

How tariffs and policy shifts are reshaping the US solar supply chain

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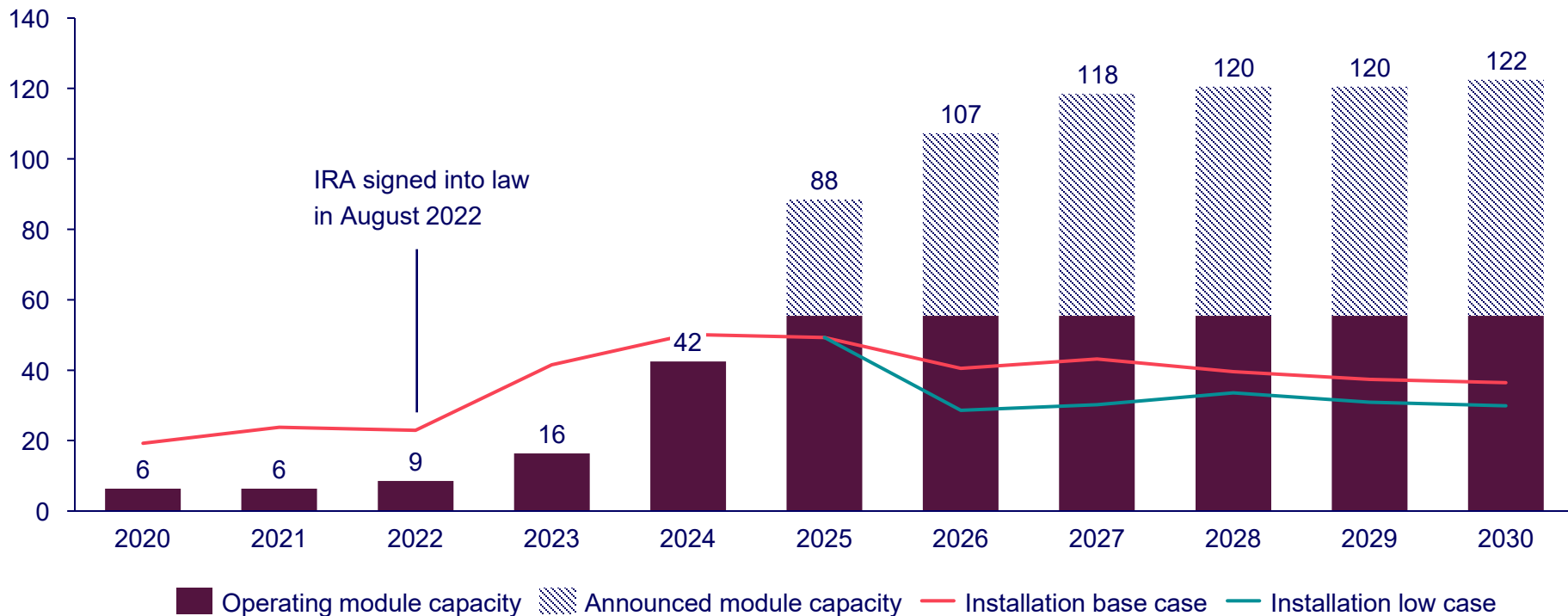
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IRA has incentivized US module manufacturing capacity to increase by over sixfold

Domestic manufacturing capacity now exceeds annual installations, suggesting growth will slow down in 2026

