

Tungsten

Market and supply chain overview of a strategic defence material

25th June 2026

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Agenda

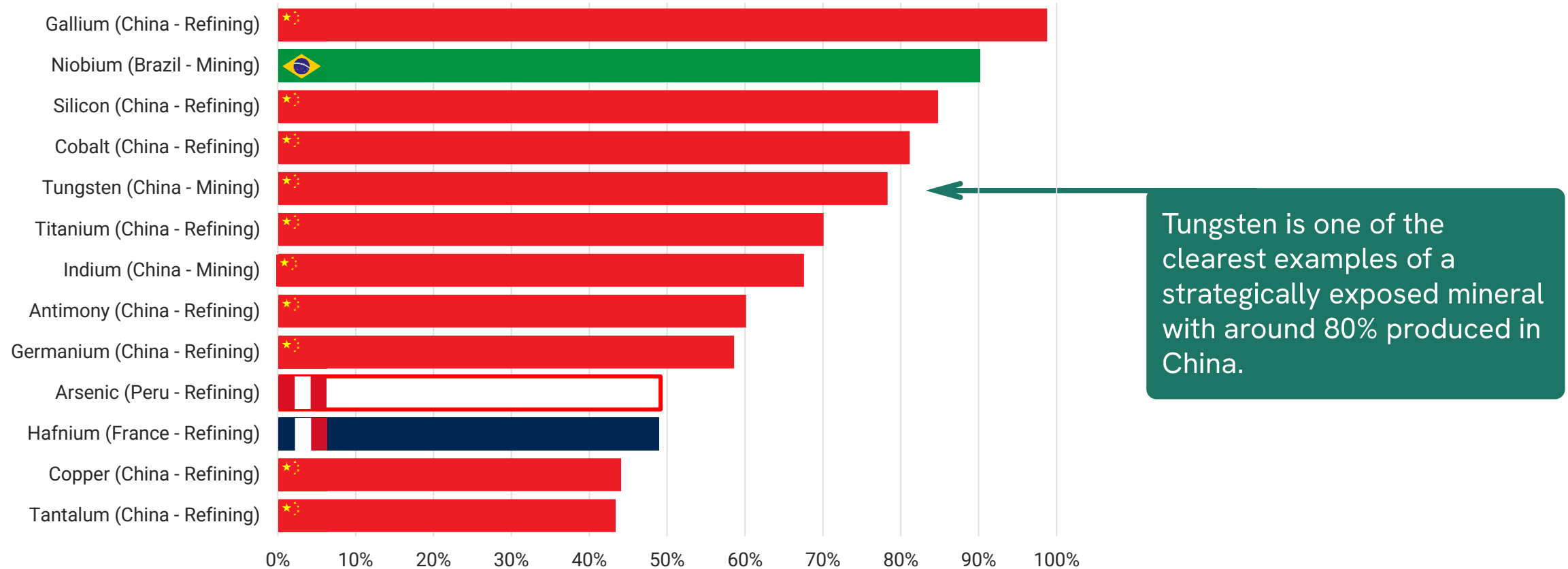
A structurally shifting tungsten supply chain



- 1) **The Tungsten value chain**
- 2) **Tungsten price developments**
- 3) **Market overview:** supply-demand outlook, key trends
- 4) **Potential new supply**

Critical mineral supply is highly concentrated; tungsten is a clear example

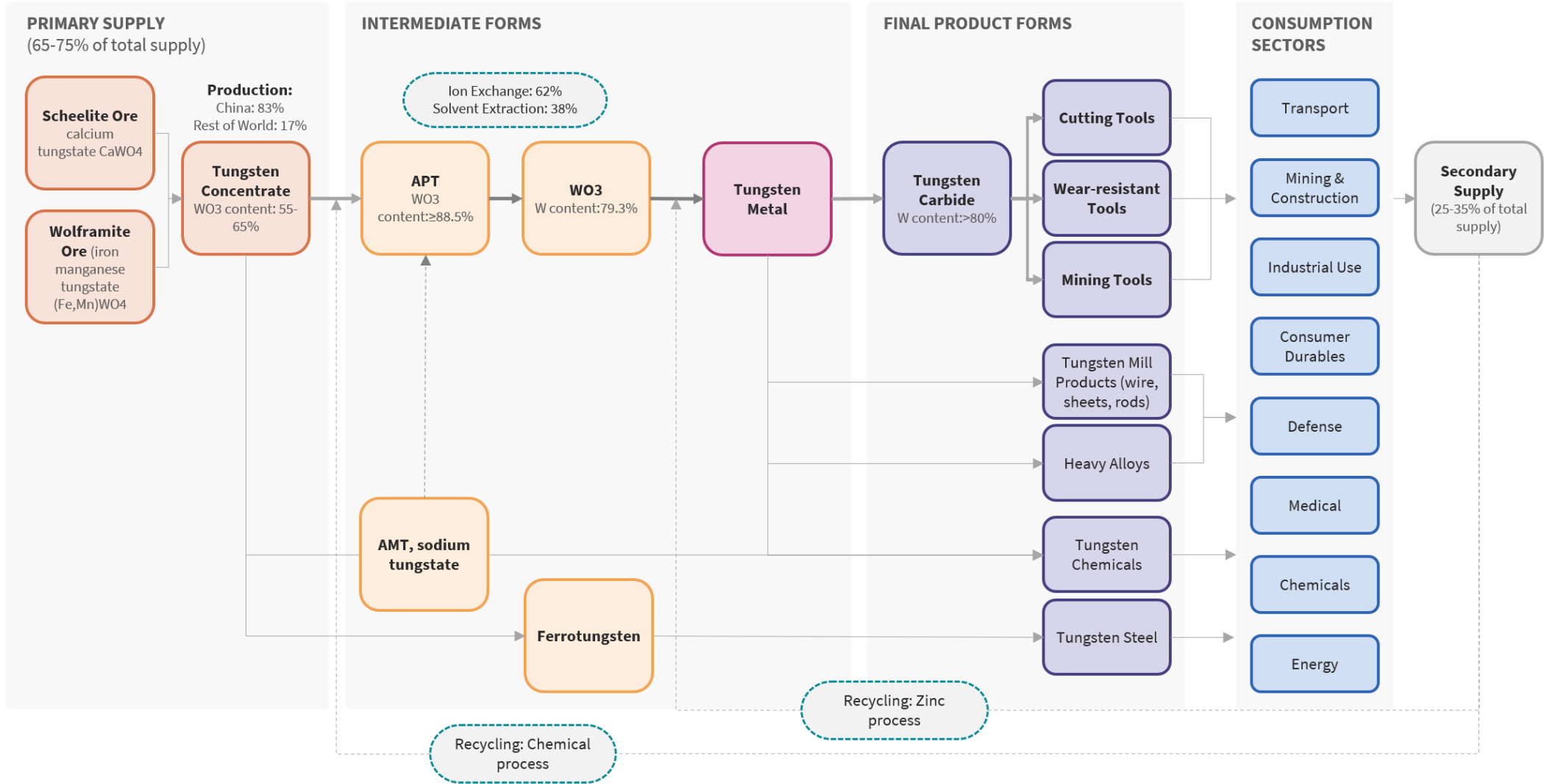
% Top-country share of mineral production at the most concentrated supply stage



