux clients est de la meilleure qualité.

SUBSIDIARY
OF
CDC
GROUP

POWER

ENTERPRISE ADVANTAGE

Core Equipment

The core equipment is independently researched and developed through independent cooperation, with external sales restrictions;currently 100% of the equipment localization rate can be achieved.

Core Material

Silver paste, non-silvered metal paste, etching additives and other core raw material

Technology Accumulation And Precipitation

R&D Investment

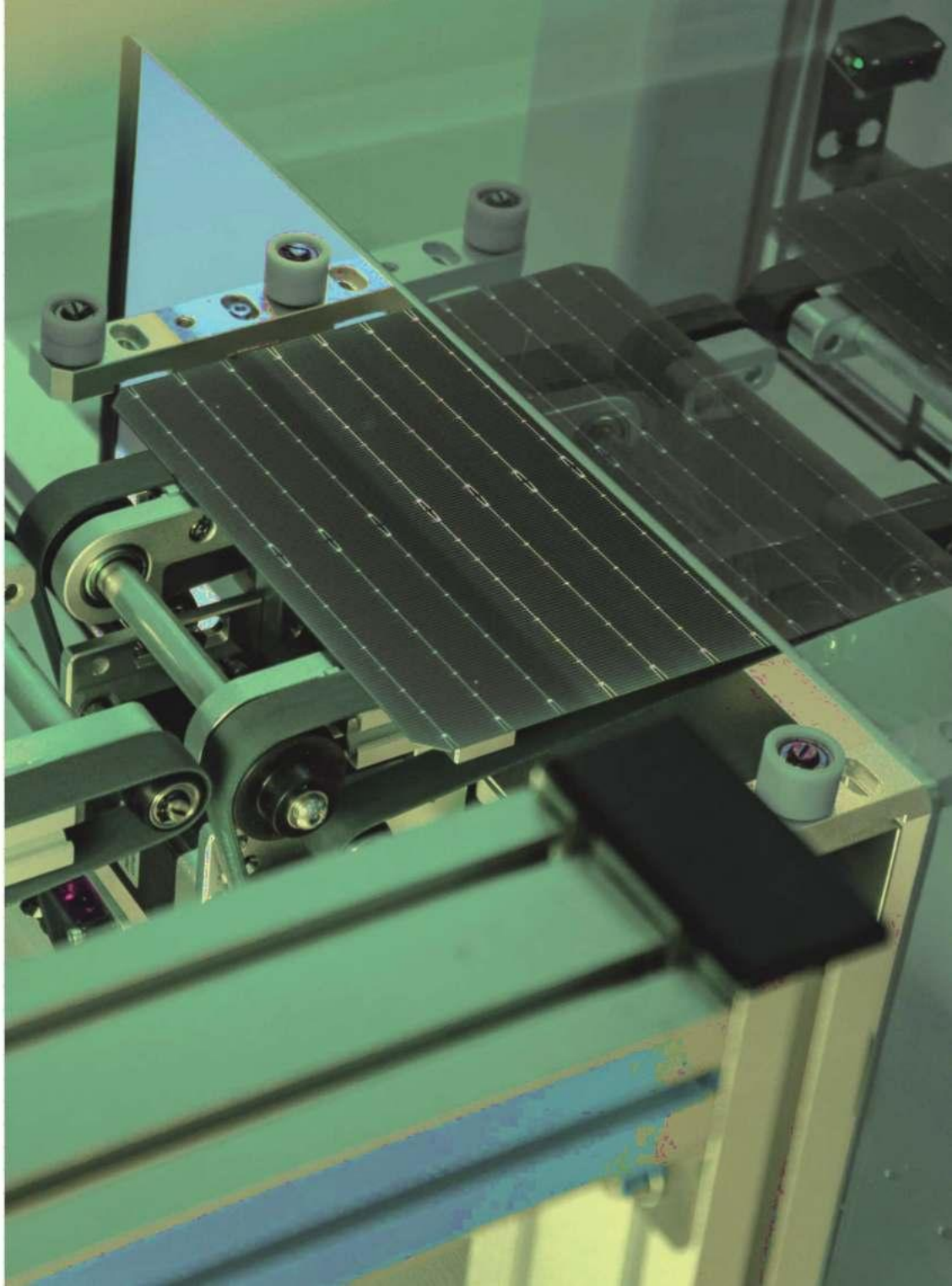
Supported by national, provincial and municipal-level scientific and technological projects; annual new investment in R&D investment exceeds 100 million yuan.

300+
Engineers

6 Employees
Hold Doctor Degrees
41 Employees
Hold Master Degrees
R & D team

188
Patents Applications Submitted

86 Patents Granted



CDCPOWER

EXCELLENT

QUALITY CONTROL SYSTEM

As a global leader in N-type bifacial high--efhciency innovative technology, CDC has anexcellent quality control system, product and quality certification system.

We have won the TÜV Rheinland “Quality in China” award for the outdoor power output ofbifacial photovoltaic modules The company has been awarded the TÜV Rheinland "Qualityin Chinaaward for the outdoor power generation of bifacial photovoltaic modules, andwas awarded the frst N-type flexible PV module certifed by TÜV North Germany.

The company was awarded the Best Photovoltaic Material Award by PV Magazine, theworld's leading PV industry magazine, for two consecutive years. The PV testing centre wasaccredited as a CNAS accredited laboratory for its testing capabilities and management.

Quality Assurance

CDC TOPCon modules have been certifed by TÜV RheinlandTÜV NORD Germany,CQC， JET,CSA and other domestic and foreign authoritative organizations.

