

# AI BOOST for Optimal LCOE & Grid Support

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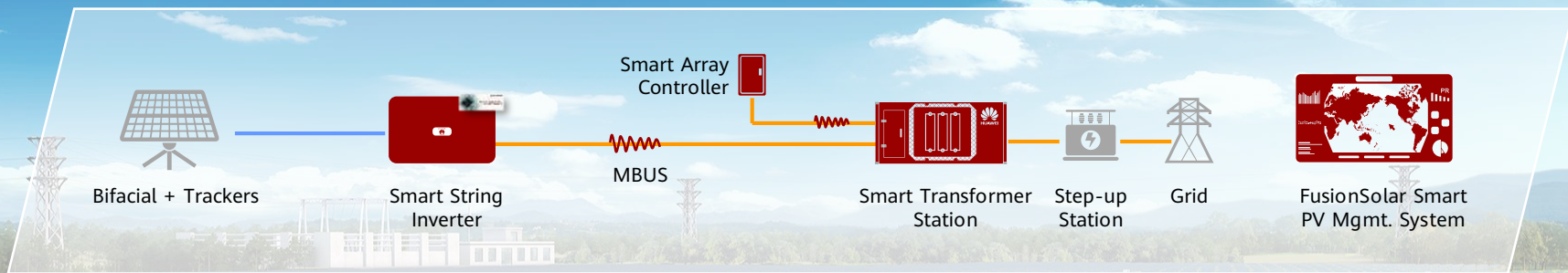
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FusionSolar Smart PV Solution **6.0+**

Strategies with High Current Modules

# FusionSolar 6.0+ Utility Smart PV Solution Overview



**AI BOOST**

**Higher Yields**

**Smart O&M**

**Safe & Reliable**

**Grid Supporting**

# Multi-MPPT Design, Minimizing Mismatch, 2%+ More Yields

## Europe

**Germany** Rooftop-mounted vs String Solution **4.85%**

**Denmark** Ground-mounted vs Central Solution **7.02%**

**Turkey** Ground-mounted vs String Solution **1.41%**

## India

Ground-mounted vs Central Solution **2.38%**

Ground-mounted vs Central Solution **2.06%**

Ground-mounted vs Central Solution **2.38%**

Ground-mounted vs Central Solution **6.67%**

Ground-mounted vs String Solution **3.11%**

## Japan

Mountain-mounted vs Central Solution **4.53%**

Ground-mounted vs Central Solution **5.02%**

## Asia

**Guangdong, China** Rooftop-mounted vs Central Solution **6.25%**

**Xinjiang, China** Ground-mounted vs Central Solution **5.28%**

**Inner Mon., China** Ground-mounted vs Central Solution **6.76%**

**Xinjiang, China** Ground-mounted vs Central Solution **3.45%**

**Qinghai, China** Ground-mounted vs String Solution **2.94%**

**Inner Mongolia, China** Ground-mounted vs Central Solution **3.06%**

**Inner Mon., China** Ground-mounted vs Central Solution **3.71%**

**Sichuan, China** Mountain-mounted vs String Solution **3.16%**

**Xinjiang, China** Ground-mounted vs Central Solution **4.36%**

**Hebei, China** Mountain-mounted vs Central Solution **5.26%**

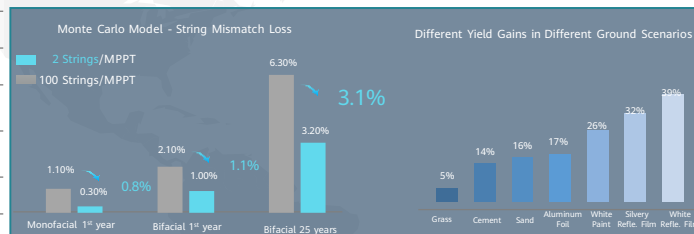
**Hebei, China** Mountain-mounted vs Central Solution **5.26%**

