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JinkoSolar US

5 June 2024

10:00 am – 11:00 am | PST, Los Angeles

1:00 pm – 2:00 pm | EST, New York City

7:00 pm - 8:00 pm | CET, Berlin



**Ryan Kennedy**  
Editor  
pv magazine USA

pv magazine  
**webinars**


# Procuring bankable PV and energy storage as a complete solution



**Adam Detrick**  
Director, Product Management and Technical Services  
JinkoSolar US

# Welcome!

Do you have any questions?  

Send them in via the Q&A tab.  We aim to answer as many as we can today!

You can also let us know of any tech problems there.

We are recording this webinar today. 

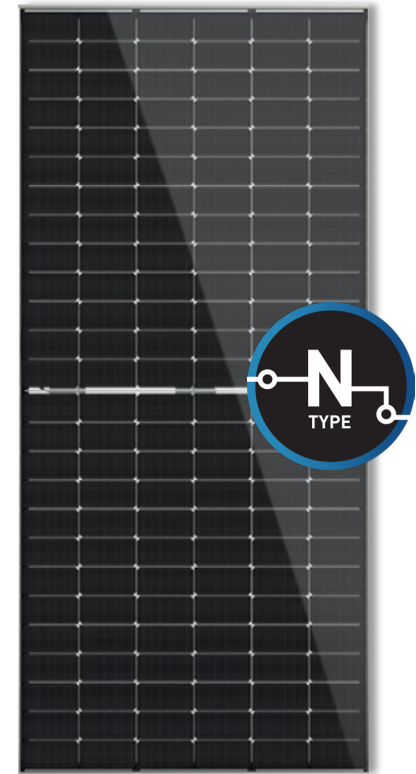
We'll let you know by email where to find it and the slide deck, so you can re-watch it at your convenience.  

# JINKOSOLAR U.S. EAGLE® COMPLETE

**Adam Detrick**

US Director, Product Management & Technical Services

# EAGLE® COMPLETE



**BEST-IN-CLASS SOLAR + STORAGE  
FROM ONE COMPANY**

# WORLD RECORD POWER AND MORE



**SOLAR EFFICIENCY  
WORLD RECORDS**



**2023 REVENUE**



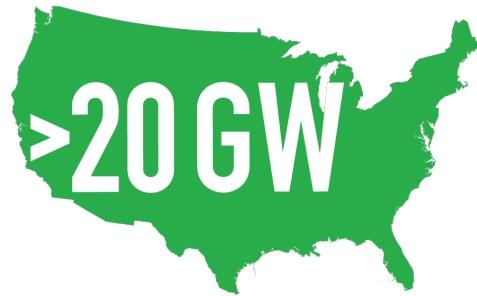
**US Factory**  
Est. 2018, Jacksonville, FL



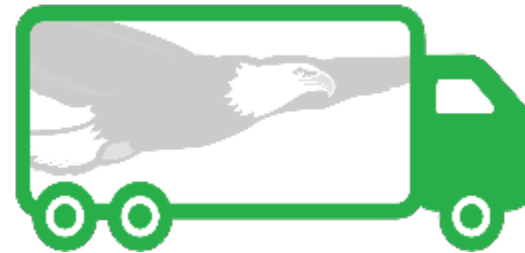
**NYSE: JKS**  
Publicly listed on the New York  
Stock Exchange since 2010



>1 out of 10 modules in the world  
was produced by JinkoSolar



**DEPLOYED IN THE U.S.**  
Equivalent to 3.6 million  
homes powered in the U.S.  
\*recent as of February 2024



**EXPERT LOCAL LOGISTICS**  
in the U.S.



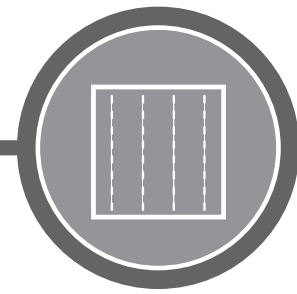
Listed as a Bloomberg  
Tier 1 manufacturer