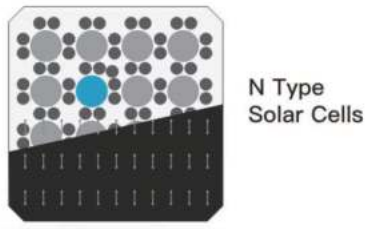
All Quality Matters Award

TOPCON TECHNOLOGY

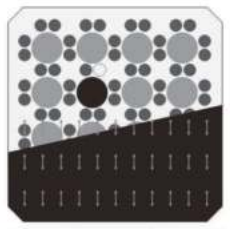
Advantages of N Type Solar Cells

Silicon
Phosphorus
Electron
Boron

Comparing with P- type solar cells, TOPCon cells have longer lifetime, lower degradation and higher potential of efficiency enhance.



N Type Solar Cells

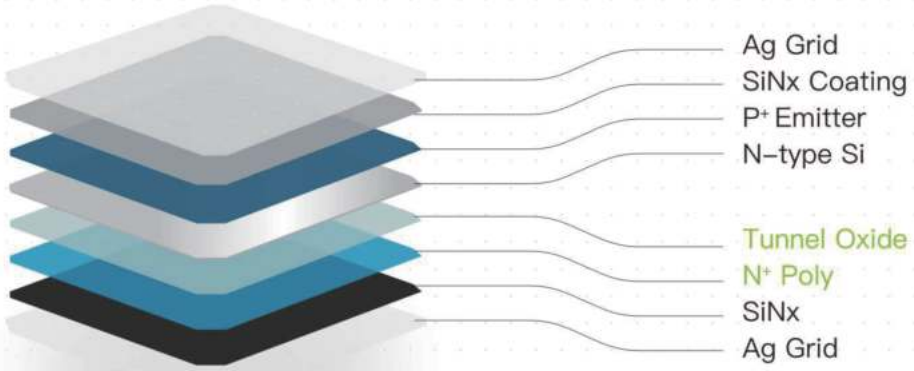


P Type Solar Cells

ADVANTAGES OF N TYPE SOLAR CELLS

Good interface passivation effect & field passivation effect
Most of the carrier selective funneling effect,raip carriers transport between absorption and doped layer.

Passivated contact structure of J-TOPCon 2.0:



ADVANTAGES OF J-TOPCON2.0

24.8%
Effciency
24.8%

85%
Bifacial Rate
Reaching 85%

- Higher efficiency
- Higher bifaciality
- Lower Temperature coefficient
- Lower degradation

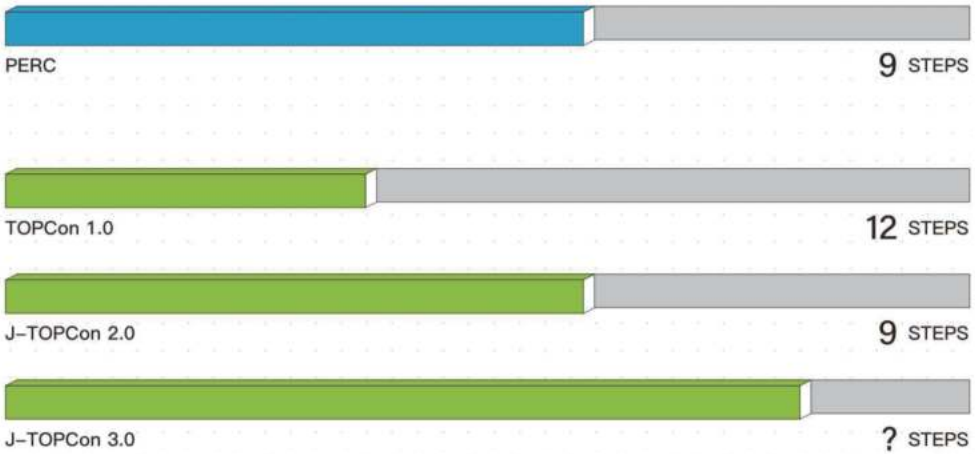
-0.30%/°C
Temperature
Coefficient Reaching
-0.30%/°c

1%
Degradation
In First Year 1%

SELF-DEVELOPED CELL TECHNOLOGY POPAID

Plasma Oxidation & Plasma Assisted Insitu-doping Deposition

J-TOPCon 3.0: POPAID Gemini technology+lesssilver consumption+shorter process flow



POPAID Technology Core Advantages

Shorter Processes

Compared With The ExistingRoute, The Popaid Route Can Shorten 3 Processes. Which Greatly Reduces The Cost

Higher Efficiency

By Using IEARWAT Latest Technolgy, The Solar Cell Effcieny Can Reach To More Than 24.8%

Higher Yield

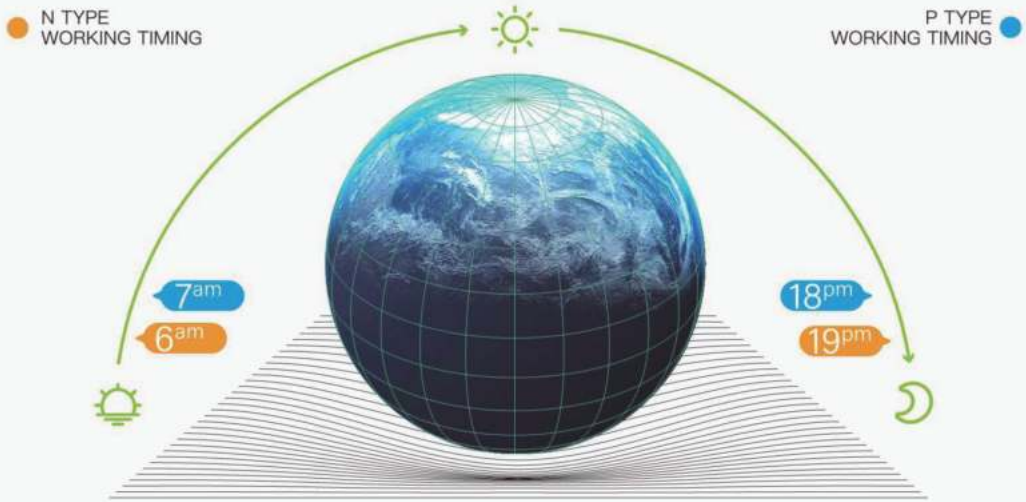
IEARWAT Popaid Technology Can Reduce. The Manufacturing Process Hence TolIncrease The Yield

