

# PV Module Technology Trends: from PERC to TOPCon



*Solar*  
**Jinko**

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Jinko Solar

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# About Jinko Solar



# No.1 Total Shipments Globally



**100GW+**

Delivered Globally  
Until February 2022

**45GW+**

Annual Module  
Capacity in 2022

**14.3%**

Global Market  
Share

**10GW+**

Shipments and  
orders of Tiger  
Neo in 2022



Applied for  
1632 Patents



968 Authorized  
Patents



R&D Team  
1395 Engineers  
and Scientists

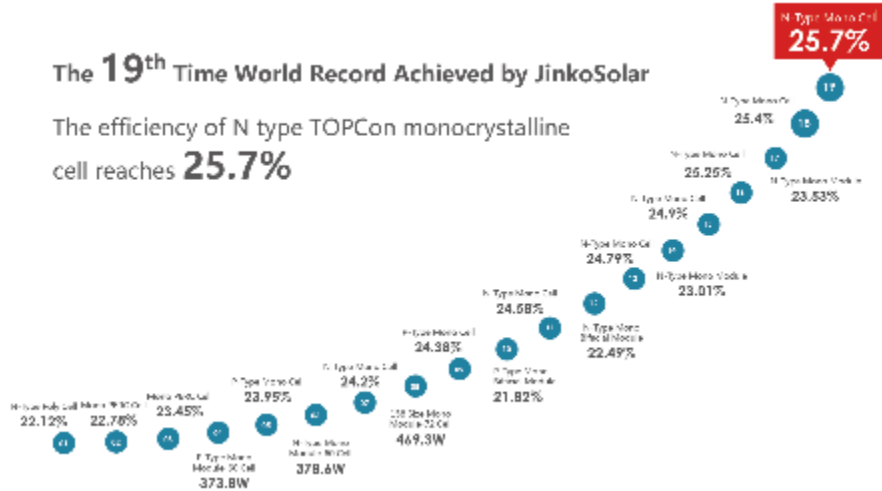


R&D Investments  
2.637 Billion

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The **19<sup>th</sup>** Time World Record Achieved by JinkoSolar

The efficiency of N type TOPCon monocrystalline  
cell reaches **25.7%**



# Jinko Products – Battery Storage



**Residential Storage System**

(1kWh-50kWh)

**C&I Storage System**

(50kWh-1MWh)

**Utility Storage System**

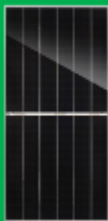
(≥1MWh)

# Jinko Products – PV Modules



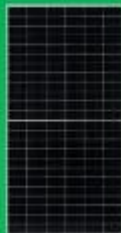
## Tiger 78 Cell

- Up to 480 Wp
- 78 cells
- 164mm wafer
- Efficiency up to 21.38%
- 25 Year Linear Power Warranty



## Tiger Pro 72 Cell

- Up to 550 Wp
- 72 cells
- 182 mm wafer
- Efficiency up to 21.29%
- Mono-facial and Bifacial



## Tiger Pro 54 Cell

- Up to 415 Wp
- 54 cells
- 182 mm wafer
- Efficiency up to 21.25%
- 25 Year Linear Power Warranty



## Tiger Neo 60 Cell

- Up to 480 Wp
- 60 cells
- 182mm wafer
- Efficiency up to 22.24%
- 30 Year Linear Power Warranty



## Tiger Neo 72 Cell

- Up to 575 Wp
- 72 cells
- 182 mm wafer
- Efficiency up to 22.26%
- 30 Year Linear Power Warranty
- Mono-facial and bifacial



## Tiger Neo 78 Cell

- Up to 610 Wp
- 78 cells
- 182 mm wafer
- Efficiency up to 21.82%
- 30 Year Linear Power Warranty



