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SUBMISSION · NOVEMBER 2026

Critical Minerals List and Strategic Materials List

2026 Review



Complete the list.

AUSTRALIA'S CRITICAL MINERALS LIST – 31 MINERALS (FEBRUARY 2024)

13 HPA High-purity alumina	51 Sb Antimony	33 As Arsenic	4 Be Beryllium	83 Bi Bismuth	24 Cr Chromium	27 Co Cobalt	9 F Fluorine
31 Ga Gallium	32 Ge Germanium	6 C Graphite	72 Hf Hafnium	49 In Indium	3 Li Lithium	12 Mg Magnesium	25 Mn Manganese
42 Mo Molybdenum	28 Ni Nickel	41 Nb Niobium	44–78 PGE Platinum-group elements	57–71 REE Rare earth elements	75 Re Rhenium	21 Sc Scandium	34 Se Selenium
14 Si Silicon	73 Ta Tantalum	52 Te Tellurium	22 Ti Titanium	74 W Tungsten	23 V Vanadium	40 Zr Zirconium	

Inclusion of Uranium

Disclaimer

This submission has been prepared by Cauldron Energy Limited (ASX: CXU) ("Cauldron" or "the Company") for the sole purpose of assisting the Department of Industry, Science and Resources in its 2026 review of the Critical Minerals List and Strategic Materials List and in accordance with the Consultation Paper, which can be found at https://consult.industry.gov.au/critical-minerals-list-and-strategic-materials-list-review-2026.

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As an ASX-listed entity, Cauldron is subject to the continuous disclosure obligations set out in Chapter 3 of the ASX Listing Rules. Accordingly, all material information in relation to the Company has already been disclosed to the market through ASX announcements. Nothing in this submission is intended to provide additional undisclosed material information to the Department or any other party.

Nothing in this submission should be interpreted as a commitment or representation by Cauldron, and the Company reserves the right to supplement, amend, or withdraw the information provided herein at any time without notice.

Artificial intelligence (AI) tools have been used to assist in the preparation of this submission, including with research, drafting and the adaptation of material from the Company's prior public submissions into the format requested by the Department. All content has been reviewed by the Company, which takes full responsibility for this submission.

17 November 2026

Critical Minerals Office
Department of Industry, Science and Resources
Industry House, 10 Binara Street
Canberra ACT 2601

By lodgement via the consultation hub and by email: criticalminerals@industry.gov.au

Dear Critical Minerals Office,

Further to the release of the *Critical Minerals List and Strategic Materials List – 2026 review: issues and consultation paper*, I am pleased to provide this submission on behalf of Cauldron Energy Limited (ASX:CXU), proposing the addition of **uranium** to Australia's Critical Minerals List – or, in the alternative, a facilitation-only ("B-List") listing giving access to the Critical Minerals Facilitation Office and the coordination across government it provides, without requiring the government to underwrite concessional finance that many other critical minerals require. Our industry can stand on its own, it just needs to be given the opportunity to do so.

This submission is not confidential. I would welcome the opportunity to meet with the Critical Minerals Office to discuss it further.

Yours sincerely,



Jonathan Fisher

For any inquiries related to this Submission please contact:

Jonathan Fisher
Chief Executive Officer
Jonathan.fisher@cauldronenergy.com.au

2026 CRITICAL MINERALS LIST REVIEW

Why uranium belongs on Australia's Critical Minerals List

Uranium now meets all four of the Government's criteria



1 Essential to modern economies & national security

- **Firm, zero-emissions power** – nuclear supplies ~9% of the world's electricity
- **AI & data centres** – big tech is signing nuclear power deals
- **Nuclear medicine** – ANSTO's OPAL reactor makes life-saving isotopes
- **Energy security** – allies need safeguarded fuel from a trusted, stable supplier
- **No substitute** – nothing else fuels the world's reactor fleet

2 Australian geological potential

- **World's largest resources** – around 32% of known uranium
- **~40 years of safe production** in South Australia, 3 mines operating
- **Every major deposit type** – incl. low-impact In Situ Recovery
- **New discoveries** – exploration spend at a decade high
- **Untapped** – only 4th-largest producer; bans in WA, QLD and NSW

3 Demand from strategic partners

- **United States** – uses ~50 Mlb a year, produces only 1–2 Mlb; listed uranium as critical
- **India** – leader-level uranium deal with Australia, July 2026
- **Japan** – no domestic supply; listed uranium as critical
- **France & EU** – seeking new supply after losing Niger
- **Korea & UK** – fully import-reliant; Sapporo 5 seeking non-Russian supply

4 Vulnerable to supply chain disruption

- **~40% of mine supply** from one country – Kazakhstan
- **Russia & China** hold over 60% of enrichment capacity
- **Trade restrictions** – US–Russia bans, Niger nationalisation
- **Structural deficit** – ~half of 2040 needs have no identified supply
- **10–20 years** from discovery to production

Uranium for export ≠ nuclear power in Australia. Listing is consistent with existing Government policy – and Australia is ready to supply its partners.

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Figure 1 Exploration at Yanrey, April 2026 funded in part by WA Govt EIS Grant

1. Submission and Scope

1.1. Further to the release of the *Critical Minerals List and Strategic Materials List – 2026 review: issues and consultation paper* (the **Consultation Paper**), I am pleased to provide this submission on behalf of Cauldron Energy Limited (ASX:CXU) (**Cauldron**, **CXU** or **the Company**).

1.2. Cauldron is a uranium exploration and development company with a world-class uranium project (the **Yanrey Project**) located on Thalanyji lands in the north of Western Australia, approximately 100 km inland from Onslow and close to essential mining and industrial supply chains. A summary of the Company and the Yanrey Project is provided at Appendix F.

1.3. I am the Chief Executive Officer of Cauldron and I disclose that I am a shareholder of Cauldron.

1.4. I make this submission on the basis of my experience across the radiological value chain and broader mining industry, which has included:

1.4.1. uranium exploration and project development in Western Australia, leading Cauldron since late 2022 – uranium being the front end of the nuclear fuel cycle and the fuel source for nuclear energy;

1.4.2. involvement in the financing and M&A of existing nuclear power stations and participation in the nuclear new build process in the United Kingdom and Europe;

1.4.3. negotiating the approvals for, financing and developing Australia's first commercially operated radioactive waste repository, the Tellus Holdings Limited owned Sandy Ridge facility in Western Australia (as former CFO and Company Secretary of Tellus); and

1.4.4. the development of critical minerals and renewable energy projects across the Northern Territory and northern Western Australia.



Figure 2 Cauldron CEO Jonathan Fisher and Chairman Ian Mulholland onsite at Yanrey, WA, 2024

1.5. The mineral being proposed to be added to the Critical Minerals List (CML)

1.5.1. The Consultation Paper asks that submissions identify the mineral precisely as possible, including the relevant form, processing stage or derivative material.

1.5.2. This submission proposes the addition to the CML of:

> **Uranium (U)** – specifically **natural uranium in the form of uranium ores and uranium oxide concentrate (UOC, commonly referred to as "yellowcake" or U_3O_8)**, being the form in which uranium is mined, processed and exported from Australia today;
>
> **together with** its downstream nuclear fuel cycle derivatives (uranium hexafluoride (UF_6) from conversion, enriched uranium, and uranium dioxide (UO_2) fuel materials) where these are relevant to processing, refining and value-adding opportunities contemplated by the Critical Minerals Strategy (notwithstanding those downstream elements cannot currently be produced in Australia due to legislative restrictions).

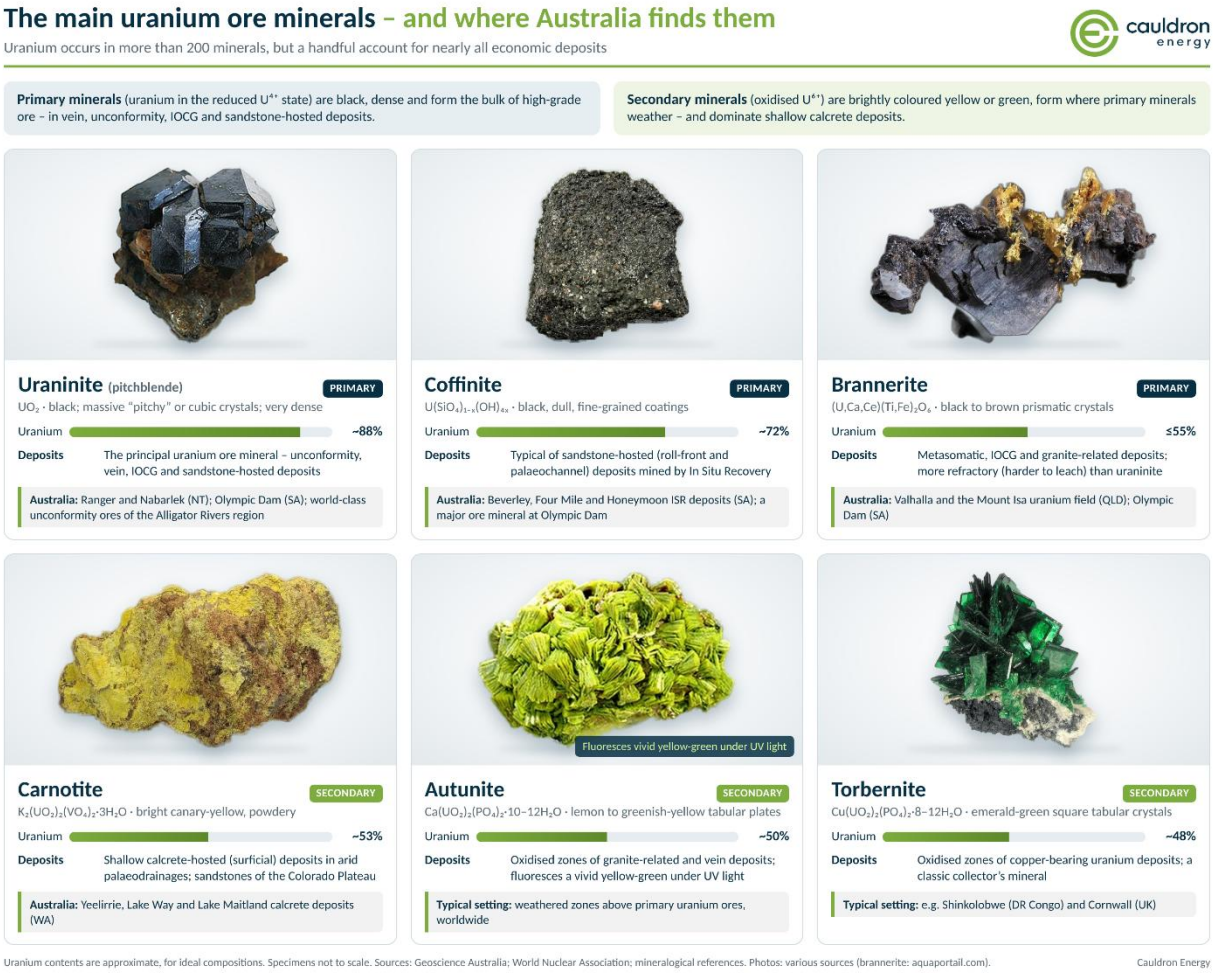


Figure 3 Main forms of uranium ore minerals and where they are found

1.5.3. The primary focus of the evidence in this submission is natural uranium at the mine and concentrate stage, which is where Australia has its overwhelming comparative advantage, it is a major player and where it has the most opportunity for growth in the near term.



Figure 4 Yellowcake coming off the belt during production[1]



Figure 5 Yellowcake in a drum in Wyoming Sept 2025 (Source: Peninsula Energy)



Figure 6 Uranium storage (Cameco, Canada)

1.5.4. However, the supply chain vulnerabilities described in Section 9 are also very acute at the conversion and enrichment stages, and these stages are relevant to how listing uranium could support onshore value capture and allied supply chains over the longer term. The nuclear fuel cycle, and Australia's participation in it, are described in Appendix A.

[1] Source: https://www.orano.group/en/unpacking-nuclear/mining-recipe-for-yellowcake/yellow-cake---2

1.6. The Critical Minerals List versus State and Federal policy on uranium mining

1.6.1. Mining is principally a State and Territory responsibility in Australia, while the Commonwealth regulates exports, safeguards, radiation protection and nationally significant environmental matters. The current position on uranium mining across Australia is summarised below.

Jurisdiction	Current position on uranium mining	Recent activity
South Australia	Permitted. Three operating mines (Olympic Dam, Four Mile, Honeymoon) and ISR pilot activity (Samphire); ~40-year record of safe production	Bipartisan support; SA Government has offered to share its regulatory experience with other jurisdictions
Northern Territory	Permitted. Long history of production (Ranger, Rum Jungle, Nabarlek); no mines currently operating with rehab underway; although supportive of the industry	Uranium added to the NT critical minerals list (2026) becoming the first Australian jurisdiction to do so.
Western Australia	New mining prohibited by WA Labor Government policy since 2017 (not legislated); exploration permitted; four projects approved before 2017 (but only one met its five-year substantial commencement obligation)	WA Government Exploration Incentive Scheme (EIS) grants now support uranium exploration (2026); parliamentary decarbonisation inquiry received majority support in submissions for reconsidering the ban
Queensland	Prohibited by Government policy since 2015	Ban lifted by the LNP Government in 2012 and reinstated by Labor in 2015. The current LNP Government (elected October 2024) has so far resisted increased pressure to remove the ban
New South Wales	Prohibited by legislation since 1986	Repeal Bill passed the Legislative Council (May 2026) and awaits the Legislative Assembly; Minerals Council of Australia (MCA) polling (August 2026) shows majority support
Victoria	Prohibited by legislation (*Nuclear Activities (Prohibitions) Act 1983*)	No recent activity
Commonwealth	Previous 3 Mines Policy, but no limit on the number of mines since 1996; every uranium mine is automatically referred under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) nuclear action trigger (under reform); exports licensed by ASNO; enrichment, fuel fabrication, reprocessing and nuclear power prohibited by EPBC Act s140A (conversion is prohibited by SA and Victorian law)	EPBC Act reforms proposed to replace the nuclear action trigger with a "radiological exposure action" trigger

Figure 7 Uranium mining across Australian jurisdictions (November 2026)

1.6.2. There is a substantial amount of policy and advocacy activity under way in Australia. Three jurisdictions – NSW (legislation before the Lower House after passing Upper House), Western Australia (funding Exploration Grants for Uranium[2]) and, at Territory level, the Northern Territory (inclusion on its Critical Minerals List) – have taken visible steps, of varying degrees, in 2025–26.

[2] This is Cauldron's view. Whether funding of uranium exploration signals any future potential change in WA policy has been the topic of significant parliamentary debate and media interest. See for example https://www.cruxinvestor.com/posts/australias-uranium-revival-gains-momentum-amid-fuel-crisis-and-policy-shifts

1.6.3. **However, whether uranium is added to the Federal Critical Minerals List (CML) is a separate decision from whether individual States choose to lift their bans.** The two should not be conflated:

1.6.3.1. the CML is a national instrument that assesses national geological potential, strategic importance and partner demand – none of which depends on any single State's policy settings;

1.6.3.2. listing would not compel any State to change its policy, nor override State legislation; and

1.6.3.3. conversely, the existence of State bans is not a reason to deny listing. Listing would deliver immediate value in the jurisdictions where mining is permitted (South Australia and the Northern Territory), support exploration that is already lawful in every State, and ensure the national framework is ready if and when other jurisdictions revisit their settings.

1.7. Scope of this submission against the Consultation Paper

1.7.1. The Consultation Paper invites submissions that propose adding, removing or reclassifying a mineral; explain how listing could support development of the mineral; and comment on the purpose and usefulness of the Strategic Materials List. This submission addresses each of those matters, as summarised below.

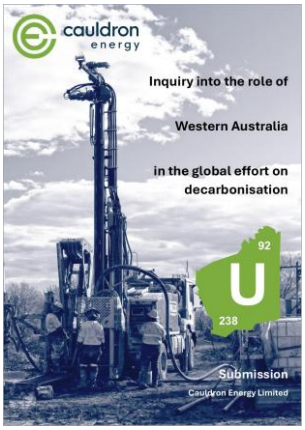
Consultation Paper item	Where addressed
Propose adding a mineral (uranium)	Sections 2, 3 and 18
What has changed since the December 2023 review	Section 5
Criterion 1 – Importance to modern technologies, economies and national security (incl. substitutability)	Section 6
Criterion 2 – Australian geological potential and reasonable chance of production	Section 7
Criterion 3 – Demand from strategic international partners	Section 8
Criterion 4 – Vulnerability to supply chain disruption	Section 9
Case study: the Australia–India uranium arrangement (July 2026)	Section 11
Consistency with Australian Government policy (and separation from domestic nuclear power)	Section 12
Strategic importance to sovereign capability, economic resilience and Future Made in Australia	Sections 14 and 15
How listing could support development of the mineral	Section 16
Alternative: facilitation-only ("B-List") listing without concessional finance	Section 16 and Recommendation R2
Purpose and usefulness of the Strategic Materials List	Section 17
The nuclear fuel cycle and Australia's participation in it	Appendix A
Evidence summary against the four criteria	Appendix B
Partner critical minerals lists and nuclear programmes	Appendices C and D
Responses to common concerns	Appendix G
Assumptions, uncertainties and limitations	Appendix I

Figure 8 Map of this submission against the Consultation Paper

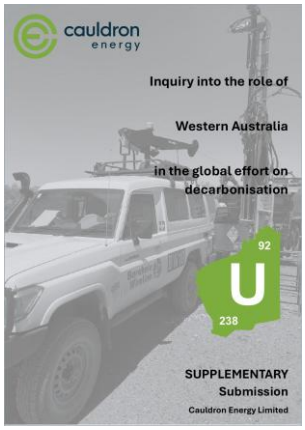
1.7.2. This submission draws on, and should be read alongside, the Company's prior public submissions, each of which contains more detailed supporting material:

1.7.2.1. Submission to the WA Economics and Industry Standing Committee *Inquiry into the role of Western Australia in the global effort on decarbonisation* (October 2025) and Supplementary Submission (May 2026); and

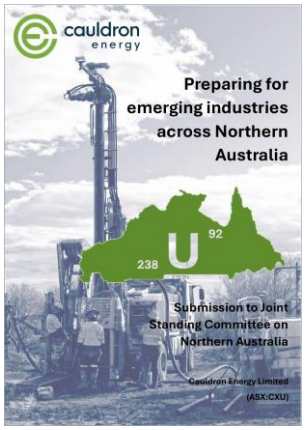
1.7.2.2. Submission to the Joint Standing Committee on Northern Australia *Inquiry into preparing for emerging industries across Northern Australia* (January 2026), Section 6 of which specifically discussed the potential inclusion of uranium on Australia's Critical Minerals List.



WA decarbonisation inquiry – Submission (October 2025)
Download from the WA Parliament inquiry page



WA decarbonisation inquiry – Supplementary Submission (May 2026)
Limited availability – on request



Northern Australia emerging industries inquiry – Submission (January 2026)
Download from the APH inquiry page

Figure 9 Cauldron Energy's prior submissions

1.7.3. This submission is not confidential and may be published in full.

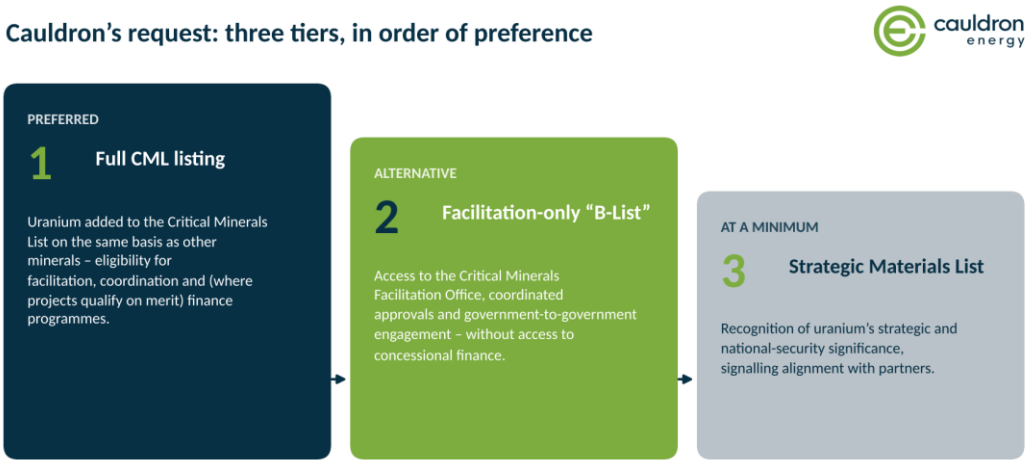


Figure 10 Cauldron's request for uranium – three options in order of preference

2. Summary of Submission

The major points of this submission can be summarised as follows:

2.1. **Uranium should be added to Australia's Critical Minerals List (CML).** It now clearly meets all four of the Government's criteria. **In the alternative**, if the Government is not prepared to extend concessional funding eligibility to uranium, it should be listed on a **facilitation-only basis (a "B-List" or Facilitation Tier)** – giving access to the Critical Minerals Facilitation Office and whole-of-government coordination, without eligibility for concessional finance. **At a minimum**, and immediately, it should be added to the Strategic Materials List (SML). See Sections 3 and 16.

2.2. **The 2023 review judged uranium against the criteria and found it did not meet criteria 3 (demand from strategic partners) and 4 (vulnerability to supply chain disruption)**, and it was also noted that Australia, like many countries, did not then consider fuel sources to be critical minerals. Without questioning whether that was the right decision at the time, **the evidence on both criteria, and on the "fuel source" principle, has changed fundamentally since December 2023.** See Section 5.

2.3. **Criterion 1 – Essential to modern technologies, economies and national security.** Uranium is the sole commercially deployed fuel for nuclear power, the largest source of dispatchable zero-emissions electricity in the world and a growing source of firm power for energy-hungry industries such as artificial intelligence (AI) and data centres. It also underpins nuclear medicine, research reactors, naval nuclear propulsion and a broad range of other high-tech industries and technologies, including the most promising method of decarbonising the industrial heat sector. **There is no substitute for uranium in the existing or planned global reactor fleet.** See Section 6.

2.4. **Criterion 2 – Geological potential.** Australia holds the **world's largest uranium resources** – approximately 32% of the world's resources recoverable at under US$130/kgU on the basis of 2024 data (World Nuclear Association (WNA) and Geoscience Australia (GA)) – and is already the world's 4th largest producer. Production has a ~40 year safe track record in South Australia, and exploration expenditure in 2024 was the highest in over a decade, with significant further upside possible in the future. See Section 7.

2.5. **Criterion 3 – Demand from strategic partners.** Australia's closest partners – the United States, Japan, the Republic of Korea, the United Kingdom, France and the broader European Union – are all large consumers of uranium and are all structurally short of supply and in need of further supply from strategically aligned nations. In 2024, Australia's uranium exports went to the United States (67%), Canada (17%) and Europe (16%). **Since the 2023 review the United States (November 2025) and Japan (February 2024) have both added uranium to their own critical minerals lists**, joining Canada and China; the Northern Territory has done the same (2026). See Section 8. The Australian Government itself concluded a national agreement in July 2026 to facilitate long-term uranium exports to India – see Section 11. It is absolutely clear there is significant demand from our strategic partners.

2.6. **Criterion 4 – Supply chain vulnerability.** Uranium supply chains are among the most concentrated and geopolitically exposed of any mineral: Kazakhstan alone produced ~39% of world mine supply in 2024; Russia (Rosatom) controls ~44% of world enrichment capacity; Niger has nationalised a French-operated mine; Kazakhstan has moved to tighten state control of new discoveries and to reserve uranium for its own reactor programme; and Russia has restricted enriched uranium exports to the United States while the United States legislated a ban on Russian imports. Even under current demand requirements, **primary mine supply still does not meet current reactor requirements (with the market living off finite stockpiles)**, and the World Nuclear Association projects requirements to more than double to ~150,000 tU by 2040 at the same time existing supply sources are projected to be exhausted. See Section 9.

