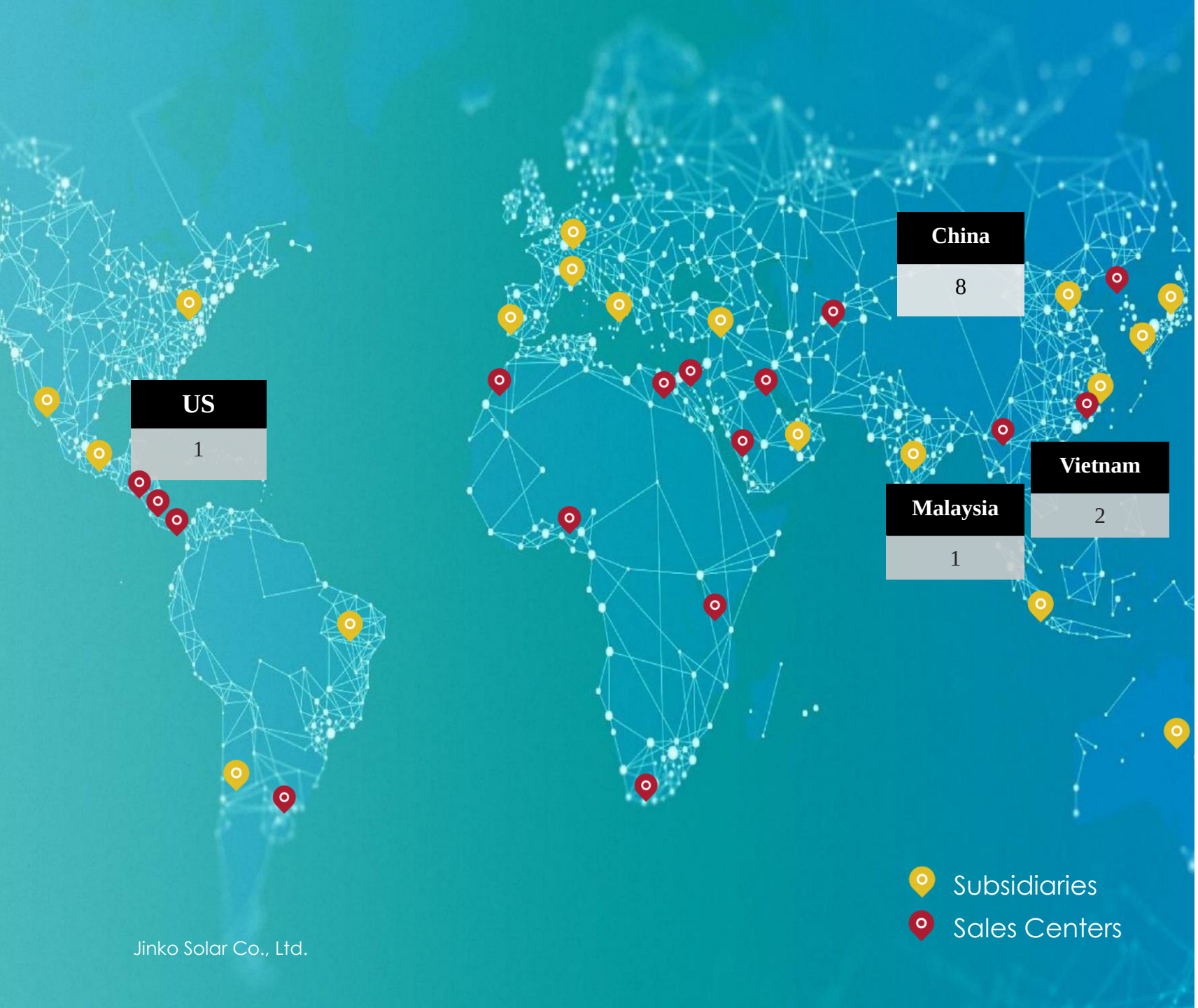
Suitable Solar+Storage:
New Residential Solutions from Jinko Solar