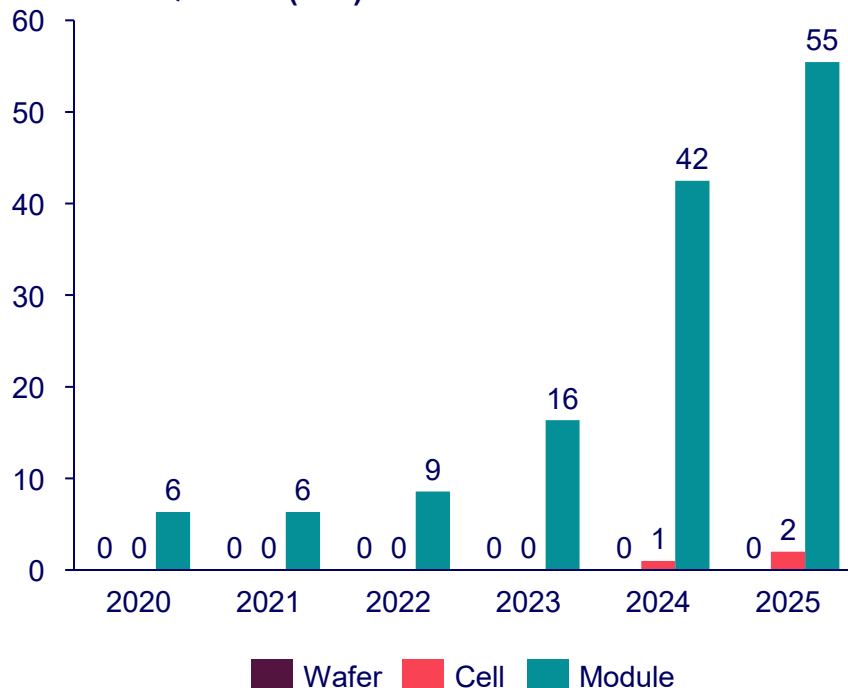
US module manufacturing capacity vs. installations, 2020-2030 (GW)



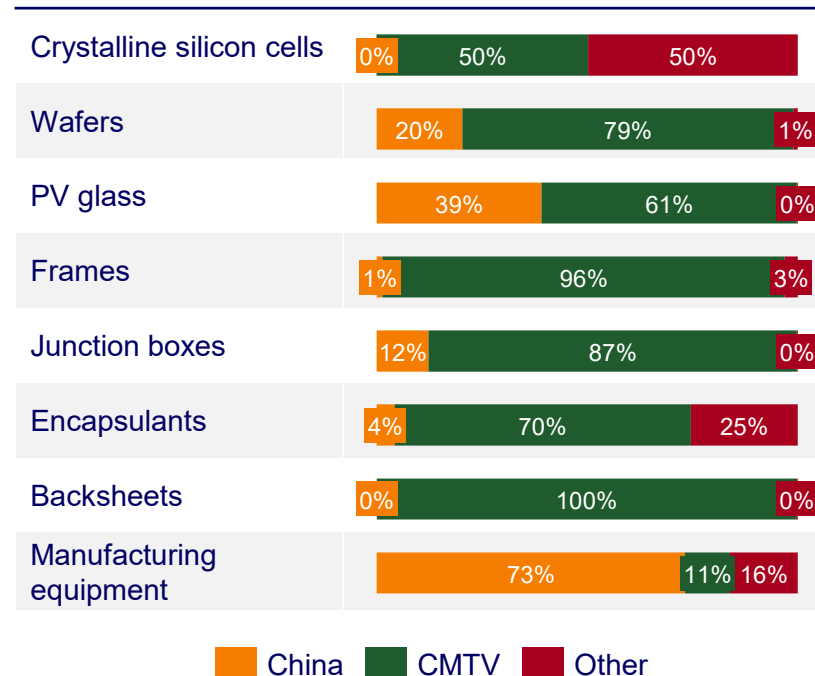
But the buildout of upstream component manufacturing has not kept up the pace

US module manufacturers rely largely on imported components, making them susceptible to tariffs

US wafer, cell, and module manufacturing capacity, 2020-Q2 2025 (GW)