Source: Data from USGS, BGS, Graph by Rovjok

NOTE: Both mined and refined production was considered, with the highest chokepoint considered

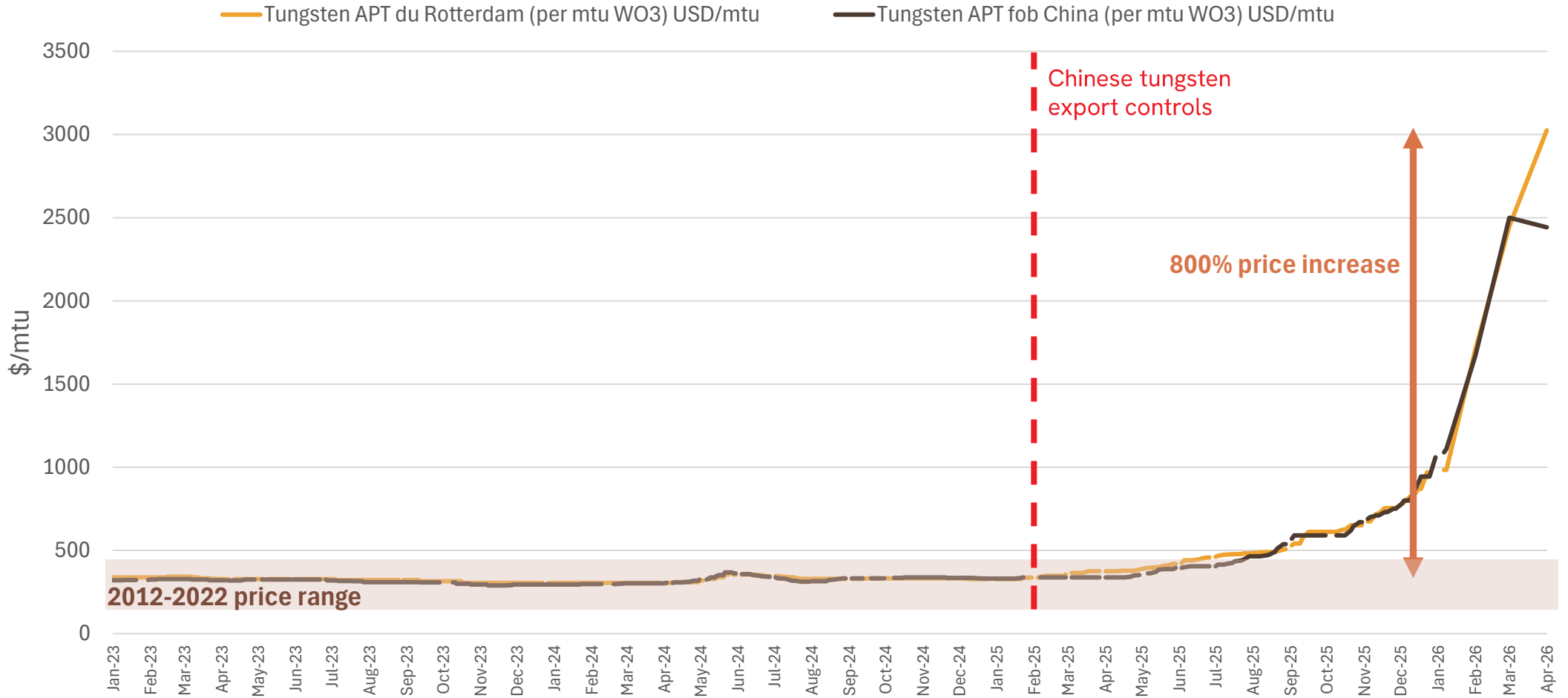
Tungsten's strategic importance lies in its use as an 'enabling' material, and also where control sits along the value chain



Source: Rovjok

Tungsten price has surged due to export controls and upstream shortages

Since H2 2025, the tungsten APT price has risen over 800%.



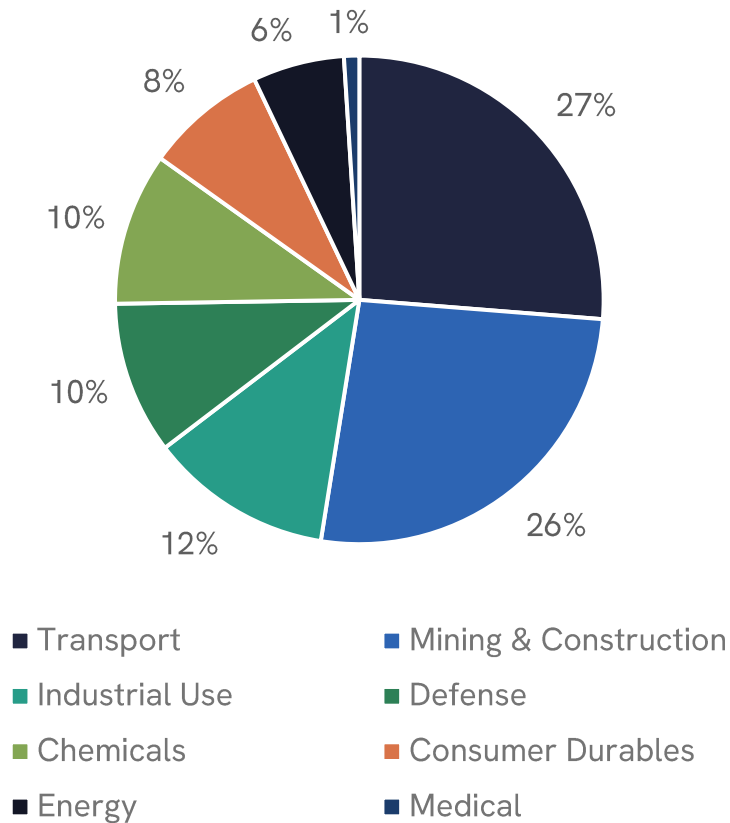
Downstream companies are relying more heavily on inventories and recycled material.