Roman Giehl, Senior Manager Technical Business Development

Introduction of the Company



Jinko Solar Global Layout

Providing highly localized solutions

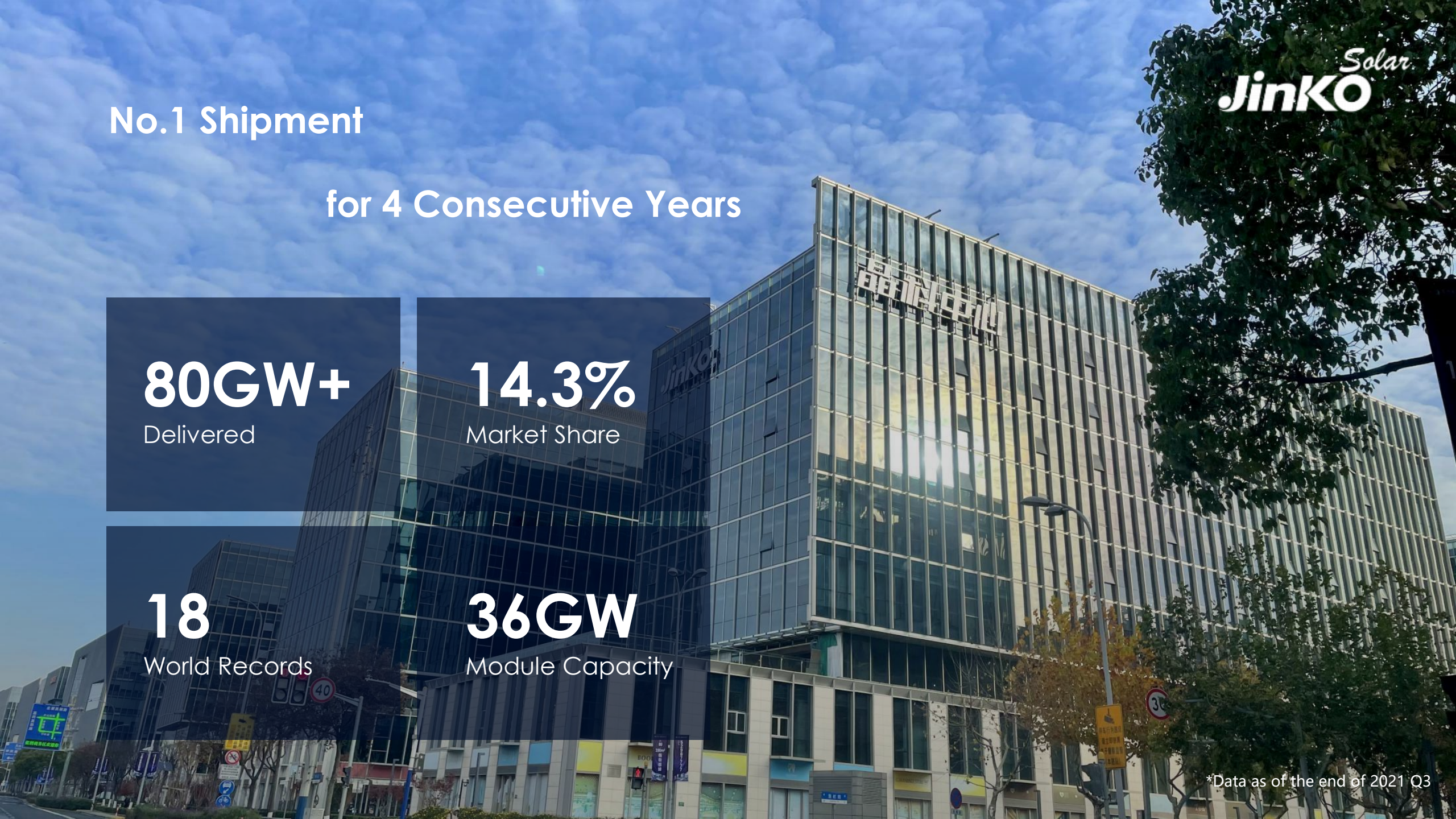
12
Production Facilities

25000+
Employees

30+
Service Centers

3000+
Customers

160+
Covered Countries



No.1 Shipment

for 4 Consecutive Years

80GW+
Delivered

14.3%
Market Share

18
World Records

36GW
Module Capacity

*Data as of the end of 2021 Q3

Industry Leading R&D Strength

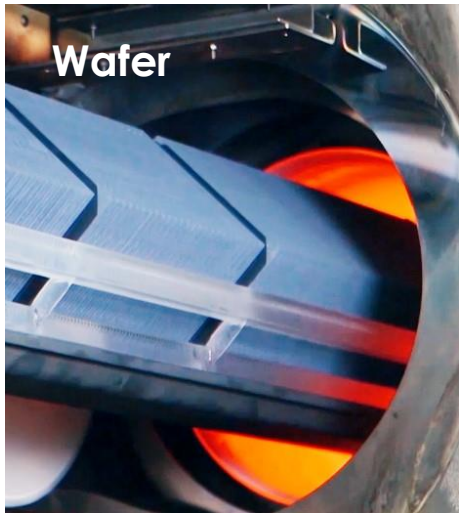
400+ R&D team

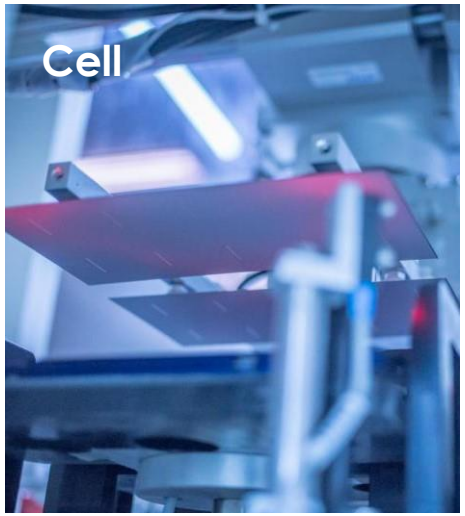
721 Granted patents

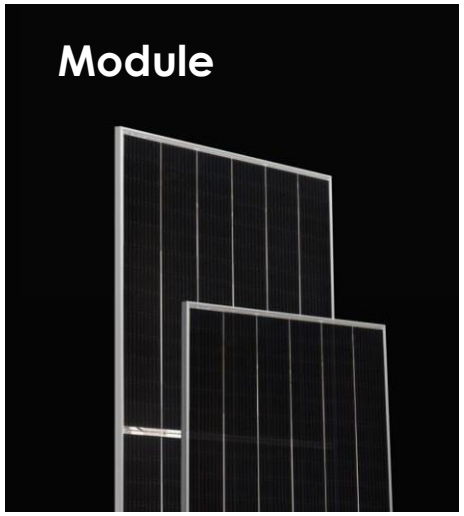
87 Invention patents

2 R&D centers

What We Do







Solar Business

Continuously expanding the production capacity of silicon wafers, cells and modules, to create a vertically integrated PV industrial chain

