International Energy Agency

Energy Technology Perspectives 2024

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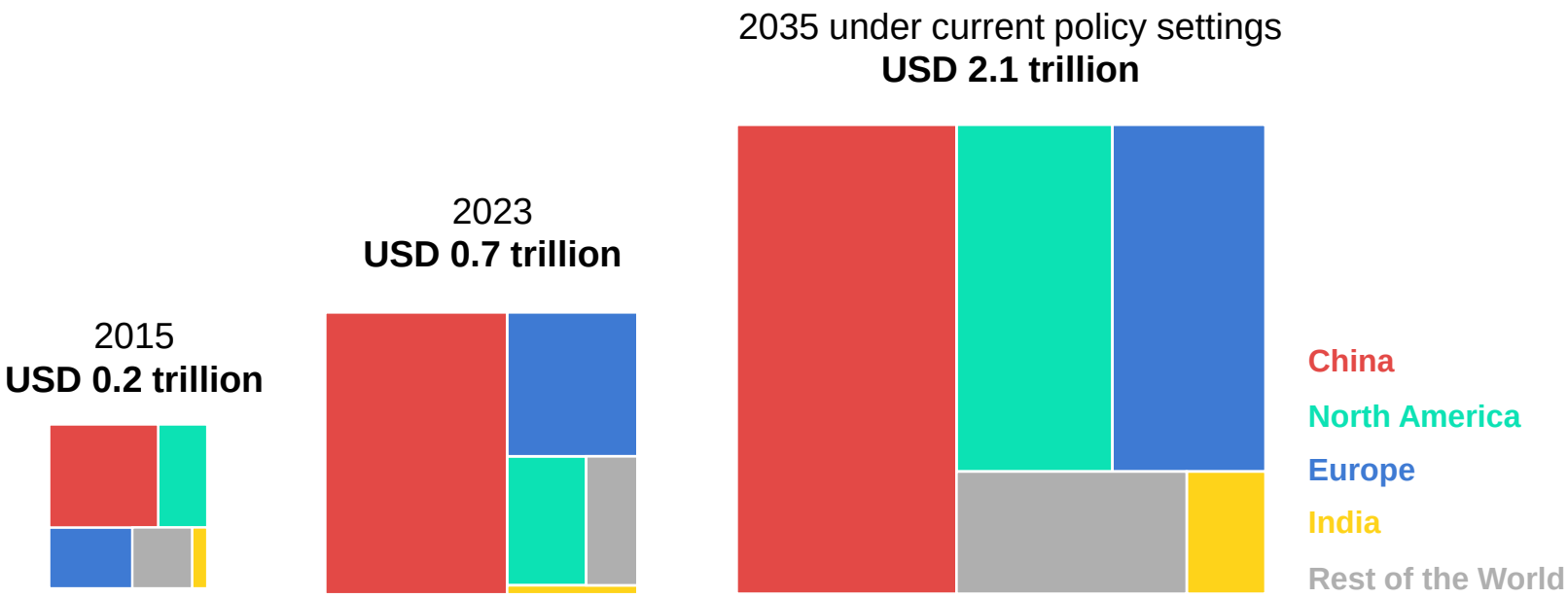
Clean & modern technologies are a sizeable economic opportunity