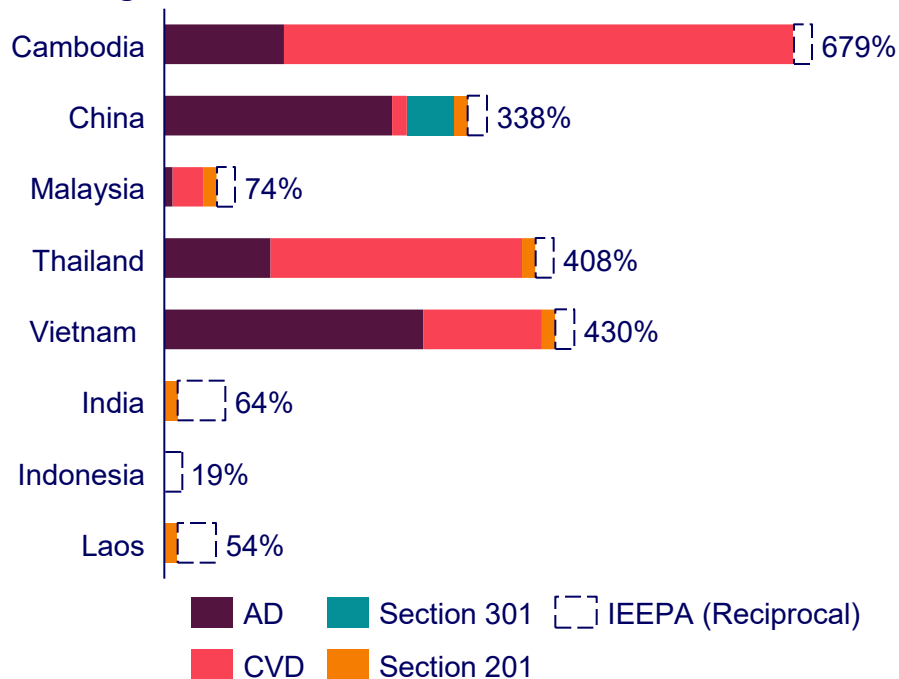
Origin of solar module components imported to the US, 2025 (Jan-Apr)



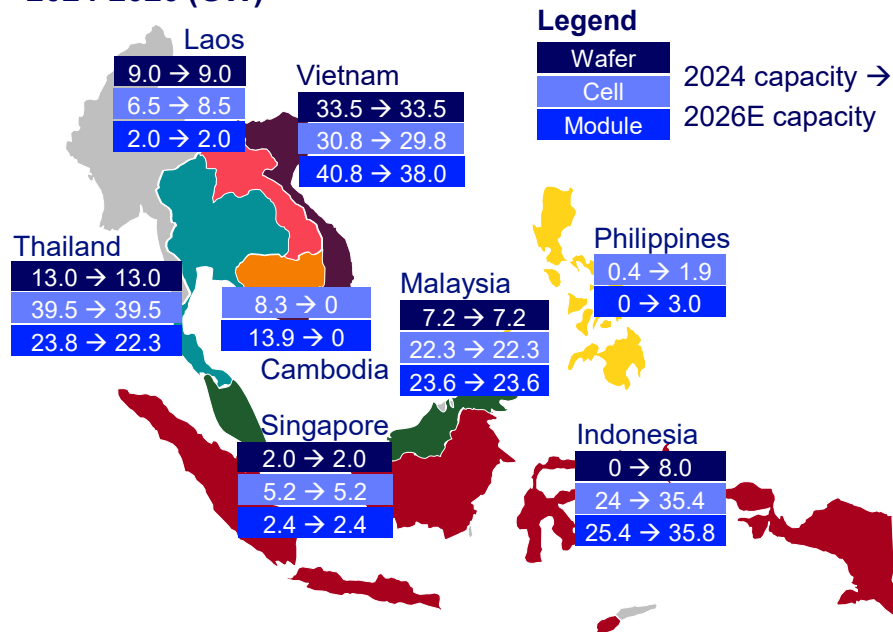
New AD/CVD is forcing manufacturers to relocate capacity outside of CMTV

While factories in these countries are closing, capacity is growing in Indonesia, Laos, and the Philippines