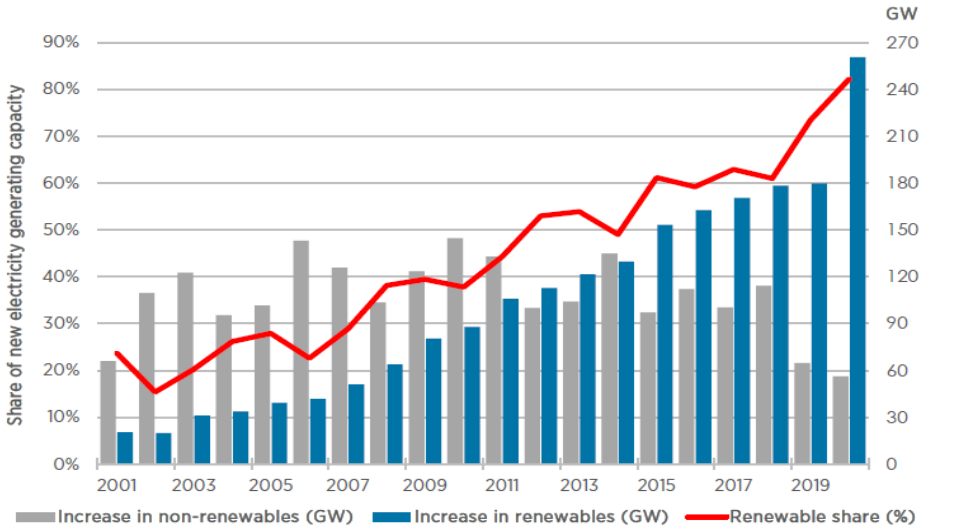
Our Solutions

BIPV+BAPV to foster the development of green buildings

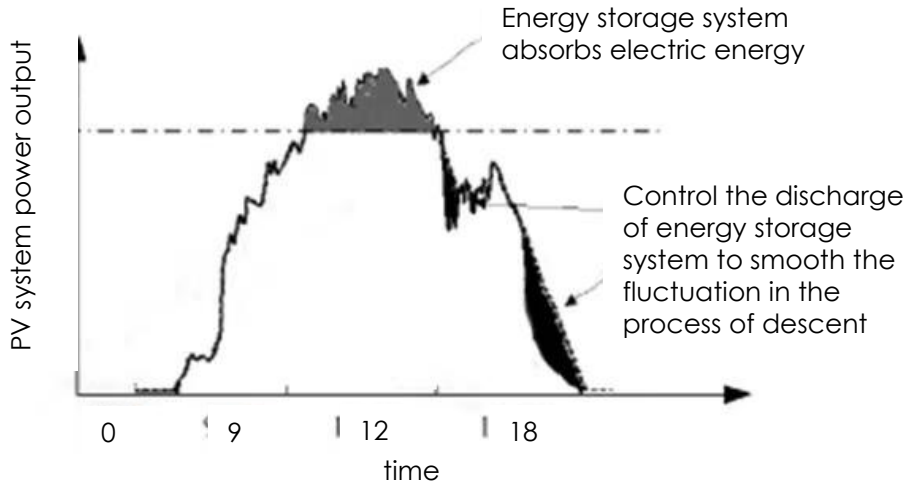
Solar+ Solutions and Energy Storage System

Impact of Renewable energy - Power System Evolution

New capacity of renewable energy and its proportion



Source: IRENA



PV + Energy storage become an increasingly essential model

The transformation of energy structure

(1) Significantly increased in renewable energy

(2) Generation forecast of existing power stations

(3) Balance the generation and consumption

Impact of PV power generation on power system

(1) Affect the stable operation of power grid

(2) Serious challenges for the dispatching of power station

(3) Affect the economic benefit of power system

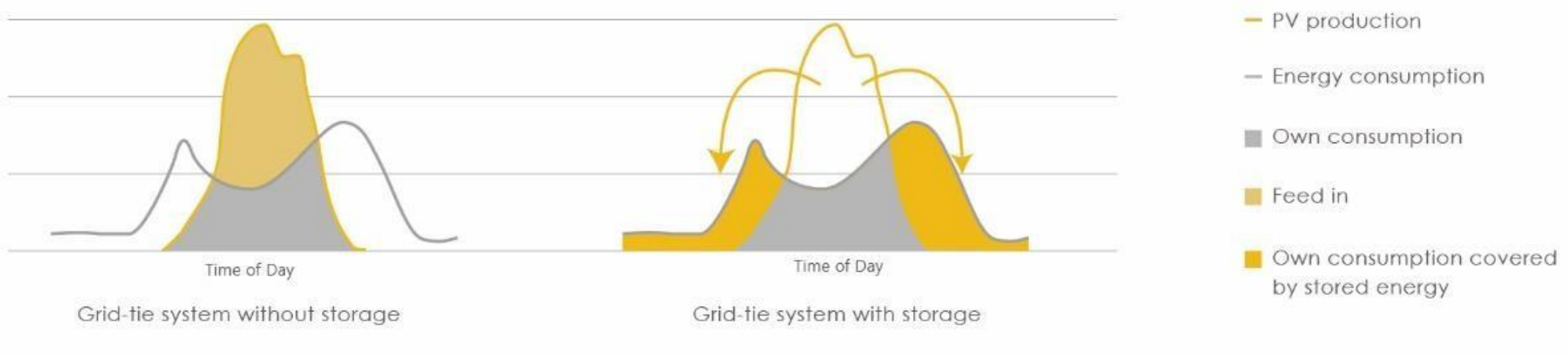
(4) Impact on distribution national power grid