**Tibet, China** Ground-mounted vs Central Solution **12.3%**

**Zhejiang, China** Rooftop-mounted vs String Solution **4.50%**

**Vietnam** Ground-mounted vs Central Solution **3.86%**

**Malaysia** Ground-mounted vs Central Solution **4.31%**



**Brazil** Ground-mounted vs Central Solution **8.09%**

**Mexico** Ground-mounted vs Central Solution **4.30%**



# AI BOOST SDS Increases Yields by 0.5%~1%

**0.5~1%**

Location: Qinghai China  
Period: 2018.09–2019.05  
Inverter: SUN2000-50KTL

**0.8%**

Location: Anhui China  
Period: 201908  
Inverter: SUN2000-50KTL

**0.67%**

Location: Inner Mongolia China  
Period: 201908  
Inverter: SUN2000-75KTL

**0.7%**

Location: Guangxi China  
Period: 2019.06–2019.08  
Inverter: SUN2000-50KTL

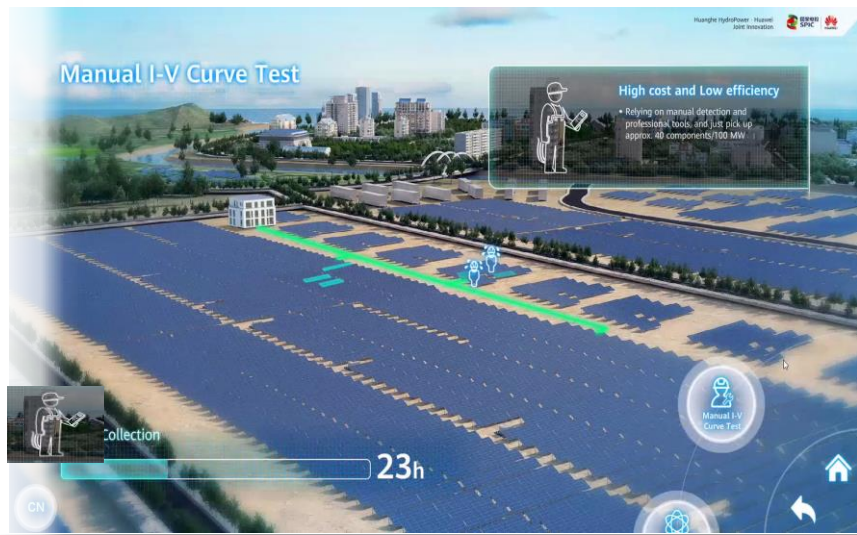


# AI BOOST Smart IV Diagnosis Increases O&M Efficiency



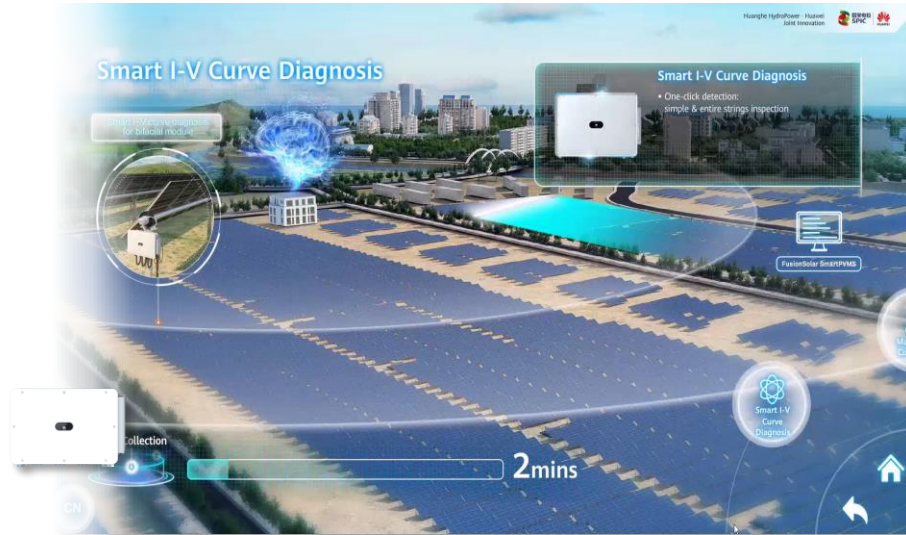
## Traditional IV inspection

Partial inspection 1%, manual report by 3 days





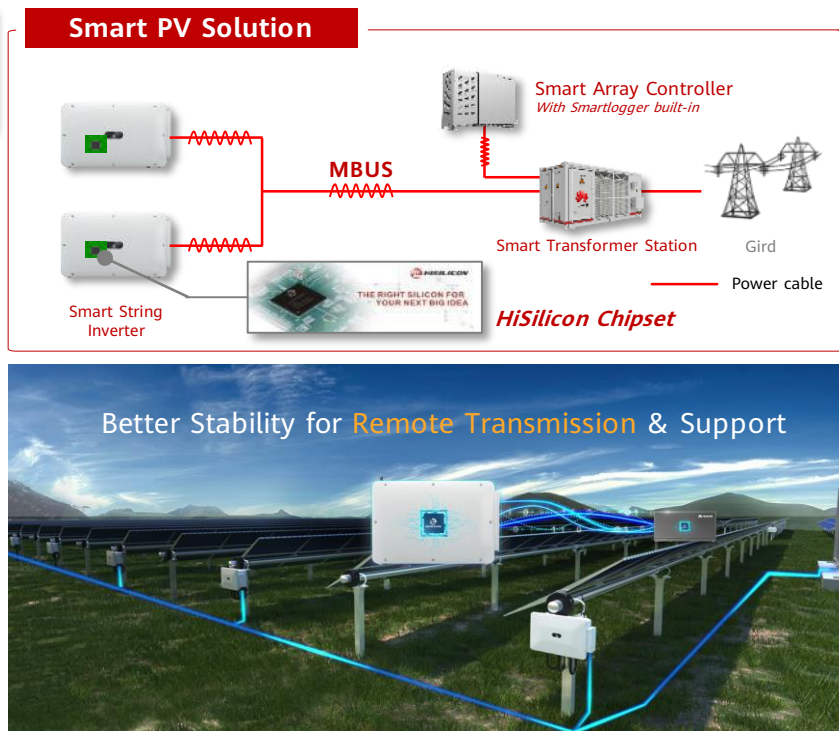
## Smart IV Diagnosis Online 100% Inspection

Auto Report Output



# AI BOOST Data Transmission via AC Power Cable, Easy O&M

|   |  |  |
|---|--|--|
|  New-Gen Hisilicon Chipset +  LiteOS Huawei Lite OS |  |  |
| Features  | HUAWEI MBUS  | RS485  |
| Transmission Rate   | 115.2 kbps   | 9.6 kbps   |
| Construction  | Data transmission via Power lines <b>without physical cables</b> | Complicated, trench laying the communication cable   |
| Reliability   | <b>Robust &amp; High reliability</b>                             | Very easy to make mistake in construction, affect part of the communication when chain is broke down |
| Maintenance   | <b>Zero-maintenance</b>  | Hard to maintenance, especially when the physical cables are broken                                  |





# Grid Support by Smart Connection Algorithm

## Challenges of Renewables Connection



**Impedance Deduction**  
with increasing Proportion  
Renewables



**Impedance Increase**  
with more HVDC, HVAC and etc.

## AI Self-learning Impedance Reshaping Algorithm

Supporting up to 50% PV Penetration Rate

1

Dynamic Damping  
Adaptation  
Algorithm

2

Intelligent Self-Adaptive  
AC Series Compensation

|   | Huawei FusionSolar | Other Solutions |
|---|--------------------|-----------------|