Source: Argus, Fastmarkets (Prices); compiled by Rovjok

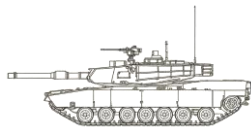
Demand growth is being driven by defence, semiconductors, and clean energy

The traditional carbide cutting tools demand is steady while defence is seeing a huge surge in the US and Europe.

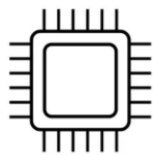
Demand by sector



2025 to 2030 key demand drivers



NATO defence spending increasing to 3.5% GDP: **+1500 t W** per year

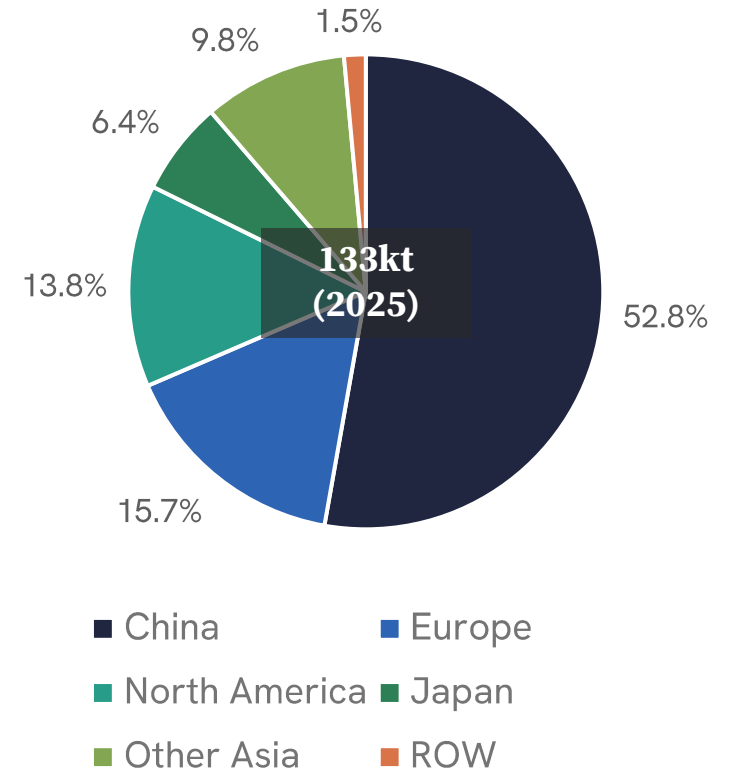


WF₆ for advanced memory chips: **+3000 t W** per year



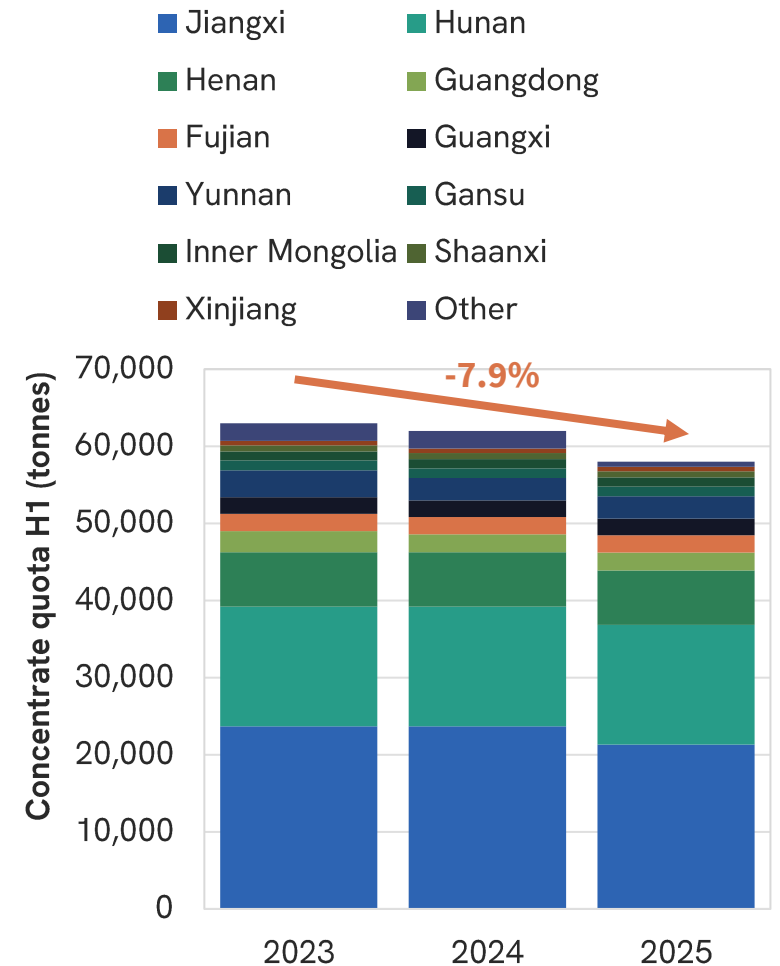
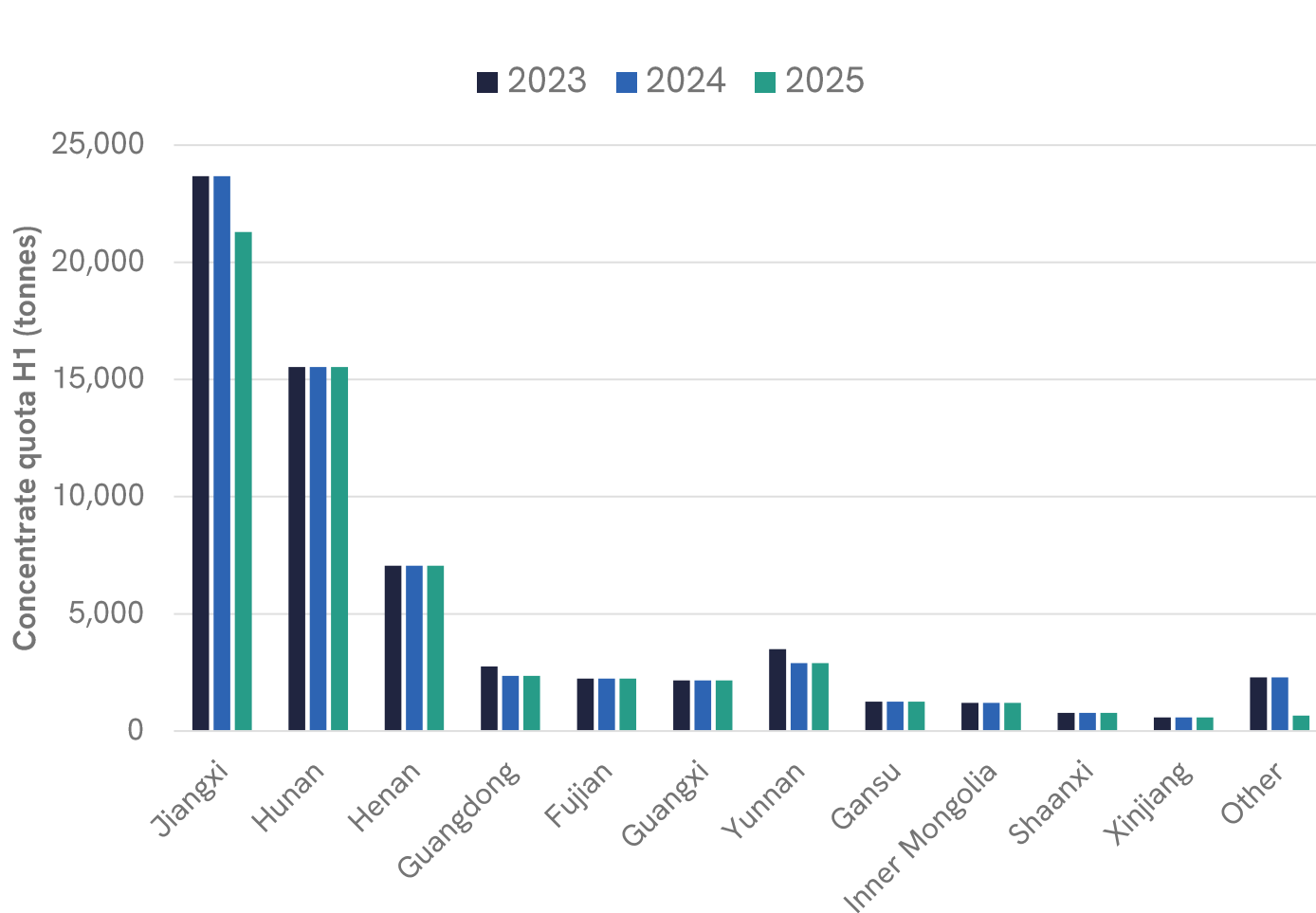
Tungsten thin wire for PV wafer slicing: **+4000 t W** per year.

Demand by region



A confluence of factors has driven the tungsten market to unprecedented levels

Chinese export controls and declining output means less feedstock available to the world...



Sources: China Ministry of Natural Resources.

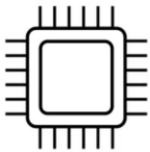
A confluence of factors has driven the tungsten market to unprecedented levels

...combined with surging Western demand and a lack of near-term ex-China projects.

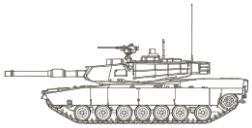
Key recent market developments



Chinese export controls on tungsten implemented since February 2025. Scrap trade flows now also a focus.



Japan shortage of high-purity tungsten powder for WF_6 . Two companies ceasing production.



2025-2035 NATO core defence spending increasing to 3.5% of GDP with aims of achieving 5%.

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China's hunt for US tungsten escalates global critical minerals race

Effort has driven up prices and prompted calls to restrict sales of a vital national security resource to overseas buyers

Martha Muir in New York and Camilla Hodgson in London

Published JUN 2 2026

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Defence expenditures and NATO's 5% commitment

Updated: 10 April 2026

NATO has had a common definition of "defence expenditure" since the early 1950s. The definition is agreed by all NATO Allies.