Jinko Energy Storage Products & Advantages

Application - Self Consumption

Self-consumption

The typical electricity demand curve usually doesn't meet the PV generation curve.By storing the surplus PV generation into a battery storage unit, you can maximize **self-consumption and reduce your electricity bill.**



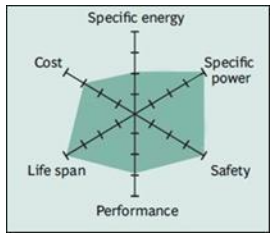
Residential Product - Core is the Battery

Long Battery Life

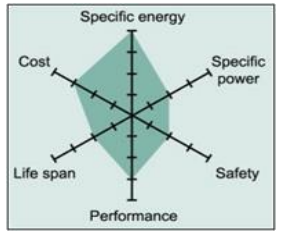
LFP (lithium iron phosphate) Battery – Mainstream Product

Jinko ESS use LFP and Metal-Can for safest operation and longest cycle-life

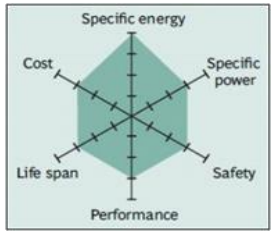
$LiFePO_4$ (LFP)



$LiCOO_2$ (LCO)



NMC

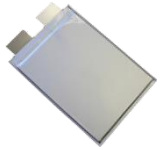


Small Cylindrical

Calendar Life: 5 years

Cost: Low

Big Polymer Pouch



Calendar Life: 3 years

Cost: Medium

Plastic Cell

Calendar Life: 5 years

Cost: Medium

Metal Can

Calendar Life: 20 years

Cost: High

Our Solutions - Energy Storage Products

Residential Storage System

(1kWh-50kWh)

C&I Storage System

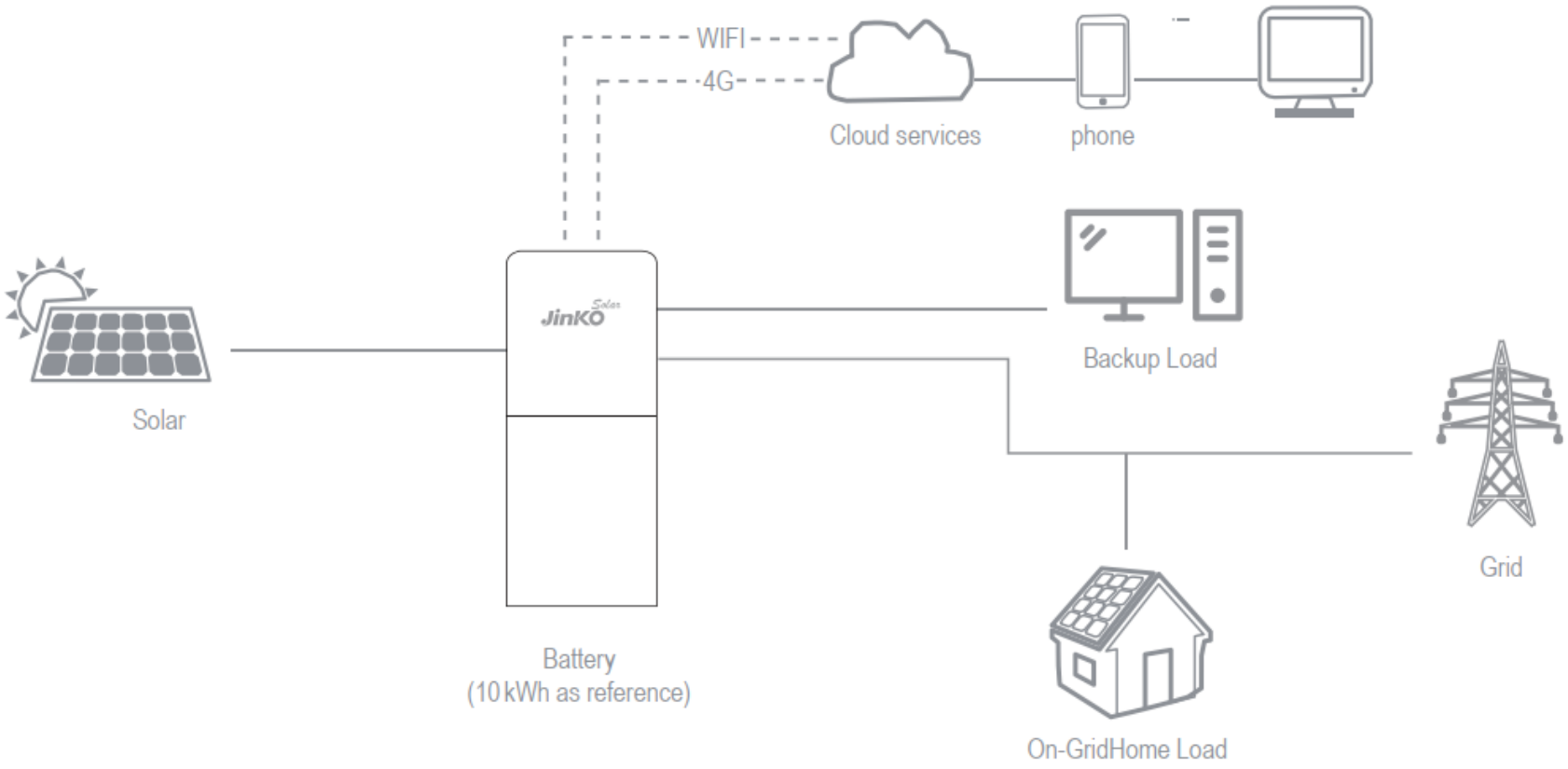
(50kWh-1MWh)