Solar cell and module tariff rates² by country, August 2025



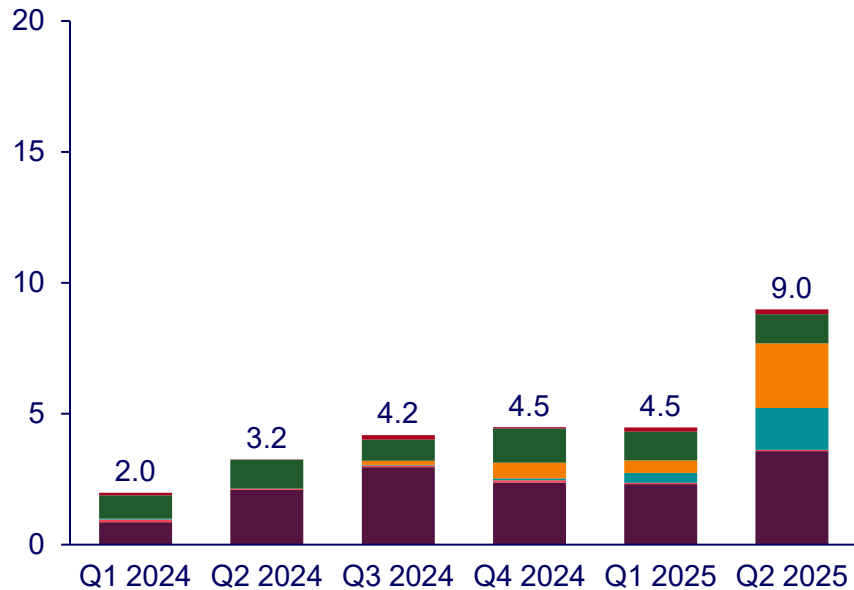
Solar manufacturing capacity in Southeast Asia, 2024-2026 (GW)



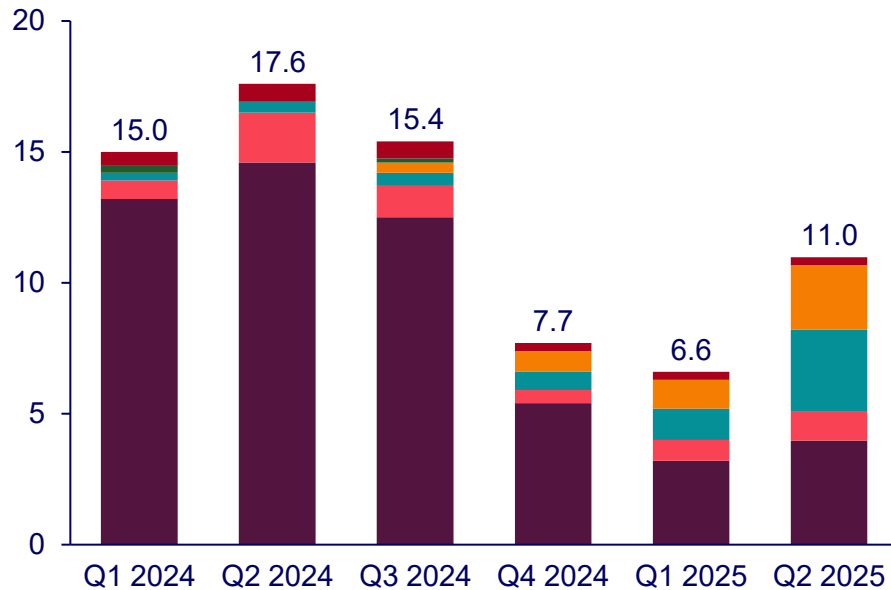
But the surge in imports from Indonesia and Laos has led to new AD/CVD case

The alleged dumping margins are 123% for India, 94% for Indonesia, and between 123-190% for Laos

US cell imports by origin, Q1 2024-Q2 2025 (GW)



US module imports by origin, Q1 2024-Q2 2025 (GW)