2.7. **The "fuel source" principle should be revisited.** The United States applied exactly this exclusion from 2020 and reversed it in 2025 – a direct precedent. The CML already includes energy-related materials (lithium, graphite, nickel, vanadium) and helium was removed in 2023 specifically to align with partner lists; **the alignment argument now points firmly towards including uranium.** See Section 14.

2.8. **Strategic national interest.** Listing aligns directly with the updated Critical Minerals Strategy's emphasis on economic resilience, national security, industrial capability and secure supply chains with partners. It would also send an important signal to Australia's partners that Australia – holding a third of the world's uranium – regards its endowment as strategic. See Section 15.

2.9. **Consistent with Government policy.** The Commonwealth already approves uranium mines, licenses uranium exports and, in July 2026, agreed at the highest level to supply India. Listing uranium is consistent with these policies and is entirely separate from the question of nuclear power in Australia, which listing does not affect. See Section 12.

2.10. **Additional benefits of increased exports.** The world will need more uranium; the real question is where it comes from. Australia – a stable democracy with the world's largest resources, world-leading environmental standards and safeguards that go well beyond the global minimum – is the supplier of choice. More Australian supply means more of the world's nuclear fuel is produced to the highest standards and subject to Australia's controls, rather than sourced from unstable jurisdictions or those aligned with strategic competitors. Increased exports would also bring further benefits, including fuel-supply assurance for partners, a stronger Australian voice in nuclear governance, regional safeguards leadership and more stable prices. See Section 13.

2.11. **How listing on CML would help – facilitation, not necessarily funding support.** Listing does not automatically confer support, and Cauldron is not seeking a subsidy – uranium projects are broadly economic at current prices. Whilst concessional funding would be appreciated, it is not what the industry needs most. The most valuable benefit would be **coordination and facilitation** across the dual State and Commonwealth approvals that uniquely apply to uranium (including the EPBC Act "nuclear action trigger" – currently under review and to be renamed the "radiological exposure action trigger" under soon to be enacted reforms),

alongside eligibility for partner-facing initiatives, offtake aggregation and processing incentives. Listing would not override State policy, nor change Australia's strict safeguards and export policy. See Section 16.

2.12. **The Strategic Materials List is useful** as a transparent watchlist and stepping stone – as nickel's move to the CML in February 2024 demonstrates – and should be retained with clearer, published assessments against each criterion. See Section 17.

PRIMARY RECOMMENDATION

That **uranium (natural uranium as ores and uranium oxide concentrate, together with its conversion and enrichment derivatives) be added to Australia's Critical Minerals List** in the 2026 review.

In the alternative, that uranium be added to the Critical Minerals List on a **facilitation-only basis (a "B-List" or Facilitation Tier)** – with full access to the Critical Minerals Facilitation Office, whole-of-government coordination and international critical minerals engagement, but **without eligibility for concessional finance or grant programmes**.

At a minimum, that uranium be added immediately to the Strategic Materials List with a commitment to reassess it for the Critical Minerals List within 12 months.



Figure 11 Think Global, Act Local – Uranium export is the best way to help global decarbonisation Adding uranium to the CML will assist Australia to increase exports!

3. Recommendations

Cauldron respectfully makes the following recommendations to the Department:

#	Recommendation
R1	**Add uranium to the Critical Minerals List**, defined as natural uranium (uranium ores and uranium oxide concentrate, U_3O_8) together with its conversion (UF_6) and enrichment derivatives, on the basis that it meets all four criteria (Sections 6–9, Appendix B).
R2	**In the alternative, list uranium on the CML on a facilitation-only basis (a "B-List" or Facilitation Tier)** – conferring access to the Critical Minerals Facilitation Office, whole-of-government approvals coordination and inclusion in international critical minerals engagement, while expressly **excluding eligibility for concessional finance, grants and tax incentives**. This captures most of the strategic value of listing at no fiscal cost (Section 16).
R3	**At a minimum, add uranium to the Strategic Materials List immediately**, with a published commitment to reassess against the CML criteria within 12 months, rather than waiting for the next three-yearly review (Section 17).
R4	**Formally retire any blanket exclusion of "fuel sources"** from consideration for the lists, consistent with the United States' 2025 reversal of the equivalent exclusion, and assess energy minerals on the same four criteria as all other minerals (Section 14).
R5	**Publish the criterion-by-criterion assessment** for each mineral considered in the 2026 review (including those not listed), so that industry, investors and international partners understand the Government's reasoning (Section 17).
R6	Under either full or facilitation-only listing, **ensure uranium projects can access the Critical Minerals Facilitation Office** to coordinate the dual State and Commonwealth approvals pathway, including interaction with the EPBC Act nuclear action trigger (Section 16).
R7	**Include uranium in Australia's bilateral critical minerals engagement** – including the United States–Australia Critical Minerals Framework (October 2025) and engagement with Japan, the Republic of Korea, the United Kingdom, France and the European Union – recognising that several of these partners already list uranium as critical (Sections 8 and 16). State-level partnerships – such as the WA–France critical minerals Letter of Intent signed at International Mining and Resources Conference (IMARC) in October 2026 – should equally be able to encompass uranium.
R8	Consider the role uranium offtake aggregation could play within the **Critical Minerals Strategic Reserve** model of offtake agreements, forward contracts and demand aggregation, given partners' explicit desire to build strategic uranium inventories (Section 16).
R9	Under full listing, ensure the **Critical Minerals Production Tax Incentive** and related Future Made in Australia measures apply to uranium processing (concentrate production) and any future conversion or enrichment, consistent with the Strategy's greater emphasis on onshore processing and refining (Section 15).
R10	Restore the national geoscience effort on uranium (resource inventories, pre-competitive data), noting that some State uranium resource data have not been comprehensively updated since 2016 (Section 16).

Figure 12 Summary of recommendations

"Australia holds around one-third of the world's uranium, and it is clearly critical to the global energy transition – that is now undisputed. A Critical Minerals List that excludes it is an incomplete picture of Australia's critical mineral endowment."

– Jonathan Fisher, CEO, Cauldron Energy

4. Criteria for Inclusion on the Critical Minerals List

4.1. The Australian Government stated criteria

4.1.1. Before turning to the evidence, it is useful to set out the test that a mineral must meet for inclusion. The Government assesses each mineral proposed for the Critical Minerals List against four published criteria. These are set out in the Department of Industry, Science and Resources' methodology for the Critical Minerals List and restated in the Consultation Paper[3]. A mineral is considered critical if it is:

4.1.1.1. essential to modern technologies, economies and national security;

4.1.1.2. one for which Australia has high geological potential for resources;

4.1.1.3. in demand from Australia's strategic international partners; and

4.1.1.4. vulnerable to supply chain disruption.

4.1.2. Minerals that are important to the global transition to net zero and broader strategic applications, but do not meet all four criteria, may instead be placed on the Strategic Materials List (SML). The Consultation Paper also makes clear that inclusion on the Critical Minerals List does not automatically confer government support.



Figure 13 The test for the Critical Minerals List – four published criteria and the unpublished "fuel source" principle
Source: Consultation Paper; Department of Industry, Science and Resources methodology. Graphic: Cauldron Energy.

[3] Department of Industry, Science and Resources, Critical Minerals List and Strategic Materials List – 2026 review: issues and consultation paper (2026). The lists were last updated in February 2024 and are to be reviewed at least every three years.

4.2. The "fuel source" exclusion

4.2.1. In addition to the four criteria, the Government has to date not listed minerals whose principal use is as a fuel.

4.2.2. This exclusion is not one of the published criteria: it was cited in previous correspondence from the Minister's office as one of the reasons uranium was not listed in the 2023 review (Section 5).

4.2.3. We address it in Section 14, noting that the United States applied exactly this exclusion from 2020 and reversed it in 2025.

4.3. Listing depends on partners' needs – not on domestic use

4.3.1. Nothing in the criteria asks whether a mineral is consumed in Australia. Criterion 3 looks outward, to the needs of Australia's strategic partners, and Criterion 4 to the security of global supply chains. Many minerals already on the list are mined in Australia but processed and used largely offshore – most of Australia's lithium, for example, is exported as spodumene concentrate for refining overseas.

4.3.2. Uranium is no different. Australia has exported uranium for more than half a century without generating nuclear power at home, and every tonne is used by partners overseas under strict safeguards. The Commonwealth prohibition on domestic nuclear power therefore has no bearing on whether uranium meets the criteria, and is not a reason to exclude it from the list (Section 12).

4.4. Uranium meets all four criteria

4.4.1. In our assessment, uranium now meets every criterion, as summarised in the table below and demonstrated in Sections 6 to 9 and Appendix B.

Criterion	What the Government asks	How uranium meets it
1. Essential to modern technologies, economies and national security	Is the mineral essential to modern technologies, the economy or national security, and can it be substituted?	Uranium is the sole commercial fuel for ~440 power reactors (around 9% of world electricity), fuels naval nuclear propulsion under AUKUS and produces nuclear medicines. There is no practical substitute. See Section 6.
2. Australian geological potential	Does Australia have geological potential for resources, and a reasonable chance of producing the mineral?	Australia has the world's largest uranium resources (~32%) and is already the world's 4th largest producer, with three operating mines. See Section 7.
3. In demand from strategic international partners	Do Australia's strategic partners need the mineral, and are they seeking it from trusted suppliers?	The US and Japan list uranium as critical and the UK classes it as a growth mineral; partners are structurally short and actively seeking Australian supply, as the July 2026 Australia–India arrangement shows. See Sections 8 and 11.
4. Vulnerable to supply chain disruption	Is supply concentrated, or exposed to geopolitical, trade or other disruption?	Around 39% of mine supply comes from one country (Kazakhstan); Russia and China dominate enrichment; trade bans and export restrictions are in force; and a structural deficit is emerging. See Section 9.

Figure 14 The Critical Minerals List criteria – and how uranium meets them

Source: Consultation Paper; Cauldron Energy analysis.

5. What Has Changed Since the 2023 Review

5.1. The Consultation Paper asks submissions to identify what has changed since the previous review in December 2023 (where uranium had been excluded). In the case of uranium, the change has been profound.

5.2. The basis of the 2023 decision

5.2.1. The Government publishes criteria for inclusion on the CML. Previous correspondence with the Minister's office has noted that during the 2023 review **uranium was considered, but was judged not to meet the third and fourth criteria** – being in demand from strategic international partners, and vulnerable to supply chain disruption. It was also noted that Australia, like many countries, did not consider fuel sources (including uranium) to be a critical mineral or a strategic material.[4]

5.2.2. Notably, **uranium was not found to fail criteria 1 or 2** – its importance to modern economies and national security, and Australia's geological potential, were evidently not in dispute. The position on criteria 1 and 2 has only strengthened since then.

5.2.3. Without questioning whether that was the right decision at the time, it is now abundantly clear that uranium now meets criteria 3 and 4, and that the "fuel source" principle has been abandoned by key partners. The table below summarises the key changes.

Issue	Position at December 2023	Position at November 2026
US treatment of uranium	Excluded from the US critical minerals list since the Energy Act of 2020 redefined critical minerals to exclude fuel minerals.	**Uranium added to the final 2025 US List of Critical Minerals** (60 minerals), published 6 November 2025.[5]
Japan's treatment of uranium	Not listed.	**Uranium added to Japan's critical minerals list** by the Ministry of Economy, Trade and Industry (METI), reported 1 February 2024, specifically to reduce dependence on Russia.[6]
UK treatment of uranium	Not listed.	**Uranium classed as a "growth mineral" in the technical annex to the UK Critical Minerals Strategy (November 2025; updated January 2026).**
Australian sub-national recognition	No Australian jurisdiction listed uranium on any CML.	**Northern Territory added uranium** to its critical minerals list in 2026.[7]

[4] As outlined in Cauldron Energy's Submission to the Joint Standing Committee on Northern Australia, January 2026, Section 6.6.
[5] US Geological Survey, 'Interior Department releases final 2025 List of Critical Minerals', 14 November 2025, https://www.usgs.gov/news/science-snippet/interior-department-releases-final-2025-list-critical-minerals
[6] Mining.com, 'Japan adds uranium to list of critical minerals', 1 February 2024, https://www.mining.com/japan-adds-uranium-to-list-of-critical-minerals/
[7] NT Government, 'New Critical Minerals and Gold guide for the NT', 2026, https://resourcingtheterritory.nt.gov.au/news-and-events/news/2026/new-critical-minerals-and-gold-guide-for-the-nt

Issue	Position at December 2023	Position at November 2026
Russian supply into the US	Russia supplied roughly a quarter of US enriched uranium requirements (27% in 2023); no import ban.	US *Prohibiting Russian Uranium Imports Act* enacted (May 2024), with full prohibition from 1 January 2028; Russia imposed temporary restrictions on enriched uranium exports to the US (November 2024).
Niger	Orano operating SOMAIR (Société des Mines de l'Aïr).	Orano lost operational control (December 2024); SOMAIR nationalised (June 2025); Niger announced sale of SOMAIR uranium on the international market (November 2025) despite an International Centre for Settlement of Investment Disputes (ICSID) order not to sell.[8]
Kazakhstan	World's largest producer (Kazatomprom); open to foreign joint ventures (JVs).	January 2026 law changes give Kazatomprom priority rights over new uranium blocks and tighten JV conditions; April 2026 National Nuclear Industry Development Strategy targets domestic reactors and reportedly reserves 100,000 tU by 2040 and 150,000 tU by 2050 for domestic use.[9]
Demand outlook	WNA 2023 reference case lower than today.	WNA *World Nuclear Fuel Report 2025* (September 2025): reference requirements rise from ~68,920 tU (2025) to **just over 150,000 tU in 2040**; upper scenario over 204,000 tU. See Section 6.16.
Global policy	Triple Nuclear Pledge launched at the 28th UN Climate Change Conference (COP28) (22 countries initially).	Pledge expanded to 39 countries; World Bank ended its prohibition on financing nuclear; International Atomic Energy Agency (IAEA) high case raised for the fifth successive year.
Tech Sector driving nuclear growth on the back of AI needs	No major activity yet from tech companies	Significant number of tech companies signing billions of dollars of deals for restarts of old reactors (eg Constellation restart of 3 Mile Island), and new reactor builds. Tech recognising the critical role nuclear will play in providing baseload energy to the AI sector. Significant progress in the microreactor segment with 5 different reactor designs achieving criticality in 2026 alone – substantial further progress needs be made prior to commercial deployment, but the pace of advancement has surprised many.
Uranium price	~US$80–90/lb spot (December 2023).	Spot **US$91.55/lb**; long-term **US$98.00/lb** (Cameco month-end, 30 October 2026) – long-term price at record levels.[10] Increasing expectations of "higher for longer" pricing due to fundamental long term demand and supply imbalance.
Australian strategy	Critical Minerals Strategy 2023–2030.	Strategy update (27 October 2026) places greater emphasis on economic resilience, national security, industrial capability, processing and secure supply chains with partners.
Australia India deal 2026	Initial agreements signed in 2014; but no progress on final arrangements to allow export	New administrative measures agreed and signed when PM Modi visited Australia in July 2026; paving the way for Australia to become a major supplier to India, in recognition of India's large unmet need for uranium driven by their substantial new build programme However realistically implementation of deal with regular sizeable shipments to India will require new mines to come on line, most likely involving new jurisdictions (WA, QLD).

Figure 15 Key changes relevant to uranium since the December 2023 review

[8] Nasdaq / Investing News Network, 'Niger moves to sell uranium from Orano's seized SOMAÏR mine', 2 December 2025; bne IntelliNews, 1 December 2025.
[9] See Cauldron Energy Supplementary Submission to the WA Economics and Industry Standing Committee, May 2026, Sections 4.11 and 5.3–5.4 and sources cited therein.
[10] Cameco, 'Uranium Price', month-end industry average of UxC and TradeTech, accessed November 2026, https://www.cameco.com/invest/markets/uranium-price

5.2.4. The scale of that change is captured by the Triple Nuclear Pledge, launched at COP28 in Dubai in the same month as the 2023 review. Twenty-two countries committed to tripling global nuclear capacity by 2050; 39 countries have now signed (see Figure 31).

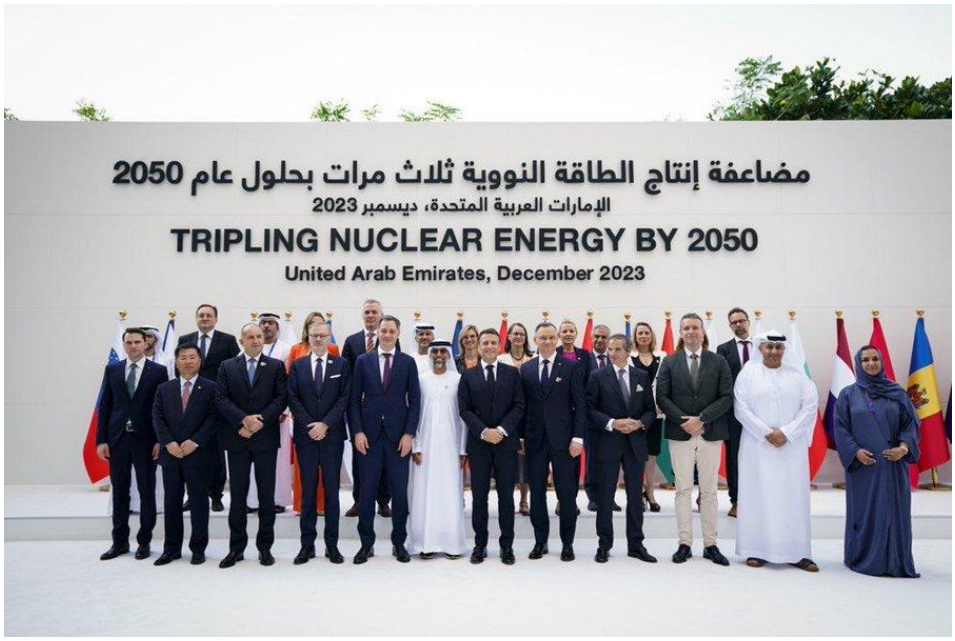


Figure 16 Launch of the declaration to triple nuclear energy by 2050, COP28, 2023

5.2.5. Each of these changes bears directly on criteria 3 and 4 – the very criteria on which uranium was previously judged not to qualify. They are discussed in more detail in Sections 8 and 9.

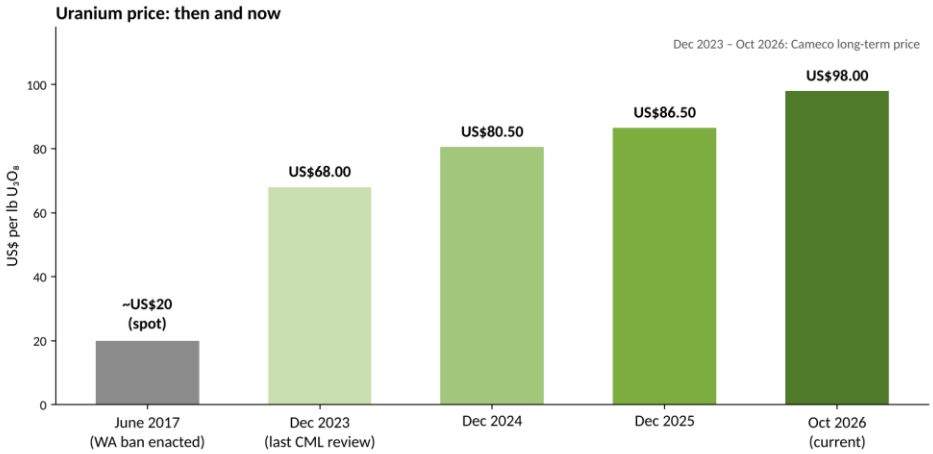


Figure 17 Uranium price comparison
When the WA ban was enacted (2017) compared with the last Critical Minerals List review (December 2023) and today

Source: 2017 approximate spot price; December 2023 to October 2026: Cameco published long-term price (month-end average of UxC and TradeTech), www.cameco.com/invest/markets/uranium-price.

6. Criterion 1 – Importance to Modern Technologies, Economies and National Security

Uranium meets Criterion 1. It is essential to modern economies and national security and has no practical substitute. This criterion was not in dispute in 2023 and has only become stronger since.

6.1. Uranium's principal use is as fuel for nuclear power reactors, where it is the most energy-dense commercially available fuel on earth and where it generates large quantities of green electricity. It also has a broad range of other applications critical to modern technologies, summarised in Figure 18 and described below.

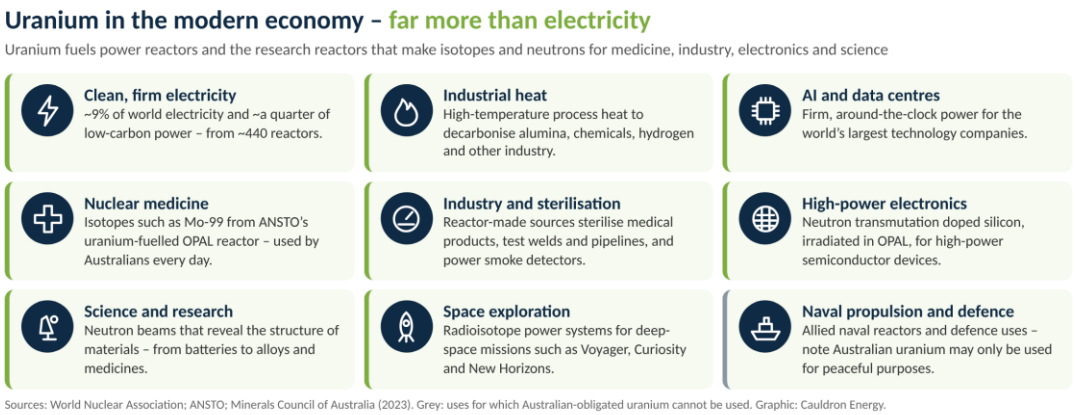


Figure 18 Uranium in the modern economy – far more than electricity

Sources: World Nuclear Association; ANSTO; Minerals Council of Australia (2023). Graphic: Cauldron Energy.

6.2. **Overwhelmingly peaceful.** The vast majority of uranium is used for peaceful purposes. More than 98% of the uranium consumed each year fuels civil nuclear power stations – some 68,900 tonnes of uranium for around 440 reactors in 2025 – with research reactors, nuclear medicine and industry accounting for most of the remainder (Figure 19). Military requirements are a small minority, and are met largely from existing Cold War stockpiles of highly enriched uranium rather than from newly mined uranium. Indeed, the flow has been the other way: under the 1993–2013 Megatons to Megawatts programme, 500 tonnes of highly enriched uranium from Russian weapons – equivalent to around 20,000 warheads – was down-blended into fuel for US power reactors, and ex-military material met some 13–19% of world reactor requirements up to 2013.[11] As noted elsewhere, Australian uranium cannot be used for military purposes.

[11] World Nuclear Association, 'World Nuclear Power Reactors & Uranium Requirements' (2025 requirements of 68,920 tU) and 'Military Warheads as a Source of Nuclear Fuel' (updated October 2026), https://world-nuclear.org/information-library/nuclear-fuel-cycle/uranium-resources/military-warheads-as-a-source-of-nuclear-fuel; SIPRI Yearbook 2025, Appendix 8A (stocks of highly enriched uranium). The civil, research and military shares shown are indicative estimates by Cauldron Energy.