Utility Storage System

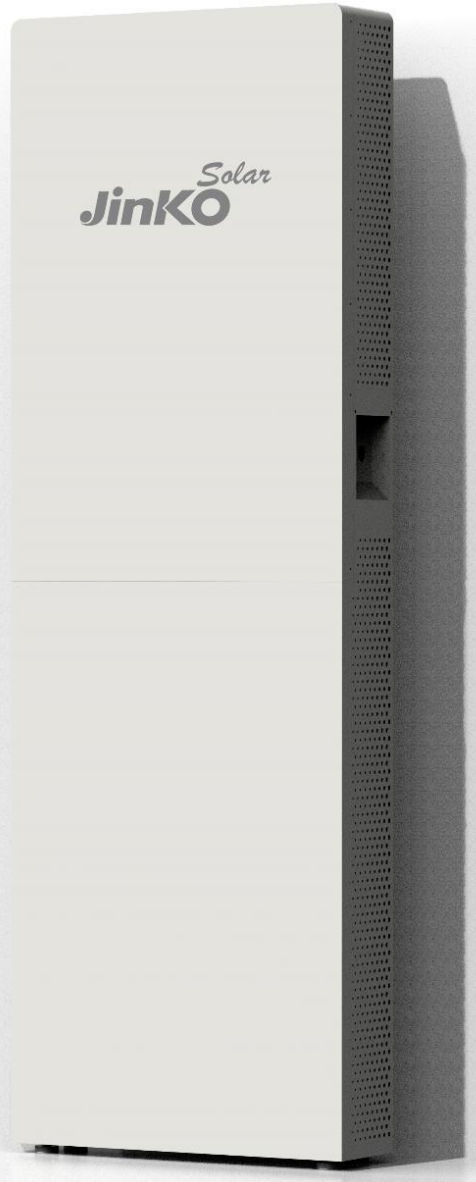
(≥1MWh)

Jinko Energy Storage
Residential

Residential Product - All-in-one-Solution



Residential Product - All-in-one-Solution



JKS10.2K-5HLVS

Key Features

- **More Aesthetics Exterior Design.**
- Double Leakage Current and Isolation Protection, **Higher Safety for Users**
- Natural Convection Design, **Wider Operating Temperature Range**
- All-in-One RESS Solution, **More User-friendly Installation**
- **Smart Real-time System** Monitoring APP Available
- Battery Capacity Flexibly **Expands up to 40 Packs**

Model	JKS10.2K-5HLVS
System Capacity	5kW/10kWh
Max. DC Input Power (W)	6000
Number of MPPT	2
Max. input current per MPPT	13A
Battery Type	LFP (LiFePO4)
Nominal Battery Voltage	51.2V
Battery Capacity	100Ah
Energy Capacity	10.24kWh
Nominal AC output power	5000W
Max. Output Power	4600W
Nominal Output Voltage	220/230Vac
Nominal Output Frequency	50/60Hz±5Hz
Dimensions W x D x H (mm)	623*170*1843mm
Weight (kg)	Cabinet:52 Inverter:25 Packs=44*2
*Operating temperature range	-20℃~+55℃
IP class	IP65
Display	APP
* For charging operation: 0℃~+55℃, for discharging operation: -20℃~+55℃	

Residential Product - All-in-one-Solution

JKS10.2K-5HLVS

More powerful
More efficient

New intelligent platform use new energy

System: IEC62109 EN61000

Battery: IEC 62619 IEC 63056 EN61000 UN 38.3

Inverter: IEC 62109 NRS 097

Key Features

- More Aesthetics Exterior Design
- Natural Convection Design, Wider Operating Temperature Range
- Smart Real-time System Monitoring APP Available
- Double Leakage Current and Isolation Protection Higher Safety for Users
- All-in-One RESS Solution, More User-friendly Installation
- Battery Capacity Flexibly Expands up to 6 Packs

Residential Product - All-in-one solution

Model	JKS-RESS-5kW/10kWh
System Capacity	5kW/10kWh
PV String Input	
Max. DC Input Power (W)	6000
Max. DC Input Voltage (V)	580
Nominal voltage (V)	360
MPPT voltage range	125V-550V
Startup voltage	90V
Number of MPPT	2
Max. input current per MPPT	13A
Max. short-circuit current per MPPT	15A

Efficiency	
Max. PV Efficiency	97,80%
Euro. PV efficiency	97,00%
Max. Battery to Load Efficiency	93,00%
Battery charged by PV Max. Efficiency	92,70%