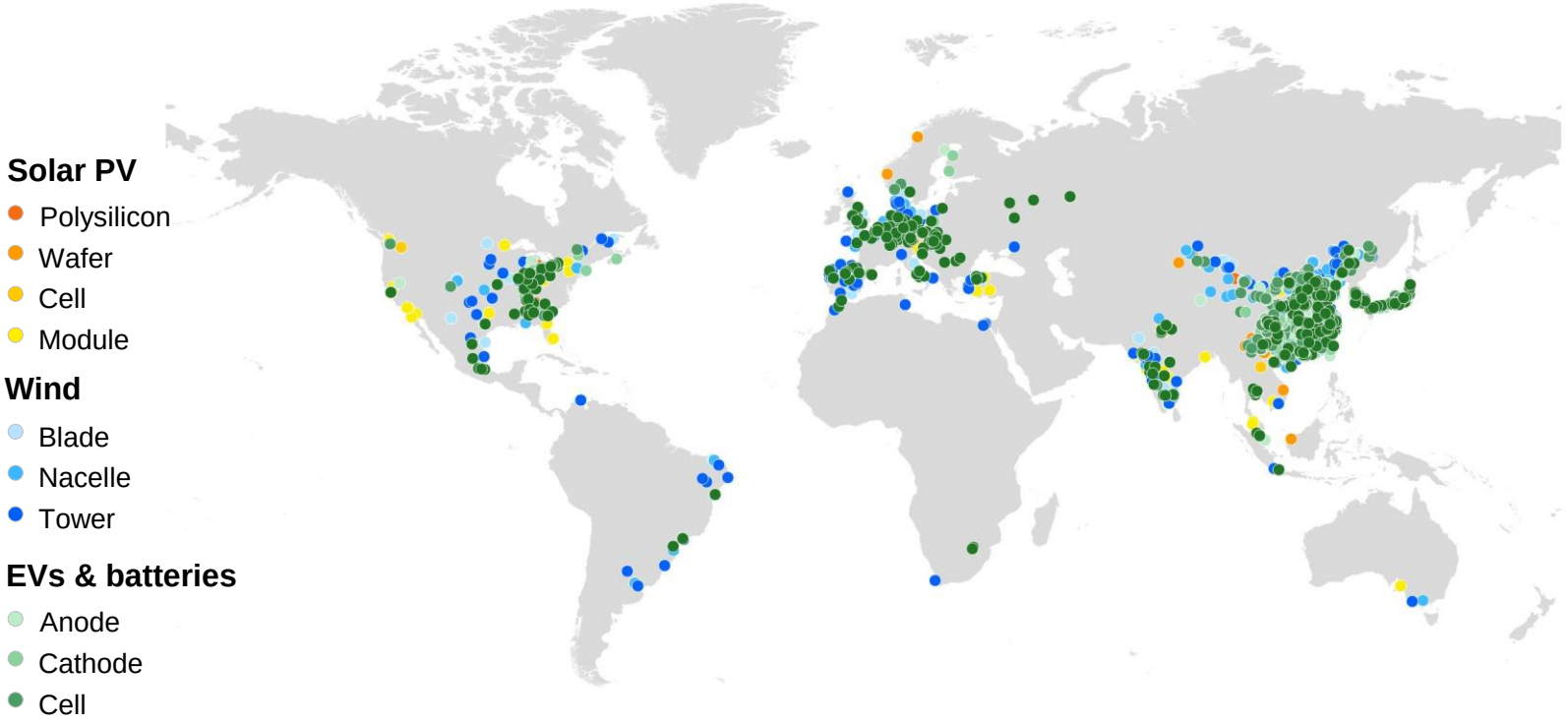
Global market value for clean energy technologies



The market for clean technologies is set to triple to 2035 under current policy settings, close to value of the global crude oil market in recent years.

