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CRITICAL MINERALS OUTLOOK · TUNGSTEN · 2026-2030

TUNGSTEN

Critical Minerals Outlook Tungsten.

Volume 1 - Supply & Mining (2026-2030)

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World production & producer profiles · reserves, resources & reserve life · project pipeline · supply outlook & illustrative scenarios. Headline findings for institutional buyers, mining and metallurgy companies, consultants and mineral-resources market analysts.

Mining | Reserves & Resources | Project Pipeline | Supply Outlook

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LANGUAGE & CONVENTIONS

British English; SI units. Tungsten is reported across at least three non-interchangeable units: **reserves and mine-production figures are contained tungsten metal (t W)** per USGS convention unless stated otherwise; **many company and Chinese/Kazakh regulatory disclosures report tungsten trioxide (WO_3) content instead**, converted where a source itself performs or implies it at **$W \approx 0.793 \times WO_3$**; and **ore tonnage and concentrate tonnage (typically ≥65% WO_3) are separate units again**, not convertible to contained metal without a stated grade. Every KEYSTONE. conversion is labelled **[KEYSTONE. estimate/conversion]**.

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keystone-observatory.com
hello@keystone-observatory.com

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STANDING DATA FLAGS

The items below recur across multiple chapters of this volume and are flagged once here for visibility, then referenced at the point of use. They are disclosed, source-level caveats a careful reader should carry forward. Where a claim could not be tied to a primary document, the text names the secondary source and date that report it, or states that it is not quantified in the sources reviewed.

- **BGS vs. USGS production trend.** The British Geological Survey's *World Mineral Production 2020-2024* shows world tungsten production *declining* (8.3% in 2024; 12.1% over 2020-2024), directionally inconsistent with USGS's flat-to-rising 2021-2025 series. Not resolved here; carried explicitly into the low scenario (Chapter 4).
- **China's downstream/refining capacity (>200,000 t/yr).** Reported by Fastmarkets (22 June 2026, T2), quoting an unnamed Chinese producer; the article does not verify it and no Tier 1 source was found (§1.2). The companion "under 20,000 t/yr outside China" quotation is anonymous, states no product or unit and is not used as a baseline in this edition.
- **Date of China's December 2025 list of 15 state-trading tungsten exporters - resolved.** The primary MOFCOM notice, dated and signed 26 December 2025, has since been located; a 30 December 2025 date cited in some secondary reporting reflects the date financial media covered the measure, four days after issuance, not a competing primary date (§1.6).
- **Draft "National Reserves Security Law."** Had not been enacted at 30 September 2026 (§1.6).
- **Absence of national reserve figures for Kazakhstan, Bolivia and Rwanda.** USGS does not publish a national reserves total for these countries; company-level figures exist for Kazakhstan (Boguty/Bakuta, Upper Kairakty) but are not additive to a national total (§2.2).

Scope and method note. This volume takes a globally neutral scope - no single producing country receives preferential treatment. Analysis period: 2026-2030. Data cut-off: 30 September 2026. HS codes (context): 2611.00 (tungsten ores/concentrates); 2841.80 (tungstates, incl. ammonium para-tungstate - APT); 7202.80 (ferro-tungsten/ferro-silico-tungsten); 8101 - tungsten and articles thereof; 2849.90 (tungsten carbide).

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- EXECUTIVE SUMMARY

World tungsten mine production held broadly flat-to-rising between 2021 and 2025, moving from an estimated 83,800 t in 2021 (USGS *Mineral Commodity Summaries 2023*) to 85,000 t in 2025 (estimate, USGS *Mineral Commodity Summaries 2026*, February 2026, the latest edition at the cut-off) of contained tungsten (t W). Unlike several other critical minerals in this series, tungsten mine supply shows no meaningful geographic diversification: China alone accounted for 78.8% of 2025 world mine production, and the three largest producers - China, Vietnam and new entrant Kazakhstan - together supplied 85.2%, rising to roughly 90% once North Korea and Russia are added. This volume's central finding is that mine-production concentration, extreme as it already is, understates China's true structural leverage: China's downstream processing capacity is reported at more than 200,000 t/yr (trade commentary; product and unit not stated); no verified figure for refining capacity outside China was available at the cut-off, but if China's base is as large as reported, refining concentration would be structurally higher than mining concentration. China is simultaneously the world's largest mine producer, its largest importer of raw concentrate, and its largest consumer - a triple role with no equivalent among the other producing countries profiled here.