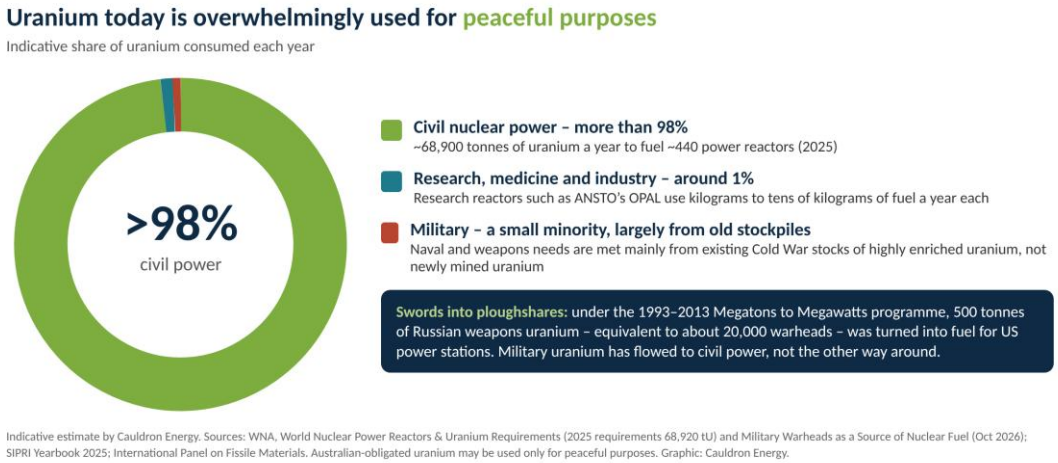


Figure 19 Uranium today is overwhelmingly used for peaceful purposes
Indicative estimate. Sources: WNA; SIPRI Yearbook 2025; International Panel on Fissile Materials. Graphic: Cauldron Energy.

6.3. **Electrification is the defining trend.** Decarbonisation – together with growth in industry, electric vehicles, air conditioning and data centres – is driving electricity demand. The IEA has declared that "the age of electricity has arrived": global electricity demand grew by more than 4% in 2024, almost twice the growth rate of total energy demand, and is forecast to grow by 3.6% in 2026 and 3.8% in 2027. In its World Energy Outlook 2025 the IEA projects global electricity demand rising from 27,290 TWh in 2024 to around 37,800 TWh by 2035 and around 50,000 TWh by 2050 – an increase of more than 80% – under both its Current Policies and Stated Policies scenarios. Over the same period, nuclear generation – broadly flat between 2010 and 2024 – rises by 83% to 142% across the IEA's three scenarios.[12]

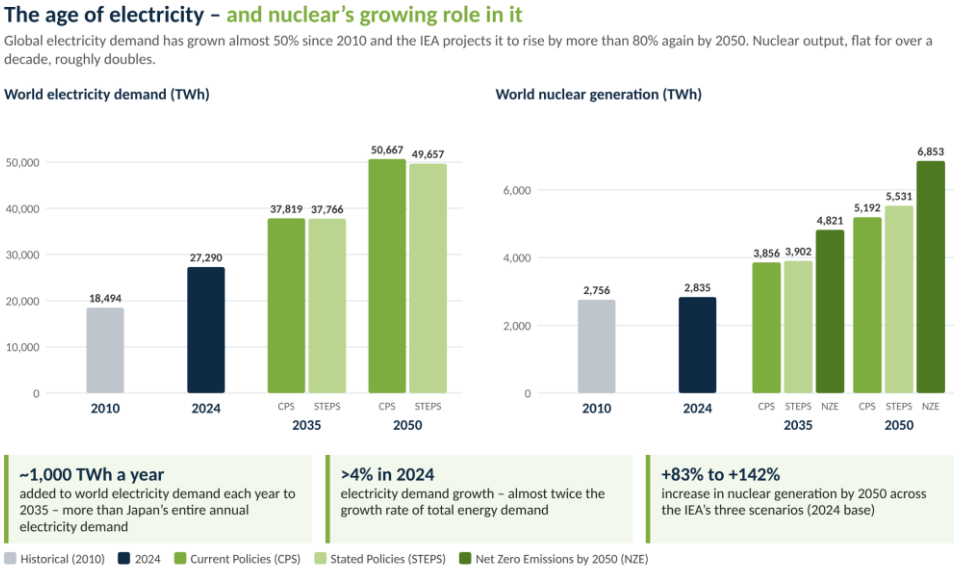


Figure 20 Electrification: world electricity demand and nuclear generation to 2050 (IEA scenarios)
Source: IEA, World Energy Outlook 2025, Annex A (Tables A.1a–c, A.16, A.21); IEA, Electricity Mid-Year Update 2026. CPS = Current Policies; STEPS = Stated Policies; NZE = Net Zero Emissions by 2050. Graphic: Cauldron Energy.

[12] International Energy Agency, World Energy Outlook 2025 (November 2025), Annex A, Tables A.1a–c, A.16 and A.21; IEA, Electricity Mid-Year Update 2026 (July 2026).

6.4. **Nuclear provides large scale green electricity.** Nuclear is a major source of the clean, firm electricity needed to support this global electrification trend. Nuclear reactors generated a record 2,702 terawatt-hours (TWh) of electricity in 2025, beating the previous record of 2,667 TWh set in 2024, and provide roughly 9% of the world's electricity and around a quarter of the world's low-carbon electricity.[13] In Europe nuclear provides about half of clean electricity, and in France more than 65% of all electricity.[14]

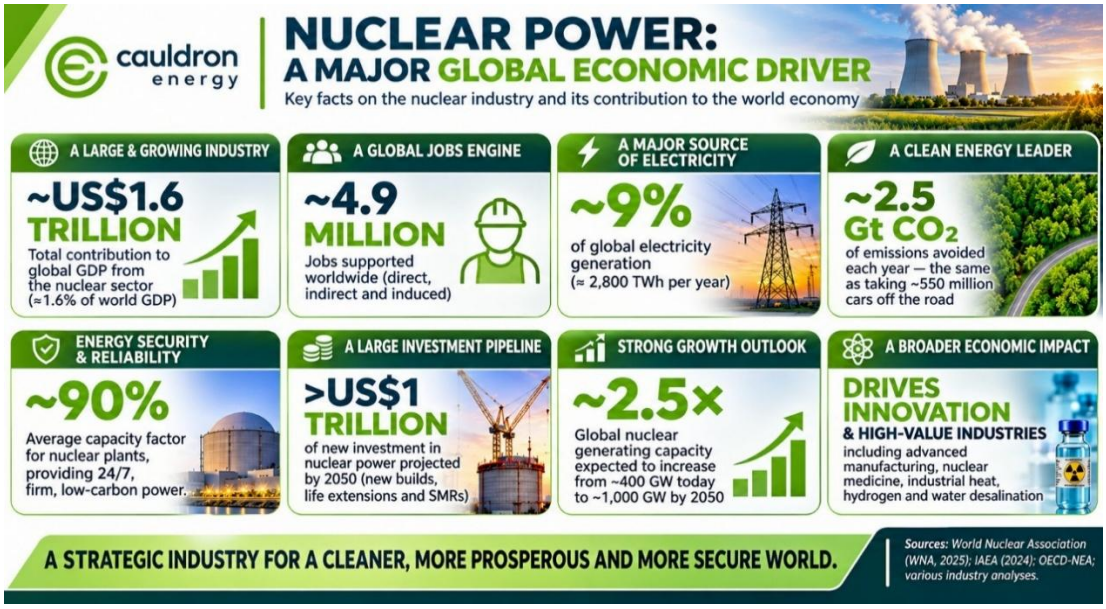


Figure 21 Nuclear power: A major global economic driver

6.5. **Energy security and density.** Uranium is the densest form of energy storage available. While oil storage provides days or weeks of security, a warehouse of uranium fuel can supply a nation's grid for years. This is why energy-importing partners such as Japan and the Republic of Korea are ensuring long term stockpiles of uranium are available. Inventory data bear this out: European Union utilities hold around three and a half years of uranium requirements, and US utilities and suppliers around four years, compared with the 90 days of net oil imports that IEA members are required to hold (Figure 22).[15]

[13] World Nuclear Association, World Nuclear Performance Report 2025.
[14] World Nuclear Association, World Nuclear Outlook Report 2026, as reported in World Nuclear News, "Fresh record set for nuclear generation in 2025", 7 September 2026.
[15] IEA, 'Oil security and emergency response' (each IEA country must hold oil stocks equivalent to at least 90 days of net oil imports), https://www.iea.org/about/oil-security-and-emergency-response; Euratom Supply Agency, Annual Report 2025 (EU utility inventories of 42,522 tU at end-2025, sufficient for more than three reloads on average; average gross requirement of 11,835 tU a year over 2026–2035); US EIA, 2025 Uranium Marketing Annual Report (July 2026) (US commercial inventories of 170 million lb U_3O_8e at end-2025; 40.9 million lb loaded into reactors in 2025). Years of cover calculated by Cauldron Energy.



Figure 22 Uranium: energy security measured in years, not days

Sources: IEA; Euratom Supply Agency Annual Report 2025; US EIA Uranium Marketing Annual Report 2025; Nuclear Energy Institute. Years of cover calculated by Cauldron Energy. Graphic: Cauldron Energy.

6.6. **Modern technologies – AI and data centres.** Since 2024, Microsoft, Google, Amazon, Meta, Oracle, Nvidia and OpenAI have announced nuclear power purchase arrangements, restarts or investments in advanced reactors to secure firm, around-the-clock, low-emissions power for data centres. Data-centre demand now accounts for a large share of forecast electricity demand growth in several advanced economies.

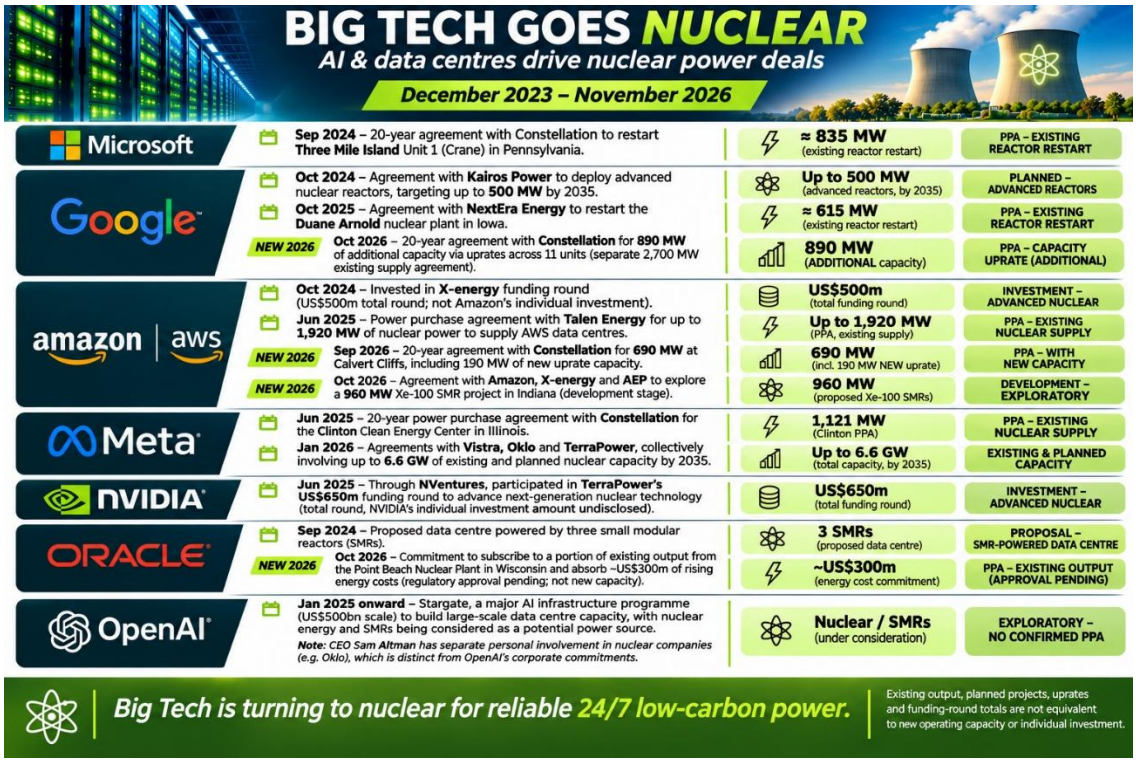


Figure 23 Big Tech going nuclear and more to come

6.7. **Modern technologies – micro-reactors**. Extraordinary advancements in micro-reactors achieved in 2026 – with 5 microreactors achieving criticality – demonstrate the opportunity to play a role in small, remote power installations.

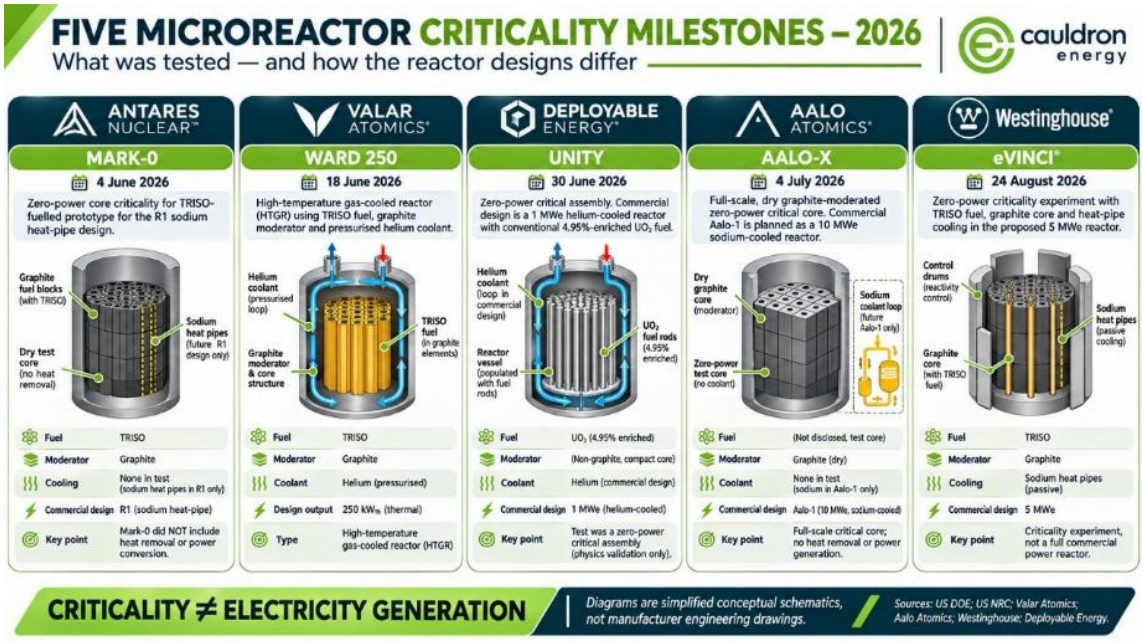


Figure 24 Five US microreactors achieve criticality in 2026

6.8. **Health and science.** Uranium is the feedstock for the low-enriched uranium fuel and targets used in research reactors, including ANSTO's OPAL reactor at Lucas Heights in NSW, which produces nuclear medicine isotopes used in millions of diagnostic procedures across Australia and globally.

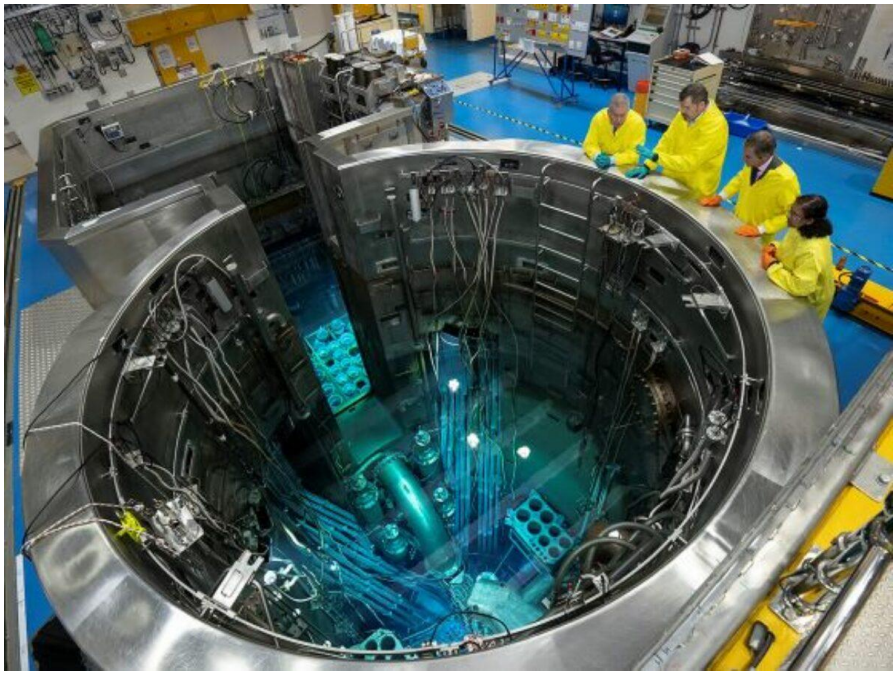


Figure 25 ANSTO's OPAL research reactor, Lucas Heights, NSW
Fuelled by low-enriched uranium, OPAL produces nuclear medicines used by Australians every day. Image: ANSTO.

6.9. **National security.** The security of allied civilian nuclear fuel chains is unambiguously a national security matter for Australia and its partners – if Australia is a key player in our strategic partners' energy supply systems (through being a critical supplier of uranium), this then helps Australia's own national security as it ensures our partners will support Australia to ensure their own energy security.

6.10. **Industrial heat.** Generating heat for industry is one of the least appreciated uses of uranium. Nuclear fission is one of the few ways to supply high-temperature heat reliably, at scale and with near-zero emissions: conventional light-water reactors supply heat at around 300°C, high-temperature gas reactors up to around 750°C, and advanced designs aim for 1,000°C. Many small modular reactor designs are being developed specifically for industrial heat and hydrogen production, making uranium a key pathway to decarbonising heavy industry.[16] Notably one of the first commercial deployments of SMRs globally is being pursued by Dow Chemical, with the construction permit being issued by the US NRC on 9 November 2026 for 4x 80Mwe Xe-100 high temperature gas cooled reactors which will also generate 200MW of thermal heat, to replace aging natural gas assets to supply zero carbon power and steam for chemical manufacturing.



Figure 26 Nuclear the most cost effective method decarbonising industrial heat
Source: Minerals Council of Australia (2023)

6.11. **Industry, electronics and science.** Uranium-fuelled reactors produce the radioisotopes and neutrons that underpin many modern technologies. Reactor-produced sealed sources such as cobalt-60 are used to sterilise medical products and in industrial gauges; iridium-192 is used in industrial radiography to find flaws in welds, pipelines and other metal components (non-destructive testing); and americium-241 is used in smoke detectors. ANSTO's OPAL reactor is one of the world's leading providers of neutron transmutation doped (NTD) silicon – irradiating silicon ingots to produce material needed for high-power semiconductor devices, for electronics manufacturers across Europe and Asia – and its neutron beams are used by researchers to study materials from batteries and alloys to medicines.

6.12. **Space exploration.** Radioisotope power systems, using heat from plutonium-238 produced in uranium fuelled nuclear reactors, have powered deep-space missions such as Voyager, Cassini, New Horizons and the Curiosity rover where solar power is not practical.[17]

[16] Minerals Council of Australia, Nuclear: Decarbonising Australia's industrial heat sector, November 2023, https://minerals.org.au/wp-content/uploads/2023/11/Nuclear_Decarbonising-Australias-industrial-heat-sector-Nov-2023.pdf
[17] World Nuclear Association, 'The Many Uses of Nuclear Technology' (updated 9 January 2026), https://world-nuclear.org/information-library/non-power-nuclear-applications/overview/the-many-uses-of-nuclear-technology

6.13. **Defence.** Uranium's exceptional density means depleted uranium is also used in armour and munitions, and enriched uranium fuels naval reactors. Nuclear weapons are another potential use of the technology, although Australian-obligated uranium strictly cannot be used for any of these military purposes; Australia's safeguards are discussed more fully in Section 13.6.

> ***"Energy security is national security."***
>
> *– Stephen Wilson, Institute of Public Affairs (October 2023)* [18]

6.14. **Substitutability – there is none.** No other material can be practically substituted for uranium in the existing ~440 power reactor global fleet, nor in the reactors under construction or planned (noting that some reprocessed and mixed-oxide (MOX) fuel is used globally). Thorium-based fuel cycles remain at the research and pilot stage and, even if commercialised, would still require fissile uranium to initiate. Fuel represents a small share of reactor operating costs, so demand is highly price-inelastic: a utility cannot switch fuel when supply is disrupted. **This makes uranium among the least substitutable of any mineral considered for the lists.** At ~US$100/lb, uranium represents only around 7–8% of the cost of nuclear power – there is no meaningful "demand destruction" price for uranium.[19]

Application	Form of uranium	Strategic significance	Substitutes
Large-scale power reactors (pressurised water reactors, PWR; boiling water reactors, BWR)	Low-enriched uranium (LEU, ~3–5% U-235)	Firm zero-emissions baseload; energy security	None in operating fleet
Small modular and advanced reactors	LEU and HALEU (up to ~19.75% U-235)	Industrial heat, remote and data-centre power	None
CANDU (Canada Deuterium Uranium) / heavy-water reactors	Natural uranium	Canada, India, Argentina fleets	None
Research reactors and nuclear medicine	LEU fuel and targets	Medical isotopes (e.g. Mo-99), science	Limited
Naval nuclear propulsion	Highly enriched uranium (partner-supplied)	AUKUS and allied defence capability	None

Figure 27 Principal applications of uranium and substitutability

[18] Institute of Public Affairs, Energy Security is National Security: A framework for better energy outcomes in Australia, October 2023.
[19] Shaw and Partners, 'Uranium Sector – The Era of "Cheap" Uranium is Fading Away', Sector Report, 22 August 2026.

