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Jinko Solar

17 February 2021

2 pm – 3 pm | GST, Dubai
1 pm – 2 pm | AST, Riyadh
10 am – 11 am | BST, London
11 am – 12 pm | CET, Berlin/Morocco
12 pm – 1 pm | SAST, Johannesburg

Mark Hutchins
Editor | pv magazine

pv magazine webinars

Risk vs. reward: Optimizing energy yield with 182mm wafers

Corrine Lin
PV InfoLink

Waleed Alhallaj
Jinko Solar

Optimizing Energy Yield With 182mm Wafers

Waleed AlHallaj, CEM©, REP™, BEP©

Business Development Manager - MENA

17 February 2021

About Jinko Solar

4-year Shipment # 1

Delivered 70 GW

Market Share 12.6%

Module Capacity 35GW

Cell Eff. Record 24.9%

9 Global Factories | 30+ Service Centers

100+ Covered Countries | 8000+ Annual Orders


THE RACE TO
70GW+
JinKO Solar
70GW
60GW
50GW
40GW
30GW
20GW

2021 Jinko Solar Product Portfolio - Monofacial

Tiger 166 60 cells
355 - 375 Wp

Tiger 166 72 cells
435 - 455 Wp

Tiger 163 78 cells
460 - 470 Wp

Tiger Pro 72 cells
530 - 550 Wp

2021 Jinko Solar Product Portfolio - Bifacial

Tiger 166 72 cells DG
430 - 450 Wp

Tiger Pro 72 cells DG/TB
525 – 545 Wp

Tiger Pro 78 cells TB
565 – 585 Wp

WINNER

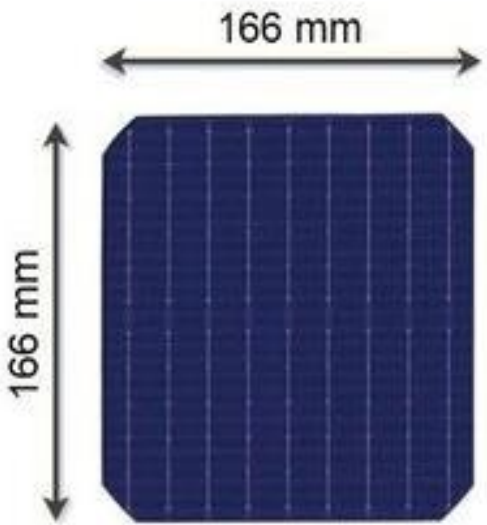
JinkoSolar Tiger Module Series

pv magazine

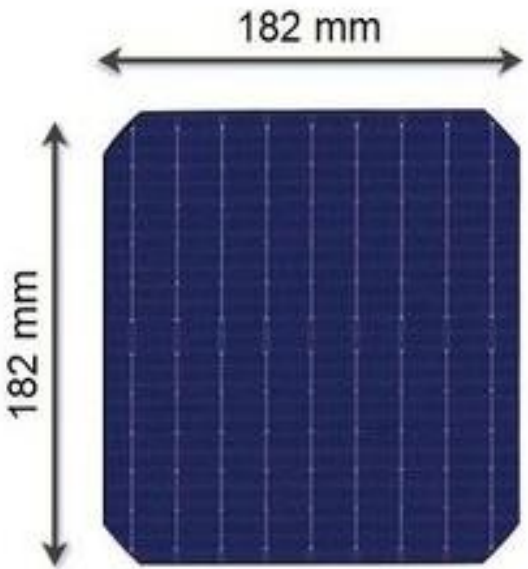
AWARD 2020

MODULES

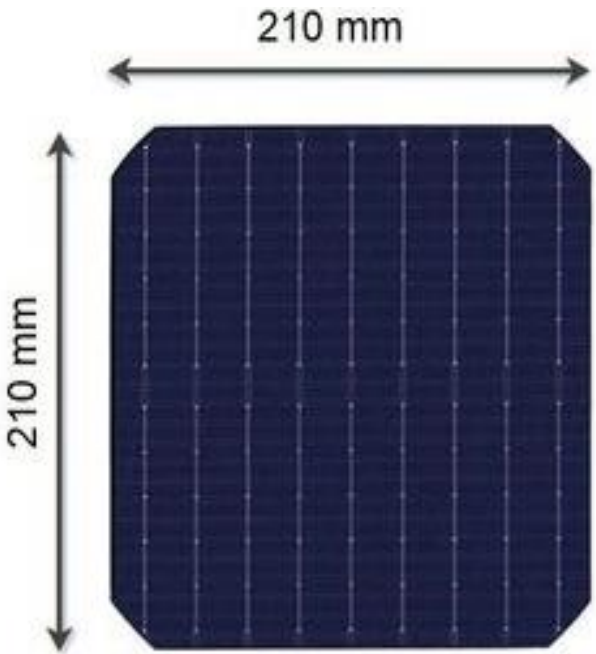
Most Common Cell Sizes 2021



M6

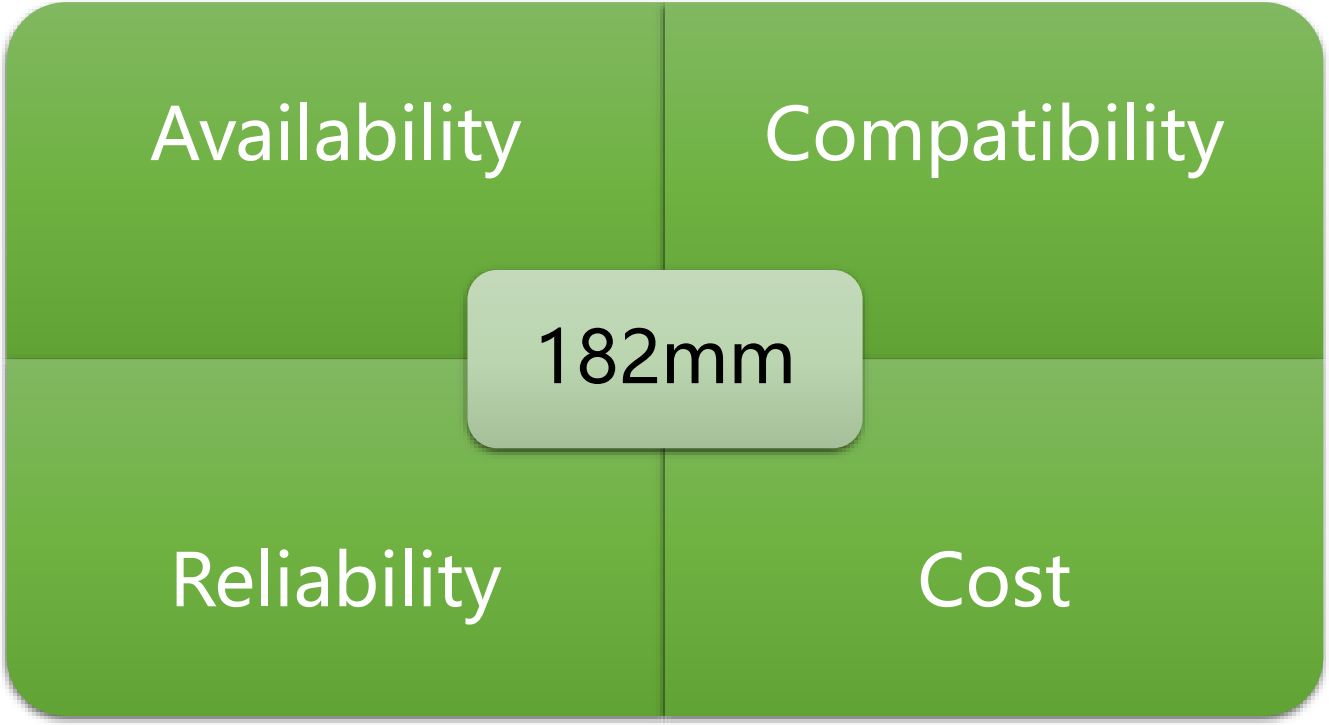


M10



M12

Maturity of 182mm Modules



Availability – Supply Chain

The Global Market Demand in 2021 is:

140GW

182mm Modules – Global Industrial Major Suppliers Chain Plan in 2021

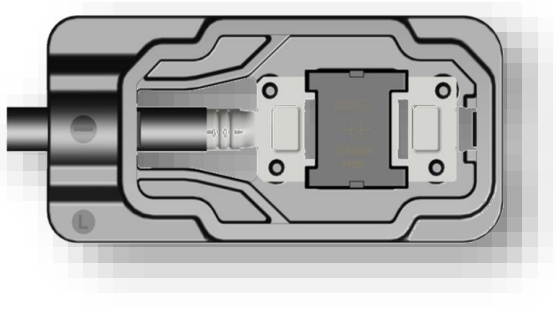
182mm Cell
90.2GW

182mm Modules
108GW

Fully meet the Capacity Demand

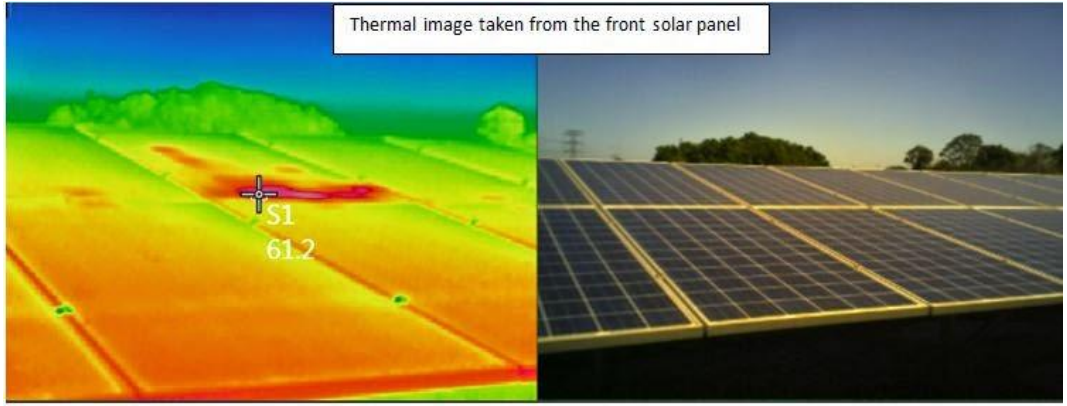
Source: PV info 2020 Oct. & JinkoSolar internal database