This asymmetry is now compounding a wave of Chinese policy action. Export controls introduced in February 2025, a first-batch mining quota of 58,000 t of concentrate at 65% WO_3 (about 29,900 t of contained tungsten [KEYSTONE. estimate/conversion]) set in April 2025 (6.45% below the 2024 first batch; first batches are not annual totals), and the December 2025 renewal of China's list of 15 qualified tungsten exporters have already moved the market: benchmark prices rose approximately 218% through 2025 (SMM scheelite concentrate) to record highs in 2026 (Chinese domestic 65% wolframite concentrate: RMB 1,050,000/t on 12 March 2026; European APT: US$2,900-3,200/mtu CIF Rotterdam on 2 July 2026 (SMM article of 3 July 2026); by 30 September 2026 the 65% concentrate had closed at RMB 380,000/t, about 64% below its March peak [China Tungsten Online; KEYSTONE. calculation]), while Chinese exports of tungsten products fell 34% y/y by volume in January-February 2026 (China customs data via China Tungsten Online; SMM: -27.6% on a different basis), with APT exports reported at zero (SMM). A draft "National Reserves Security Law," a general state-reserves framework, remains unenacted as of the cut-off.

AT A GLANCE

Seven baseline anchors for the 2026-2030 tungsten supply outlook.

METRIC	VALUE	SOURCE · TIER
World mine production, 2025	85,000 t W	USGS MCS2026, T1
China share of world mine production, 2025	78.8%	USGS MCS2026, T1
Top-3 countries' share, 2025 (China, Vietnam, Kazakhstan)	85.2%	USGS MCS2026, T1
China downstream capacity (rest-of-world not verified)	>200,000 t/yr (China)	Fastmarkets, T2, unverified
World reserves / world R/P at 2025 output	>4.7 Mt W / >55 yrs	USGS MCS2026, T1 / KEYSTONE. estimate
Benchmark price rise through 2025	≈+218%	SMM, T2
Chapter 3 pipeline: 10 projects	8 mine · 1 midstream · 1 recycling	**KEYSTONE. Chapter 3 scan (+5 watch list)**

Sources: as detailed in the table above. Elaboration: KEYSTONE. Minerals Data Observatory, 2026.

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- EXECUTIVE SUMMARY

Against this backdrop, this volume's project-pipeline review identified 10 projects with capex of at least US$20 million documented in a Tier 1 or Tier 2 source (8 at the mine stage, 1 in midstream/refining and 1 in recycling), and a further 5 significant projects with no documented project capex (a watch list). Capital is flowing overwhelmingly into mine-site diversification, and only thinly into the non-Chinese refining capacity that would actually be needed to reduce reliance on Chinese processing. Even the most credible non-Chinese midstream additions identified (a Goslar, Germany scrap-processing expansion to about 7,000 t/yr in total and a tungsten powder and carbide plant in Toyama, Japan, tonnage not disclosed) appear small against China's reported downstream capacity of more than 200,000 t/yr (trade commentary; product and unit not stated, so no ratio is computed), and one Kazakh midstream project (the Bakuta deep-processing plant, at study stage, outside the pool for lack of documented capex) is promoted by a company in which Chinese state-linked groups together hold about 41% (KEYSTONE. calculation) and no shareholder holds a majority, adding non-Chinese *geography* without clearly reducing Chinese *ownership* exposure.

On the geological side, the world reserve base exceeds 4.7 million tonnes of contained tungsten against 85,000 t of 2025 production, implying a world R/P of at least 55 years - a KEYSTONE. estimate, and a floor rather than a point value. This world-level comfort conceals sharp variation: Portugal (4.9 years) and Austria (11.9 years) have the shortest reserve lives among covered producers, while Australia (570 years, or 220 years JORC-compliant) and Russia (200 years) show the largest overhangs. Tellingly, China's own reserve life (37.3 years) sits mid-pack - longer than Portugal's, Austria's or North Korea's - which argues against reading Beijing's 2025-2026 controls as a response to imminent resource scarcity; they read as strategic and geopolitical choices. This volume also flags an unresolved divergence: BGS's aggregate data show world production *declining* 8.3% in 2024 and 12.1% over 2020-2024, inconsistent with USGS's flat-to-rising reading - carried explicitly into the low scenario below.

To help readers navigate what follows, this volume presents three **illustrative KEYSTONE. constructions** - never forecasts - built from the sourced 2026-2030 project pipeline: a **base scenario** (illustrative mine supply of roughly 88,000-95,000 t/yr by 2030, non-Chinese refining capacity growing only modestly, so the midstream bottleneck persists); a **high scenario** (roughly 100,000-115,000 t/yr mine supply, non-Chinese refining capacity landing early); and a **low scenario** (roughly 75,000-85,000 t/yr, explicitly consistent with the unresolved BGS declining-production reading, featuring a "double bottleneck").

KEYSTONE. HEADLINE CONCLUSION

The binding risk appears to be refining concentration, not mine-site geology or reserve adequacy.

Securing offtake from a non-Chinese mine - Sangdong, Panasqueira, Barruecopardo, Núi Pháo, or eventually Mt Mulgine - does not by itself secure supply-chain independence unless matched with genuinely non-Chinese-controlled midstream capacity. The 2026-2028 window, in which most of the pipeline's critical investment decisions cluster, should be treated as the primary monitoring period.

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