# EAGLE® G6 MODULES

# VERTICALLY INTEGRATED U.S. AND SE ASIA SUPPLY CHAIN

\*POLYSILICON IS FROM A THIRD-PARTY SUPPLIER



**POLYSILICON\***

USA & GERMANY

**INGOT/WAFER**

VIETNAM

**CELL**

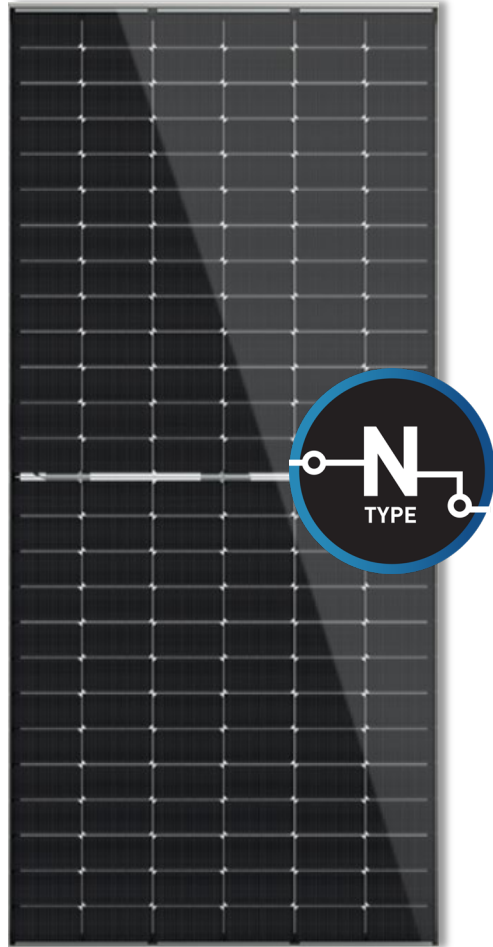
VIETNAM & MALAYSIA

**MODULE**

VIETNAM, MALAYSIA, & USA\*\*

\*\*  **ASSEMBLED  
IN THE USA**  
From foreign components

# N-TYPE: HIGHEST POWER AND EFFICIENCY



## JinkoSolar is the Global Leader of Delivering N-Type Technology to the Market

01

### Highest Power, Highest Efficiency

Module Power up to 590Wp @ 22.8%

02

### Lower Degradation, Leading Warranty

<1% First Year Degradation and <0.4% Annual

03

### Higher Bifacial Gain

80% Bifaciality Factor

04

### Lower Temperature Coefficient

-0.29%/°C for superior kWh/KWp

05

### Enhanced Reliability

Dual-glass construction with best-in-class PQP results



## G6: N-TYPE TOPCON

### G6: 182mm (M10), N-Type, TOPCon

- 16 Busbars (MBB)
- “Tunnel Oxide Passivated rear Contact”
- Longer carrier lifetimes + Less recombination

### G5: 182mm (M10), P-Type, PERC

- 10 Busbars (MBB)
- “Passivated Emitter Rear Collector”