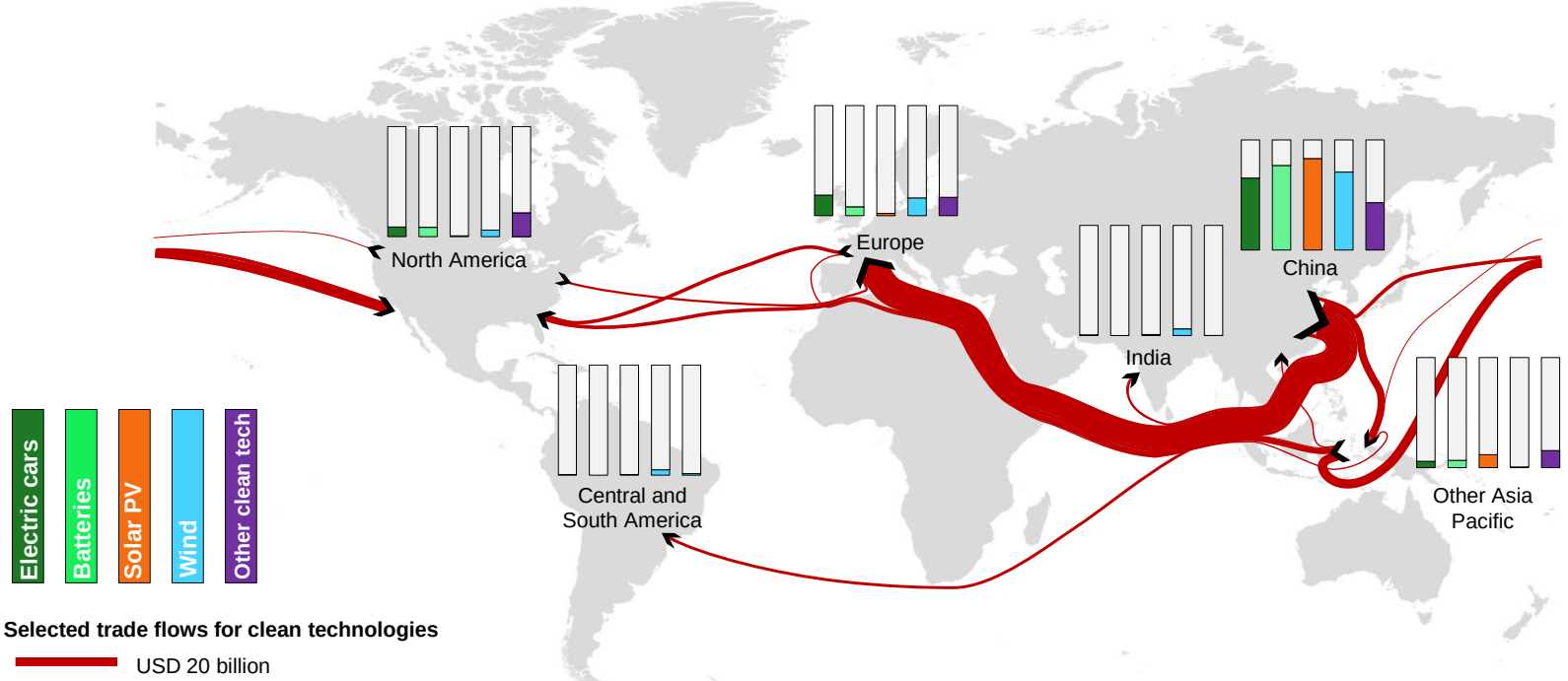
Investment in clean technology manufacturing is booming

Clean technology manufacturing facilities in operation, 2023



Investment in clean technology manufacturing is booming

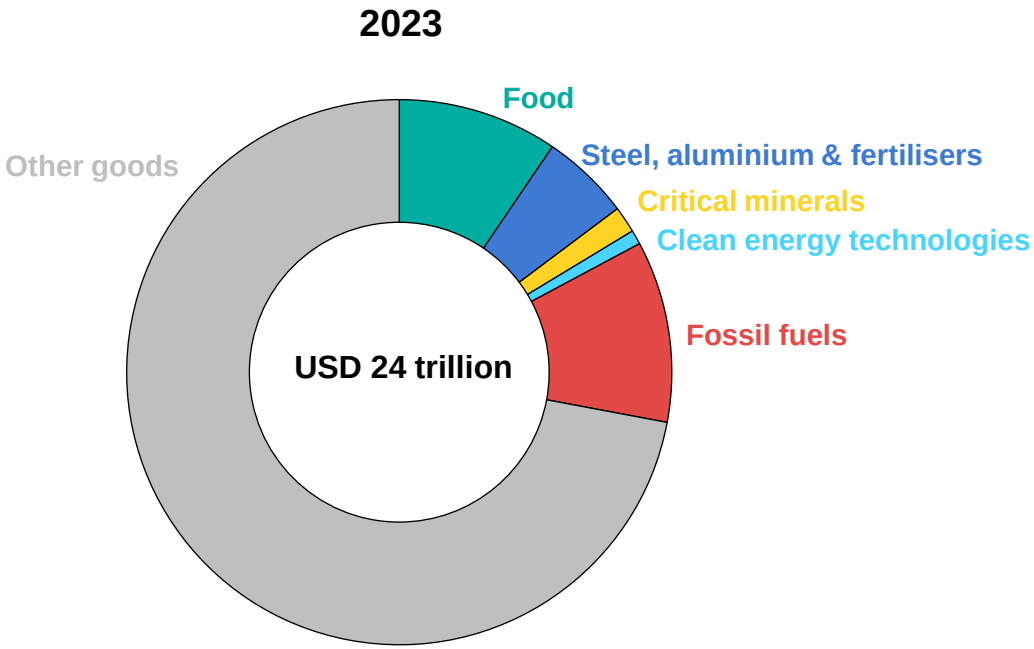
Share of global clean technology manufacturing output by technology, 2023