6.15. Key developments in nuclear energy since the 2023 review

Since December 2023 the global nuclear sector has moved from policy intent to implementation at scale. The following developments are directly relevant to uranium demand:

Jurisdiction / sector	Development	Implication for uranium
Multilateral	Triple Nuclear Pledge grew from 22 signatories (COP28, 2023) to 39 countries; 14 major global banks committed to support nuclear (Sept 2024); World Bank ended its prohibition on financing nuclear (2025); Asian Development Bank reviewing its own prohibition	Financing barriers to new build falling
United States	Executive actions to quadruple nuclear output by 2050; licence extensions to 80 years (e.g. Diablo Canyon, H.B. Robinson, April 2026); restarts of closed reactors; US$2.7b enrichment programme (Jan 2026); uranium restored to critical minerals list (Nov 2025). Project Janus drives 5 microreactor technologies to achieve criticality.	Largest single source of incremental Western demand
China	World's largest new-build programme: 65 operable reactors (~65 GWe) and ~40 under construction at November 2026; the State Council has approved ten or more new reactors a year since 2022 (including 10 in April 2025), with ~40 more planned and over 140 proposed; the 15th Five-Year Plan targets around 110 GWe by 2030; joined the Triple Nuclear Pledge (March 2026)	Largest source of incremental global demand; China is securing supply through overseas equity and record imports, tightening the market for Western buyers
India	24 operable reactors (~8 GWe) and 8 under construction; new units brought online including Kakrapar 4 (2024) and Rajasthan 7 (2025), and the Prototype Fast Breeder Reactor reached criticality (April 2026); target raised to 100 GW by 2047; Nuclear Energy Mission for small modular reactors (February 2025); SHANTI Act (December 2025) opens the sector to private investment	Strategic programme to lock in long-term uranium supply – agreements with Kazakhstan (February 2026), Canada (March 2026), Uzbekistan and Australia (July 2026)
Japan	Restart of Kashiwazaki-Kariwa Unit 6 (February 2026) – the world's largest nuclear plant; government support for new build and investment in US SMRs	Rebuilding inventories and seeking new supply
Germany / EU	German Chancellor described the nuclear phase-out as a "serious strategic mistake" (January 2026); European Commission President made a similar admission regarding the EU; Électricité de France (EDF) advancing EPR2 programme	Reversal of a decade of European decline
Taiwan	Final reactor shut down May 2025; legislation amended and restart plans submitted within a year – fastest shutdown to restart cycle globally.	Shows energy security reversing phase-outs
Sweden	Uranium mining ban repealed, effective 1 January 2026, after a structured inquiry process	Allied jurisdictions reopening supply
Kazakhstan	First national nuclear power strategy (April 2026) targeting 6 GW by 2040 and 8 GW by 2050	World's largest exporter becomes a domestic consumer
Technology sector	Microsoft, Google, Amazon, Meta, Nvidia, Oracle and OpenAI nuclear power purchase agreements (PPAs), restarts and small modular reactor (SMR) investments (2024–2026)	New, price-insensitive private demand

Figure 28 Selected nuclear energy developments since December 2023

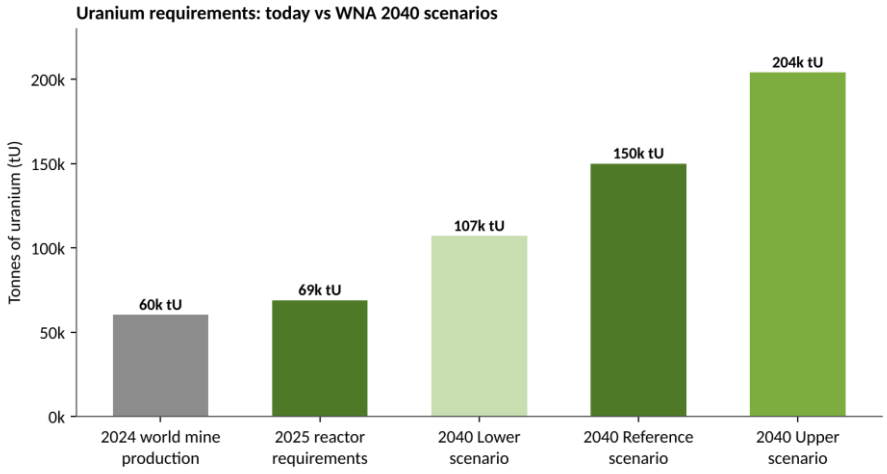
6.16. Growth outlook for the nuclear and uranium sector

6.16.1. The IAEA revised its projections upwards in 2025 for the fifth successive year; its high case shows nuclear capacity rising ~2.6 times from 377 GW in 2024 to 992 GW by 2050.[20] The IAEA and WNA figures differ because they come from different organisations using different scenarios and time horizons: the IAEA's high case runs to 2050 (992 GW, with a low case of 561 GW), whereas the WNA scenarios summarised below run only to 2040 (966 GWe in its Upper Scenario). Despite these differences in source, scenario and horizon, the overall trend is very clear: every major forecaster projects a substantial and sustained increase in nuclear capacity – and therefore uranium demand – with even the IAEA's low case implying growth of around 50% by 2050.

	Installed capacity, 2040	Uranium requirements, 2040	Increase on 2025 (~68,920 tU)
Lower	552 GWe	> 107,000 tU	~ +55%
Reference	746 GWe	~ 150,000 tU	~ +118%
Upper	966 GWe	> 204,000 tU	~ +196%

Figure 29 WNA World Nuclear Fuel Report 2025 scenarios
Capacity in 2024: 372 GWe. Source: WNA, 5 September 2025.

6.16.2. The World Nuclear Association's *World Nuclear Fuel Report 2025* projects capacity rising from 372 GWe (2024) to 746 GWe by 2040 in its Reference Scenario (966 GWe Upper; 552 GWe Lower).[21] Uranium requirements rise correspondingly – in the Reference Scenario from ~68,920 tU in 2025 to just over 150,000 tU in 2040, more than doubling (Upper: over 204,000 tU; Lower: over 107,000 tU), as summarised in the table above and the chart below. The supply side of the outlook, and why existing mines cannot meet this demand, is addressed in Section 9.4.



[20] IAEA, Energy, Electricity and Nuclear Power Estimates for the Period up to 2050, 2025 edition.
[21] World Nuclear Association, 'World Nuclear Fuel Report 2025: Investment in nuclear fuel cycle needed as demand for nuclear power grows', 5 September 2025.

Figure 30 World mine production (2024) versus requirements and 2040 scenarios
Sources: WNA World Nuclear Fuel Report 2025; WNA World Uranium Mining Production (October 2026).

6.16.3. The Triple Nuclear Pledge, launched at COP28, has expanded to 39 countries covering a substantial majority of global GDP, and the International Energy Agency has observed that the current Middle East energy shock will provide a "significant boost to renewables and nuclear power" – echoing the response to the 1970s oil shocks.

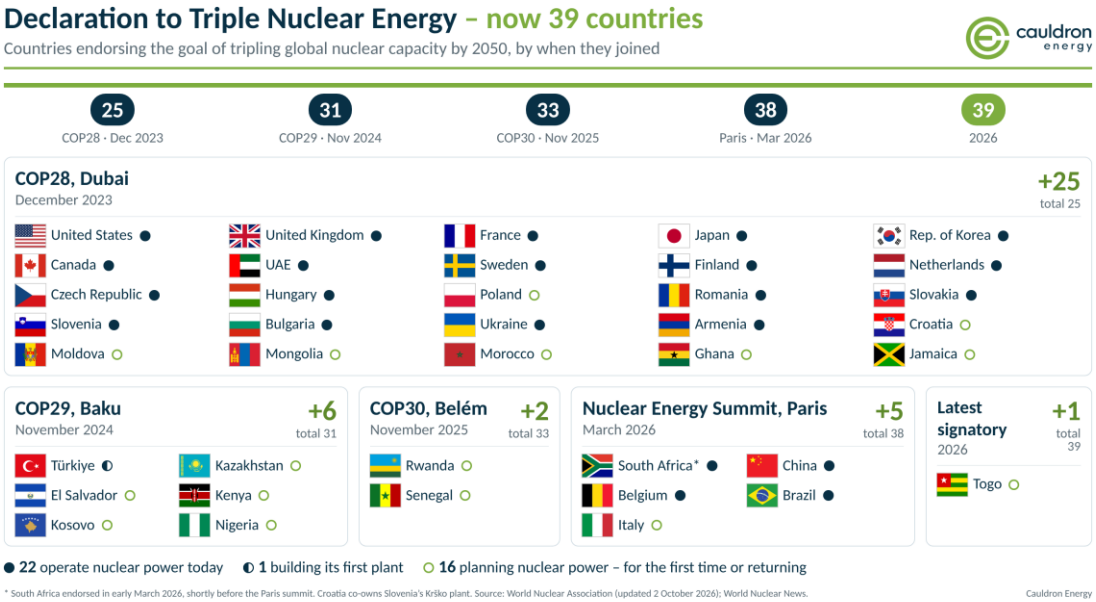


Figure 31 The Declaration to Triple Nuclear Energy – 39 countries (November 2026)

Source: World Nuclear Association (updated 2 October 2026); World Nuclear News. Graphic: Cauldron Energy.

6.16.4. Uranium's importance is no longer a question of decarbonisation policy alone. Three drivers now act together – **decarbonisation, energy abundance (driven by AI and electrification) and energy security** – which in our judgement makes the demand case more durable and less dependent on the policy settings of any single government.

> ***"In my view, if someone asks me today does Australia need to build a nuclear power plant, I would say: No… But make the most of uranium reserves!"***
>
> *– Dr Fatih Birol, Executive Director, International Energy Agency, Canberra, March 2026*

Assessment: Uranium clearly meets Criterion 1. It is essential to modern economies and national security and has no practical substitute. This criterion was not in dispute in 2023 and has only grown stronger since.

7. Criterion 2 – Australian Geological Potential

Uranium meets Criterion 2. Australia holds the world's largest uranium resources and is already a top-four producer. This criterion was not in dispute in 2023.

7.1. **Australia has the world's largest uranium resources.** Geoscience Australia reports Australia's total identified uranium resources at 1,959 ktU – **more than one-third of the world's known uranium resources** – and that Australia accounts for approximately **32% of world Reasonably Assured Resources** recoverable at under US$130/kgU. Economic Demonstrated Resources stand at 1,280 ktU, sufficient for 71 years at 2024 production.[22] The World Nuclear Association similarly reports that, on the basis of 2024 data, Australia holds 32% of the world's uranium resources recoverable at under US$130/kgU – the largest share of any country.[23]

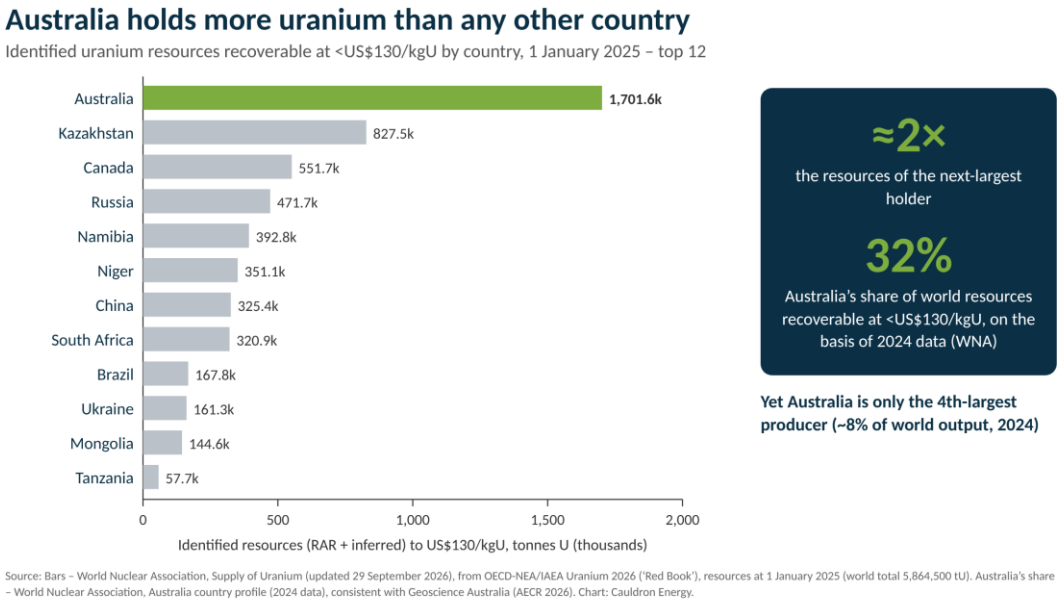


Figure 32 Australia's uranium resource advantage – resources by country
Identified resources (reasonably assured plus inferred) recoverable at <US$130/kgU, 1 January 2025. Source: WNA, Supply of Uranium (updated 29 September 2026), from OECD-NEA/IAEA Uranium 2026 (Red Book); Australia's 32% share per WNA Australia country profile (2024 data). Chart: Cauldron Energy.

7.2. **Australia is already a major producer. Australia produced around 5,390 tU (6,353 t U_3O_8) in 2025, up 16% on 2024, and in 2024 was the world's 4th largest producer** with ~8% of world output, from three operating mines in South Australia: Olympic Dam, Four Mile and Honeymoon.

[22] Geoscience Australia, Australia's Energy Commodity Resources 2026 – Uranium and Thorium, updated 10 August 2026, https://www.ga.gov.au/aecr2026/uranium-and-thorium
[23] World Nuclear Association, 'Uranium in Australia' country profile (updated 23 October 2026), https://world-nuclear.org/information-library/country-profiles/countries-a-f/australia

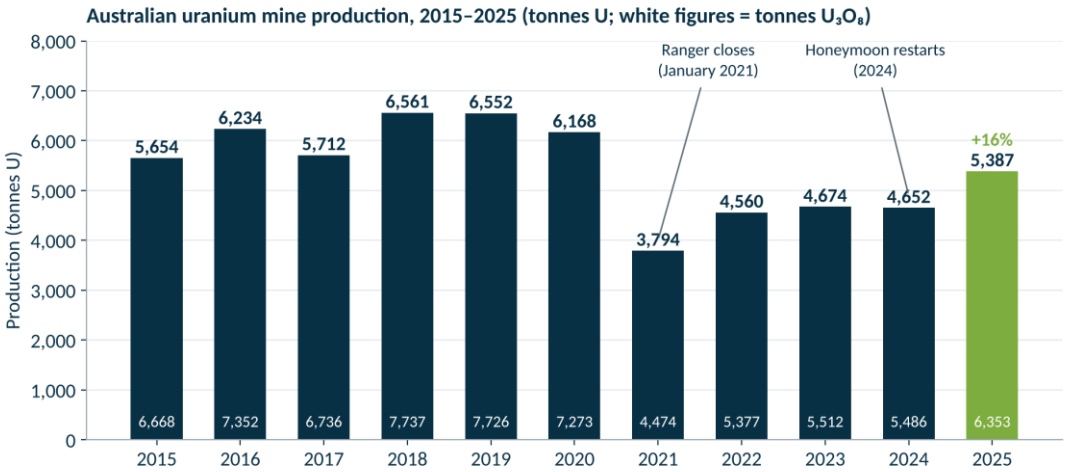


Figure 33 Australian uranium mine production, 2015–2025

Calendar years, tonnes U (converted from tonnes U_3O_8). Source: Department of Industry, Science and Resources, Resources and Energy Quarterly (September 2026), historical data. Chart: Cauldron Energy.

7.3. Despite already having the world's largest resources, Australia has substantial exploration potential.

7.3.1. **Known occurrences are widespread.** Historic drill-hole data compiled by Needle Digital record uranium occurrences across every mainland State and the Northern Territory (Figure below). Many were intersected incidentally while exploring for other commodities and have never been systematically followed up.

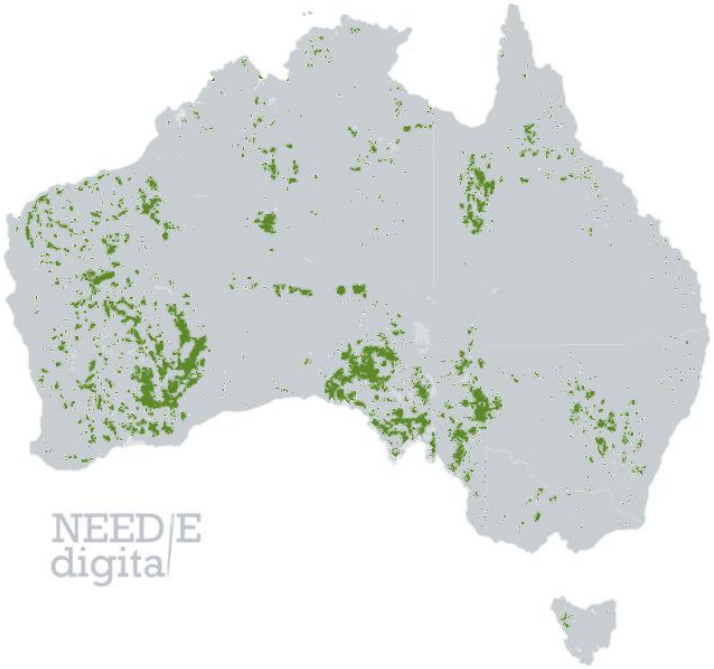


Figure 34 Uranium occurrences in historic drill-hole data across Australia
Source: Needle Digital (as presented in Cauldron's submission to the WA Parliamentary inquiry, October 2025). Map recoloured by Cauldron Energy.

7.3.2. **Exploration follows policy.** Where mining is prohibited – currently Western Australia (for new projects), Queensland and New South Wales – there is little incentive to drill out a discovery that cannot be developed. Large areas of prospective ground in these States have therefore seen little modern, uranium-focused exploration for many years. In our view, the resource figures above understate Australia's true endowment.

7.3.3. **Modern techniques find new deposits in old districts.** Cauldron's three discoveries at Yanrey in two field seasons – in a district first explored for uranium in the 1970s – were made using modern geophysics, palaeochannel targeting suited to In Situ Recovery and systematic drilling. The same approach could be applied to many of the occurrences shown above.



Figure 35 Passive seismic surveying at Yanrey – from survey design to drill testing

Source: Cauldron Energy ASX announcements (October 2025 – July 2026).

7.4. **Exploration is rebounding.** Uranium exploration expenditure in Australia reached **$71 million in 2024, the highest in over a decade**. In Western Australia, Cauldron made three new discoveries across the 2024 and 2025 campaigns (Manyingee South, Manyingee North and Cosgrove), lifting the Yanrey Project resource by 32% to 55.6 Mlb eU_3O_8 in February 2026, and was awarded two WA Government Exploration Incentive Scheme grants in April 2026. However, exploration would be expected to take a significant further step upwards as policy shifts in jurisdictions that currently ban mining (WA, QLD and NSW) are revisited.

7.5. **Diverse deposit styles.** Australia hosts every major uranium deposit type: iron-oxide copper-gold (Olympic Dam, the world's largest single uranium resource); unconformity-related (Alligator Rivers, NT); sandstone-hosted deposits amenable to low-impact **In Situ Recovery**

(ISR) (Beverley/Four Mile and Honeymoon in SA; Yanrey and Manyingee in WA); calcrete-hosted surficial deposits (Yeelirrie, Lake Maitland, Lake Way); and metasomatic deposits (Valhalla, Queensland).

Jurisdiction	Selected deposits / projects	Status of uranium mining
South Australia	Olympic Dam (BHP), Four Mile (Heathgate), Honeymoon (Boss Energy), Samphire (Alligator Energy)	Permitted; three operating mines; ~40-year safe track record; bipartisan support
Northern Territory	Ranger (rehabilitation), Alligator Rivers region, Angela, Napperby	Permitted; uranium on NT critical minerals list (2026)
Western Australia	Yeelirrie and Kintyre (Cameco), Mulga Rock (Deep Yellow, approved 2017), Yanrey (Cauldron, 55.6 Mlb), Manyingee and Carley Bore (Paladin), Lake Maitland (Toro)	Exploration permitted (and supported by EIS grants); new mining prohibited by Government policy since 2017, other than grandfathered approvals
Queensland	Valhalla / Mount Isa (Paladin, ~148 Mlb), Westmoreland (Laramide, ~66 Mlb), Ben Lomond	Mining prohibited by policy since 2015
New South Wales	Exploration-stage prospects	Prohibited since 1986; repeal Bill passed the Legislative Council in May 2026

Figure 36 Australian uranium endowment and regulatory status by jurisdiction
Indicative summary.

7.6. Reasonable chance of being produced in Australia

7.6.1. The Consultation Paper asks whether a mineral has a reasonable chance of being produced in Australia. For uranium the answer is plainly yes – **it is being produced in Australia today**, under a mature and internationally respected regulatory framework:

7.6.1.1. radiation protection regulated nationally through Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) codes and the Australian National Radiation Dose Register;

7.6.1.2. safeguards, non-proliferation and export permits administered by ASNO, with exports only to countries with bilateral safeguards agreements and only for peaceful purposes;

7.6.1.3. established export logistics through the Port of Adelaide; and

7.6.1.4. a best-practice ISR regulatory framework developed by the Commonwealth with the South Australian, Western Australian and Northern Territory Governments (*Australia's In Situ Recovery Uranium Mining Best Practice Guide*).

7.6.2. We acknowledge that policy prohibitions in Western Australia and Queensland currently constrain new production in those States. However, geological potential is a property of the rocks, not of policy settings, and the CML has never required that every jurisdiction permit production of a listed mineral. The direction of travel is also clear: NSW's upper house has voted to repeal its prohibition; the NT has listed uranium as critical; and the WA Government is now financially supporting uranium exploration through its EIS grants.

7.6.3. Inclusion on the CML would assist more production by facilitating the pathway

through State and Federal approvals. Further, whilst not directly related, inclusion on the CML could provide additional impetus to the States themselves to revisit their policies.

7.7. A proven, safe and well-regulated Australian industry

7.7.1. A further consideration relevant to whether uranium has a "reasonable chance of being produced in Australia" is whether it can be produced safely and with social licence. The evidence is clear.

7.7.2. **Four decades of safe production.** Large-scale commercial uranium mining has been undertaken safely in South Australia for around 40 years, with bipartisan support from both major parties. It enjoys strong social licence in the State. The SA Government has offered its regulators as a resource to other jurisdictions considering reform.



Figure 37 ISR wellfield at Boss Energy's Honeymoon project, South Australia
Source: Cauldron Energy submission to the WA Parliamentary inquiry (October 2025).

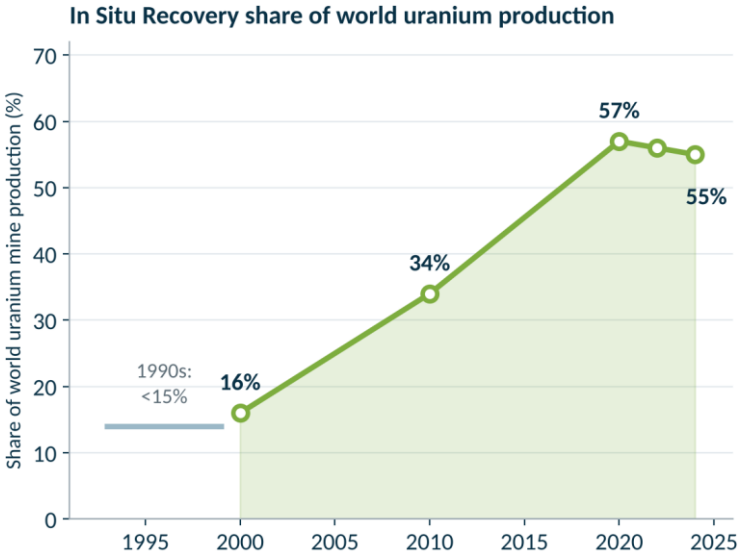
7.7.3. **Low radiation doses.** Average annual doses to Australian uranium mine workers are around 2 mSv – comparable to natural background radiation in Australia (~1.5–2.0 mSv) and about half that of long-haul aircrew – against an occupational limit of 20 mSv per year averaged over five years. ARPANSA states that current industry exposures are low and that "no health effects have been observed or are expected to be observed at the very low doses normally received in this occupation".[24]

[24] ARPANSA, 'Occupational exposure – uranium mining', https://www.arpansa.gov.au; ANSTO, 'What is radiation?'

Exposure	Typical annual dose (mSv)
Natural background radiation in Australia	~1.5–2.0
Average uranium mine worker (Australia)	~2
Long-haul airline crew	~4
Occupational dose limit (International Commission on Radiological Protection (ICRP) / ARPANSA)	20 (averaged over 5 years; max 50 in any one year)

Figure 38 Comparative radiation doses (indicative)
Sources: ARPANSA; ANSTO; MCA.

7.7.4. **Low-impact mining methods.** In Situ Recovery now accounts for more than half of global uranium production (55% in 2024). It involves no open pits, minimal surface disturbance and no crushing, and wellfields can be rehabilitated to their natural state. The Commonwealth, working with the South Australian, Western Australian and Northern Territory Governments, has published best-practice ISR guidance (2010) covering groundwater, residues and radiation protection. See Cauldron factsheet: In-situ recovery mining of uranium.



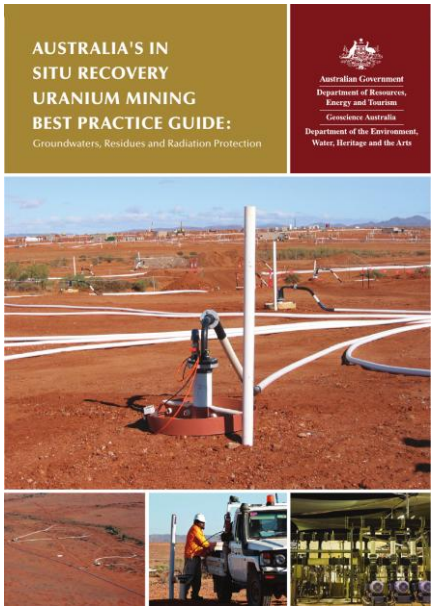


Figure 39 The rise of In Situ Recovery (left) and Australia's ISR best practice guide (right)

Sources: WNA; AusIMM Bulletin (TradeTech); Commonwealth of Australia (2010), Australia's In Situ Recovery Uranium Mining Best Practice Guide: Groundwaters, Residues and Radiation Protection.