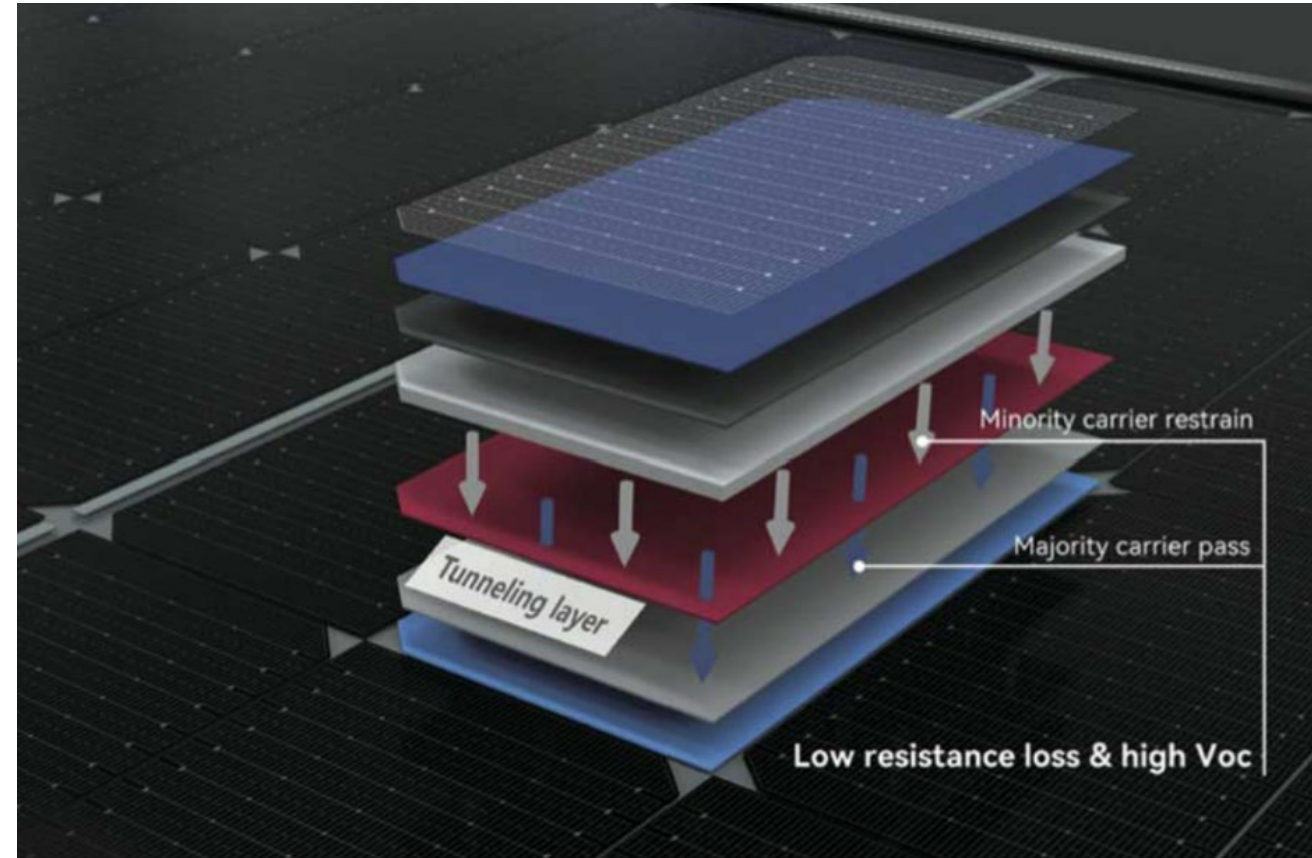


Figure 1: TOPCon cell technology (Jinko Tiger Neo).

# MODULES: UTILITY



	G6B	G5b
SKU	JKM5xxN-72HL4-BDV	JKM5xxM-72HL4-TV
Cell	<b>N-type</b>	<b>P-type</b>
Power	<b>590Wp</b>	<b>545Wp</b>
Cell Count	72-Cell	72-Cell
Construction	Dual Glass 2.0mm / 2.0mm	3.2mm Glass + Transparent Backsheet
Dims	2278 x 1134 x 30	2278 x 1134 x 35
Hail Resistance	40mm	<b>55mm</b>

- Standard format ideal for tracker integration
- Roadmap of steadily increasing power over time; format stays the same
- Hail resistant G5b SKU available

# TOP PERFORMER: PVEL PQP



- Top Performer in EVERY category
- <1% degradation in all tests



## 1.2. Test data summary

Average Post-stress Change in P <sub>MAX</sub> Relative to Initial Measurement [%]						
Model	TC600	DH2000/BO	MSS/HF10	PID192(-)	PID192(+)	LeTID
JKM555N-72HL4-BDV	-0.25	-0.55	-0.29	-0.87	-0.54	*
Wet Leakage Insulation Resistance Meets IEC 61215-1:2016 Requirements <sup>1</sup>						
JKM555N-72HL4-BDV	Yes	Yes	Yes	Yes	Yes	*
Visual Inspection Findings <sup>2</sup>						
JKM555N-72HL4-BDV	None	None	None	None	None	*

\*Note - as per PVEL PQP: BOM Test Requirements, this test is not required for this BOM. Contact PVEL for more information on the representative results from other BOMs from the same manufacturer.