More Cost-effective

By Using 182 Size Solar Cells And POPAID Technology, the Equipment Investment Of N-topconIs Similiar As PERC For Gw Size. Make N Type More Cost-effective

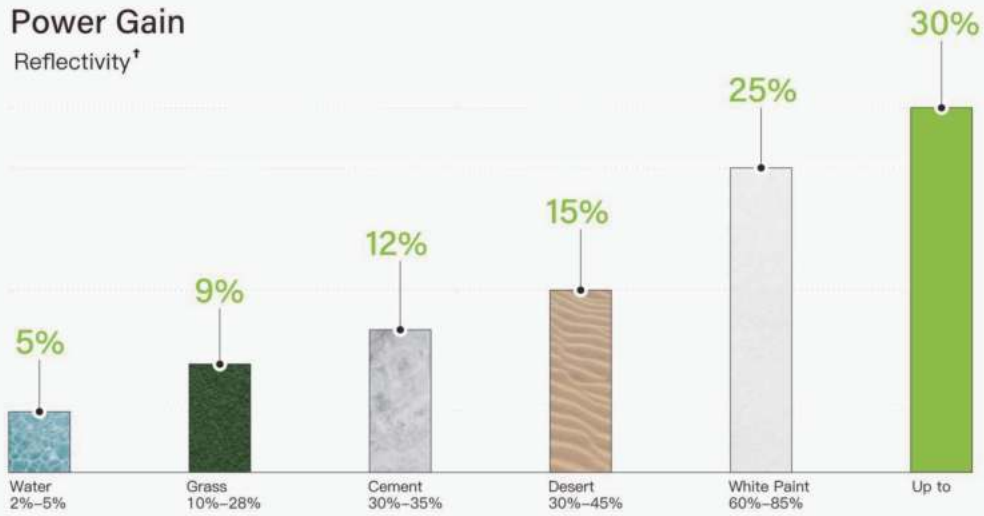
ADVANTAGES OF LCOE WITH N TYPE PV PANELS

With the same solar irradiation, compare to P type PV panels N type has a higher power generation.



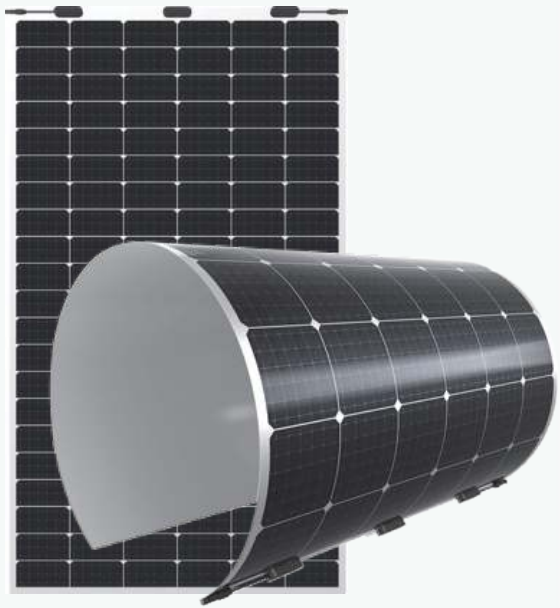
$$LCOE = \sum \text{EPC O\&M System} + \sum \text{Interest} - \sum \text{Tax} \downarrow$$