7.7.5. **Existing radiation management capability.** Western Australia already operates the nation's largest mining radiation monitoring programme (covering mineral sands, rare earths and tantalum/lithium operations, where monazite-bearing products often exceed uranium ore activity concentrations) and hosts Australia's first commercially operated low-level radioactive waste facility at Sandy Ridge. Uranium mining produces only low-level wastes of a kind these systems already manage.

7.7.6. **Community support is growing.** Independent polling for the Association of Mining and Exploration Companies (AMEC) (February 2025) found 57% of Western Australians support lifting the WA ban, with only a small minority

opposed; MCA polling in NSW (August 2026) found 67% support for uranium mining where it contributes to addressing climate change. Support for AUKUS in WA – involving nuclear-powered submarines based off Perth – is the highest in the nation (Lowy Institute).

7.7.7. **First Nations support can be achieved – but it must be earned.** South Australia's operating uranium mines are conducted under Indigenous Land Use Agreements (ILUA) and native title agreements with their Traditional Owners. The Tellus Holdings Sandy Ridge facility in Western Australia secured an ILUA and native title support for the disposal of low-level radioactive waste – a considerably more contentious activity than uranium mining. Cauldron works closely with the Thalanyji people through the Buurabalayji Thalanyji Aboriginal Corporation at Yanrey. At the same time, views differ across Country and communities, and some Traditional Owners have opposed specific projects (for example, the Mirarr people in relation to Jabiluka). There is no one-size-fits-all approach: the industry must engage early and proactively, invest in communication and education, respect decision-making, and bring communities on the journey with it.



Figure 40 Heritage team on site at Yanrey, 2026

7.7.8. **Legacy lessons have been learned.** We acknowledge legacy issues at historic sites such as Rum Jungle and Ranger in the Northern Territory[25], approved under very different standards decades ago. A fair comparison for future operations is not to the practices of the past but to contemporary practice in leading jurisdictions such as South Australia, with rehabilitation planned and funded from the outset.

7.8. Production potential

7.8.1. Based on the Chamber of Commerce and Industry of WA's modelling, Western Australia alone could support ~10,800 tU per annum of production, which on current figures would make it the world's second-largest producing jurisdiction.[26] With Queensland's Mount Isa province, Australia's production

[25] These matters are discussed in more detail in our prior government submissions.
[26] CCIWA, Uranium Mining in Western Australia, March 2024.

could plausibly multiply several-fold within 10–15 years of policy change.

7.8.2. The figure below illustrates the scale of the opportunity. [27]South Australia's three mines produced around 5,390 tU in 2025 – equivalent to around 9% of 2024 world mine production. Allowing for notional further growth of ~2,000 tU a year in South Australia, and adding the CCIWA's modelled Western Australian industry (~10,800 tU a year) and an illustrative ~3,000 tU a year from Queensland's Mount Isa province, would take Australian production to around 21,200 tU a year – roughly 35% of 2024 world mine production.

7.8.3. Timing matters. Existing mines are projected to supply only around 60 Mlb U_3O_8 (~23,000 tU) a year by 2040 as large assets deplete, against WNA Reference Scenario requirements of just over 150,000 tU (Sections 6.16 and 9.4). New Australian supply would be entering a market in which the world needs well over 100,000 tU a year of new production.

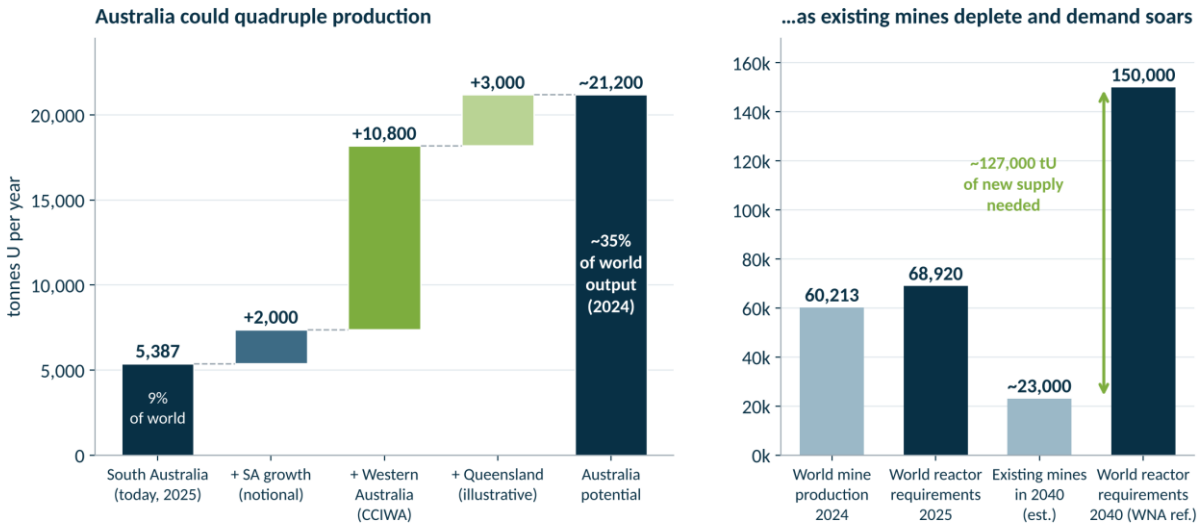


Figure 41 Australia's production potential versus the emerging global supply gap

Sources: Department of Industry, Science and Resources; CCIWA; WNA World Nuclear Fuel Report 2025; Shaw and Partners (August 2026). South Australian growth notional; Queensland illustrative. Chart: Cauldron Energy.

7.8.4. In our judgement Australia's position on Criterion 2 is unmatched by any other mineral on the current CML: **no other country holds a larger share of the world's resources of any listed critical mineral than Australia does of uranium.**

Assessment: Uranium clearly meets Criterion 2. Australia has the largest uranium resources in the world and is already a top-four producer, but could certainly produce more with the assistance of inclusion in the CML aiding new project progression. This criterion was not in dispute in 2023.

[27] Illustrative only. Paladin's Valhalla/Mount Isa (~148 Mlb) and Laramide's Westmoreland (~66 Mlb) resources total ~214 Mlb U_3O_8 (~82,000 tU); production of ~3,000 tU a year would be sustained for roughly 20–25 years at typical recoveries.

8. Criterion 3 – Demand from Strategic International Partners

Uranium now meets Criterion 3. In 2023 uranium was judged not to meet this criterion. Since then, key partners have listed uranium as critical, are continuing to increase their forecasts for future nuclear generation and hence uranium needs, are structurally short of supply and are actively seeking Australian uranium.

8.1. This was one of the two criteria on which uranium was previously judged in 2023 not to qualify. The evidence since 2023 is overwhelming.

8.2. **Australia's uranium already flows exclusively to strategic partners.** In 2024 Australian exports went to the **United States (67%), Canada (17%, largely for conversion) and Europe (16%)**, worth approximately A$1.2 billion. Every tonne was exported under bilateral safeguards agreements. These are first destinations: exports to Canada are largely for conversion, and converted material is then supplied on to utilities, so the end users of Australian uranium are spread more widely. Australian Obligated Nuclear Material is currently in inventory across the following jurisdictions: Canada, China, the European Union, India, Japan, Mexico, the Republic of Korea, Russia, Switzerland, Taiwan, Ukraine, the United Arab Emirates, the United Kingdom and the United States – in total some 243,544 tonnes of nuclear material as at 31 December 2024.[28]

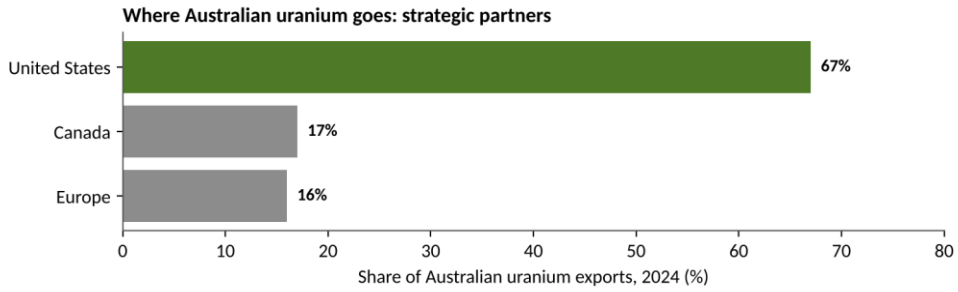


Figure 42 Destinations of Australian uranium exports, 2024
Source: Geoscience Australia, Australia's Energy Commodity Resources (AECR) 2026.

8.3. **Partners are formally recognising uranium as critical.** Since the 2023 review, two of Australia's most important partners have added uranium to their national critical minerals lists – the **United States** (final 2025 list, November 2025) and **Japan** (February 2024). **Canada** has listed uranium since its first list in 2021, and **China** includes uranium among its strategic minerals. The full comparison is at Appendix C, and partner programmes are profiled in Appendix D. The United Kingdom now classes uranium as a "growth mineral" in its Critical Minerals Strategy (November 2025).

8.4. **The countries that use uranium are not the countries that produce it.** Red Book data show that the largest consumers – the United States, China, France, Russia, the Republic of Korea, Japan and the United Kingdom – produce little or no uranium, while production is

[28] Australian Safeguards and Non-Proliferation Office, Annual Report 2024–25, Table 8: Summary of net accumulated AONM by category, quantity and location as of 31 December 2024, p. 57. The Australia–Euratom agreement covers all 27 Member States of the European Union.

concentrated in a handful of countries led by Kazakhstan, Namibia, Australia, Uzbekistan and Canada. Among producers, Australia is one of very few that is both a strategically aligned, high-ESG (environmental, social and governance) supplier and able to expand materially.[29]

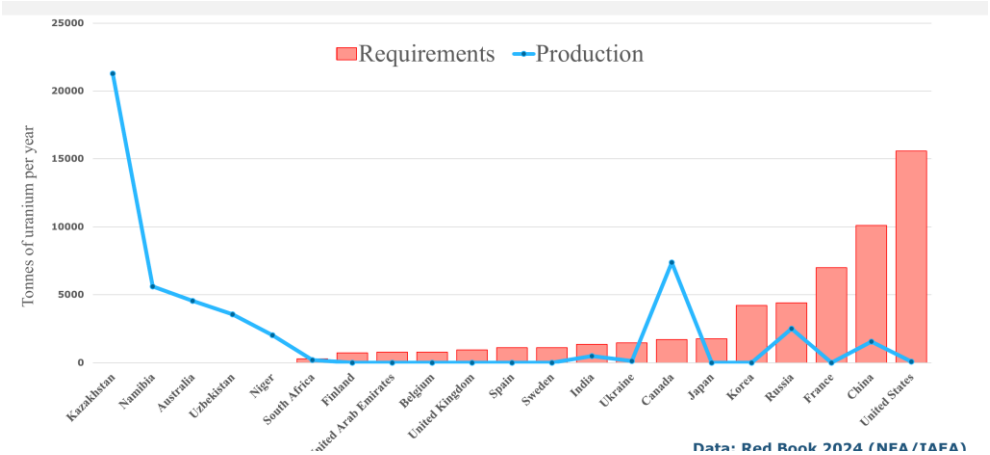


Figure 43 Uranium producing and consuming countries – annual requirements vs production
Annual requirements versus production (tU). Source: OECD-NEA/IAEA Red Book 2024.

8.5. **The United States is structurally short.** US commercial reactors currently require approximately 49 million lb of U_3O_8 per year, against domestic production of only a few million pounds. The US has legislated to ban Russian uranium imports, committed US$2.7 billion (January 2026) to rebuild domestic enrichment, and its Energy Secretary has publicly called on Australia to "get in the game" of supplying uranium.[30]

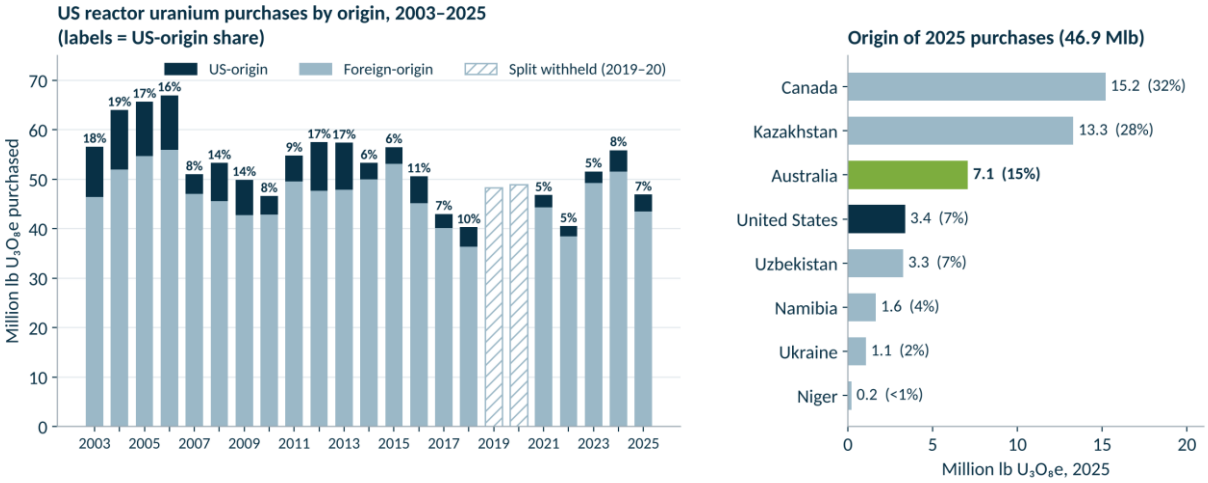


Figure 44 US reactor uranium purchases by origin, 2003–2025, and origin of 2025 purchases
Source: US Energy Information Administration, Uranium Marketing Annual Report (2025 data, released 2026); the US/foreign-origin split was withheld for 2019–2020. Chart: Cauldron Energy.

[29] J. Fairchild, OECD Nuclear Energy Agency, 'Uranium and Nuclear Fuel Supply: Building Resiliency in Uncertain Times', presentation, June 2025, drawing on the NEA/IAEA Red Book 2024 and preliminary OECD-NEA data.
[30] Sprott, 'Record term prices mark a new phase for uranium', 24 September 2026; US Department of Energy, January 2026; The Guardian, 18 February 2025.

8.5.1. Preliminary US EIA data show US production recovering from near zero in 2020–2023 to only around 2 million lb in 2025 – still less than 5% of US requirements. Even a tripling of domestic output would leave the United States largely dependent on imports from trusted partners, such as Australia.[31] In 2025, US-origin uranium accounted for only around 7% of the 46.9 million lb purchased by US reactor operators, while Australian-origin uranium supplied 7.1 million lb – around 15%[32].

8.5.2. At the same time, the US is aiming to **quadruple** its domestic nuclear fleet out to 2050 – even if it has large increases in its domestic production, its absolute production gap measured in millions of pounds will grow substantially. Australia is one of its key targets for sources of additional uranium supply.

8.5.3. In October 2025 the US Government entered a partnership with Westinghouse, Cameco and Brookfield for at least US$80 billion of new reactors, and in June 2026 the Department of Energy announced US$17.5 billion of loans to support 10 new AP1000 reactors. As a rule of thumb, each gigawatt of capacity requires around 0.5 Mlb of uranium a year, so the US objective of expanding from ~100 GW to 400 GW by 2050 implies around 150 Mlb a year of extra demand – roughly equal to today's entire world production.[33]

8.6. **Contract coverage is collapsing.** Analysis published in September 2026 indicates maximum European uranium coverage falls from ~100% in 2030 to 36% by 2034, while US coverage falls from approximately 60% to just 9% between 2030 and 2033.[34] UxC estimates cumulative uncovered utility requirements of ~3.1 billion lb to 2045.

8.6.1. Nuclear utilities do not usually buy uranium on the spot market as they need it. They sign long-term contracts – typically for five to ten years – with miners and other suppliers. A utility's "coverage" is the share of its future fuel needs that is already locked in under those contracts.

8.6.2. Utilities in Europe and the United States have contracted only part of the uranium their reactors will need from the early 2030s. The rest has yet to be bought, so a substantial wave of contracting is expected in the coming years – and much of it will need to be met by mine supply that does not yet exist.[35]

[31] US Energy Information Administration, Domestic Uranium Production Report (Quarterly), Q4 2025 (preliminary); EIA Uranium Marketing Annual Report.
[32] US Energy Information Administration, 2025 Uranium Marketing Annual Report (2026): uranium purchased by owners and operators of US civilian nuclear power reactors, by origin country.
[33] Shaw and Partners, 'Uranium Sector' report, 22 August 2026.
[34] Sprott, 'Record term prices mark a new phase for uranium', 24 September 2026.
[35] Euratom Supply Agency, Annual Report 2025; US Energy Information Administration, 2025 Uranium Marketing Annual Report; both as reported in Sprott, 'On the Cusp of a New Contracting Cycle', 18 August 2026. Cumulative uncovered requirements: UxC estimate as reported by Cameco, Q4 2025 Management's Discussion and Analysis.

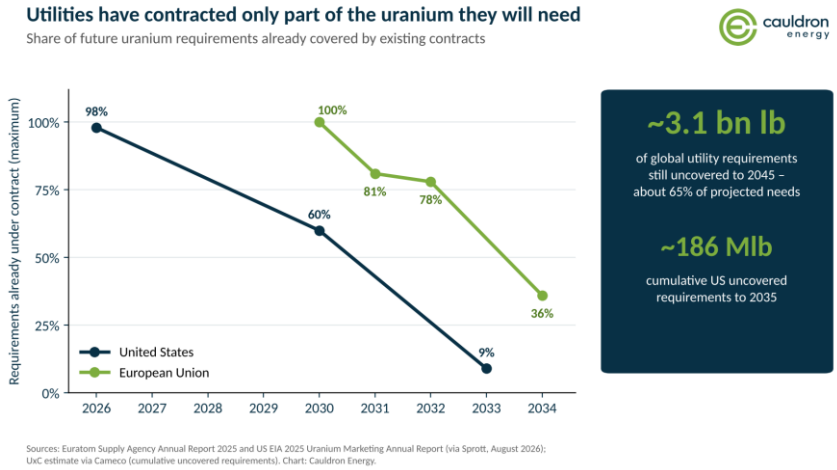


Figure 45 Uranium requirements already under contract – US and EU

8.7. **Partners are actively seeking Australian supply.** Since 2025, Cauldron alone has: been invited to Tokyo (December 2025) to discuss future uranium supply with Japanese entities; signed a memorandum of understanding (MOU) with Uzbekistan's Navoiyuran, a world-leading ISR producer, which has expressed strong interest in participating in Australian development; and observed France's Minister Delegate for Foreign Trade visiting WA Parliament (April 2026) following France's loss of Niger supply. This is consistent with the Sapporo 5 (Canada, France, Japan, the UK and the US) commitment to establish a resilient global uranium supply market "free from Russian influence" – reflecting the real issue with bifurcation in the market – which is discussed more in the next section. The Sapporo 5 is a new initiative of our strategic partners – formed post the last critical minerals review date, that further demonstrates the extraordinary strategic importance of additional uranium supply from Australia. The Sapporo 5 is discussed more in Section 10.

8.8. Further, the **recent Australia – India deal** is a key example of nations working together to develop holistic and dependable uranium supply chains (Section 11). This is a clear example of the need outlined by Criterion 3. The problem is that the industry is currently sold out with existing production – we cannot supply meaningful and regular shipments to India unless we:

8.8.1. Reduce our supplies to existing partners like the US, UK, Japan and Europe – this would not be practical or wise;

8.8.2. Increase production from existing mines – some of which is possible; and

8.8.3. Bring new mines into production; with the greatest opportunity for this to occur in new jurisdictions such as WA and QLD.

Partner	Nuclear status and plans	Uranium position	Uranium on national critical list?	Australian safeguards agreement
United States	Largest fleet (~94 reactors); policy to quadruple nuclear output by 2050	~49 Mlb/yr requirement; minimal domestic production; Russian imports banned from 2028	**Yes** (2025)	Yes
Japan	Restarts continuing (Kashiwazaki-Kariwa Feb 2026); new build supported	Zero domestic production; rebuilding national inventory	**Yes** (2024)	Yes

Partner	Nuclear status and plans	Uranium position	Uranium on national critical list?	Australian safeguards agreement
Republic of Korea	Global reactor exporter; expanding domestic share	Entirely import reliant	Supply-security policies	Yes
United Kingdom	Hinkley Point C and Sizewell C under way; 24 GW ambition; SMR programme; AUKUS partner	Entirely import reliant	Growth minerals list (2025)	Yes
France / EU	France: ~57 reactors, life extensions and EPR2 programme; EU nuclear revival	EU fully import reliant; France lost Niger supply	EU: No (Euratom Supply Agency policies)	Yes (Euratom)
Canada	Major producer and consumer; conversion capacity	Large existing producer (Cameco); Significant exploration upside and new development opportunity (eg Athabasca Basin, Nexgen Energy) processes Australian UOC	**Yes** (since 2021)	Yes
India	100 GW target by 2047	Large import requirement	Atomic minerals regime	Yes
Indonesia, Singapore	Developing first nuclear programmes	Emerging future demand	–	Developing
China	World's largest new-build programme – 65 reactors operating, ~40 under construction; ~110 GWe targeted by 2030	~13,900 tU required in 2025; limited domestic production; record imports and overseas acquisitions to build strategic inventories	Yes – among China's strategic minerals	Yes (in force 2007); NPT party

Figure 46 Strategic partner demand for uranium (summary – see Appendix C)

8.9. Demand outlook

8.9.1. The growth in global nuclear capacity and uranium requirements is set out once, in Section 6.16. For Criterion 3, what matters is where that demand sits. The overwhelming majority of current and future reactor capacity outside China and Russia sits in Australia's strategic partners. The strategic partners profiled in Appendix D (excluding China) required some 38,500 tU in 2025 – more than half of world requirements – yet, apart from Canada, produce little or no uranium.

8.9.2. That demand cannot be met from existing mines (see Section 9.4). The market faces a shortfall of more than 200 Mlb a year by 2040. This is precisely why Australia's strategic partners are looking to Australia – and why Australian supply cannot be delivered from existing mines alone.

8.9.3. In our experience, partner demand for Australian uranium is not merely commercial – it is strategic. Buyers increasingly ask not only "what price" but "from which jurisdiction" and "When". A high-ESG, rules-based, safeguards-compliant supplier aligned with the West is precisely what partners are seeking, and is what the CML exists to identify.

Assessment: Uranium now clearly meets Criterion 3. Key partners have themselves designated uranium as critical, are continuing to increase their forecasts for future nuclear generation and hence uranium needs, are structurally extremely short, and are actively seeking Australian supply.

9. Criterion 4 – Vulnerability to Supply Chain Disruption

Uranium now meets Criterion 4. In 2023 uranium was judged not to meet this criterion. Its supply chain is now among the most concentrated and politically exposed of any mineral; with significant concerns from our Strategic partners about security of supply and ongoing bifurcation in the market.

9.1. This was the second criterion on which uranium was previously judged not to qualify. Uranium supply chains are now among the most concentrated and politically exposed of any mineral, and subject to significant structural bifurcation with concerns over an East vs West split, with the West currently on the wrong side of the trade!



Figure 47 Market bifurcation – East streaking ahead whereas the West is lagging

9.2. Market concentration at each stage

9.2.1. **Mining.** In 2024 world production was 60,213 tU. Kazakhstan alone produced 23,270 tU (39%); Kazakhstan, Canada and Namibia together produced 75%.[36] Using the WNA country data, Cauldron estimates a Herfindahl–Hirschman Index (HHI) of roughly 2,300 for mine supply by country – above the 1,800 threshold the US 2023 Merger Guidelines treat as "highly concentrated", and before accounting for cross-border ownership links (own calculation).