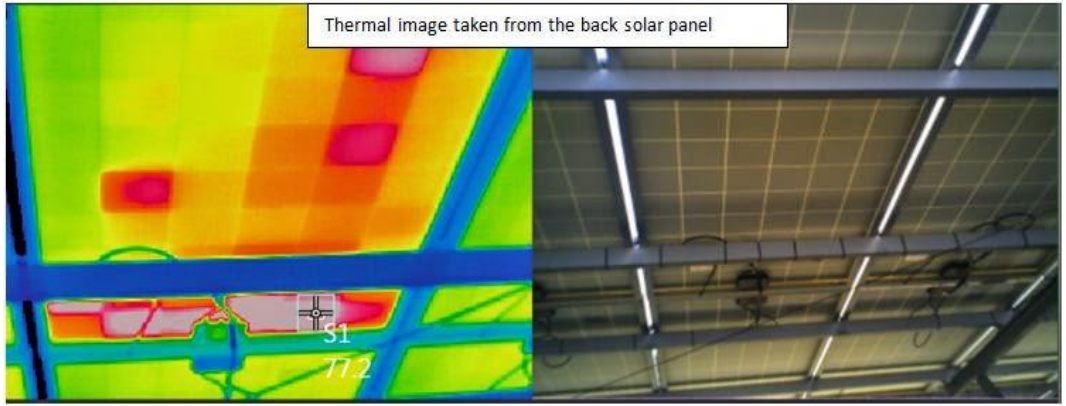
Reliability – Junction Box



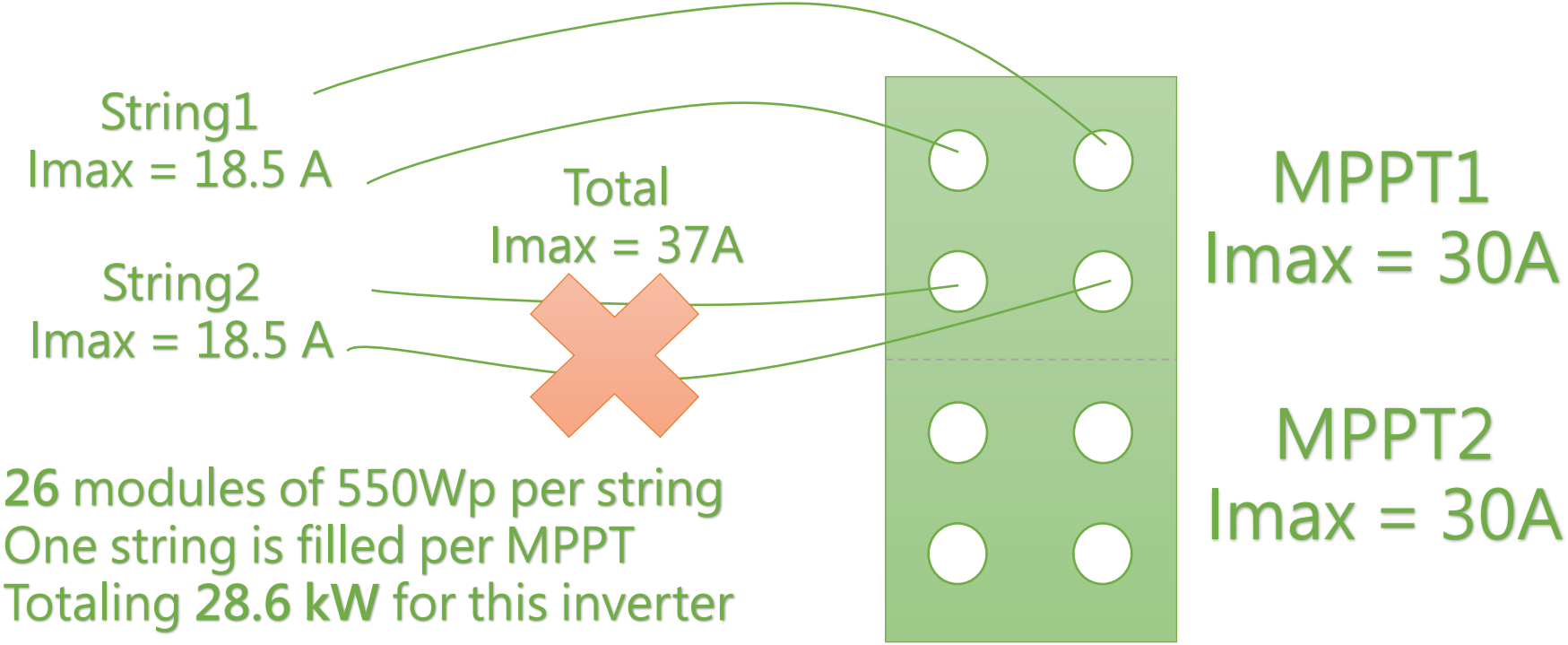
Module type	Isc	Bifacial factor	Diode factor	Theoretical diode current requirement	Diodes rating	**Safety margin**
182 bifacial	13.8	1.3	1.25	22.4	30	**25%**
210 Bifacial	18.43	1.3	1.25	29.94	30	0.18%

Reliability – Losses & Hotspots





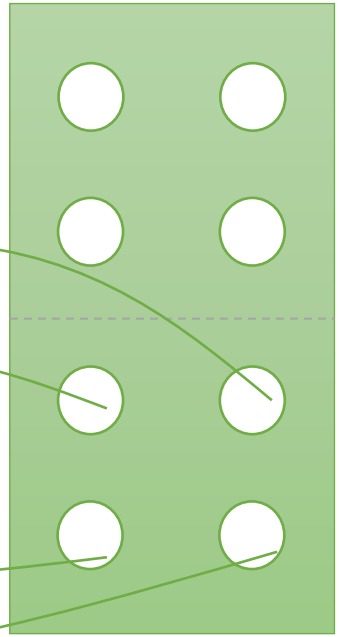
Compatibility – Inverters with 210mm



26 modules of 550Wp per string
One string is filled per MPPT
Totaling **28.6 kW** for this inverter

Compatibility – Inverters with 182mm

20 modules of 550Wp per string
Two strings per MPPT filled
Totaling **44 kW** for this inverter