SunSirs: Japan Shuts Down 25% of Global WF_6 Capacity: A Major Supply Chain Blow

2026-06-10 10:25:01 Source:ChemNet

Tungsten is a strategic mineral critical for modern technology

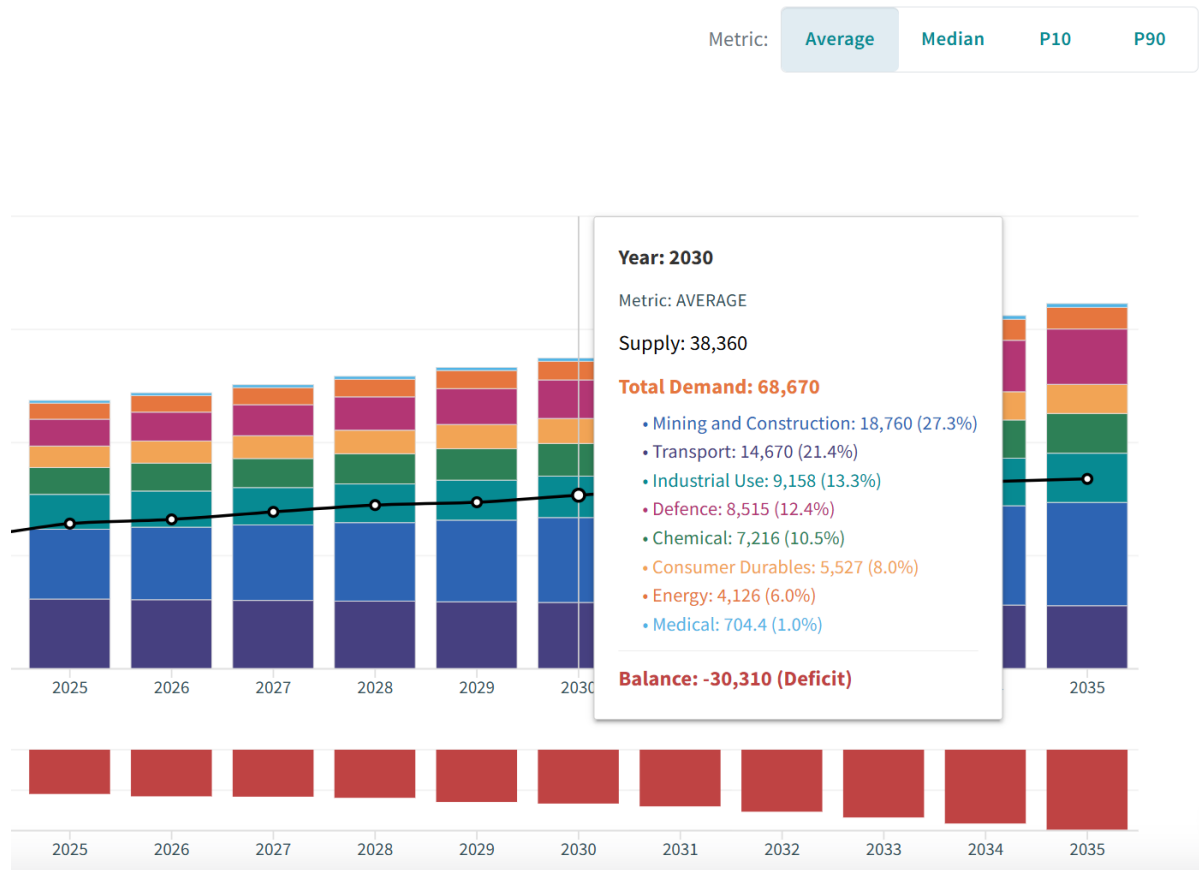
Global supply-demand balance outlook shows a deficit closing at the end of the decade...



Sources: Rovjok, screenshot from our CRM Market Monitor software

But ex-China market has a large shortage of current primary sources.

Global supply-demand balance outlook shows a deficit closing at the end of the decade.



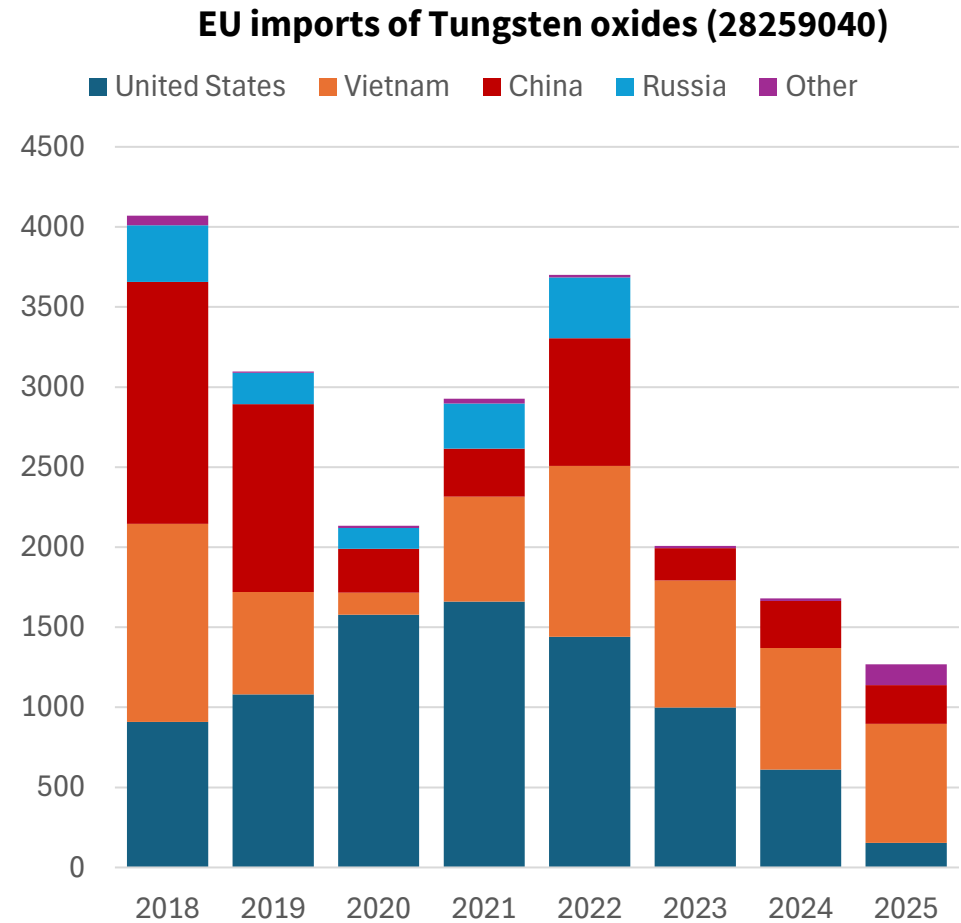
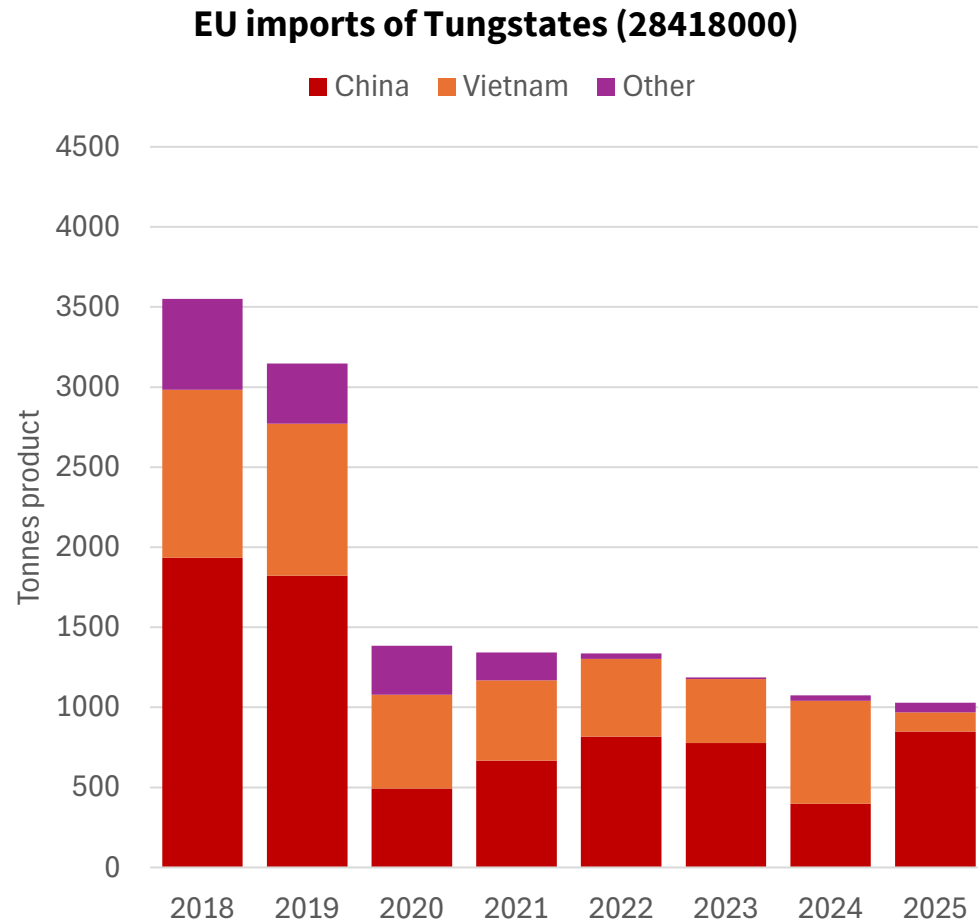
[Screenshots from CRM Supply Monitor application]