# EAGLE® ESS

# UTILITY ESS: EAGLE® DCB-3440

DC BLOCK FOR UTILITY, COMMERCIAL, AND INDUSTRIAL APPLICATIONS



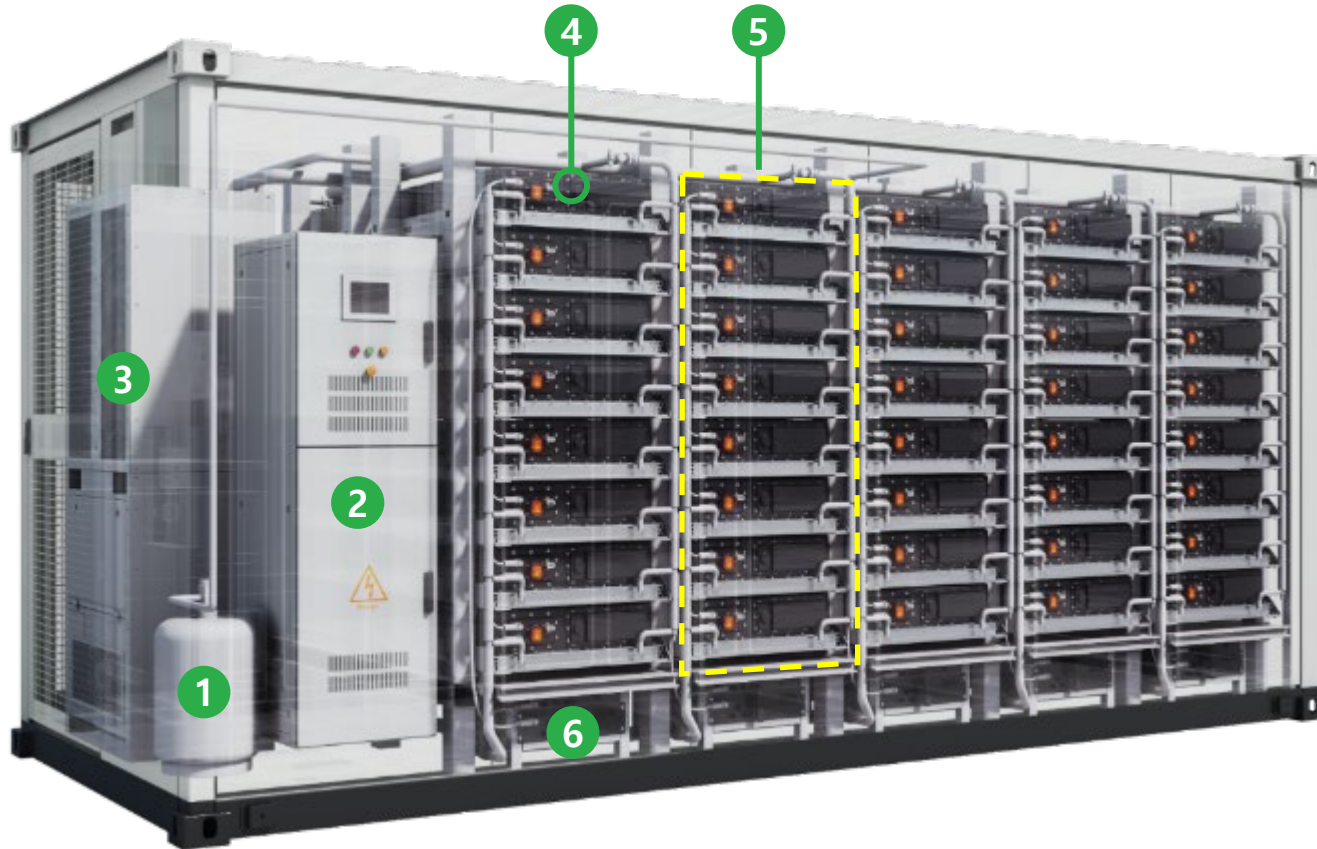
3.44 MWh, 20' Container, 0.5C

# BENEFITS

- High Energy Density
- Best-in-Class Performance
- Superior Fire & Safety
- Optimized Configuration
- Trusted Industry Leader



# FEATURES



1. Fire Suppression
2. Integrated Cabinet
3. Liquid Cooling
4. DC Battery Pack
5. DC Battery Rack
6. HV Box + BMS

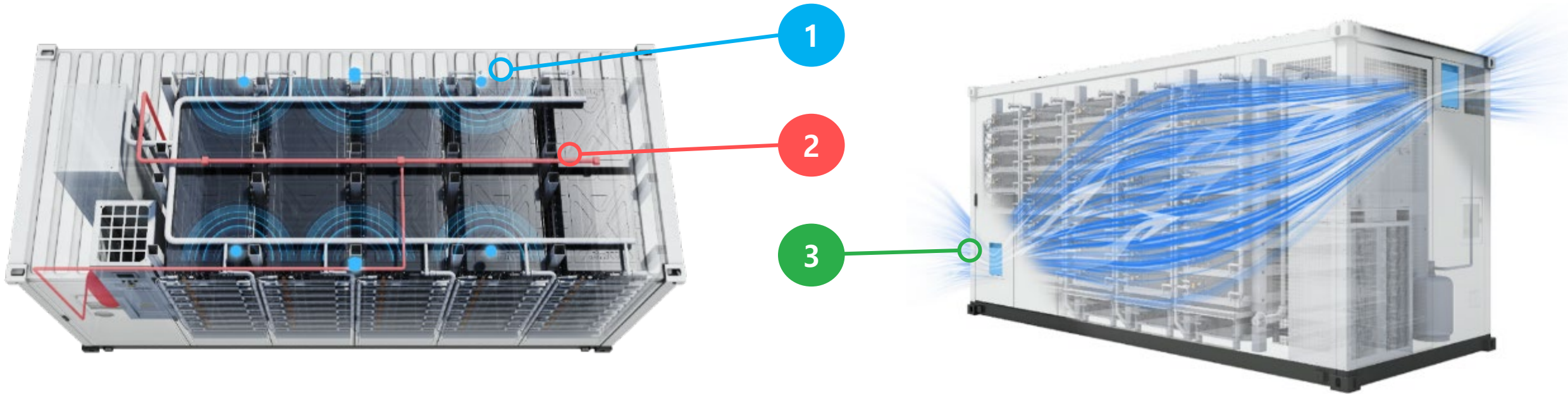
# SAFETY: CELL TO PACK/MODULE

- **Cell**
  - LFP: 280Ah
- **Module/Pack**
  - Cell Insulation: Mica Sheets
  - CCS: Cell Coating System
  - Level 1 BMS
- **Rack**
  - Insulation Detection
  - Rack Management
  - Level 2 BMS





# SAFETY: 3-LEVEL SYSTEM PROTECTION



- 1. Detection:** Smoke, Thermal, H<sub>2</sub> and CO Sensors
- 2. Suppression:** Redundant with Clean Agent + Water Dry Pipe
- 3. Venting:** Exhaust system directly connected to Fire Panel (NFPA 69)