Battery Input	
Battery Type	LFP (LiFePO4)
Nominal Battery Voltage	51.2V
Charging Voltage range	44.8-57.6V
Max. Charging Current	70A
Max. Discharging Current	80A
Battery Capacity	100Ah
Energy Capacity	10.24kWh
Usable Capacity	9.216kWh

AC Output (Grid)	
Nominal AC output power	5000W
Maximum AC output power	110%load：30min；120%load：5min；
Nominal AC voltage	220/230Vac
AC grid frequency range	50 / 60Hz±5Hz
Rated output current	21.7A
Power factor (cosΦ)	0.8leading-0.8lagging
THDi	<3%

Residential Product - Non Integrated Solution

JKS9.6K-5HLVS

Capacity Range:
7.2kWh~38.4kWh

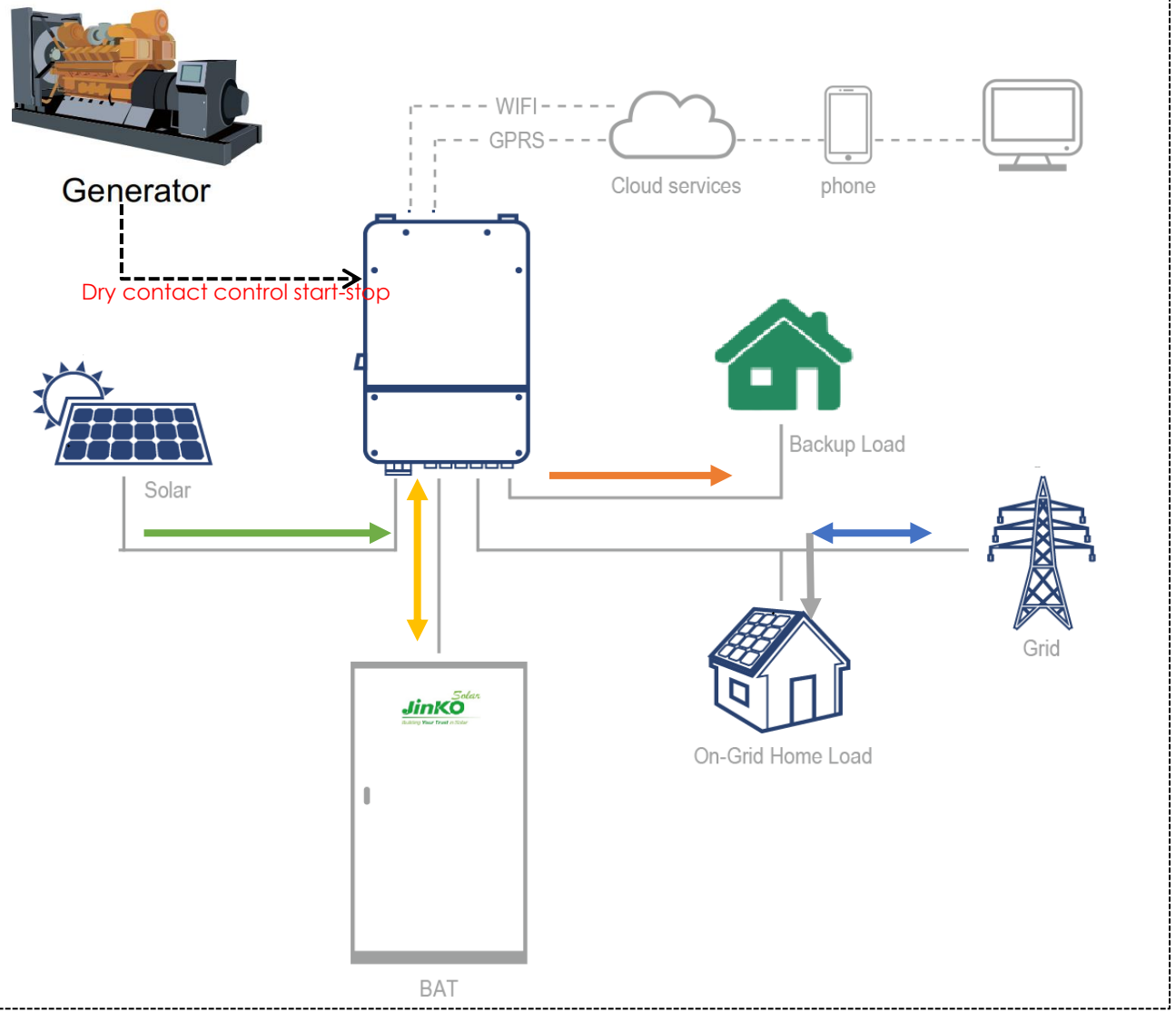
Power Range:
3.6kW~10kW:

more powerful more efficient

New intelligent platform use new energy

Match single/three-phase scheme

- Intelligent battery management function
- Back-Up Mode can integrate with diesel generator
- More security & performance for same costs
- Monitoring inverters freely via computers or mobile phones