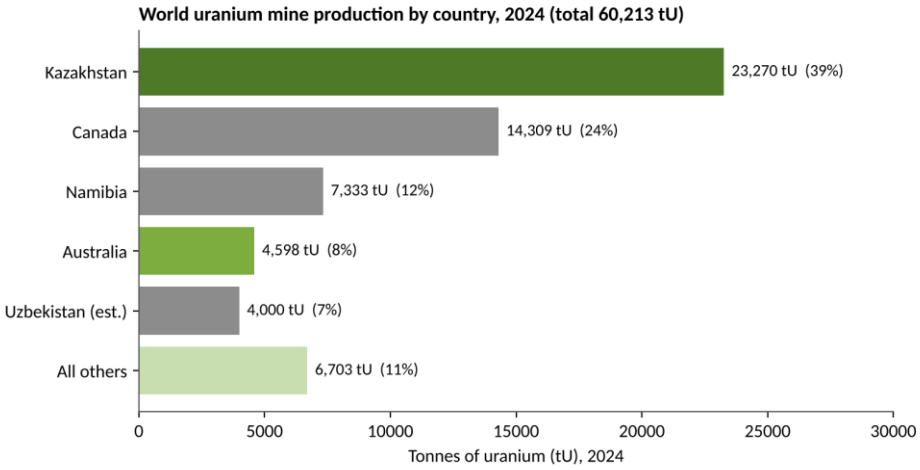


Figure 48 World uranium mine production by country, 2024
Source: World Nuclear Association (October 2026).

9.2.2. **Ownership and control.** A September 2026 report by the Centre for Strategic Advantage found Russia directly produced ~5% of world mined uranium in 2024, but **almost a quarter** when Rosatom's Uranium One assets (largely in Kazakhstan) are included – potentially rising to 36% by 2040.[37]

9.2.3. **China is securing supply directly and indirectly.** China is undertaking the world's largest reactor construction programme and has been building national uranium inventories as a matter of energy security policy. Its state-owned nuclear groups hold major equity positions in other countries' uranium production – including Namibia's Husab mine (China General Nuclear, CGN) and Rössing mine (CNNC) – hold interests in joint ventures with Kazatomprom in Kazakhstan, and have secured long-term offtake from Kazakh production. They continue to expand through M&A: CNNC has agreed to take a 45% stake in Bannerman Energy's Etango project in Namibia, fully funding construction to first production and locking in 60% of the project's output.[38] Shaw and Partners observes that Kazakh supply is increasingly being "locked up by Russian, Indian and Chinese buyers". In our view, the combination of Russian and Chinese state-

[36] World Nuclear Association, 'World Uranium Mining Production', updated 23 October 2026.
[37] Miningmx, 'Report warns of Russian dominance in uranium supply', 9 September 2026, reporting a Centre for Strategic Advantage report via the Financial Times.
[38] Shaw and Partners, 'Uranium Sector' report, 22 August 2026. See also Bannerman Energy ASX announcements, 2026.

linked ownership means a growing share of the world's uranium is effectively unavailable to Western utilities on commercial terms.

9.2.4. **East versus West.** Preliminary OECD-NEA data on the ownership of existing and future uranium projects illustrate the bifurcation of the market. Production capacity in Kazakhstan, Uzbekistan, Russia, Niger, Namibia and other African jurisdictions is substantially controlled by non-OECD (principally Russian and Chinese state-linked) entities, while OECD-controlled capacity is concentrated in Canada, the United States and Australia. Meanwhile, the largest consuming fleets in the West sit overwhelmingly in OECD countries. In our judgement the West is currently on the wrong side of this trade: OECD utilities depend on supply that is increasingly controlled by strategic competitors, and Australia is one of very few jurisdictions able to rebalance it.

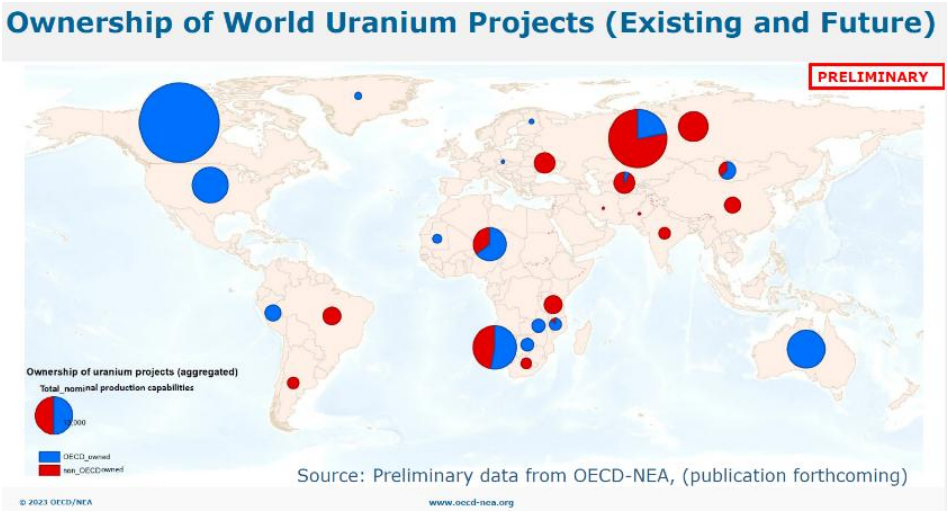


Figure 49 Ownership of world uranium projects – OECD versus non-OECD control
Existing and future projects: OECD-controlled (blue), non-OECD-controlled (red). Source: OECD-NEA, preliminary data.

9.2.5. **Conversion and enrichment.** These midstream stages are even more concentrated. Four suppliers hold ~99.5% of world enrichment capacity, with **Rosatom (Russia) alone holding ~44%**, followed by Urenco (~27%), CNNC (~17%) and Orano (~12%).[39] On these shares the HHI for enrichment exceeds 3,000 – **highly concentrated** (own calculation). The WNA expects conversion to be "very tight in the near-to mid-term".

[39] Eco3min, 'Uranium enrichment: Russia, the bottleneck and Western capacity', June 2026 (updated October 2026), citing WNA and Enerdata capacity estimates.

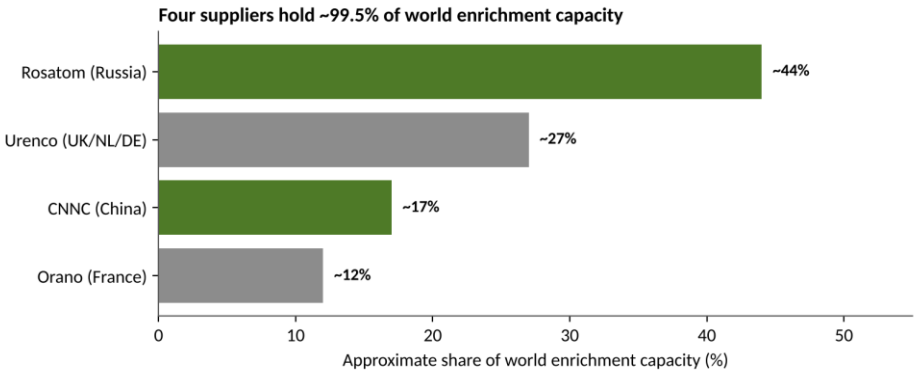


Figure 50 Approximate shares of world enrichment capacity
Source: Eco3min (2026) citing WNA/Enerdata.

9.3. Disruptions since 2023

9.3.1. Since the 2023 review, the uranium supply chain has been disrupted repeatedly – by trade restrictions between the United States and Russia, the loss of Western control of Niger's SOMAIR mine, policy changes in Kazakhstan and production shortfalls at restart projects. The main events are summarised below.

Date	Event	Supply chain impact
May 2024	US *Prohibiting Russian Uranium Imports Act* enacted	Russian LEU prohibited from 1 January 2028; waivers being phased out
Nov 2024	Russia temporarily restricts enriched uranium exports to the US	Demonstrates use of nuclear fuel as geopolitical leverage
Dec 2024 – Nov 2025	Niger: Orano loses control of SOMAIR; mine nationalised (June 2025); junta moves to sell stockpile on international market	Loss of a major Western-controlled source; ~1,500 tU stockpile of contested destination
Aug 2025	Kazakhstan: Kazatomprom cuts 2026 nominal production ~10% (32,777 tU to 29,697 tU), subject to sulphuric acid availability	Largest producer prioritising value over volume; reagent constraints
Jan 2026	Kazakhstan law changes: Kazatomprom priority rights over new uranium blocks; >75% control required on transfer of new subsoil use agreements	Western explorers exiting (e.g. Laramide abandoned its Kazakh projects)
Apr 2026	Kazakhstan National Nuclear Industry Development Strategy to 2050	Domestic reactors; reported reservation of 100,000–150,000 tU for domestic use, substantially reducing uranium available to the global (Western) market
2024–2026	Restart and ramp-up delays at multiple Western projects (e.g. Langer Heinrich (Namibia), Kayelekera (Malawi), Honeymoon (South Australia), Lance (USA) – see Appendix H)	Supply response slower than expected

Figure 51 Selected uranium supply chain disruptions since the 2023 review

9.3.2. In addition, much of Kazakhstan's export route has historically transited Russia (including via St Petersburg), and Kazakhstan is under political pressure to direct supply to Russia and China. China is building national uranium inventories as a matter of energy security policy.

9.4. The structural supply deficit will get worse

9.4.1. **Primary supply does not meet existing demand, let alone increased future requirements.** Primary mine supply covered only 78% of reactor requirements in 2022 and ~90% in 2024; the balance comes from finite secondary sources (inventories, government stockpiles, underfeeding and down-blended material), which are being depleted.[40] The WNA expects existing mines to face depletion from the middle of the next decade.

9.4.2. **The world's largest producer is depleting its lowest-cost resources.** Preliminary OECD-NEA analysis indicates that Kazakhstan's Reasonably Assured Resources recoverable at under US$130/kgU – the low-cost ISR resources that underpin around 40% of world supply – would be **largely exhausted by around 2040** at mid-term production rates, with identified resources at higher cost also declining steadily.[41]

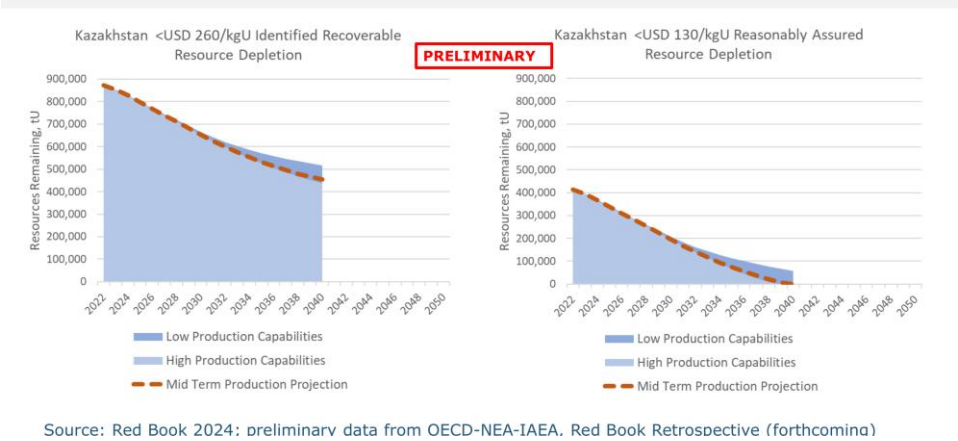


Figure 52 Kazakhstan: projected depletion
Projected depletion of identified recoverable resources (<US$260/kgU, left) and reasonably assured resources (<US$130/kgU, right). Source: Red Book 2024; preliminary OECD-NEA-IAEA data.

9.4.3. **The largest producer is not coming to the rescue.** Kazakhstan's Kazatomprom's 1H26 result showed C1 costs up 37%, production constrained by sulphuric acid availability (with its new acid plant delayed by 6–12 months), incremental output heading to Russia, and volumes being reserved for Kazakhstan's own nuclear programme. Its CEO stated that "new realities are signalling that the era of 'cheap' uranium is fading away".[42]

9.4.4. **Demand is rising at the same time as existing supply is falling.** Shaw and Partners (August 2026), aligning its modelling with the WNA Reference case, estimates existing mine production at around 150 Mlb U_3O_8 a year – but well over half of it, including large assets such as Cigar Lake, will be depleted by 2040, leaving only around 60 Mlb a year from today's mines. Against WNA demand of roughly 280 Mlb (Lower), 390 Mlb (Reference) and 530 Mlb (Upper) in 2040, the world will need around 220, 330 and 470 Mlb a year respectively of **new** mine

[40] World Nuclear Association, World Nuclear Fuel Report 2025 press statement, 5 September 2025.
[41] J. Fairchild, OECD-NEA presentation, June 2025.
[42] Shaw and Partners, 'Uranium Sector' report, 22 August 2026.

supply – at least 200 Mlb a year in every scenario.[43]

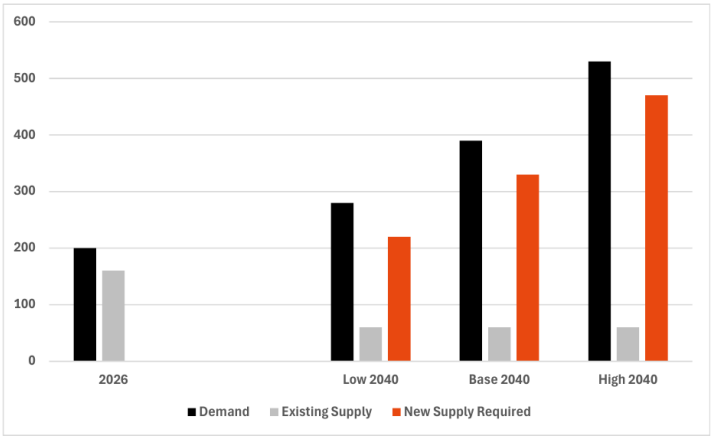


Figure 53 Uranium demand under WNA to 2040 scenarios versus existing and new supply required Mlb U_3O_8. Source: Shaw and Partners (August 2026), using WNA data.

9.4.5. Even including projects in development, Shaw and Partners' updated modelling (August 2026) shows supply from all currently known mines and projects peaking at around 230 Mlb a year in the early 2030s and declining to around 180 Mlb by 2040, while consumption rises to almost 390 Mlb. On this basis, **by 2040 the market will be short** more than 200 Mlb a year unless new sources of supply are identified.

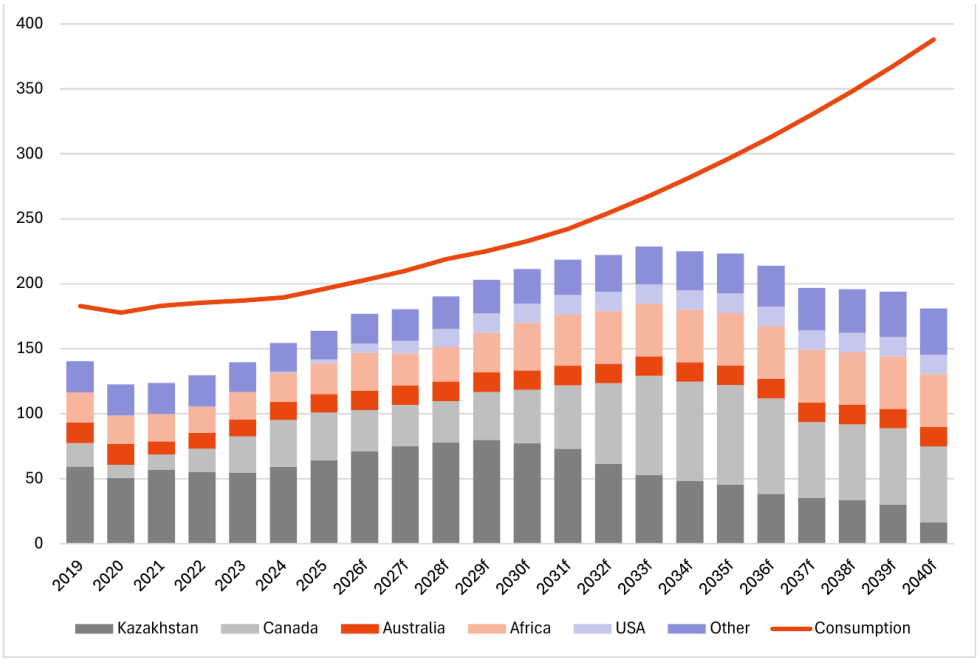


Figure 54 Uranium primary mine supply by source versus consumption to 2040 (Mlb U_3O_8).

Source: Shaw and Partners (August 2026), using company reports and WNA data.

9.4.6. Whereas the Shaw and Partners analysis (Figure 54) breaks future supply down

[43] Shaw and Partners, 'Uranium Sector' report, 22 August 2026.

by source and country, the WNA chart below (Figure 55) breaks it down by status – existing mines, planned and prospective mines, and requirements with no identified supply – and so shows how much of future demand is still unmet. It shows **production from existing mines is expected to decline from around 2030**, and that by 2040 roughly half of Reference Scenario requirements have no identified source of supply – the "unspecified supply" that must come from mines not yet discovered, approved or financed.

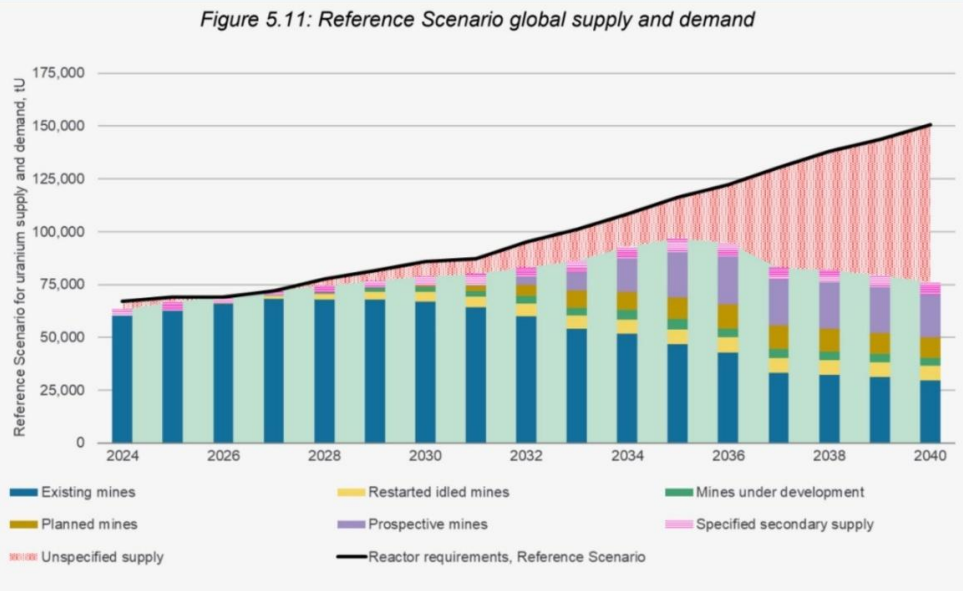


Figure 55 WNA Reference Scenario uranium supply and demand to 2040
The hatched area represents requirements with no identified supply. Source: WNA World Nuclear Fuel Report 2025.

9.4.7. The joint OECD-NEA/IAEA "Red Book" reaches the same conclusion from a different starting point. It projects uranium requirements rising by a factor of 1.45 (low scenario) to 2.3 (high scenario) by 2050, while production capability from existing and committed centres declines through the 2030s and 2040s; even including planned and prospective centres, capability falls below high-scenario requirements from the mid-2030s. The NEA concludes that the resource base is sufficient, but meeting demand "will require timely investments to convert resources into active production".[44]

[44] J. Fairchild, OECD-NEA presentation, June 2025.

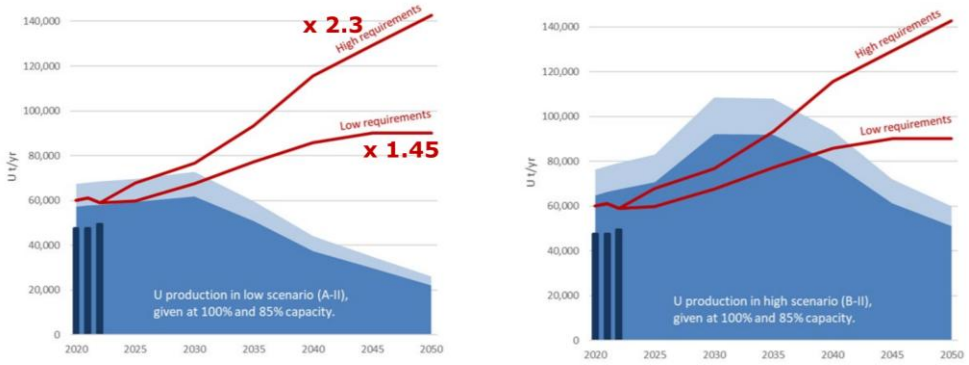


Figure 56 Uranium production capability versus requirements to 2050 – low
Low scenario (left) and high scenario (right), tU per year. Source: OECD-NEA/IAEA Red Book 2024.

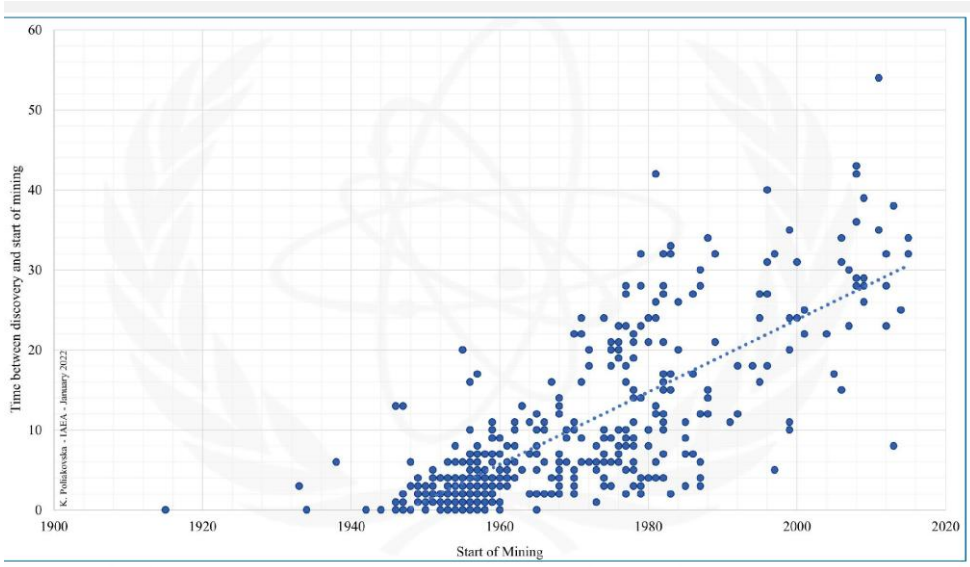
It is "very difficult to see where more than 150Mlb of new supply can come from", and access to uranium may become "the rate limiting step in delivering the growth in nuclear energy".

– Shaw and Partners, Uranium Sector – The Era of "Cheap" Uranium is Fading Away, August 2026

9.4.8. **Long lead times.** The WNA reports that the typical timeline from discovery to production has extended from 8–15 years to **10–20 years**.[45] Supply cannot respond quickly to disruption, which is the defining characteristic of a critical mineral.

9.4.9. OECD-NEA analysis of the IAEA's world uranium deposits database shows that the time between discovery and the start of mining has lengthened steadily – from a few years for mines that commenced in the 1950s to around 30 years on average for those commencing in the 2010s. Shaw and Partners estimates it now takes at least 15 years from discovery to first production for new uranium capacity. **Supply decisions taken today will determine whether Australia's partners have fuel in the late 2030s and 2040s.**[46]

[45] World Nuclear News, 'Investment decisions needed to avoid fuel cycle supply gaps', 5 September 2025.
[46] OECD Nuclear Energy Agency (2023), 'Relationship between discovery and start of mining', modified from IAEA World Distribution of Uranium Deposits (UDEPO) 2022 edition (Poliakovska et al., 2023); Shaw and Partners, 'Uranium Sector' report, 22 August 2026.