MPPT1
Imax = 30A

MPPT2
Imax = 30A

String1
Imax = 14 A

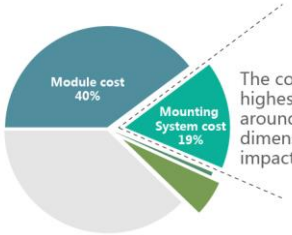
String2
Imax = 14 A

Total
Imax = 28 A

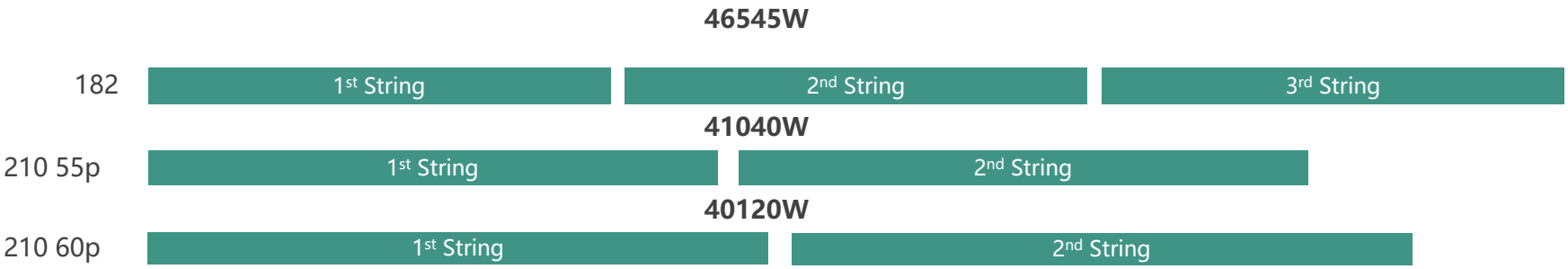
Compatibility – Tracker Mounting System

Maximize the power per tracker

It makes full use of the load area, as well as of power density, reducing the number of trackers



The cost on mounting system is the highest within the BOS cost, which is around 19% for tracker, while modules dimension design has the largest impact on mounting system cost.

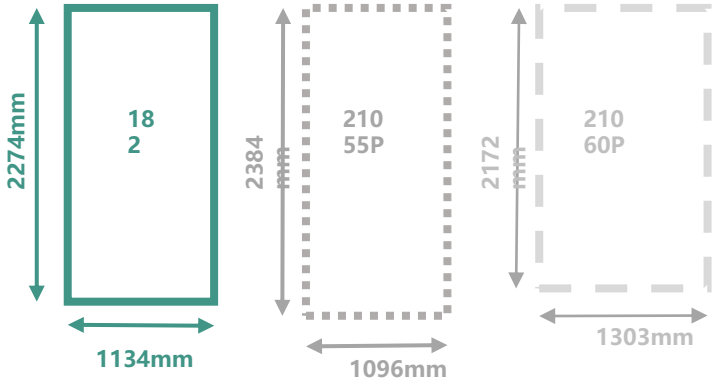


Tracker Design

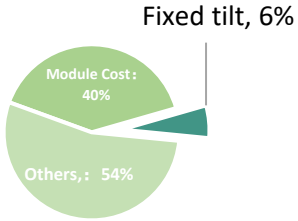
	182	210
Existing Products (approx.100m)	3 strings	2 strings
Recent Products (approx. 115m)	4 strings	3 strings
Next products (2p)	6 strings	4 strings

Longer trackers are bound to be the future trend, the total power of a single tracker is higher than that of 210mm, and the gap of 2P tracker is greater.

Cost – Fixed Structure Cost

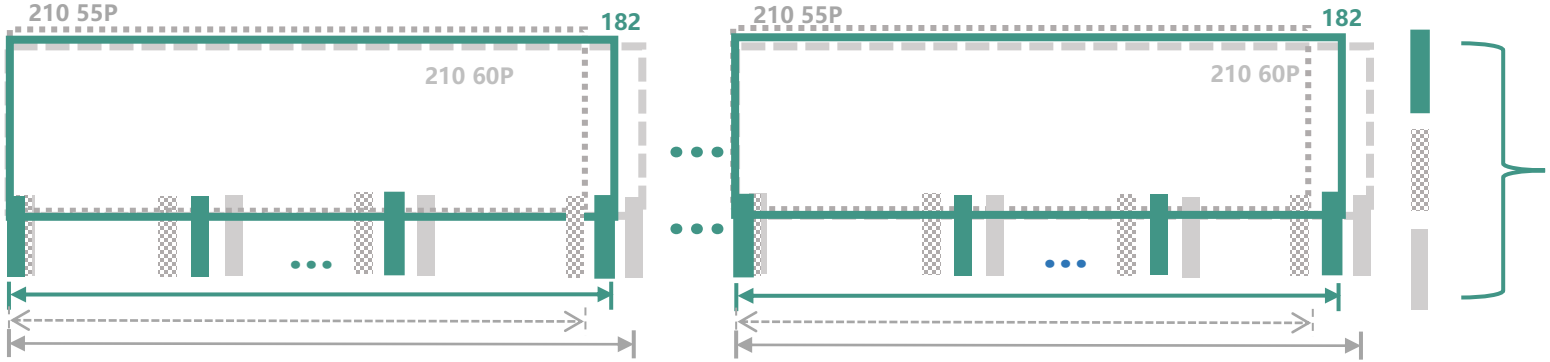


System Cost Analysis



The fixed tilt accounts for 6% of the BOS cost, and the difference between 182 and 210 is less than 5%, which has little effect on the overall EPC.