| Min. Allowed SCR<br>(Short Circuit Ratio) | 1.5                | 3               |



**Australia**  
Apr.  
2019

Huawei firstly passed the compliance test of new grid code, which requires the highest ability of LVRT & HVRT



**China**  
Jun.  
2019

Huawei passed the LVRT test in Tibet in the first try, while other inverter brands failed after one-month tests



**Spain**  
Oct.  
2019

Huawei is the first inverter manufacturer to achieve the NTS test report of new Spanish grid code



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FusionSolar Smart PV Solution **6.0+**

**Strategies with High Current Modules**

# Electrical Parameters Fully Matched



**Fully Matched**



Maximum Power  
(580~600) W

Module Efficiency  
(20.5~21.2) %

MPPT Voltage  
(33.8~34.6) V

MPPT Current  
(17.16~17.34) A

Open Voltage  
(40.9~41.7) V

Short Circuit Current  
(19.48~19.71) A

Rated Power  
**185 KW**

Per MPPT Current  
**100 A**

String Quantity  
**18**



# Take VERTEX as an example, Supports Larger DC/AC Ratio in various regions and scenarios around the world

DC/AC Ratio up to 1.75+



| Module Wp | Series Nos | String Nos | DC Power | INV Rated power | DC-AC Ratio |
|-----------|------------|------------|----------|-----------------|-------------|
| 550       | 33         | 15         | 272250   | 185000          | 1.47        |
| 550       | 34         | 15         | 280500   | 185000          | 1.52        |
| 550       | 35         | 15         | 288750   | 185000          | 1.56        |
| 550       | 36         | 15         | 297000   | 185000          | 1.61        |
| 600       | 33         | 15         | 297000   | 185000          | 1.61        |
| 600       | 34         | 15         | 306000   | 185000          | 1.65        |
| 600       | 35         | 15         | 315000   | 185000          | 1.70        |
| 600       | 36         | 15         | 324000   | 185000          | 1.75        |

Note: The temperature of 33 PCS is -32C, the temperature of 34 PCS is -18C, and the temperature of 35 PCS is -4C

# Thank you.

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每个组织，构建万物互联的智能世界。

Bring digital to every person, home and  
organization for a fully connected,  
intelligent world.

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