# Jinko Products – BiPV Modules

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## PV Technology Overview





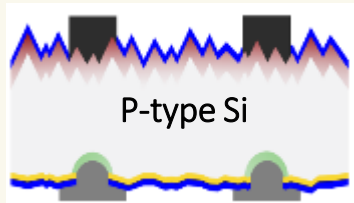
# Cell Technology Development



~2021  
PERC

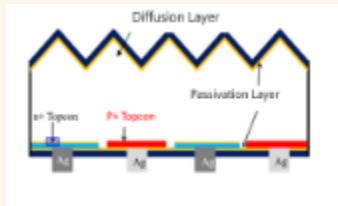
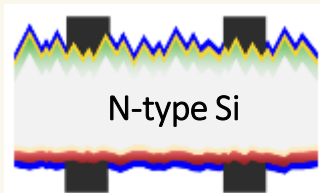
24.45%

PERC



~25%  
HOT 2.0  
Passivated  
Contact Cell

~25.5%  
HOT 2.0+  
selective  
emitter



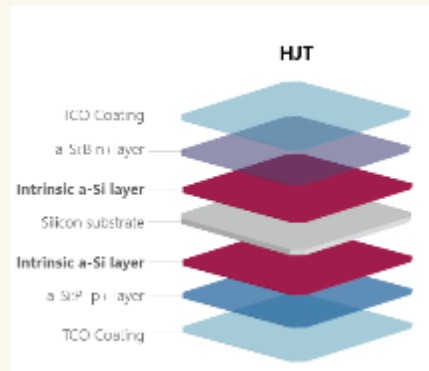
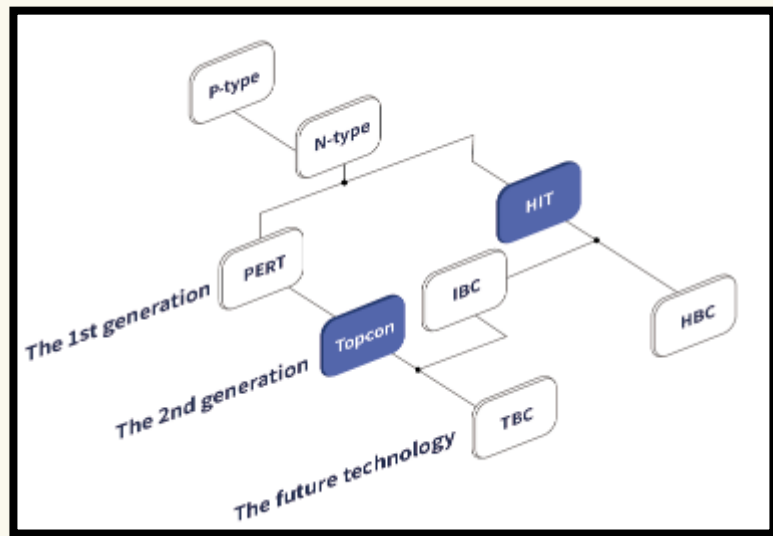
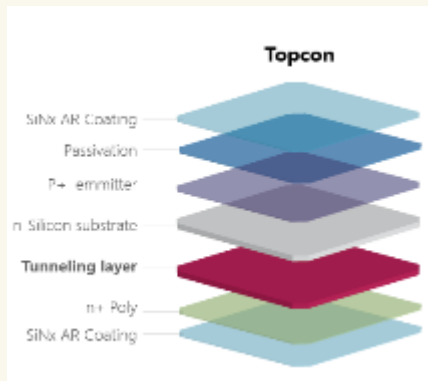
~26.5%