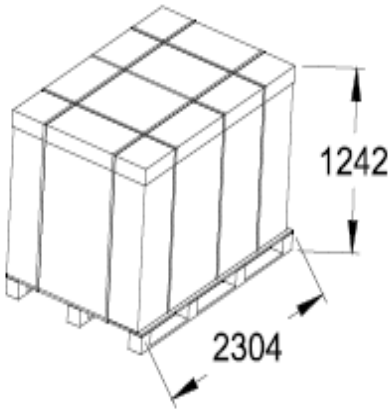
The fixed tilt's cost difference is within the total cost of 6%*5%=0.3%. The final quotation will remain consistent.

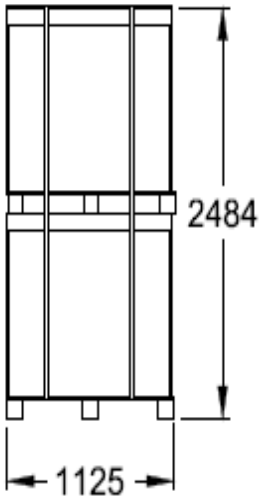


The steel consumption of 182 and 210 is basically the same.

Hypothesis: Regardless of topographical restrictions, 2 portraits, the total steel consumption of the total capacity is almost the same (although the number of piles is different due to the different length of a single fixed tilt, but the quantity of fixed title will vary).

Cost – Logistics & Transportation





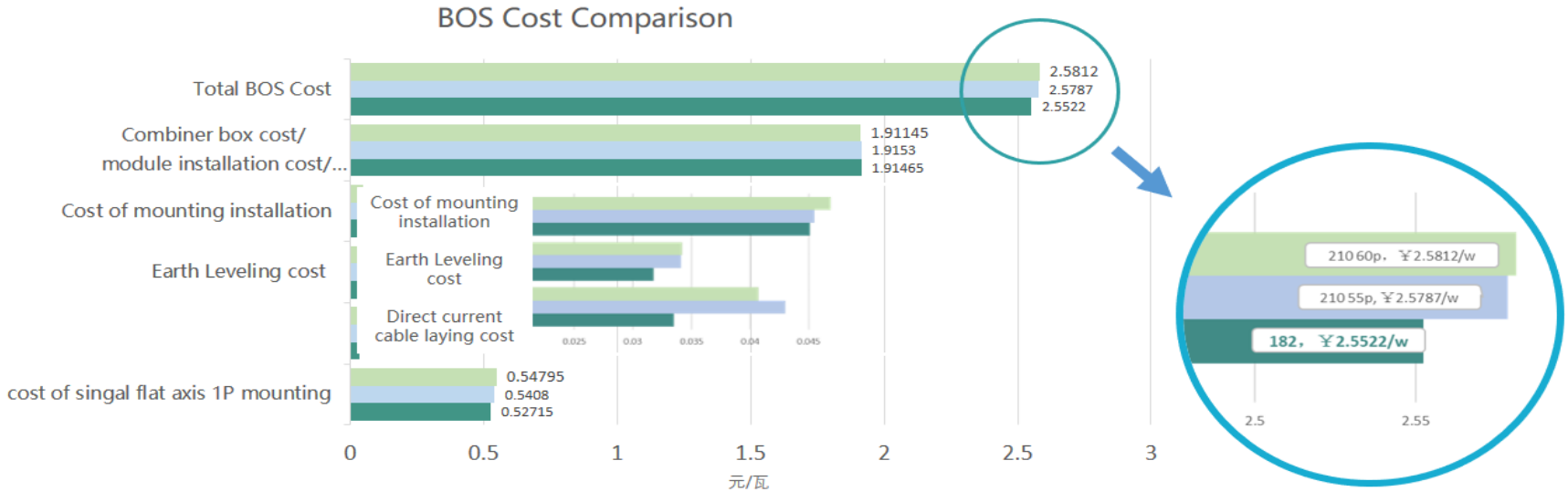
SIZE: 2304×1125×1242 2304×1125×2484

Increased power capacity per container

Module	Number of Modules (pcs)	Capacity (KW)
166 72C	620	285
182 72C	620	335
210 55C	558	307
210 60C	448	268

Cost – Levelized Cost of Electricity (LCoE)

BOS Cost Comparison



Type	182	210 55p	210 60p
BOScost difference	**Standard**	**+101.04%**	**+101.14%**

Thank You!

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Business Development Manager – MENA

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