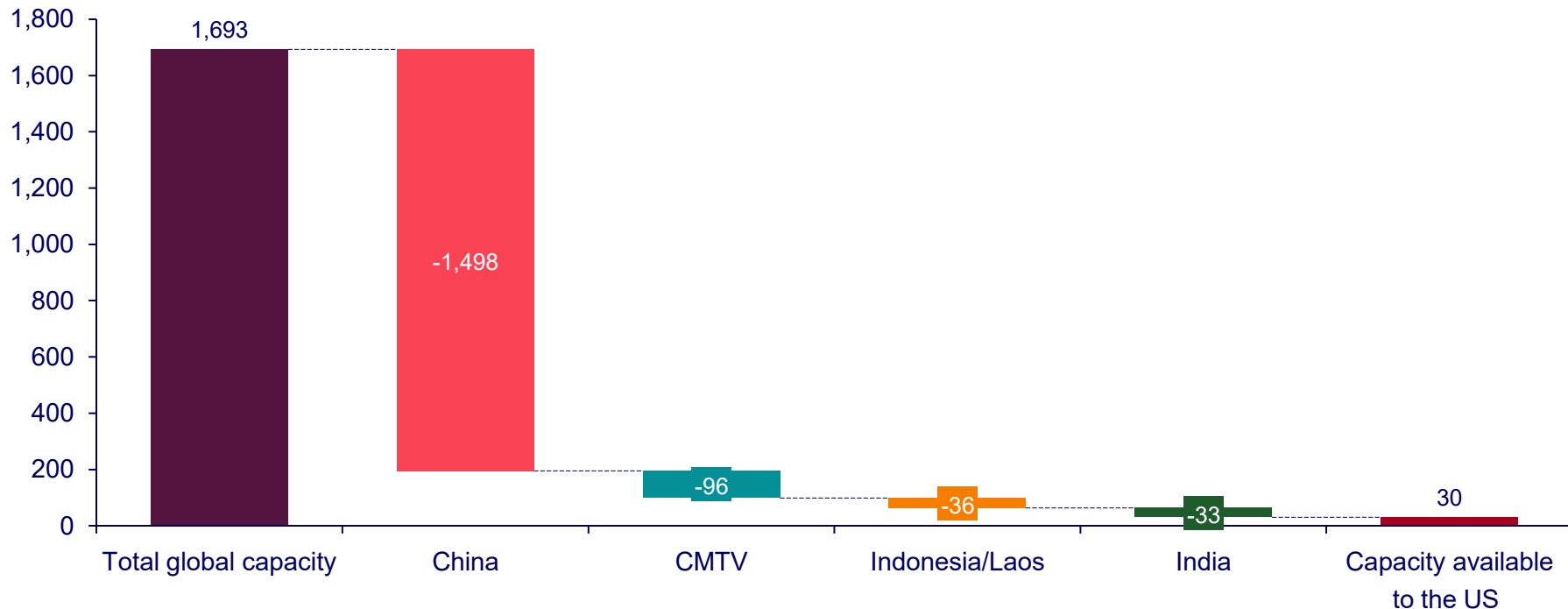


CMTV India Indonesia Laos South Korea Rest of the world

High tariffs on Southeast Asia and India would constrain US cell supply

Remaining operational capacity is spread across globe rather than concentrated in one region

Potential available cell production capacity for the US with AD/CVD on India/Indonesia/Laos, 2025¹ (GW)



The MENA region could become the US' next major cell and module supplier

But most factories in this region are not expected to come online until 2026 or later

Legend 2024 → 2028 Manufacturing Capacity

Polysilicon	0 MT → 270K MT
Wafer	0.3 GW → 50.3 GW
Cell	0.3 GW → 32.3 GW
Module	1.7 GW → 42.7 GW