POWER GENERATION ↑



POWER

IE-R12-PVF380



380w
Maximum Power Output

up to
380w
19.19% Maximum Module Efhciency
1850*1040*2.5mm
20.8kg

Munich RE IEC CE

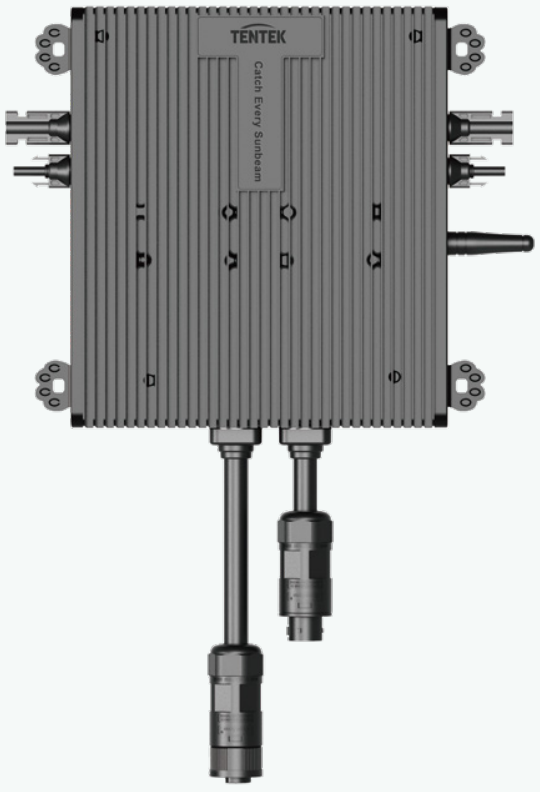
IE-V12-PVP430

430w
Maximum Power Output

up to
430w
22% Maximum Module Efhciency
1722*1134*30mm
20.8kg

Munich RE IEC CE

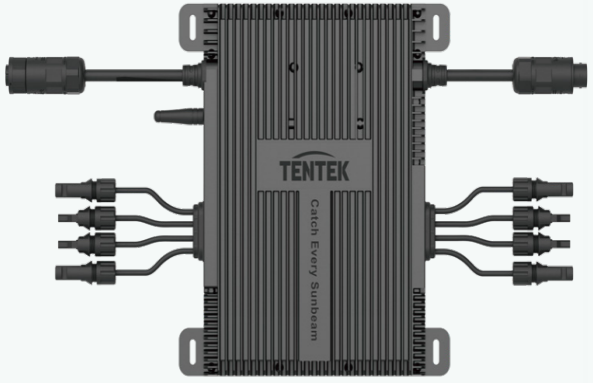
IE-Q15-OV1000



1.0Kw
Micro inverter

up to
1.0Kw
95% Maximum Efficiency 218*245
*42mm
4.5kg

IE-Q15-OV2000



2.0Kw
Micro inverter

up to
2.0Kw
95% Maximum Efficiency 270*300
*45mm
6.3kg

PD0060G-SPM-EU

6Kw
Mixed grid inverter

up to
6kw
98% Maximum Efficiency
580*330*252mm
24kg

PD0100G-TPM-EU

10Kw
Three electrical low voltage inverter

up to
10Kw
98% Maximum Efficiency
702*422*281mm
37.5kg

POWER

IE-B11-BS5KWh

POWER

5Kw-20Kw

Lithium iron phosphate battery

up to

5Kw

565*360*319mm

42.5kg

Munich RE IEC CE

IE-E11-ESS5KWh

5Kw-20Kw

Lithium iron phosphate battery

up to

5Kw

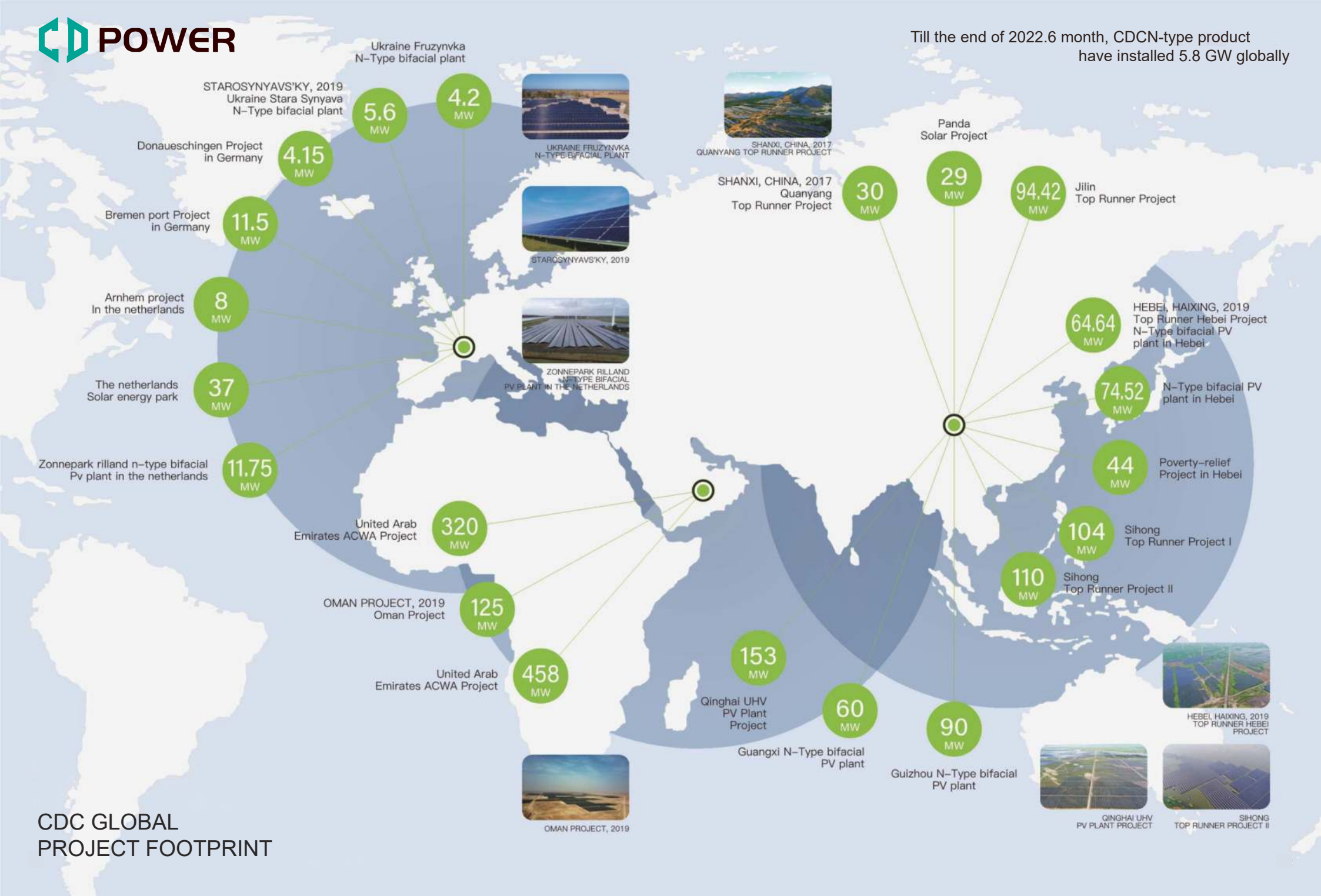
465*290*445mm

43.5kg

Munich RE IEC CE

CD POWER

Till the end of 2022.6 month, CDCN-type product have installed 5.8 GW globally



CDC GLOBAL
PROJECT FOOTPRINT

ROOFTOP PROJECT


1 MW, Vietnam


273 kw, France


258.6 kw, France


227.3 kw, France


216 kw, France

Vietnam
France
Poland
Germany
...