The manufacturing of clean technologies is highly concentrated geographically, with China accounting for around 70% of the global manufacturing output value for the six key clean technologies.

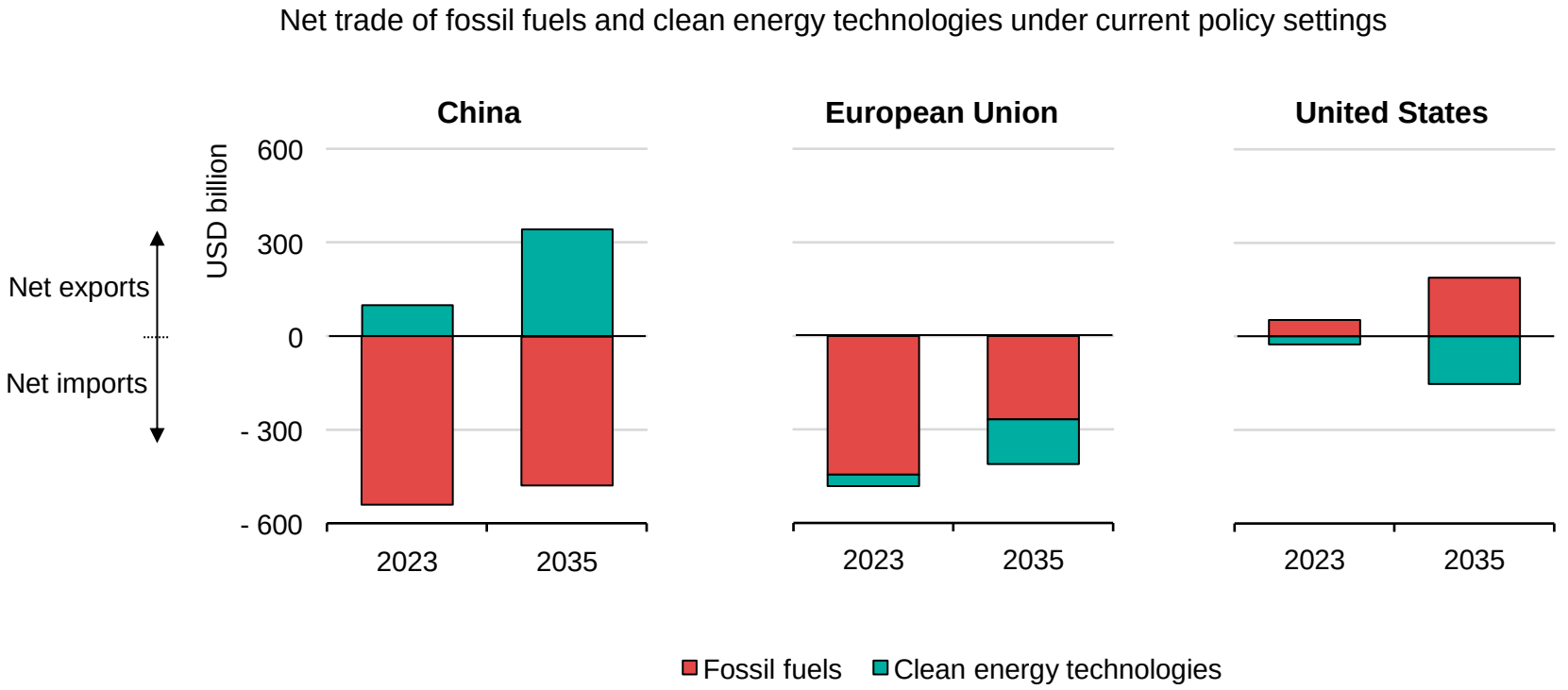
International trade is essential to the global economy