HOT 4.0

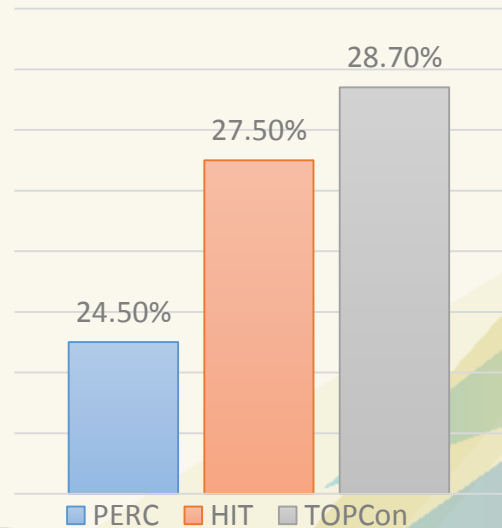
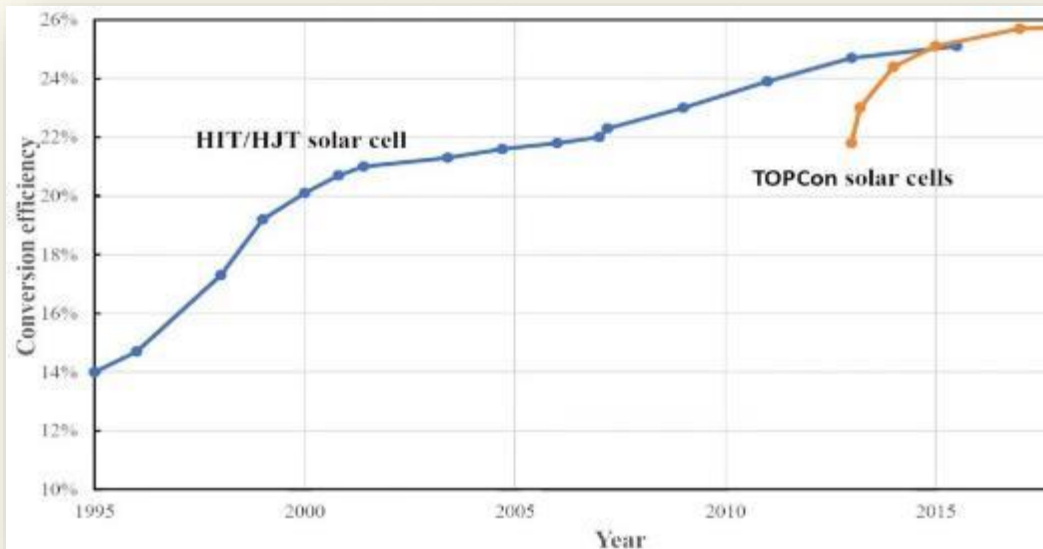
2022~2024 TOPCon

# N-Type Technologies

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# TOPCon Technology



# TOPCon Technology



## JinkoSolar achieves 25.7% efficiency for n-type TOPCon solar cell

Manufacturing giant JinkoSolar has set another world record for n-type solar cell efficiencies with its TOPCon technology, this time pushing to 25.7%. The new world record was confirmed by China's National Institute of Metrology.

APRIL 27, 2022 **FMTI IANO RFI IJNT**

## JinkoSolar sets new record for n-type solar cell efficiency

Manufacturing giant JinkoSolar has set another world record for n-type solar cell efficiencies with its TOPCon technology, this time pushing to 25.4%. The new world record was confirmed by JET Laboratories in Japan, and surpasses JinkoSolar's previous record of 25.25% set back in May.

OCTOBER 13, 2021 **MARK HITCHINS**

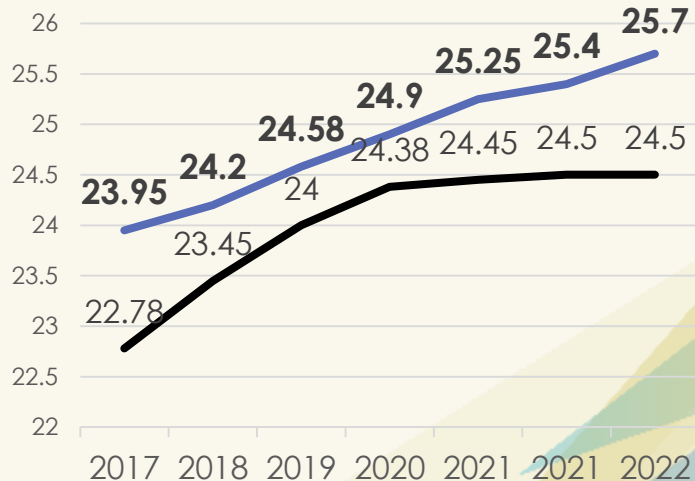
... improvement in efficiency was obtained through material upgrades integrated into the cell process and fabrication. The result was confirmed by China's National Institute of Metrology.