Ex-China summary

- Large supply-demand deficit when viewing ex-China tungsten market. China has been a major supplier of intermediate and refined material to the world.
- ~30,000 tonnes gap to be filled by the end of the decade if Chinese material stays unavailable to ROW.
- ROW will need both additional mine supply (highest priority) and then also additional APT/oxide capacity to fill shortfall.
- Multiple new greenfield and brownfield mine projects have been announced, but the majority are 3+ years away from production.
- Long-term major demand shifts, especially nuclear fusion, would radically alter the market.

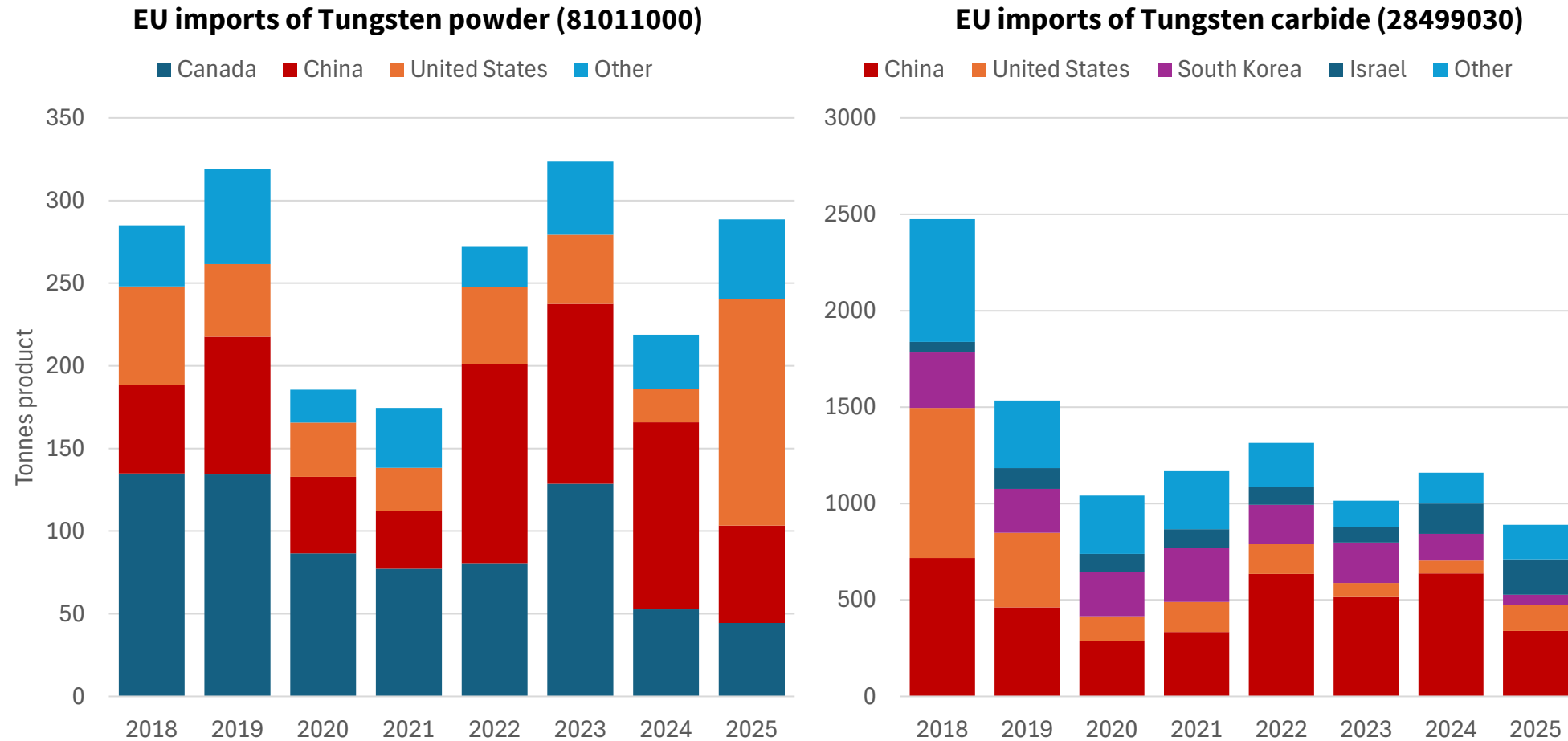
EU trade flows still reliant on China for intermediate and refined products

Tungsten APT still flowing into Europe from China, since the export controls started in Feb 2025.