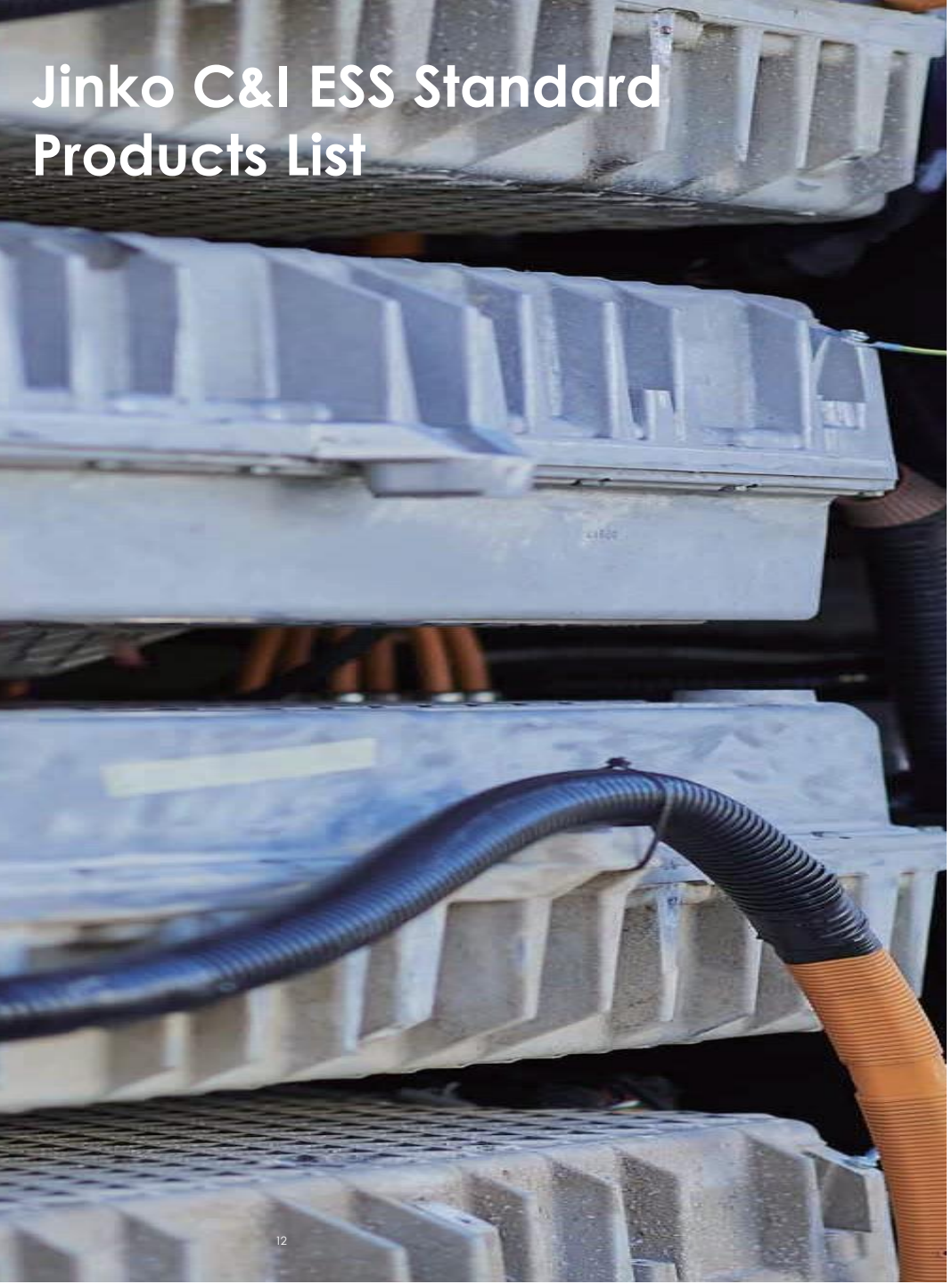


Residential Products – Facts of Interest

- The all in one system JKS10.2K-5HLVS was already launched in the WFES exhibition in Abu Dhabi
- The expected day for completion of product certification is end of February 2022
- Other grid related (regional) certificates including SA, Ge, It, Lebanon is expected to be completed end of April 2022
- The residential RESS split system will be launched in May2022 (is under R&D in the moment)
- The split system is using **separate and scalable battery blocks**, a 3-phase inverter, offers a back up system, can be charged by a diesel generator and used as an island system
- We offer the split system as a complete package including **3 phase hybrid inverter and batteries or only the batteries**
- The battery packages will be certified to **operate with all standard inverters** available on the market

The large scale utility ESS covers 1 – 4 hours system solutions, includes air cooling, liquid cooling and will be designed individually on demand

Jinko Energy Storage
C&I and Utility



Jinko C&I ESS Standard Products List

Naming rules

JKS552K-250H

- Hybrid Inverter
- BESS power
- BESS capacity

Model	Power	Capacity	Size
JKS64K-50H JKS128K-50H JKS192K-50H	50kW	64kWh 128kWh 192kWh	2250mm×1300mm×2591mm
JKS128K-100H JKS192K-100H JKS256K-100H JKS320K-100H JKS384K-100H	100kW	128kWh 192kWh 256kWh 320kWh 384kWh	2250mm×1300mm×2591mm 2991mm×2438mm×2591mm
JKS276K-250H JKS552K-250H JKS1104K-250H	250kW	276kWh 552kWh 1104kWh	6058mm×2483mm×2591mm
JKS552K-500H JKS1104K-500H	500kW	552kWh 1104kWh	12192mm×2483mm×2591mm