163.5 kw, France

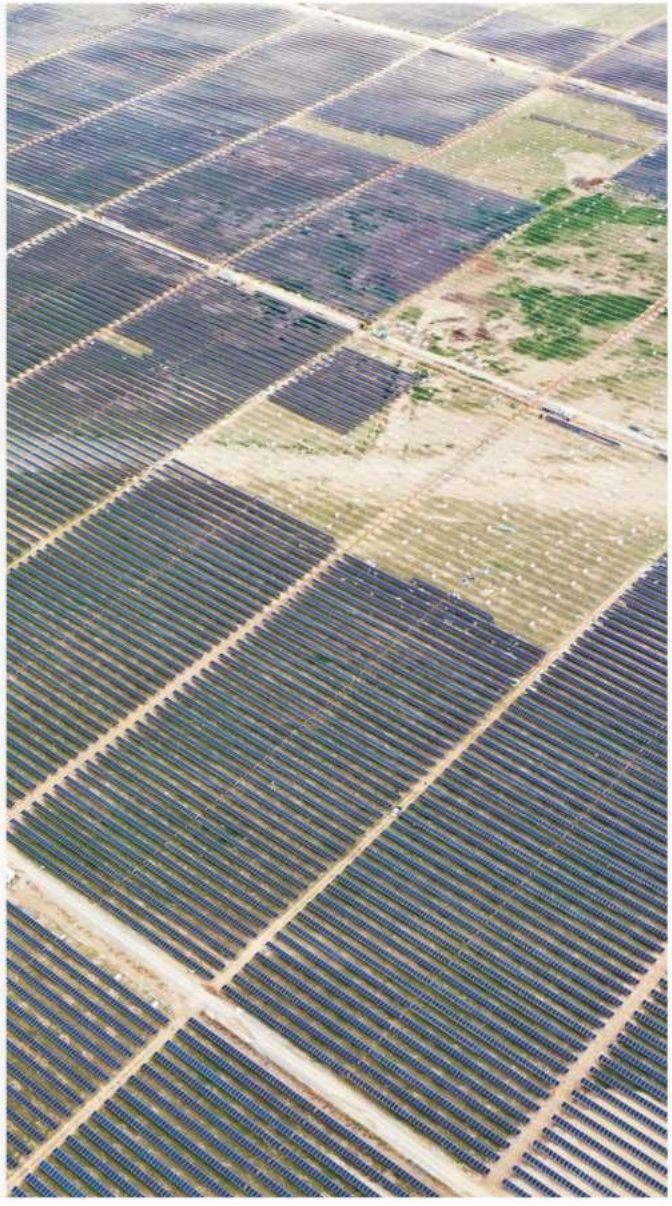

120 kw, Poland


50 kw, Poland


10 kw, Poland


7 kw, Germany


6 kw, Poland



QINGHAI UHV PROJECT

2020.09

153 MW

Location
Qinghai Province, China

COD
2017/09

EPC
/

Developer/Owner
Huanghe Hydropower Development Co., Ltd

Type of Module Installed
JW-D72N

Type of Inverter Installed
HUAWEI, Sungrow

Type of Installation
Tracker

SIHONG TOP RUNNER PROJECT

2018.09

104 MW

Location
Sihong, Jiangsu, China

COD
2018/09/30

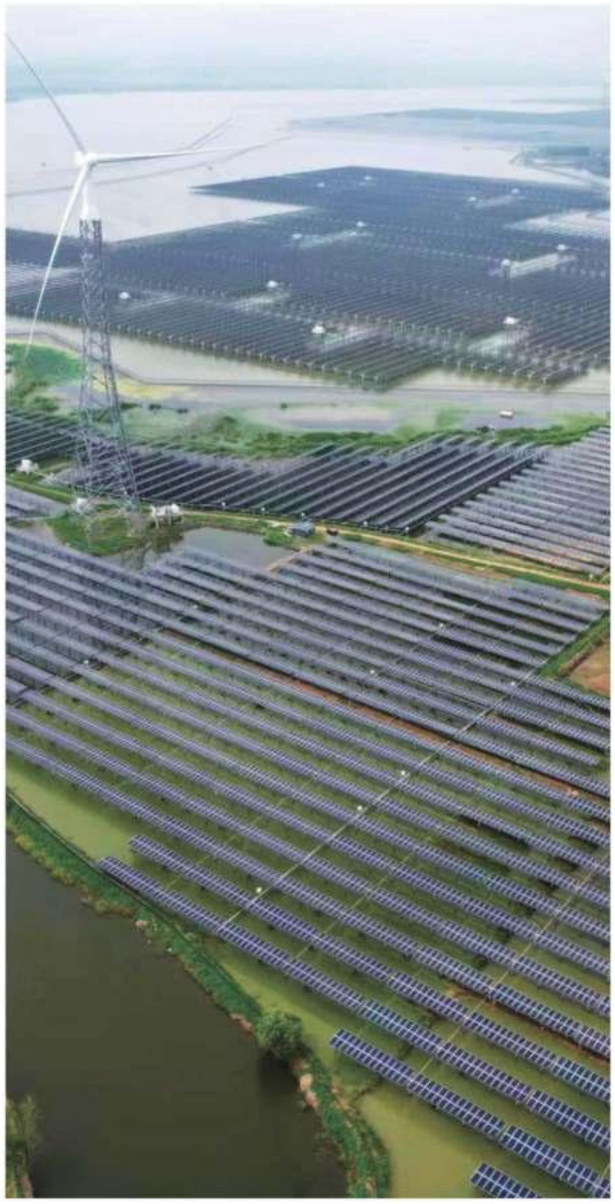
EPC
Jiangsu First Construction Installation Co., Ltd;
Henan Sijian Group Co., Ltd