International goods trade by value



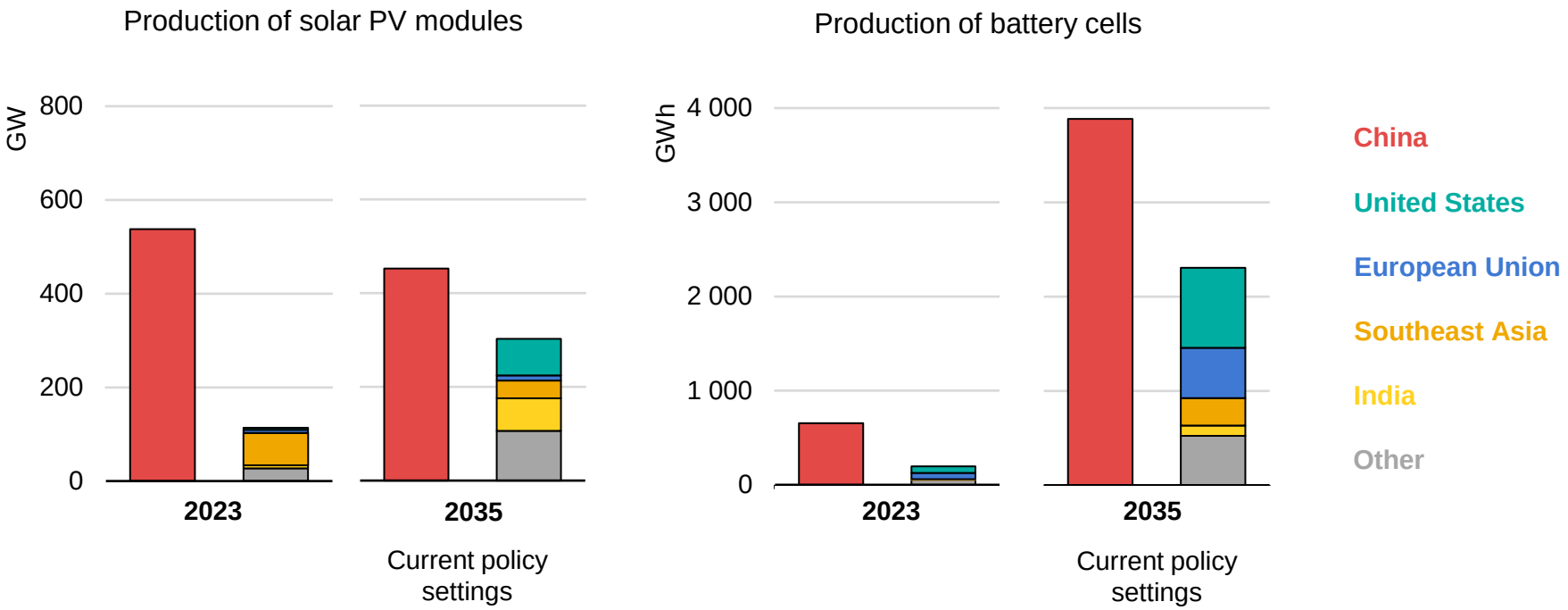
The value of clean energy technology trade is set to triple to 2035.
The pace of decline of the value of fossil fuel trade depends on the speed of the clean energy transition.