# PERFORMANCE: ADVANCED 3-LEVEL BMS



High Resolution, Fast Response Ensure Peak Battery Performance



## LEVEL 1: BMM Module / Pack

- Cell T & V Monitoring
- Current Balancing



## LEVEL 2: BCM Rack

- SOC/SOH Estimation
- <50ms Refresh Rate



## LEVEL 3: ESMU System

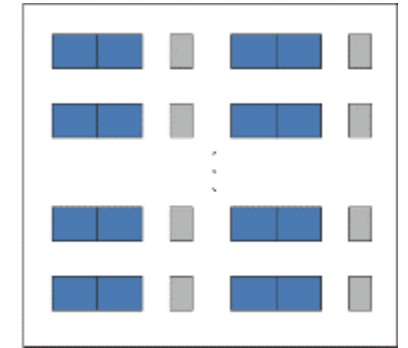
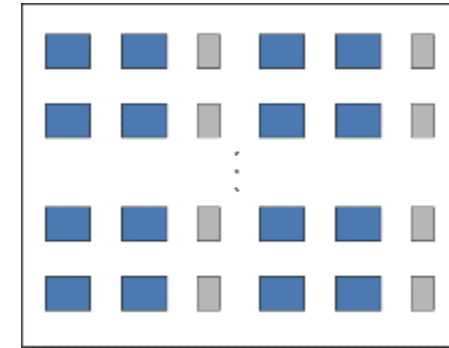
- Monitoring / Self Diagnosis
- SOC Management

# PERFORMANCE: ADVANCED LIQUID COOLING



- Proprietary Liquid Cooling (patent pending)
- Pack: Custom Pipeline Orientation w/ IP67
- System: Realtime Leakage Detection
- Uniform heat dissipation
- Temperature differences  $< 2.5^{\circ}\text{C}$

# PERFORMANCE: HIGHER ENERGY DENSITY



**Legend**     PCS     DC Blocks

- 3-Side Access Enables Back-to-Back Layout
- Up to 15% Area Reduction

# THIRD PARTY BANKABILITY TESTING



- UL bankability study completed on cell suppliers and Jinko system



# COMMISSIONING & LTSA



## COMMISSIONING

Onsite commissioning inspection

- ✓ Pre-commissioning checklist
- ✓ Cold commissioning checklist
- ✓ Hot commissioning checklist

## LTSA

- Nationwide 24/7 same day response
- OEM training certification
- Customizable annual PM plans
- Remote Monitoring Support available
- Extended warranty options
- Availability & Capacity Guarantees

# WARRANTY



- Base 5-year warranty
- Up to 20-year performance and capacity guarantees
- Local spare parts inventory management options



# ESS MANUFACTURING



# ADVANCED MANUFACTURING QUALITY



**MODULAR AND FLEXIBLE**



**HIGHLY AUTOMATED**



**HIGH QUALITY**

# IN-HOUSE CELL, PACK AND ESS ASSEMBLY

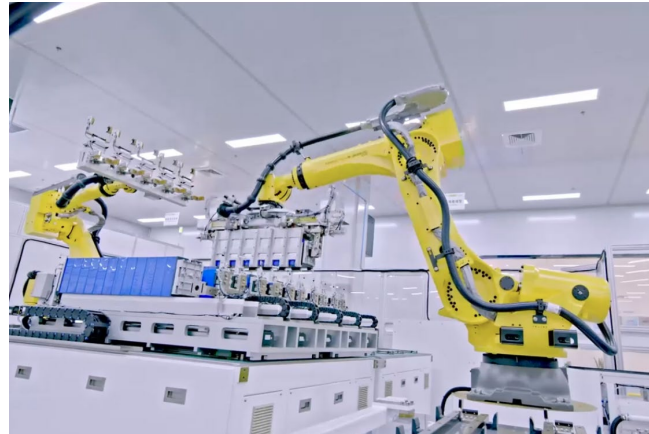
- Vertically integrated, state of the art factory
- High levels of automation for high quality and efficiency