Developer/Owner
State Power Investment Co., Ltd

Type of Module Installed
JW-D60N, JW-HD120N

Type of Inverter Installed
HUAWEI

Type of Installation
Fixed structure on water



PHASE II OF SIHONG TOP RUNNER PROJECT

2020.06

110 MW

Location
Sihong, Jiangsu, China

COD
2020/06/30

EPC
Henan Sijian Group Co., Ltd;
Jiangsu Electric Power Design Institute

Developer/Owner
State Power Investment Co., Ltd;
China Huaneng Group Co., Ltd

Type of Module Installed
JW-D60N, JW-HD120N

Type of Inverter Installed
HUAWEI

Type of Installation
Fixed structure on water

BAICHENG TOP RUNNER

2020.03

94.42 MW

Location
Baicheng, Jilin, China

COD
2020/06/30

EPC
Zhongshui Northeast Survey, Design and Research Co. Ltd; Jilin Survey Electric Power Design

Developer/Owner
Huaneng Group Co., Ltd; Guanghe Group Co., Ltd

Type of Module Installed
JW-D72N-370

Type of Inverter Installed
HUAWEI, Sungrow

Type of Installation
Tracker

HAIXING TOP RUNNER PROJECT

2019.04

64.64 MW

Location
Cangzhou, Hebei, China

COD
2019/04/30

EPC
Hubei Engineering Construction Corporation; Northwest Power Construction No.3 Company

Developer/Owner
State Electric Power Investment Corporation

Type of Module Installed
JW-D60N

Type of Inverter Installed
Sungrow

Type of Installation
Fixed structure on water

GUIZHOU XINGYI PROJECT

2020.12

90 MW

Location
Xingyi, Guizhou, China

COD
2020/12

EPC
Power China Guizhou Electric Power Engineering Co., Ltd.

Developer/Owner
Wujiang Energy Co., Ltd

Type of Module Installed
JW-HD144N-400/405

Type of Inverter Installed
Sungrow

Type of Installation
Fixed structure

GUANGXI QINZHOU PROJECT

2020.09

60 MW

Location
Guangxi, Qinzhou, China

COD
2020/09

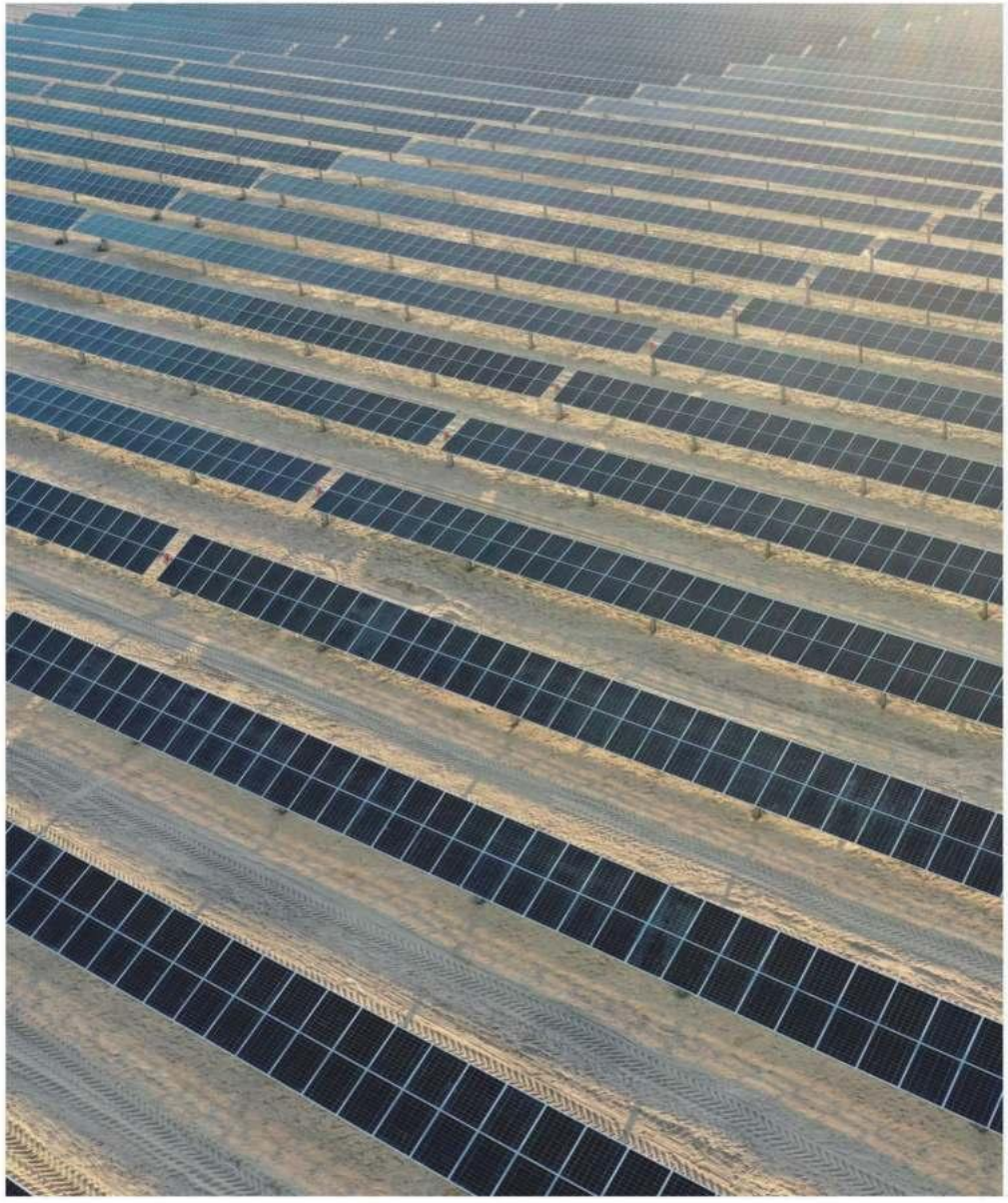
EPC
Changjiang Technology Co.,Ltd.