Utility ESS - Customized Integrated Solution

Temperature Control System

Automatic Fire Extinguishing System

Battery Racks

DC Battery Connection Panel

Access Control System

Video Monitoring System

Longer cycle life

> 6000 Cycles

Higher energy density

2.7MWh/20ft

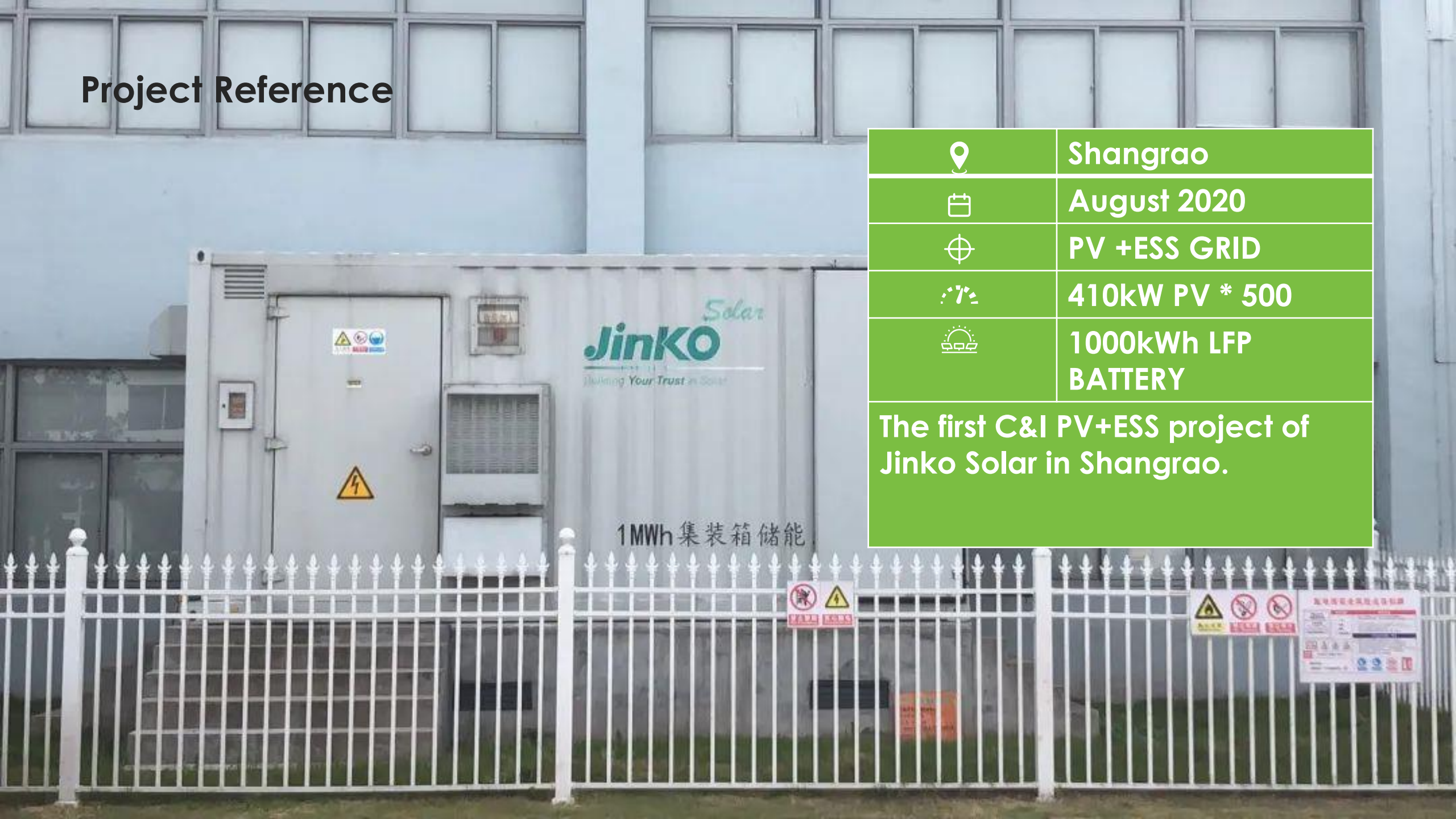
Items	Parameters	
Model	2.7MWh	1.35MWh
Cell used	100 Ah LFP Cell	
Nominal Battery Capacity (MWh)	2.7	1.35
Number of cells	8448 pcs	4224 pcs
Nominal Capacity (Ah)	2400	1200
Voltage Range (V)	880-1284.8 (352x (2.5-3.65))	
Continuous charge/discharge ratio	0.5 C	
Weight (tons)	26	13
Operating termperature	-20 – 55 °C	
Dimension (mm)	20ft:6058x2438x2896	
IP Grade	IP54	
System Composition	Not including PCS	
Cooling	Air-conditioning	
Fire Protection	FM200	
Communication Protocol	RS485, CAN	
Certifications	UN 38.3, UL 1973, UL 9540A(RACK)	

Project Reference

	Nigeria
	August 2021
	PV +ESS
	1000kW PV
	1200kWh LFP BATTERY

It has solved the fundamental problem of local power instability for Abuja, the capital of Nigeria. It supports the power supply of shops in the local Royal market.

Project Reference



	Shangrao
	August 2020
	PV +ESS GRID
	410kW PV * 500
	1000kWh LFP BATTERY

The first C&I PV+ESS project of Jinko Solar in Shangrao.

Optimize the energy portfolio and take responsibility for enabling a sustainable future