China remains the world's clean technology powerhouse



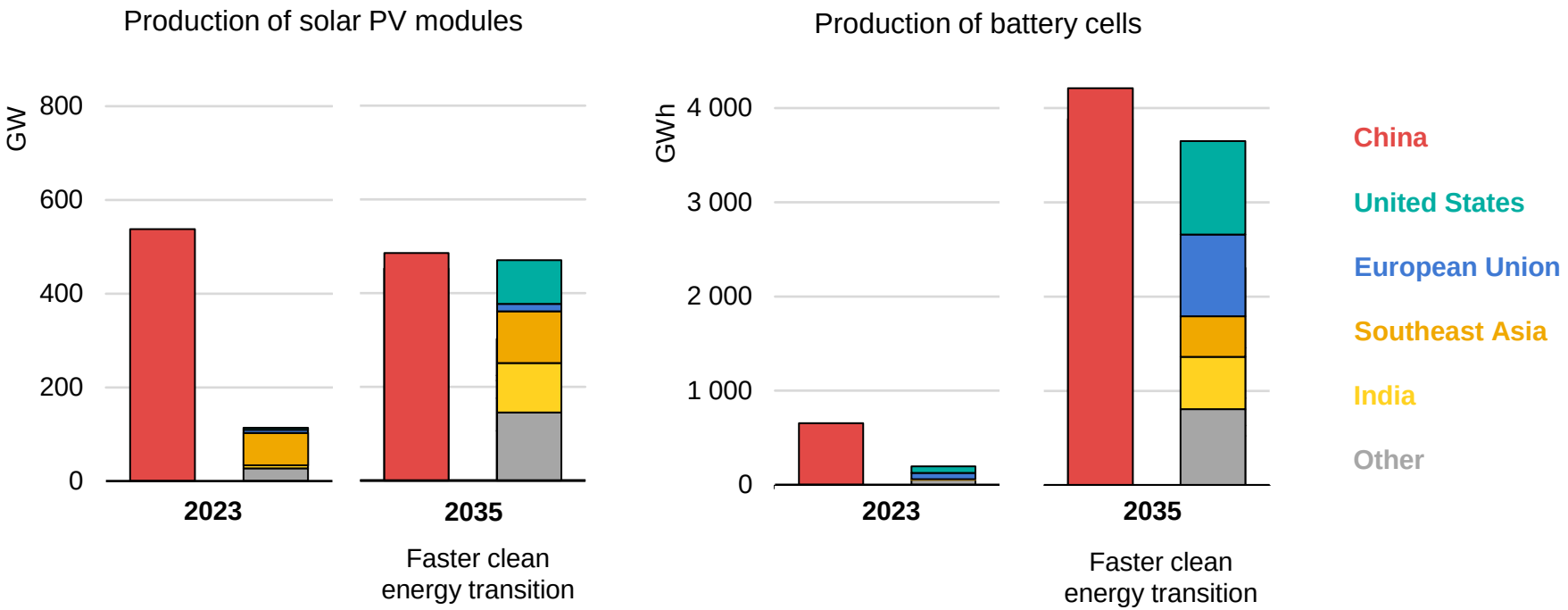
The value of China's clean tech exports in 2035 is roughly equivalent to the projected 2024 oil export revenue of Saudi Arabia & the United Arab Emirates combined. The EU's import bill shifts to clean tech, which is a boon to resilience.

Industrial policy & competitiveness shape the outlook for trade



Industrial strategies can help boost the competitiveness of clean technology manufacturing.
The policies established by countries around the world will affect the outlook for manufacturing & trade.