Source: Modified from World Distribution of Uranium Deposits (UDEPO) 2022 Edition, IAEA TECDOC (in prep); Poliakovska et al., 2023

Figure 57 Time between discovery and start of mining for uranium deposits (years), Years, by year mining commenced. Source: OECD-NEA (2023), modified from IAEA World Distribution of Uranium Deposits (UDEPO) 2022 (Poliakovska et al., 2023).

9.4.10. **Trade restrictions.** Uranium trade is now subject to import bans (US on Russia), export restrictions (Russia to US), resource nationalism (Niger, Kazakhstan) and stockpiling policies (China, Japan, US strategic uranium reserve).

9.5. Structural causes of the market imbalance

The current deficit has deep structural causes, which explain why supply cannot simply respond to price:

9.5.1. **Megatons to Megawatts (1993–2013).** Down-blending of ~500 tonnes of Russian weapons-grade uranium supplied around half of US reactor fuel for two decades, displacing primary mining and suppressing prices and exploration investment for a generation.

9.5.2. **Fukushima (2011).** Japan's and Germany's reactor shutdowns released inventory to the market; prices fell to around US$20/lb by 2016–2017 and global exploration collapsed. Japan is now rebuilding the inventories it previously sold down.

9.5.3. **Depleting secondary supply.** Government stockpiles, utility inventories and down-blended material are finite and declining, increasing reliance on primary mining.

9.5.4. **Utility contracting below replacement.** In 2025 utilities contracted only ~116 Mlb of uranium against annual consumption of ~190 Mlb. UxC reports that over five years utilities consumed ~815 Mlb but contracted only ~589 Mlb – an implied drawdown of inventories that cannot continue indefinitely.[47]

[47] Shaw and Partners, Uranium Industry Overview, February 2026, citing UxC.

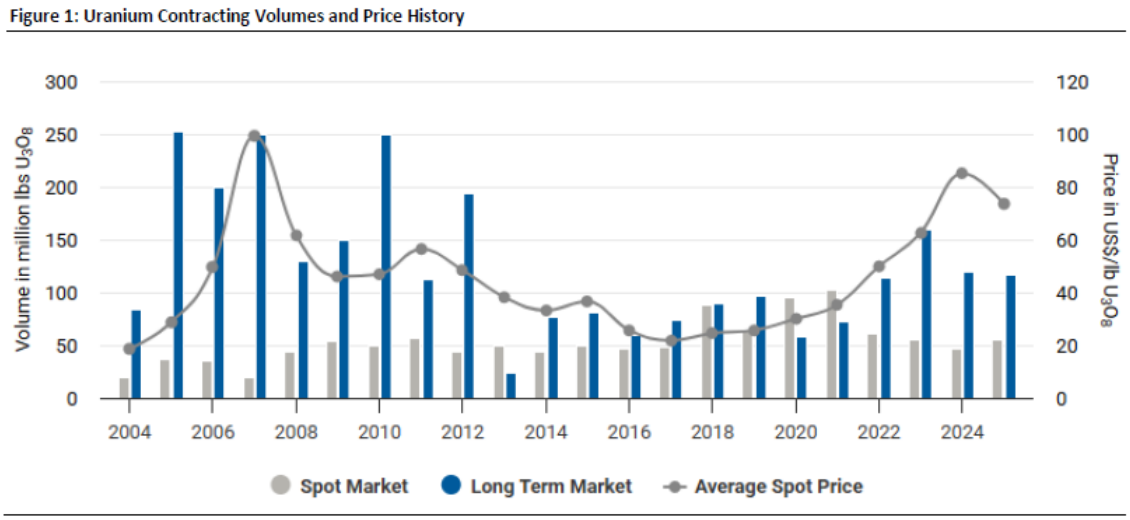


Figure 58 Uranium contracting volumes and average spot price, 2004–2025
Spot and long-term volumes. Source: Shaw and Partners, February 2026 (UxC, Cameco).

9.5.5. **Financial buyers.** Physical uranium funds (e.g. Sprott Physical Uranium Trust) have removed material volumes from the spot market.

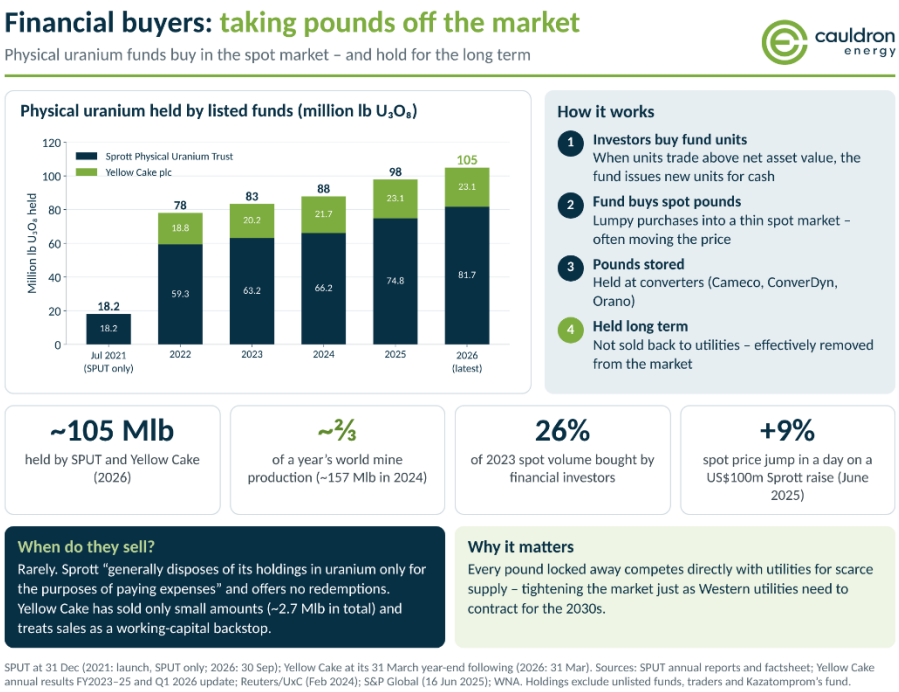


Figure 59 How financial buyers impact the market

9.5.6. **Production underperformance.** In 2025–26, major producers and restart projects (including Kazatomprom (Kazakhstan), Cameco/Inkai (Kazakhstan), Paladin's Langer Heinrich (Namibia), Boss Energy's Honeymoon (South Australia), Peninsula Energy's Lance (Wyoming, USA) and Lotus Resources' Kayelekera (Malawi); see Appendix H) experienced disruptions, ramp-up delays or downgrades relative to earlier expectations.

9.6. Summary of supply chain vulnerability

Uranium exhibits every vulnerability the Consultation Paper lists: market concentration at multiple stages, processing constraints, trade restrictions, nil substitutability and active geopolitical disruption. In our judgement, **few minerals on the current CML face a supply chain as concentrated in non-aligned hands as uranium does at the enrichment stage**, and few have a gap between consumption and primary supply as clearly documented.

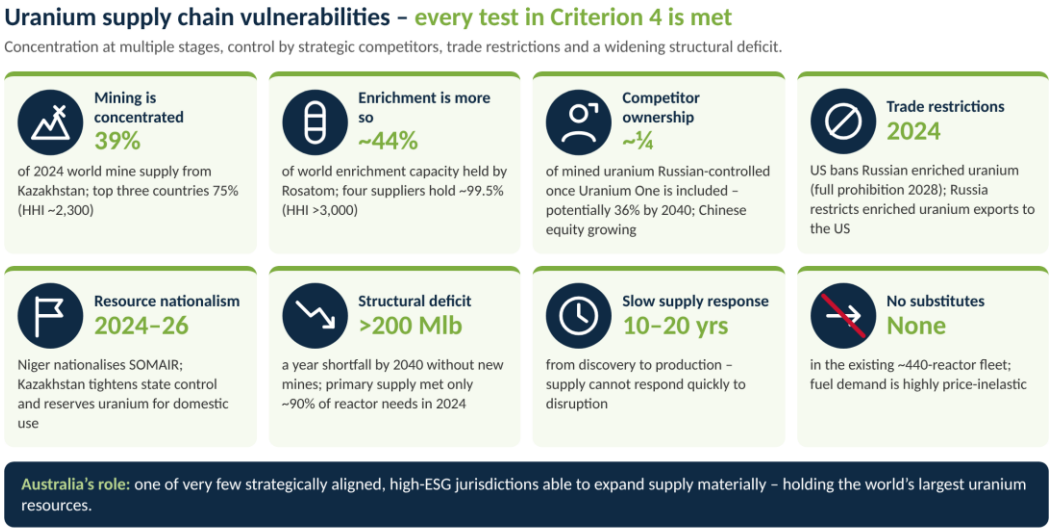


Figure 60 Uranium supply chain vulnerabilities – summary
Sources: Sections 9.2–9.5 and sources cited there (WNA, OECD-NEA/IAEA, Centre for Strategic Advantage, Eco3min, Shaw and Partners). Graphic: Cauldron Energy.

Assessment: Uranium now clearly meets Criterion 4. The supply chain is highly concentrated, exposed to Russian and non-aligned control, subject to active trade restrictions and resource nationalism, has no substitutes and very long supply response times.

10. Case Study: The Relevance of the Sapporo 5

Formation of the "Sapporo 5" – an alliance of five of Australia's closest partners – is an important development coincident with the last critical minerals review, relevant to Criterion 3. Our partners are acting collectively with billions of dollars of public investment, to rebuild a nuclear fuel supply chain free from Russian influence. Uranium from strategically aligned nations is at the heart of that effort.

10.1. Who the Sapporo 5 are and what they set out to do

10.1.1. **The Sapporo 5 – our partners organising for new supply.** The Sapporo 5 was formed on the sidelines of the Group of Seven (G7) ministerial meeting in Sapporo in April 2023, the governments of Canada, France, Japan, the United Kingdom and the United States agreed to leverage their combined civil nuclear sectors to build a resilient nuclear fuel supply chain free from Russian influence.



Figure 61 Sapporo 5 announcement on the sidelines of COP28, Dubai, December 2023
Senior officials of Canada, France, Japan, the UK and the US.

10.1.2. The founding statement of April 2023 identified collaboration on "strategic opportunities in uranium extraction, conversion, enrichment, and fabrication", with the aim of "further reducing reliance on Russia in the nuclear fuel supply chain for the long term".[48] Together, the five countries account for around half of the world's uranium conversion and enrichment capacity.

10.1.3. At the Net Zero Nuclear Summit at COP28 in December 2023, the group committed to mobilise "at least USD $4.2 billion in government-led and private investment in our five nations' collective enrichment and conversion capacity over the next three years", and resolved "to establish a resilient global uranium supply market free from Russian influence".[49]

[48] US Department of Energy, 'Statement on Civil Nuclear Fuel Cooperation Between the United States, Canada, France, Japan, and the United Kingdom', 17 April 2023, https://www.energy.gov/articles/statement-civil-nuclear-fuel-cooperation-between-united-states-canada-france-japan-and

[49] Joint statement, 'Sapporo 5: Canada, Japan, France, the United Kingdom, and the United States – Nuclear Fuel', COP28, 7 December 2023, https://natural-resources.canada.ca/energy-sources/sapporo-5; US Department of

10.2. Uranium is squarely within the mandate

10.2.1. Although the headline investment target is directed at conversion and enrichment, the Sapporo 5's mandate extends explicitly to uranium itself. The founding statement names uranium extraction first among the areas for collaboration, and the COP28 statement commits the members to a resilient global uranium supply market. This is unsurprising: conversion and enrichment plants cannot operate without natural uranium feed, and of the five members only Canada is a major uranium producer.

10.2.2. The new Western enrichment capacity now being built will need, an estimated c. 14,000 tonnes of natural uranium a year when fully operating – roughly a fifth of current world reactor requirements, and nearly three times Australia's current annual production. Securing that feed from aligned, reliable sources is the logical next step, and it is one only uranium-producing partners can provide.

10.3. Progress since 2023

The Sapporo 5 has moved quickly. By April 2024 the US DoE reported that the US$4.2 billion target had already been exceeded, with France mobilising US$1.8 billion, the UK around US$383 million and the US Congress making US$2.72 billion available.[50]

10.3.1. **United States.** The Prohibiting Russian Uranium Imports Act (May 2024) bans Russian enriched uranium from 2028, with waivers being phased out (Section 9.3). In January 2026 the DoE awarded that funding – US$2.7 billion US$900 million each – to Orano for LEU (its ~US$5 billion Project IKE plant at Oak Ridge, Tennessee, with initial capacity of 4 million SWU from the early 2030s) and to Centrus and General Matter for high-assay low-enriched uranium (HALEU).[51]

10.3.2. **France.** Construction of the €1.7 billion (c. US$1.8 billion) extension of Orano's Georges Besse II enrichment plant began in October 2024, adding 2.5 million SWU a year, with the first new modules due in 2028 and full commissioning in 2030.

10.3.3. **United Kingdom and Europe.** Urenco brought the first new cascade of its US expansion online in May 2025 and has announced a further 2.1 million SWU expansion there, while adding around 1.5 million SWU at Almelo in the Netherlands by 2030. The UK has funded Europe's first HALEU programme, and Urenco's Capenhurst plant produced LEU+ in a trial in May 2026.

Energy, 'At COP28, US, Canada, France, Japan, and UK announce plans to mobilize $4.2 billion for reliable global nuclear energy supply chain', 7 December 2023.

[50] US Department of Energy, 'Sapporo 5 leaders make significant progress in securing a reliable nuclear fuel supply chain', 18 April 2024, and 'Biden-Harris Administration takes action to secure nuclear fuel supply chain', 19 April 2024, https://www.energy.gov/ne/articles/sapporo-5-leaders-make-significant-progress-securing-reliable-nuclear-fuel-supply-chain

[51] World Nuclear News, 'DOE awards USD2.7 billion to strengthen US uranium enrichment', 6 January 2026; Orano, 'Project IKE enrichment', https://www.orano.group/usa/en/our-portfolio-expertise/project-ike-enrichment; World Nuclear Association, 'Uranium Enrichment' (updated 27 October 2026), https://world-nuclear.org/information-library/nuclear-fuel-cycle/conversion-enrichment-and-fabrication/uranium-enrichment

10.3.4. **Japan and Canada.** Japan is restoring enrichment capacity at Rokkasho, targeting 450,000 SWU a year by the 2028 fiscal year. Canada – the only major uranium producer in the group – continues to mine and convert uranium for its partners.

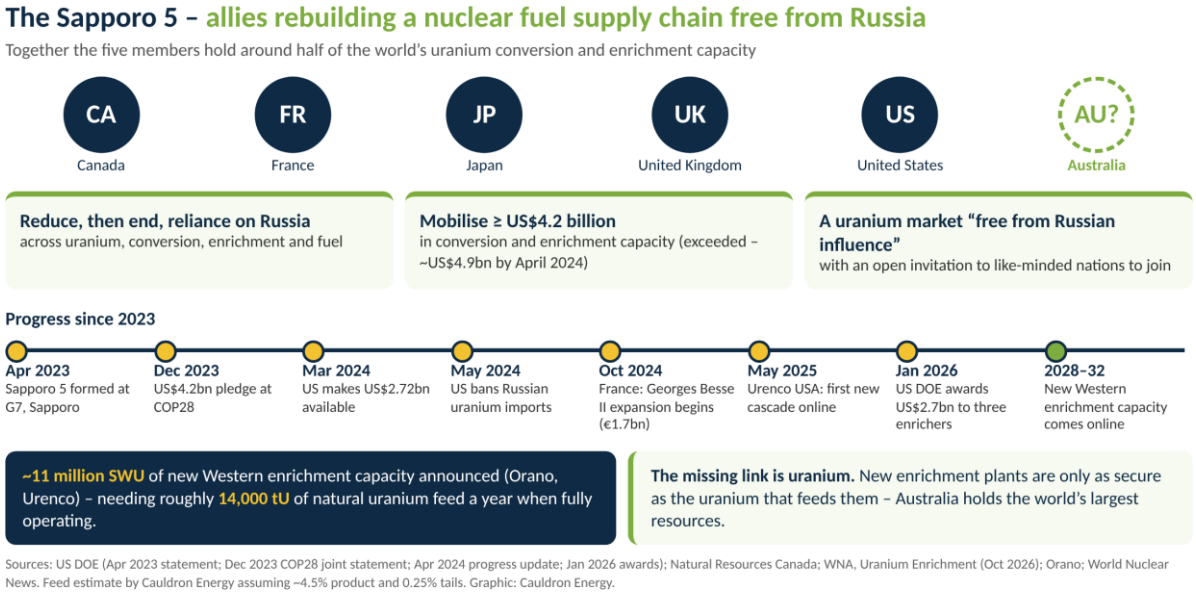


Figure 62 The Sapporo 5: aims and progress since 2023

Sources: US DOE; Natural Resources Canada; WNA; Orano; World Nuclear News. Graphic: Cauldron Energy.

10.4. What it means for Australia

10.4.1. Its significance for this review is direct. New enrichment and conversion capacity is only as secure as the uranium that feeds it, and that uranium must increasingly come from outside Russia's sphere of influence. Australia – with the world's largest resources, a long safeguards record and close ties to all five members – is the natural upstream partner. Listing uranium as critical would signal clearly to the Sapporo 5 that Australia intends to be part of the solution, and would support closer Commonwealth (and State) engagement with the initiative.

10.4.2. The COP28 statement expressly invites "all likeminded nations seeking reliable nuclear energy partners to join us in securing the global uranium supply chain". Australia – which already supplies uranium to all five members under its bilateral safeguards agreements – is an obvious candidate.

10.4.3. We suggest the Government explore joining, or formally partnering with, the Sapporo 5 as its upstream uranium supplier (Appendix E). Listing uranium on the CML would be a natural first step, aligning Australia's own framework with the fuel-security priorities of its five closest nuclear partners.

11. Case Study: The Australia–India Uranium Agreement (July 2026)

The most recent and direct evidence of strategic partner demand for Australian uranium came on 9 July 2026, when Prime Minister Albanese and Prime Minister Modi concluded a new arrangement to facilitate long-term Australian uranium exports to India during Mr Modi's visit to Melbourne.[52] This warrants particular attention in the review because it demonstrates, at the highest levels of Government, that uranium is already being used as an instrument of Australia's strategic and economic diplomacy.



Figure 63 The Australia–India uranium deal: overview

11.1. Background

11.1.1. Australia and India signed a Civil Nuclear Cooperation Agreement in 2014, which entered into force in November 2015. Following review by the Joint Standing Committee on Treaties, the Parliament passed the *Civil Nuclear Transfers to India Act* in November 2016. But issues remained.

11.1.2. The July 2026 arrangement is a government-to-government administrative arrangement under the existing agreement. It facilitates exports "for exclusively peaceful purposes and under IAEA safeguards". It is an enabling framework rather than a commercial contract – no volumes or suppliers were specified.

> *"This will open the way for uranium supplies from Australia to India and give new impetus to our clean energy objectives."*
>
> *– Prime Minister Narendra Modi, Melbourne, 9 July 2026*
>
> *"…we look forward to becoming a reliable, trusted supplier of uranium to India."*
>
> *– Prime Minister Anthony Albanese, 9 July 2026*

[52] World Nuclear News, 'Australia agrees to export uranium to India', 9 July 2026; Al Jazeera, 'Australia, India strike deal on uranium exports during PM Modi's visit', 9 July 2026.

11.2. Why India matters

11.2.1. India will become one of the world's most important end users of uranium.

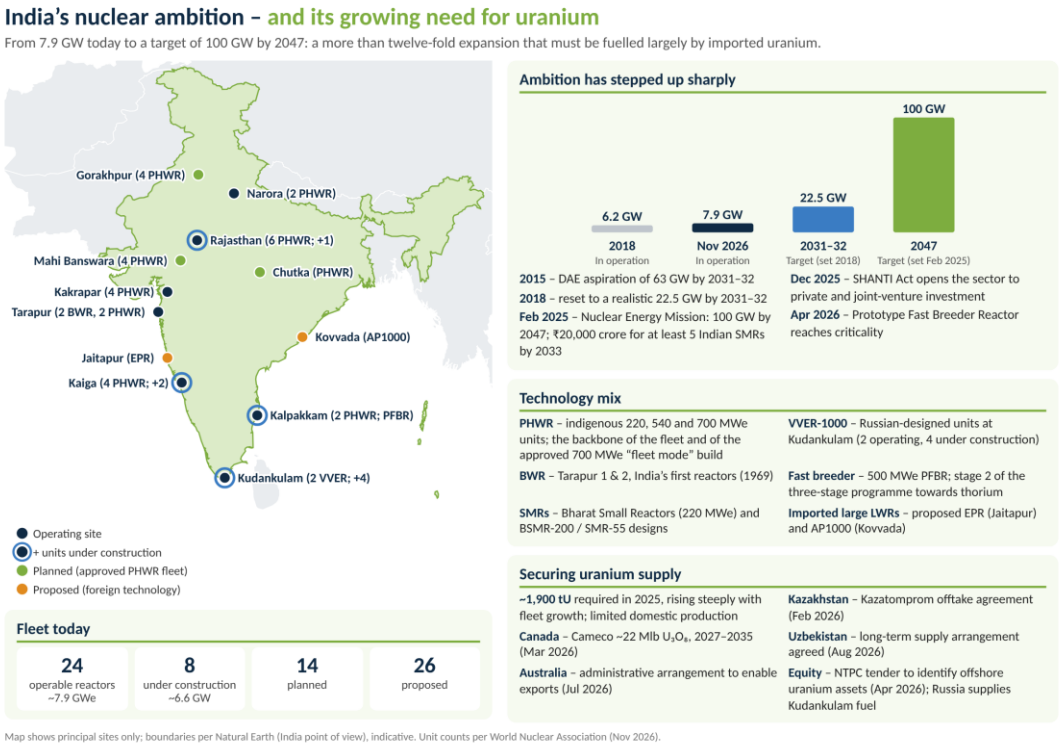


Figure 64 India's nuclear programme – fleet, ambition, technology and uranium supply strategy

Sources: World Nuclear Association, Nuclear Power in India (updated November 2026); World Nuclear News; WISE Nuclear Monitor (2018); Government of India. Map boundaries: Natural Earth (India point of view), indicative. Graphic: Cauldron Energy.

11.2.2. **India is moving decisively to lock up supply.** In February 2026 India signed an offtake agreement with Kazakhstan's Kazatomprom (estimated by Shaw and Partners at more than 40 Mlb); in March 2026 Canada's Cameco agreed to supply ~22 Mlb over 2027–2035; in April 2026 NTPC, India's largest power producer, went to tender for consultants to identify offshore uranium assets for investment; and in August 2026 Prime Minister Modi and President Mirziyoyev agreed to establish a long-term uranium supply arrangement with Uzbekistan, whose existing contract with India runs to the end of 2026.[53] Shaw estimates that India's 100 GW target alone would add around 50 Mlb a year to global uranium demand.

> *"We would buy as much (uranium) as Cameco can produce … We would like to invest in your uranium mines, if possible."*
>
> *– Dinesh Patnaik, High Commissioner of India, 2026 (as reported by Shaw and Partners)*

[53] Shaw and Partners, 'Uranium Sector' report, 22 August 2026. India TV News, 30 August 2026; Mining & Metal News, 2 September 2026.

11.3. Implications of India deal for the Critical Minerals List

11.3.1. **Criterion 3 is plainly met.** A Quad partner (a fellow member of the Quadrilateral Security Dialogue – the strategic partnership of Australia, India, Japan and the United States covering security, critical minerals, technology and supply chains) with one of the world's fastest-growing nuclear programmes has sought, and the Australian Government has agreed at the highest level to facilitate, long-term uranium supply.

11.3.2. **The Government already treats uranium as strategic.** The uranium arrangement was concluded alongside defence and critical minerals cooperation during the same visit. It is difficult to reconcile that uranium is negotiated at the highest level as a strategic export, yet sits outside the Government's own list of critical and strategic minerals.