JUNE 1, 2021 **EMILIANO BELLINI**

... technology, for which a record efficiency of 25.25% was announced in late May. TÜV Rheinland has confirmed the result.

JULY 12, 2021 **EMILIANO BELLINI**

CELL EFFICIENCY RECORD /%

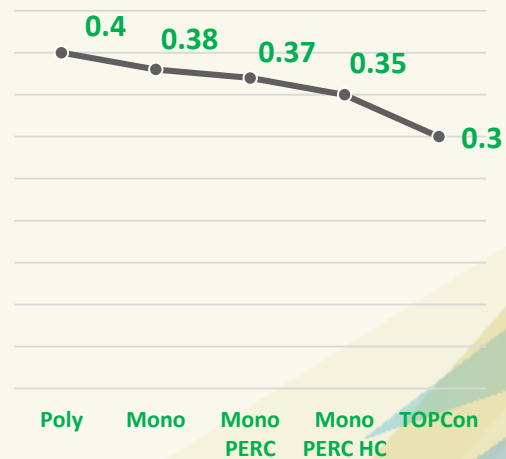
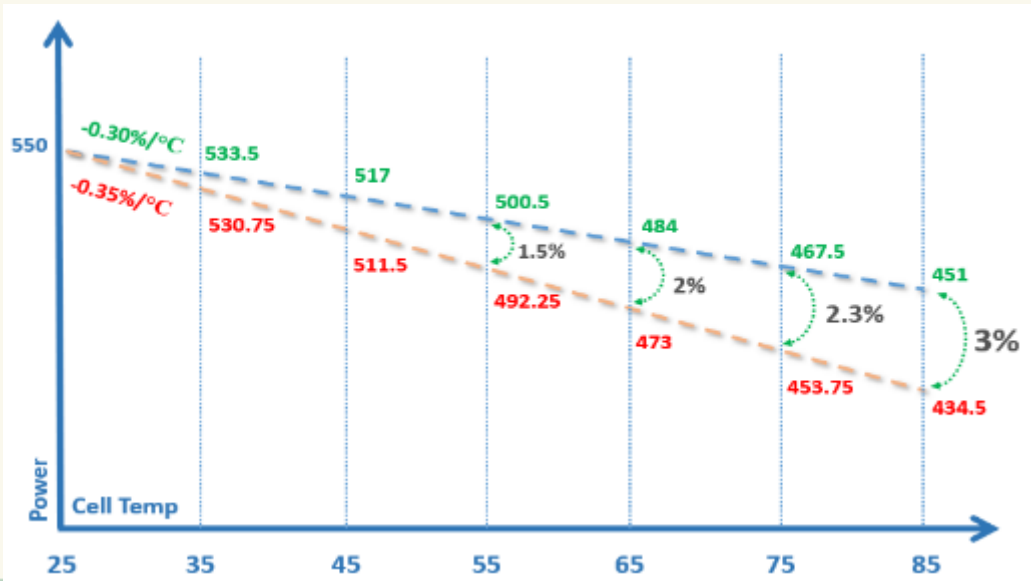