Industrial policy & competitiveness shape the outlook for trade



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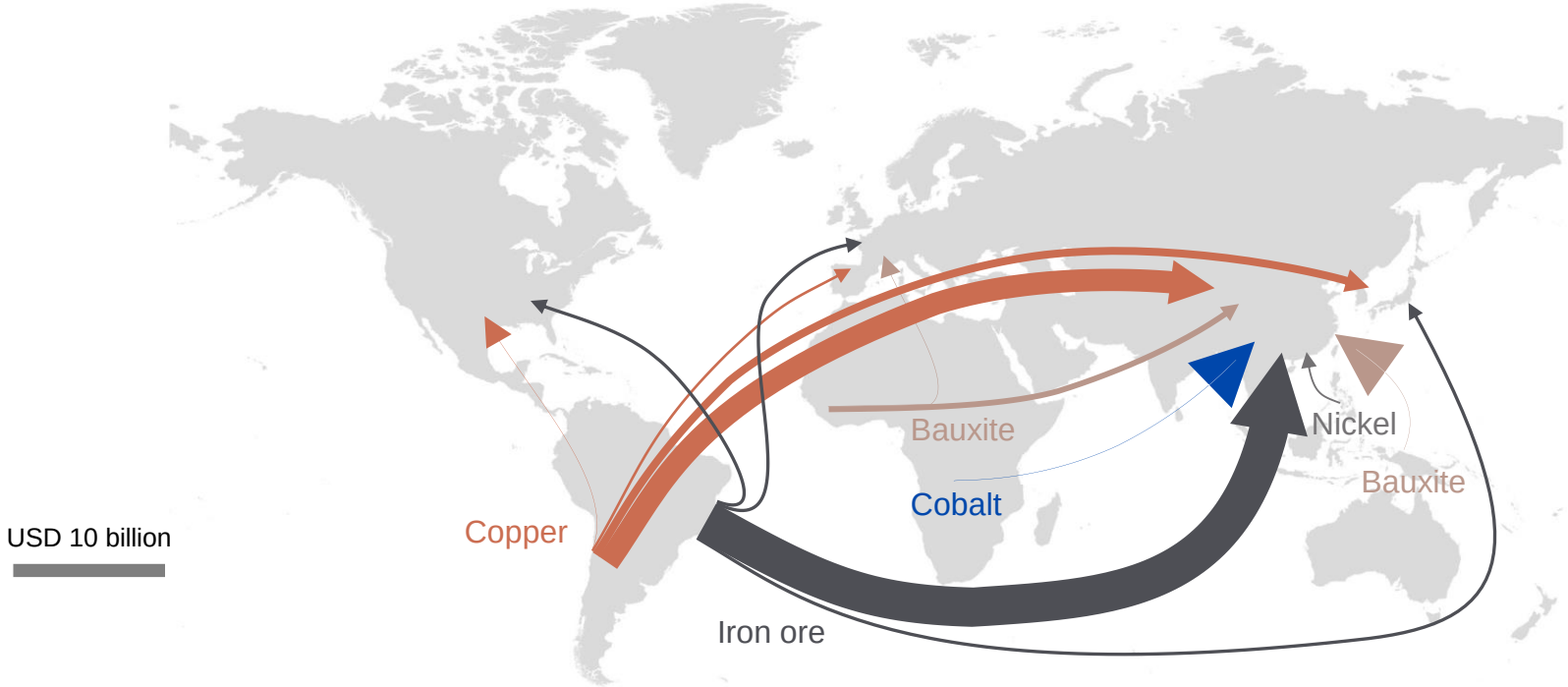
The door of the new energy economy is still open to emerging markets

Trade flows of raw materials from emerging markets and developing economies, 2023



A fair and just transition requires enabling more regions to reap the economic benefits from growing supply chains for clean and modern energy technologies.

The door of the new energy economy is still open to emerging markets

Key manufacturing opportunities in the High Potential Case

- ✓ Skills of the workforce
- ✓ Good energy infrastructure
- ✓ Large lithium & iron ore reserves
- ✓ High fertiliser demand