EU trade flows still reliant on China for intermediate and refined products

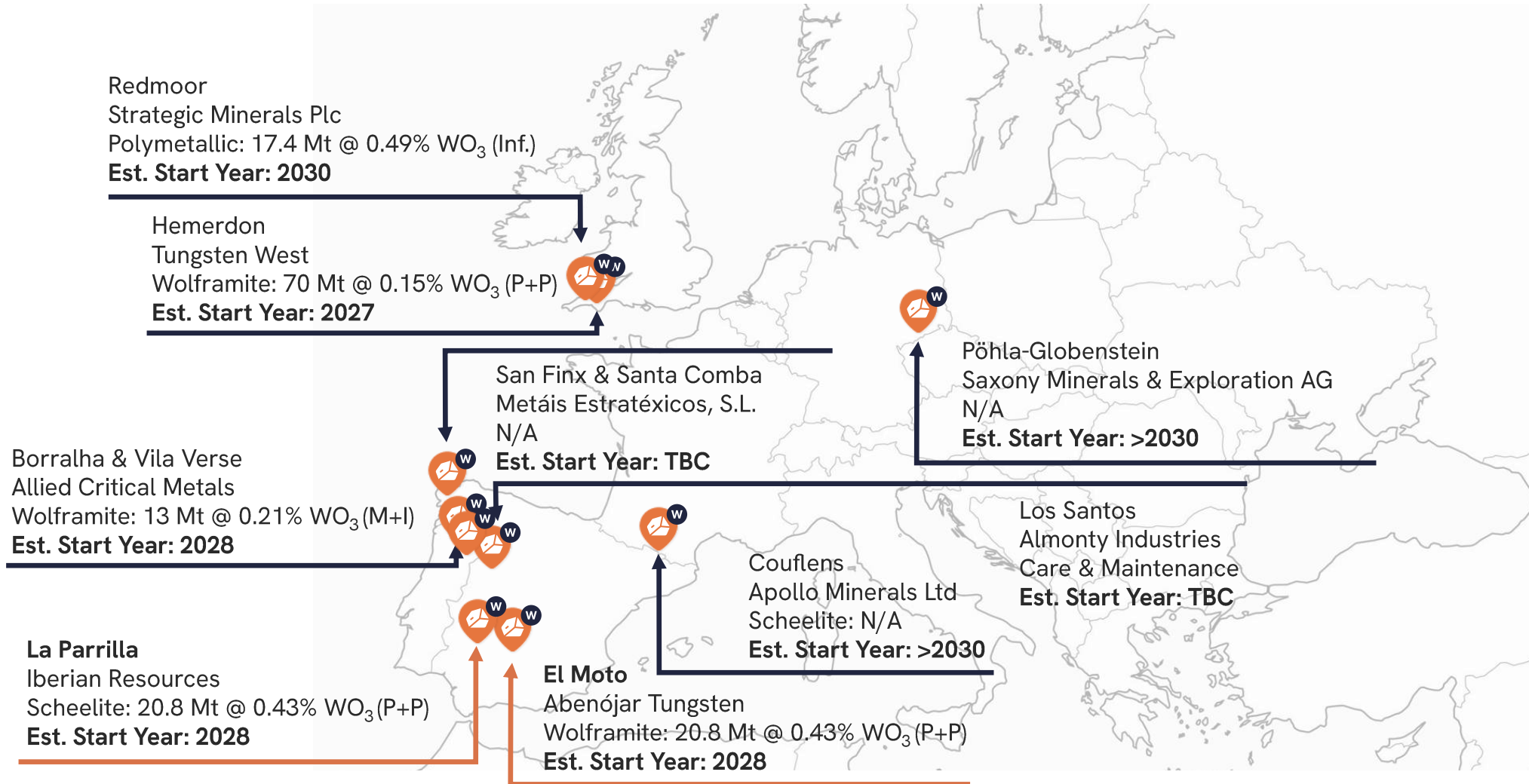
Efforts to diversify downstream products have been taken, e.g. increased imports from the US. But feedstock availability is still the ultimate constraint.



Sources: Eurostat Comext, S&P GTAS, Rovjok

European tungsten mine projects are at a variety of stages

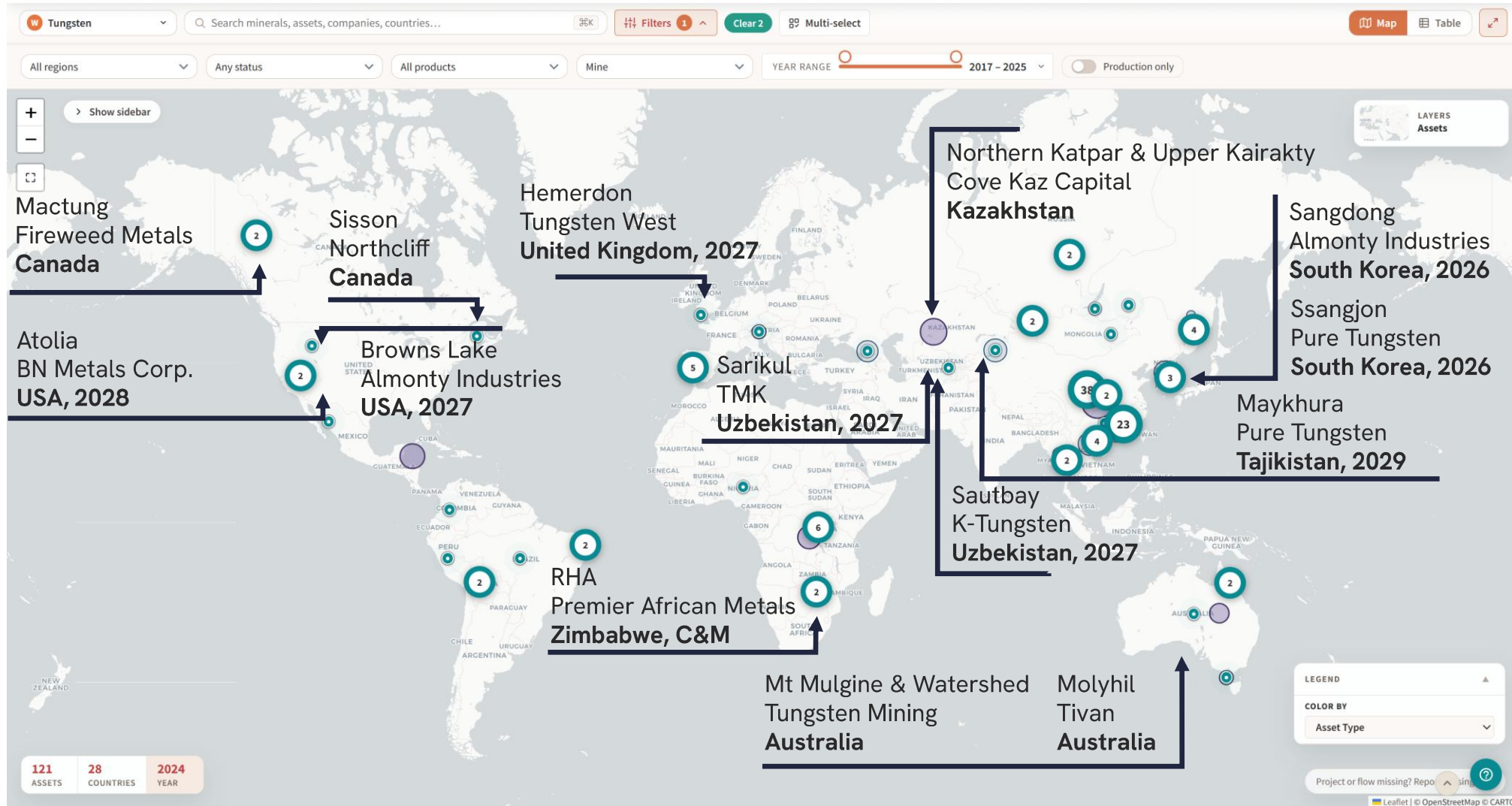
Several projects have the potential to help Europe's supply challenges... (non-exhaustive map)