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## Tiger Neo Key Benefits



# Tiger Neo Advantages – Temperature Coefficient



# Tiger Neo Advantages – Temperature Coefficient



## Advanced Warranty

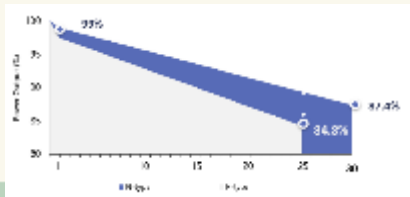


$\leq 1\%$

First year degradation

$-0.4\%$

Linear degradation



## Improved Bifacial Factor

80%



N-type's higher bifacial factor will bring significant power gain

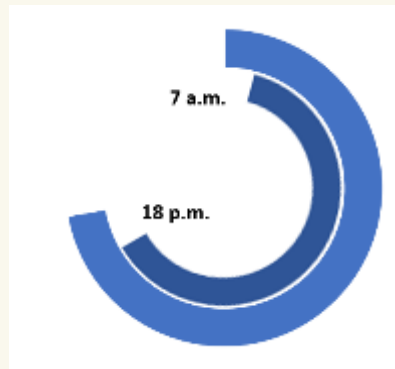
around **1.35%**

Power gain contrast :

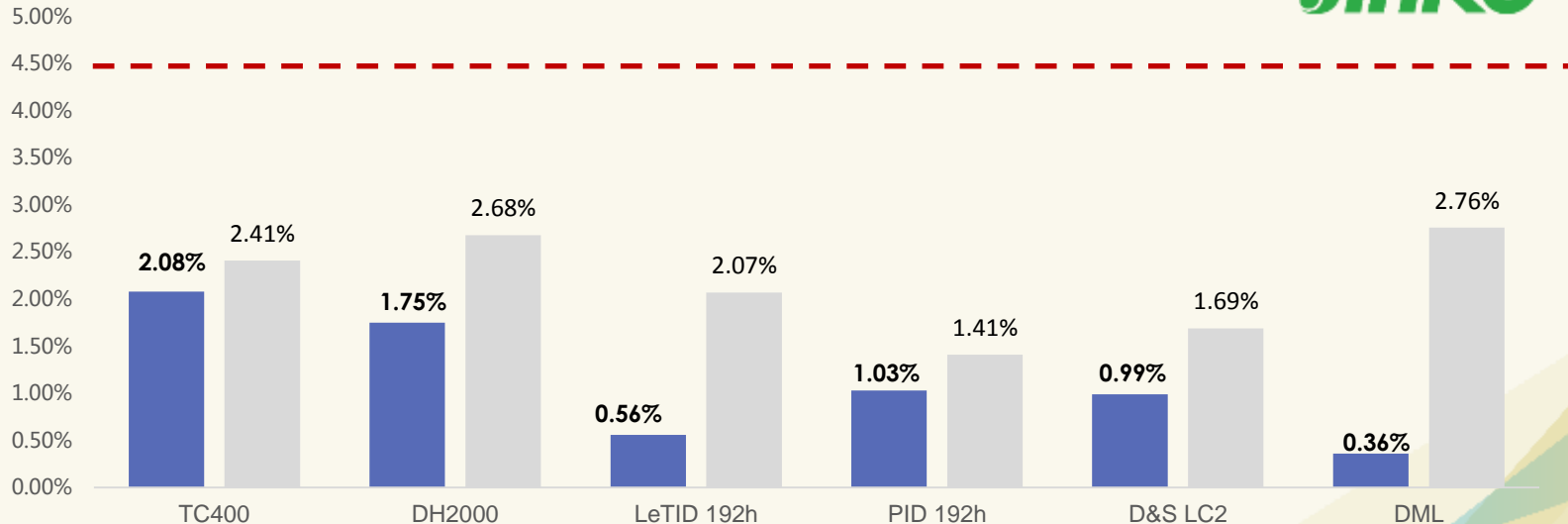
PERC: BSI\*70%=**9.45%**

HOT: BSI\*80%=**10.80%**

## Better Low Light Performance



# Product reliability test





**Thank you**



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