Wind blade manufacturing increases x4 by 2035

Third largest battery manufacturer by 2050

Second largest exporter of near-zero emissions ammonia by 2050

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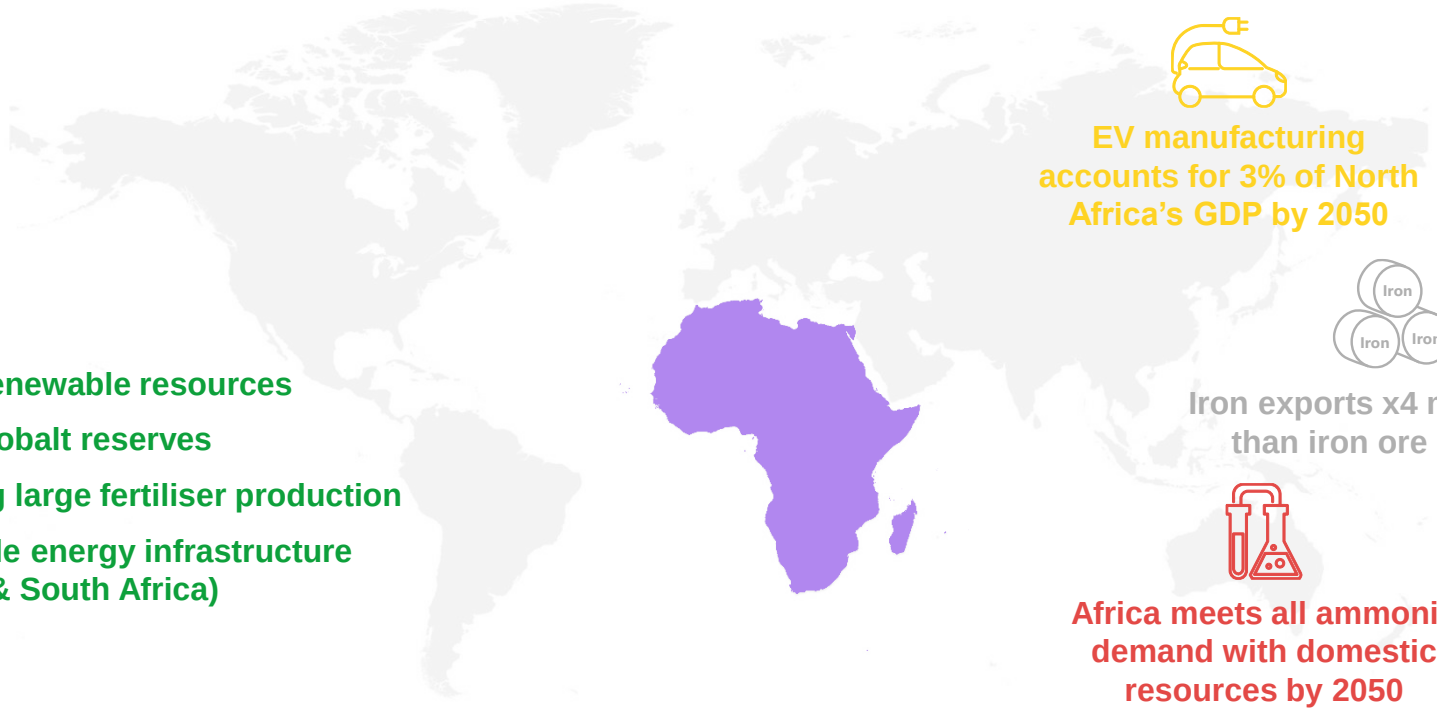

- ✓ Good renewable resources
- ✓ Large cobalt reserves
- ✓ Existing large fertiliser production
- ✓ Available energy infrastructure (North & South Africa)

EV manufacturing accounts for 3% of North Africa's GDP by 2050

Iron exports x4 more value than iron ore exports

Africa meets all ammonia demand with domestic resources by 2050

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The door of the new energy economy is still open to emerging markets

Key manufacturing opportunities in the High Potential Case

- ✓ Good business environment
- ✓ Strong high-tech manufacturing sector
- ✓ Existing solar PV and ICE manufacturing
- ✓ Large nickel reserves

Over 10% of global polysilicon production by 2050

EV exports approach 3 million by 2035

A fair and just transition requires enabling more regions to reap the economic benefits from growing supply chains for clean and modern energy technologies.