Source: Company announcements compiled by Rovjok.

But several overseas projects are further advanced and nearer production

Global tungsten mine projects (non-exhaustive map)

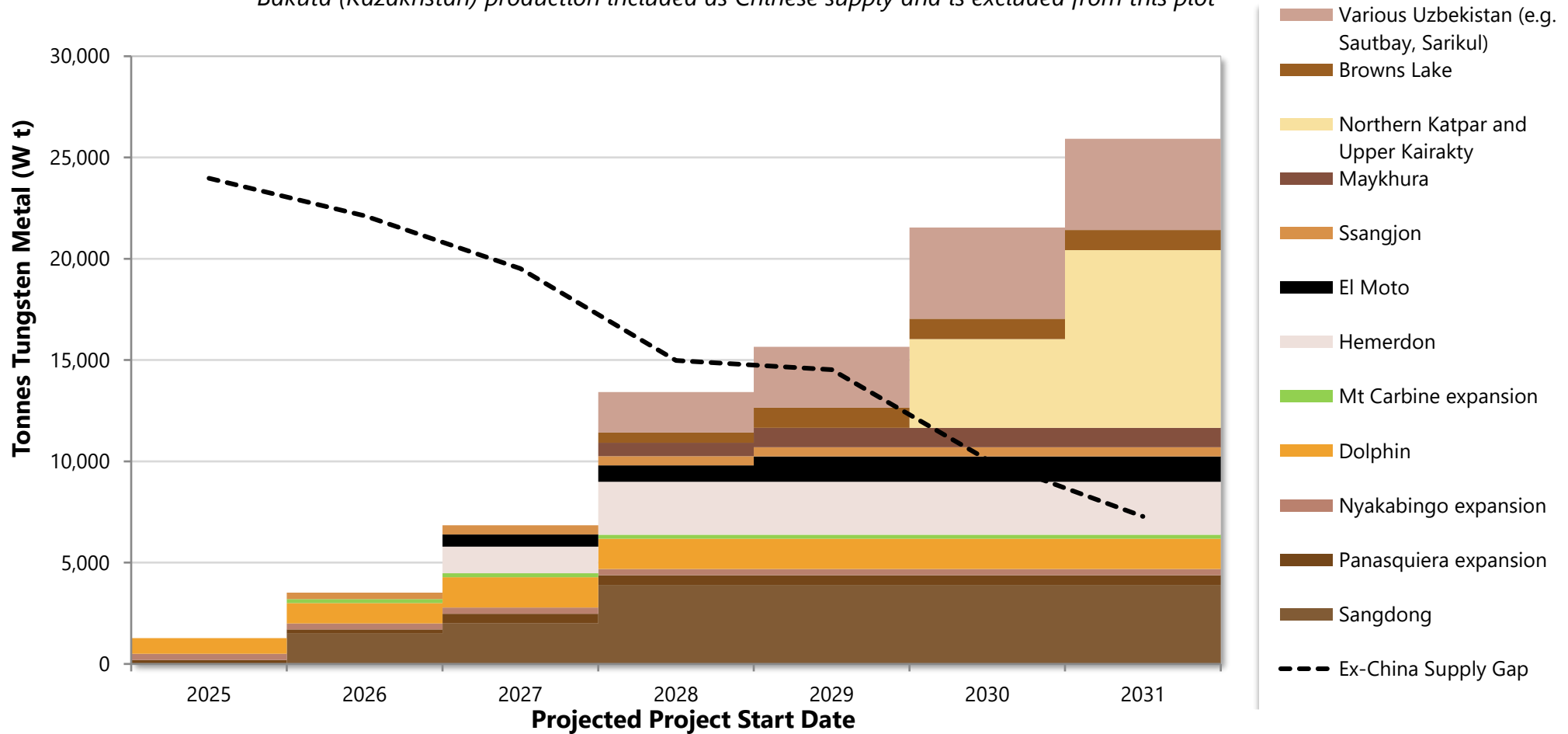


Ex-China mine supply potential outlook

Ex-China projects will help close the supply-demand gap, but technical and permitting risk always remains.

Planned Western tungsten capacity additions & their impact on Ex-China demand balance

**Bakuta (Kazakhstan) production included as Chinese supply and is excluded from this plot*



The tungsten market is in an immediate supply crunch



- 1) China's export controls, a lack of ex-China mine supply, and increased defence demand have caused a huge price surge.
- 2) Supply will become more diversified, but a near-term ex-China supply gap remains.
- 3) There is a significant uncertainty as to what supply will actually come online (i.e. what is reported versus what is credible).

Rovjok supports upstream market intelligence, project screening, supply-chain mapping, and scenario analysis.