Developer/Owner
CITIC Group

Type of Module Installed
JW-D72N-370/375

Type of Inverter Installed
Huawei

Type of Installation
Fixed structure



IBRI II POWER STATION IN OMAN

2021.09

458 MW

Location
Ad-Dhahirah, Oman

COD
2021/09

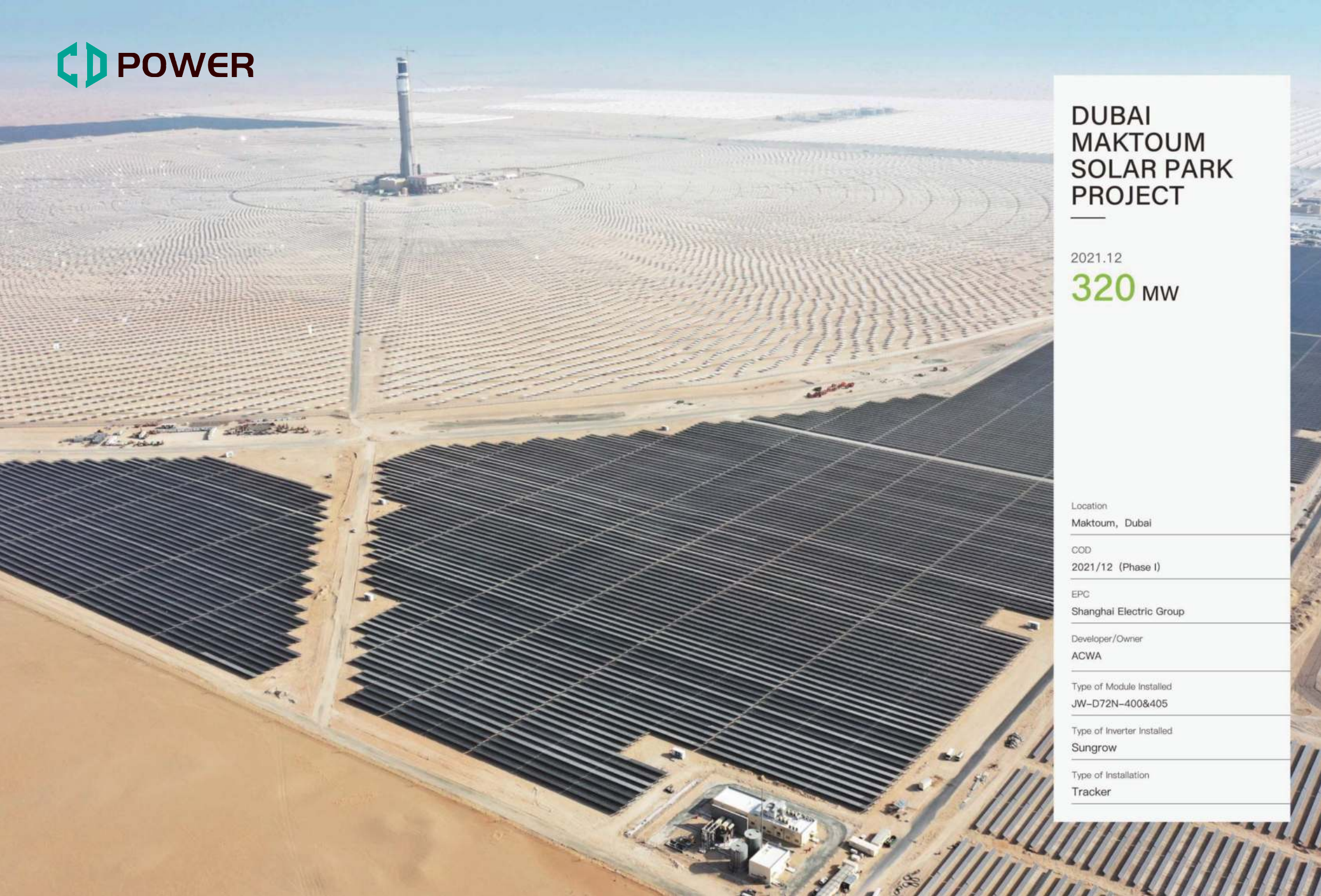
EPC
China Power Construction Corporation East China Survey and Design Institute Co., Ltd.

Developer/Owner
ACWA

Type of Module Installed
JW-HD144N-410W/415W

Type of Inverter Installed
Sungrow

Type of Installation
Tracker



POWER

DUBAI MAKTOUM SOLAR PARK PROJECT

2021.12

320 MW

Location	Maktoum, Dubai
COD	2021/12 (Phase I)
EPC	Shanghai Electric Group
Developer/Owner	ACWA
Type of Module Installed	JW-D72N-400&405
Type of Inverter Installed	Sungrow
Type of Installation	Tracker