# CELL, PACK AND ESS ASSEMBLY



Cell Inspection



Module Assembly



Pack Assembly

# FINAL ASSEMBLY AND TESTING

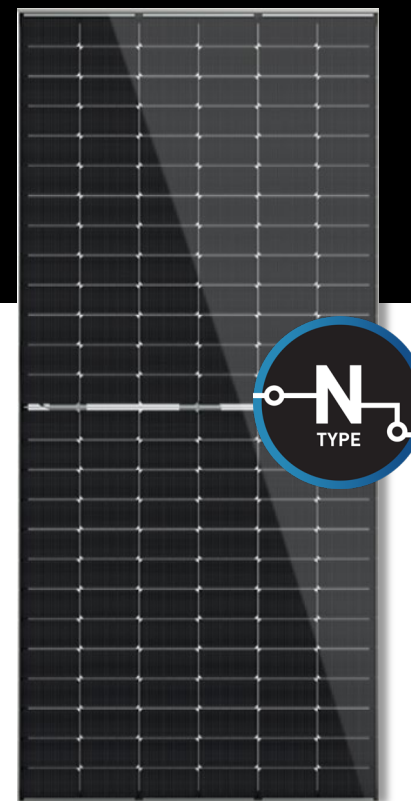
Solar  
**JinKO**



# EAGLE<sup>®</sup> COMPLETE

BEST-IN-CLASS SOLAR + STORAGE FROM ONE COMPANY

All-In-One Solution For Utility Applications



COMPLETE ENERGY SOLUTIONS AT [WWW.JINKOSOLAR.US](http://WWW.JINKOSOLAR.US)



**THANK YOU FOR YOUR BUSINESS  
AND YOUR SUNNY DISPOSITION**



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**BEST-IN-CLASS STORAGE + MODULES FROM A COMPANY YOU CAN TRUST**

All-In-One Solution For Utility Applications

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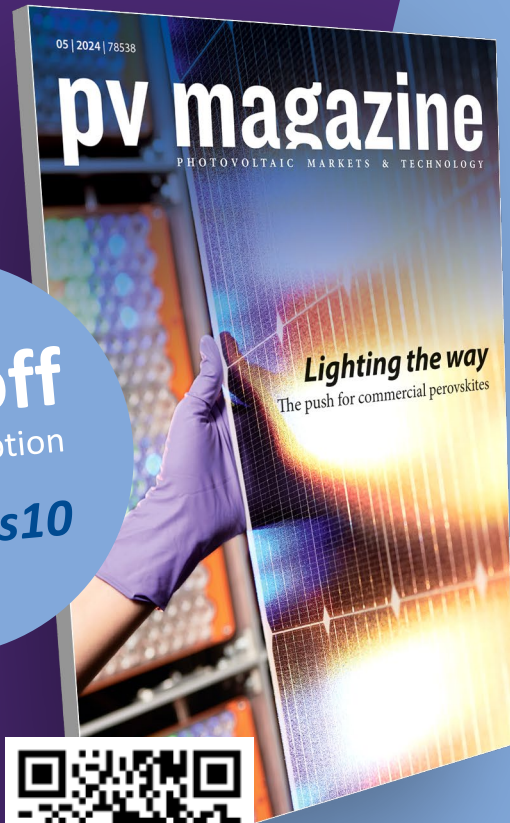
## Q&A



**Adam Detrick**  
Director, Product Management and Technical Services  
JinkoSolar US



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by John Fitzgerald Weaver



# Coming up next...

## Thursday, 6 June 2024

10:00 am – 11:00 am CEST, Berlin, Madrid  
4:00 pm – 5:00 pm CST, Beijing

## Tuesday, 11 June 2024

10:00 am – 11:00 am BST, London  
11:00 am – 12:00 pm CEST, Berlin, Madrid

Many more to come!

**Advanced  
solution for C&I  
energy storage**

**What are the  
benefits of “Made  
in Germany” for  
inverters?**

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**Ryan Kennedy**

Editor

pV magazine USA

**Thank you for  
joining today!**