operational capacity is in **bold**



0.1 GW



4 GW

4 GW



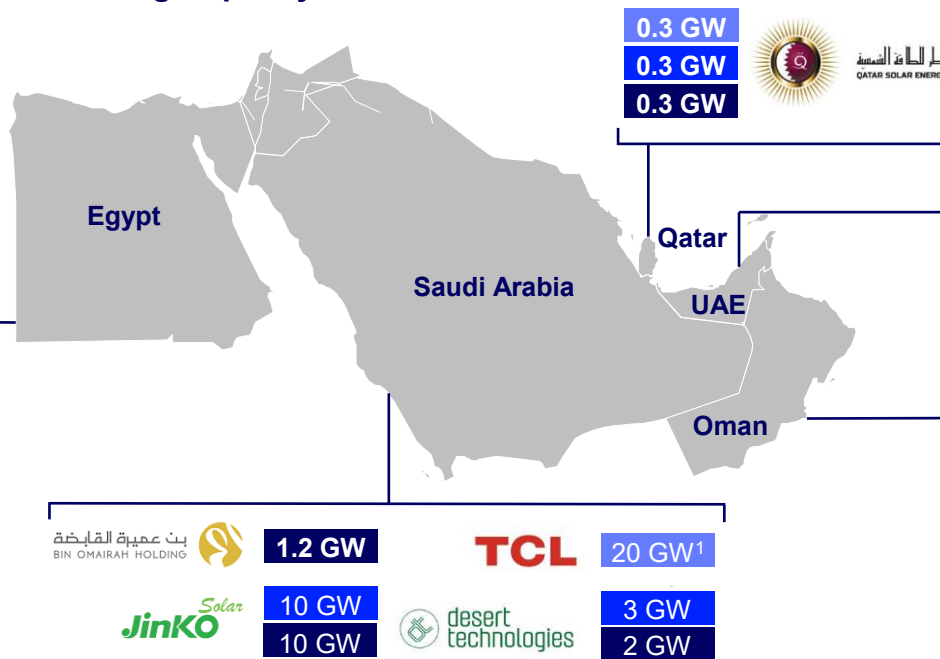
2 GW

2 GW



2 GW

2 GW



120K MT



50K MT

30 GW

5 GW

5 GW



100K MT

0.05 GW

5 GW

6 GW

3 GW

2 GW

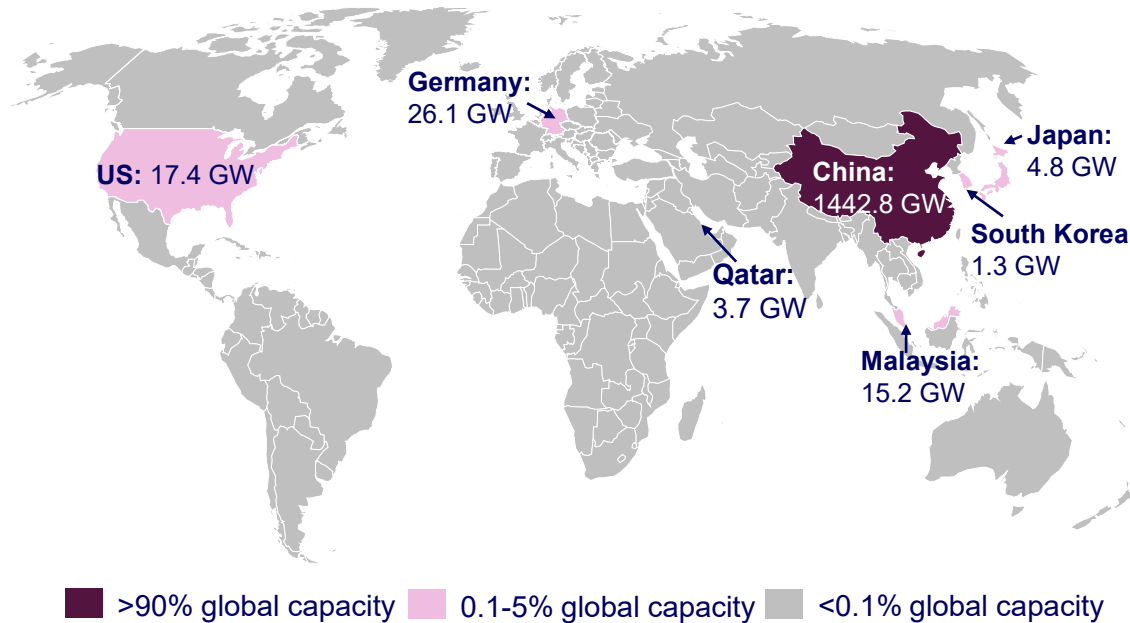
8 GW



Section 232 investigation on poly and derivatives could cause further disruption

Polysilicon manufacturing is heavily concentrated in China and buildout of other capacity would take years

Global operating polysilicon manufacturing capacity¹ by country, August 2025 (GW)