POWER

OMAN AMIN PROJECT

2020.02

125 MW

Location
Oman Amin

COD
2020/02

EPC
STERLING AND WILSON INTERNATIONAL

Developer/Owner
Marubeni Corporation

Type of Module Installed
JW-D72N-370&375

Type of Inverter Installed
Sungrow

Type of Installation
Tracker

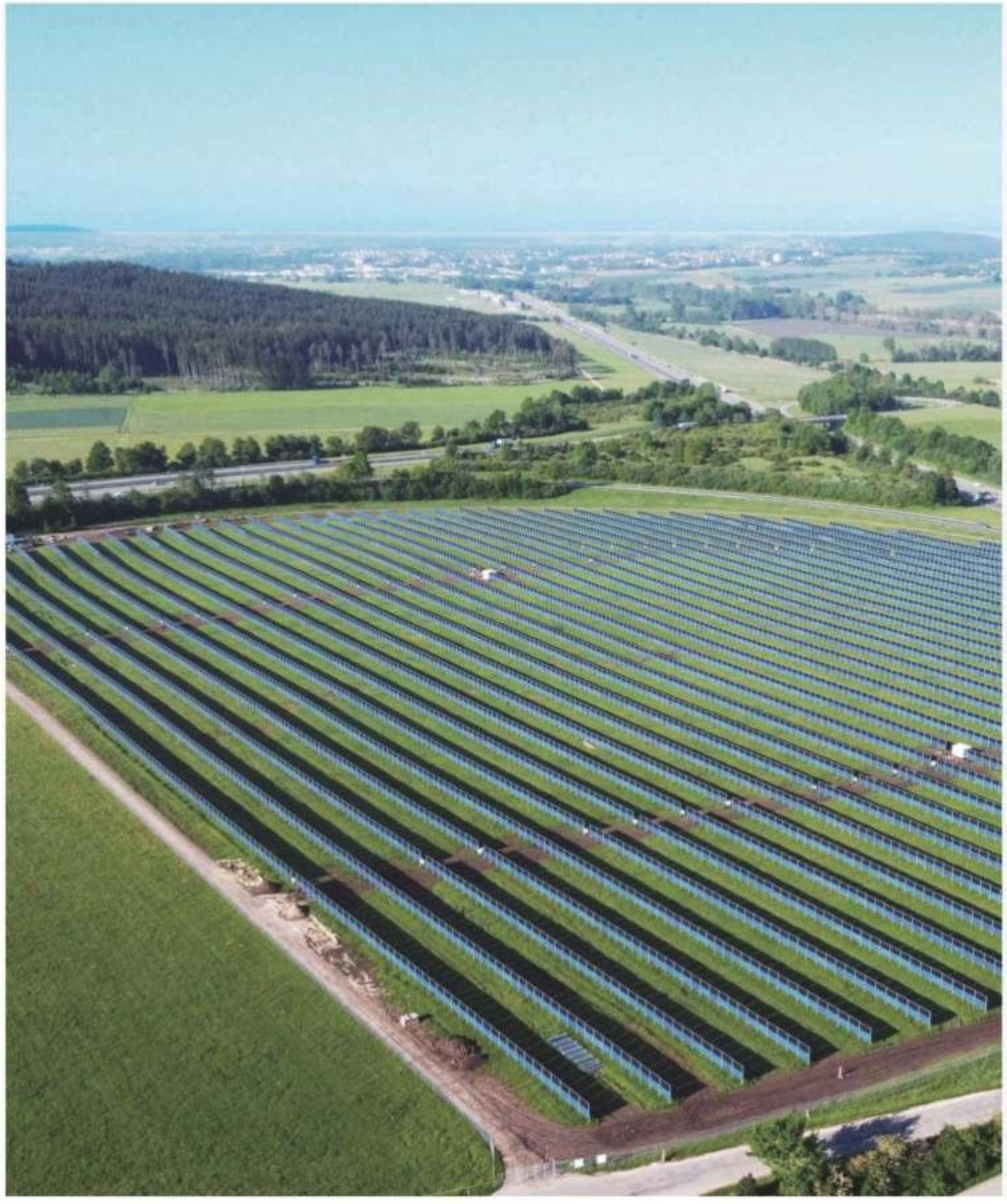
NETHERLAND ZONNEPARK RILLAND PROJECT

2019.01

11.75 MW

Location	Rilland, Netherland
COD	2019/01
EPC	Zonnepark Rilland B.V.
Developer/Owner	Alternus Energy inc
Type of Module Installed	JW-D72N-370
Type of Inverter Installed	HUAWEI
Type of Installation	Fixed structure

POWER



GERMAN VERTICAL INSTALLATION SOLAR FARM PROJECT

2020.07

4.2 MW

Location
Donaueschingen–Aasen, Baden–Württemberg

COD
2020/07

EPC
Next2Sun GmbH

Developer/Owner
Next2Sun GmbH

Type of Module Installed
JW–72N–380

Type of Inverter Installed
HUAWEI

Type of Installation
Fixed structure – vertical installation


GLOBAL PARTNERS
Trusted by Industrial Strong PV Players
IEARWAT
SOLAR BANKABILITY
Recognized by Most of Banks Globally
SOLAR FRONTIER
BNL BNP PARIBAS
ACWA POWER
Rabobank
Alternative Energy Projects Co.
REPOWER
All the energy you need.
mashreq
المشرق
COMMERZBANK
BLUE ELEPHANT ENERGY
Masdar
IBERDROLA
EDF renewables
招商银行
WARBA BANK
Commercial Bank of Dubai
UNISUN ENERGY
EcoSun S.A.
SolarToday
AIIB ASIAN INFRASTRUCTURE INVESTMENT BANK
BIB
Bank 中国光大银行
STERLING & WILSON
国家电投 SPIC
NATIXIS
oENERGY
memodo
IBC SOLAR
SUNSEAP
بنك الرياض riyad bank
中国工商银行
بنك الاتحاد الوطني UNION NATIONAL BANK
SOLARFIELDS
LBBW
中广核 CGN
CNE CONCORD NEW ENERGY
中国华能 CHINA HUANENG
Next2Sun
SIEMENS
FAB
CBI
شركة تنمية نفط عمان Petroleum Development Oman
enel Green Power
CEEC 中国能建
中国农业银行
CIT
BANCO BPM
megaSol
中国南方电网
BANK OF CHINA
中国民生银行
Triodos Bank
zonel ENERGY SYSTEMS
Libra
上海电气
Standard Chartered
DKB Deutsche Kreditbank AG
ELECTRON HOLDING
ibvogt
SOLIS energia cogenerativa
EC GROUP
ING
Emirates NBD
丸紅株式会社 Marubeni
zonel energy
中国建设银行 China Construction Bank