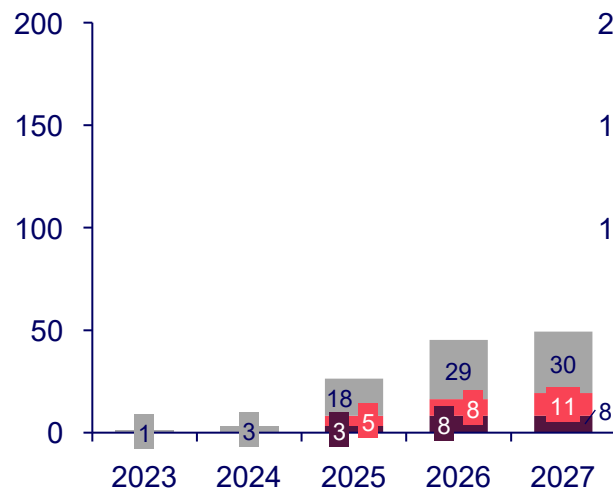


- Many aspiring and active US solar manufacturers, including Highland Materials, NorSun, Suniva, Qcells, and T1 Energy, provided public comments in support of Section 232 tariffs on polysilicon and downstream products. However, some domestic manufacturers were less supportive.
- Most parties in support of trade remedies advocated for restricting the scope to polysilicon from China or China-linked countries, with exclusions for allies such as Germany, South Korea, Japan, and Malaysia.
- Coalition for a Prosperous America (CPA) and Qcells proposed a product specific tariff structure with tariff rate quotas (TRQs) for polysilicon, ingots, wafers, cells, and modules from certain countries.

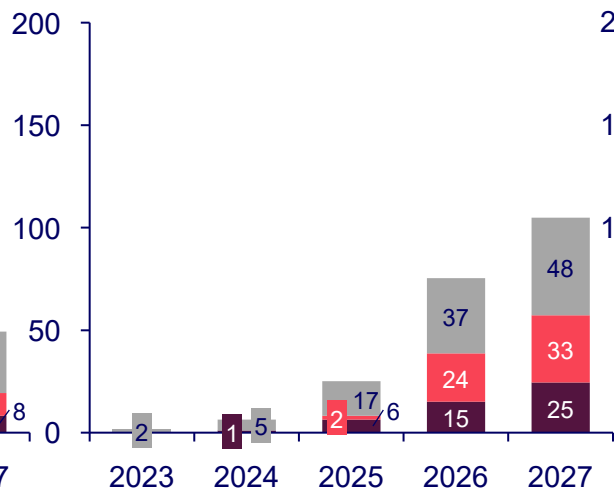
It will take years for the US to build out a self-sufficient module supply chain

The solar manufacturing industry will remain sensitive to tariff increases and policy changes until then

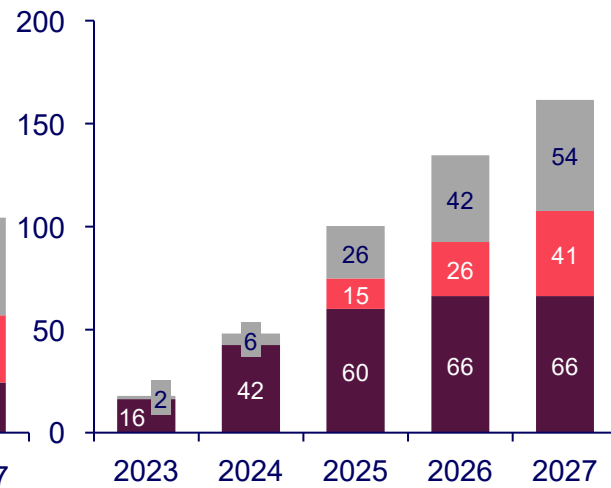
**US wafer manufacturing capacity,¹
2023-2027 (GW)**



**US cell manufacturing capacity,¹
2023-2027 (GW)**



**US module manufacturing capacity,¹
2023-2027 (GW)**



■ Forecasted capacity ■ Capacity unlikely to come online ■ Cancelled/paused capacity

Thank you!

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