11.3.3. **New supply will be needed to deliver on the commitment.** Australia's existing production is largely committed under long-term contracts to customers in the United States, Canada and Europe. Becoming "a reliable, trusted supplier of uranium to India" at meaningful scale will require new mines – precisely the projects whose approvals pathway would benefit from Critical Minerals Facilitation Office coordination.

11.3.4. **Independent analysts have drawn the same conclusion**. Commenting on the Australia–India agreement, Shaw and Partners observed that "it is not clear where that supply will come from unless the WA mining ban is overturned", noting that apart from South Australia and the Northern Territory, most of Australia's uranium is locked up by State mining bans.[54]

11.3.5. **Competitors are moving.** Canada secured a multi-year, multi-billion dollar supply agreement with India months before Australia's arrangement was concluded, and Uzbekistan just after. Without a pipeline of new Australian projects, the arrangement risks remaining an enabling framework with limited Australian supply behind it.

In our view, the India arrangement is the clearest possible signal that uranium is a strategic export for Australia. Listing uranium on the CML – or at a minimum on a facilitation-only basis – would align the Government's minerals framework with its own foreign and trade policy, and help ensure Australia can actually deliver the supply it has agreed to facilitate.

[54] Shaw and Partners, 'Uranium Sector' report, 22 August 2026.

12. Listing Uranium on the CML is Consistent with Australian Government Policy

12.1. The Government need not be concerned that listing uranium would sit uncomfortably with its existing policies. On the contrary, **listing would give effect to them.** Successive Commonwealth governments of both political persuasions have supported uranium mining and export for decades, and the current Government has actively expanded Australia's uranium export relationships.

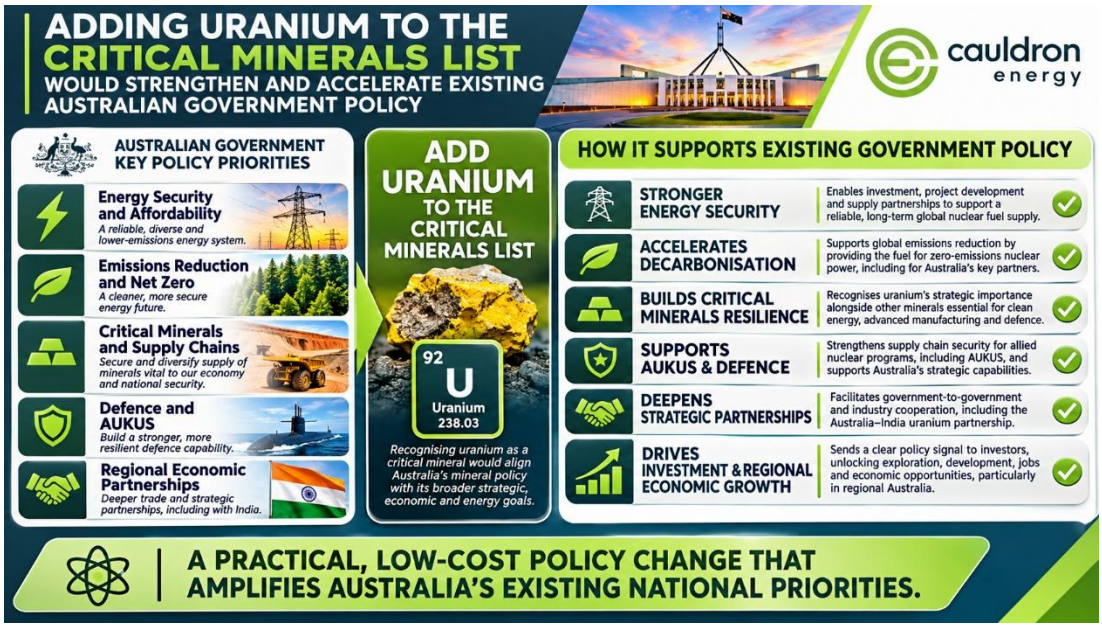


Figure 65 Adding uranium to the CML would support government policy

12.2. The Commonwealth already supports uranium mining and export

12.2.1. **It approves uranium mines.** Every uranium mine in Australia requires Commonwealth environmental approval, and the Commonwealth has granted those approvals for operating and new projects in South Australia, the Northern Territory and Western Australia.

12.2.2. **It licenses uranium exports.** ASNO issues export permits and administers an extensive network of bilateral nuclear cooperation agreements that allow Australian uranium to be supplied, for peaceful purposes only and under IAEA safeguards, to the United States, Japan, the Republic of Korea, the United Kingdom, the European Union, Canada, China, India and others. The safeguards system that tracks every kilogram of Australian uranium is described in Appendix A.

12.2.3. **It is opening new markets.** In July 2026 the Prime Minister concluded the Australia–India arrangement to facilitate long-term uranium exports, stating that Australia looks forward "to becoming a reliable, trusted supplier of uranium to India" (Section 11).

12.2.4. **It is deepening critical minerals partnerships with countries that list uranium**

as critical. The United States–Australia Critical Minerals Framework (October 2025) is with a partner that restored uranium to its own critical minerals list in November 2025. Listing would allow uranium to be addressed within that partnership on a consistent footing.

12.2.5. Partnerships are also developing at State level. At IMARC in October 2026, Western Australia and France signed a critical minerals Letter of Intent. France has a particularly acute need for uranium: it operates 57 reactors supplying around 68% of its electricity, requires around 8,400 tU a year, has had no domestic uranium production for more than two decades, and lost access to Orano's Niger operations in 2024–25.[55] Listing uranium would allow such partnerships to extend to the commodity France most needs from Western Australia.

12.2.6. **It is a partner in AUKUS.** Australia is receiving naval nuclear propulsion technology from the United States and the United Kingdom – both of which depend on imported uranium. Supporting allied nuclear fuel security is entirely consistent with that partnership.

12.3. Uranium for export and nuclear power in Australia are entirely separate questions

12.3.1. **Listing uranium on the CML has nothing to do with whether Australia builds nuclear reactors.** The prohibition on nuclear power in Australia is set by Commonwealth legislation (including section 140A of the EPBC Act), and the Government's position on domestic nuclear energy is unaffected by listing.

12.3.2. Australia has exported uranium for more than half a century without ever operating a nuclear power station (but has operated research reactors since 1958). Supporting uranium mining for export while maintaining a domestic nuclear energy ban has been government policy for decades. **It is entirely reasonable – and entirely consistent – for the Government to support uranium for export while choosing not to change its policy on domestic nuclear power.** Australia supplies its partners with the fuels they choose to use to power their economies; it does not need to share every choice of energy mix to be a reliable supplier of the raw material.

12.3.3. The International Energy Agency's Executive Director made exactly this distinction in Canberra in March 2026: Australia does not need to build a nuclear power plant, but it should "make the most of uranium reserves".

[55] World Nuclear Association, World Nuclear Power Reactors & Uranium Requirements (updated 6 November 2026), 2025 data.



The West Australian

CNBC news

‘We are facing the biggest energy security threat in history’: IEA chief Fatih Birol

Holly Ellyatt | CNBC
Thu, 23 April 2026 5:52PM

Fatih Birol, executive director of the International Energy Agency. Credit: Martin Ollman/NCA NewsWire

Figure 66 Dr Fatih Birol, Executive Director, International Energy Agency
Image: The West Australian, 23 April 2026 (photo: Martin Ollman/NCA NewsWire).

Listing uranium on the Critical Minerals List is a decision about exports, supply chains and our strategic partners. **It is not a decision about nuclear power in Australia.**

Policy area	Current Commonwealth position	Consistent with listing uranium?
Uranium mine approvals (EPBC Act)	Approves uranium mines	**Yes**
Uranium exports (ASNO)	Permits exports under safeguards agreements	**Yes**
Australia–India arrangement (July 2026)	Facilitates long-term uranium exports to India	**Yes**
US–Australia Critical Minerals Framework (October 2025)	Partner lists uranium as a critical mineral	**Yes** – improves alignment
AUKUS	Partnership with uranium-importing nuclear allies	**Yes**
Domestic nuclear power (EPBC Act s140A)	Prohibited	**Unaffected** – listing has no bearing on this policy

Figure 67 Listing uranium alongside existing Commonwealth policy settings

13. Listing Uranium and Increasing Exports: Additional Benefits

13.1. The world will need substantially more uranium over the coming decades to meet growing electricity demand and decarbonisation goals (Sections 6.16 and 9.4). That is a given. The real question is not whether that uranium will be mined, but where – and under whose standards.

13.2. This section sets out why it is in Australia's interests, and the world's, that more of it comes from Australia, and the further benefits that increased Australian exports would bring. Listing uranium on the CML would help to deliver those exports. These benefits complement the economic and strategic benefits set out in Section 15.

13.3. Australia: the supplier of choice

13.3.1. Australia is one of the most politically stable, rules-based jurisdictions in the world. It holds the world's largest uranium resources, applies world-leading environmental, radiation-protection and mine-rehabilitation standards, has one of the world's most capable mining workforces and mining equipment, technology and services sectors, and has a record of some 40 years of safe uranium production (Section 7).

13.3.2. Australia is also a world leader in nuclear safeguards and non-proliferation. It is a founding member of the International Atomic Energy Agency (IAEA) and a long-standing member of its Board of Governors, and its safeguards authority, the Australian Safeguards and Non-Proliferation Office (ASNO), administers one of the most rigorous uranium export regimes in the world (see below).

13.4. Civil uranium and nuclear weapons are separate questions

13.4.1. Some opponents of uranium mining argue that uranium mining, civil nuclear energy and nuclear weapons are inextricably linked, and that Australia should therefore neither mine uranium nor support civil nuclear energy. We do not accept that argument, and have said so in previous government submissions. For more than half a century the international community has kept civil nuclear energy separate from nuclear weapons through the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and the IAEA safeguards system that verifies it – and Australia has been one of that system's strongest supporters.

13.4.2. The product Australia exports – uranium oxide concentrate – is not a weapons material, and fuel for power reactors is typically enriched to only around 3–5% U-235 (and to less than 20% for some advanced reactor fuels). Every customer for Australian uranium is bound by treaty to use it for peaceful purposes only, and ASNO reports that all exported Australian nuclear material remains appropriately accounted for, controlled and secured.[56]

[56] Australian Safeguards and Non-Proliferation Office (ASNO), Annual Report 2024–25, p. 56: "All exported nuclear material remain appropriately accounted for, controlled, and secured in accordance with the conditions of our NCAs."

13.5. If not Australia, then where?

13.5.1. If Australian supply does not grow, the world will not go without uranium – it will source it from elsewhere. Many of the alternatives offer less assurance on governance, political stability, environmental standards or strategic alignment (Section 9.3 and Figure 68):

13.5.2. **Niger.** Following the 2023 military coup, the French operator Orano lost operational control of the SOMAIR mine, the mine was nationalised in June 2025, and the military government moved to sell its uranium on the international market despite an order from the International Centre for Settlement of Investment Disputes (ICSID) not to do so. There have been reports that the Niger military government had agreed to sell around 1,000 tonnes of the seized uranium to Russia; and that the material could ultimately find its way to other blacklisted countries such as Iran.[57]

13.5.3. **Kazakhstan.** The world's largest producer (~39% of world mine supply in 2024) is majority state-controlled, has joint-venture partners linked to Russia and China, and is increasingly reserving output for its own nuclear programme.

13.5.4. **Russia.** Russia directly produces only around 5% of world mined uranium, but almost a quarter when Rosatom's Uranium One assets are included – principally joint ventures in Kazakhstan, together with development projects in Tanzania (Mkuju River) and Namibia (Wings)[58] (Section 9.2).

13.5.5. **Namibia.** Namibia is a stable democracy and a party to the NPT, with its uranium subject to IAEA safeguards. However, its two largest mines, Husab and Rössing, are controlled by Chinese state-owned companies, and much of their output supplies China's reactor fleet.

13.5.6. The NPT and IAEA safeguards apply in all of these countries. But Australia's controls go further (see below) – and when uranium is produced in Australia, it is Australia, rather than another government, that sets the conditions on which it is supplied. Every additional pound supplied from Australia is a pound produced to the world's highest environmental standards and subject to Australia's safeguards, rather than a pound sourced from a jurisdiction with weaker governance or one aligned with Australia's strategic competitors.

[57] Ecofin Agency, 'Niger begins uranium sales after seizing Orano mine', 1 December 2025, https://www.ecofinagency.com/news-industry/0112-51003-niger-begins-uranium-sales-after-seizing-orano-mine;; SightLine U3O8, 'Romanian nuclear firm seeks 300 tons of Niger uranium held in Niamey', 8 August 2026, https://sightlineu3o8.com/2026/08/romanian-nuclear-firm-seeks-300-tons-of-niger-uranium-held-in-niamey/

[58] Rosatom, 'Rosatom's subsidiary has launched a pilot uranium processing facility at the Mkuju River project in Tanzania', 30 July 2025, https://atommedia.online/en/press-releases/dochernyaya-kompaniya-rosatoma-zapustila-pilotnuyu-ustanovku-po-pererabotke-urana-na-proekte-mkuju-r/; Namibian Uranium Association, 'Headspring Investments' (100% owned by Uranium One), https://www.namibianuranium.org/headspring-investments/. Uranium One sold its United States assets to Uranium Energy Corp in December 2021.

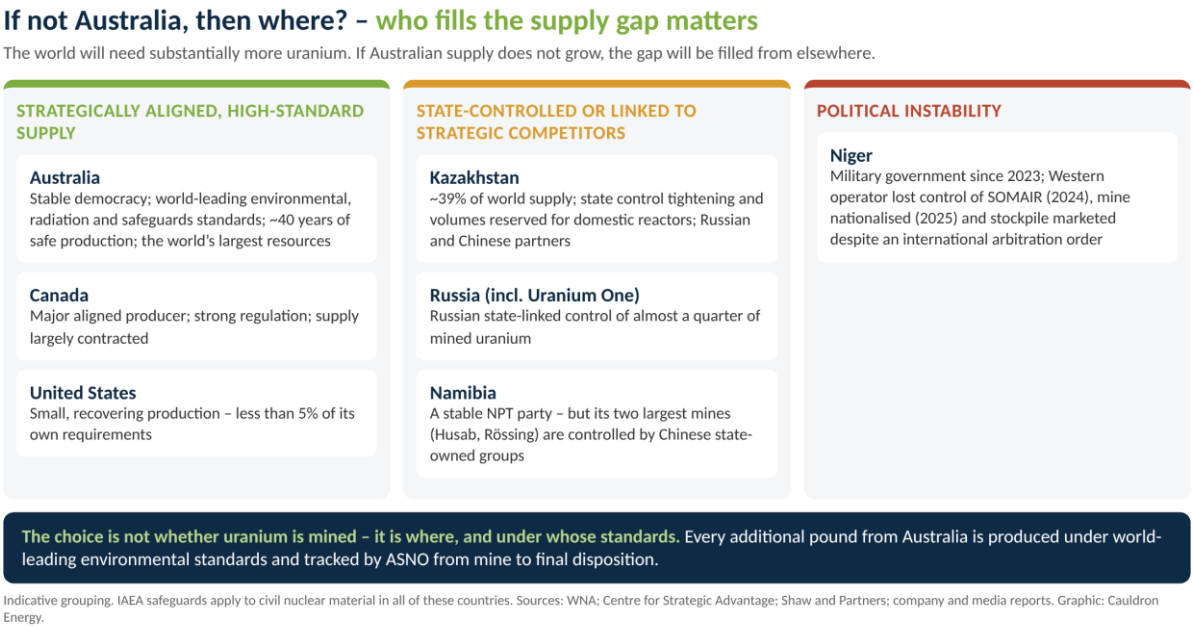


Figure 68 If not Australia, then where? Who fills the uranium supply gap matters

Indicative grouping. Sources: WNA; Centre for Strategic Advantage; Shaw and Partners; company and media reports. Graphic: Cauldron Energy.

13.6. Australia's safeguards go beyond the global minimum

13.6.1. Australia goes well beyond the international baseline. Australian uranium may only be exported to countries with which Australia has a bilateral nuclear cooperation agreement in force – currently 25 agreements covering 43 countries plus Taiwan. Under those agreements, Australian Obligated Nuclear Material (AONM) may be used only for peaceful purposes and never for any military or explosive purpose; Australia's prior consent is required for any transfer to a third party, any enrichment to 20% U-235 or more, and any reprocessing; and ASNO accounts for AONM through every stage of the fuel cycle – some 243,544 tonnes across 14 jurisdictions as at 31 December 2024 (Figure 69).[59]

13.6.2. These conditions follow Australian uranium wherever it goes. Increasing Australian exports therefore increases the share of the world's nuclear fuel that is subject to these additional controls. Supplying more uranium from Australia does not weaken the non-proliferation system – it strengthens it.

[59] ASNO, Annual Report 2024–25, Appendix C: Australia's Nuclear Cooperation Agreements, pp. 104–105, and Table 8, p. 57. Australia's prior consent is required for transfers of AONM to third parties, enrichment to 20 per cent or more in the isotope U-235, and reprocessing.

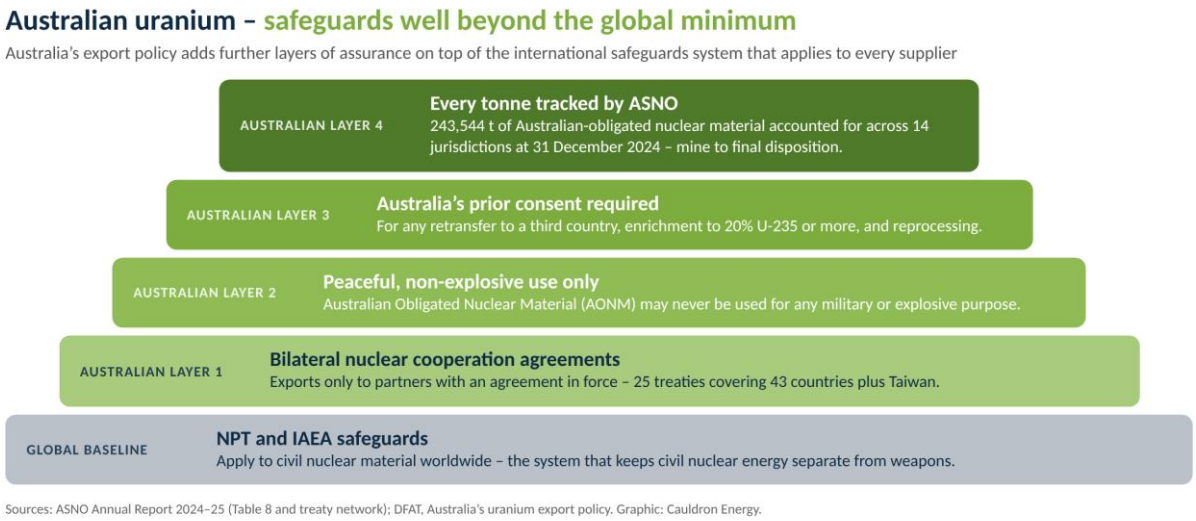


Figure 69 Australia's uranium safeguards: layers of assurance beyond the global minimum

Sources: ASNO Annual Report 2024–25 (Appendix C and Table 8); DFAT. Graphic: Cauldron Energy.

13.7. A responsibility as well as an opportunity

Those who cite non-proliferation as a reason not to mine uranium have the argument the wrong way around. Demand for uranium will be met with or without Australia. As the holder of the world's largest resources, with world-leading safeguards and environmental standards, Australia can be seen as having a responsibility to be a reliable supplier of responsibly produced uranium – so that more of the world's nuclear fuel is mined to the highest environmental standards, by a stable and trusted democracy, and under the strictest controls.

13.8. Further benefits of increased exports

13.8.1. In addition to the benefits above, and those addressed in Section 15 (economic diversification, onshore processing, national security, emissions abatement, trade leverage and Aboriginal partnership), increased Australian uranium exports would deliver further benefits for Australia, its partners and the world (Figure 70):

13.8.2. **Fuel-supply assurance.** Reliable, long-term supply from trusted producers reduces the incentive for countries with new nuclear programmes to develop their own enrichment or reprocessing – the sensitive technologies of greatest proliferation concern. This is the same objective that underpins international fuel-assurance mechanisms such as the IAEA Low Enriched Uranium Bank.

13.8.3. **A stronger voice in nuclear governance.** A larger supplier carries greater weight in forums such as the IAEA and the Nuclear Suppliers Group, enhancing Australia's ability to shape global safeguards and non-proliferation norms.

13.8.4. **Regional safeguards leadership.** As countries in our region consider nuclear power, Australia's role as a supplier gives it a natural platform to help build their safeguards and regulatory capacity – as shown by the 2025 safeguards cooperation arrangement between ASNO and Indonesia's regulator, BAPETEN

(Appendix D).

13.8.5. **Responsible sourcing.** Utilities, technology companies and governments increasingly scrutinise where and how their energy is produced. Traceable, high-ESG Australian uranium meets that demand and helps partners reduce reliance on suppliers linked to strategic competitors.

13.8.6. **More stable prices.** More diverse supply from stable jurisdictions reduces the risk of price shocks caused by political disruption in a highly concentrated market, supporting affordable clean electricity for our partners.

13.8.7. **Exporting Australian expertise.** Australia's strengths in mine regulation, radiation protection, in situ recovery (ISR) and rehabilitation can be exported as services to emerging producers, building on Australia's METS sector.

13.8.8. **A lower global environmental footprint.** Every tonne produced in Australia under world-leading environmental regulation – increasingly by low-impact ISR – is a tonne not produced under weaker environmental oversight elsewhere.

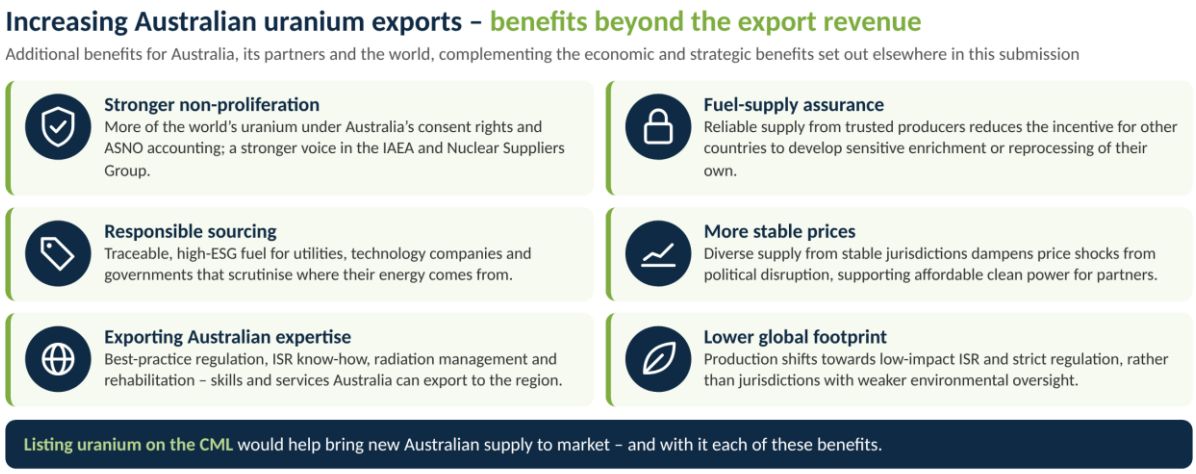


Figure 70 Benefits of increased Australian uranium exports beyond the export revenue

Graphic: Cauldron Energy.

13.8.9. Listing uranium on the CML would send a clear signal that Australia intends to be a larger, long-term, trusted supplier – and would help bring forward the new Australian production needed to realise each of these benefits.

14. Revisiting the "Fuel Source" Principle

The principal remaining objection to listing uranium appears to be one of category rather than evidence: that Australia, like many countries, has not regarded fuel sources as critical minerals. We respectfully submit that this principle should be retired (Recommendation R4), for six reasons.

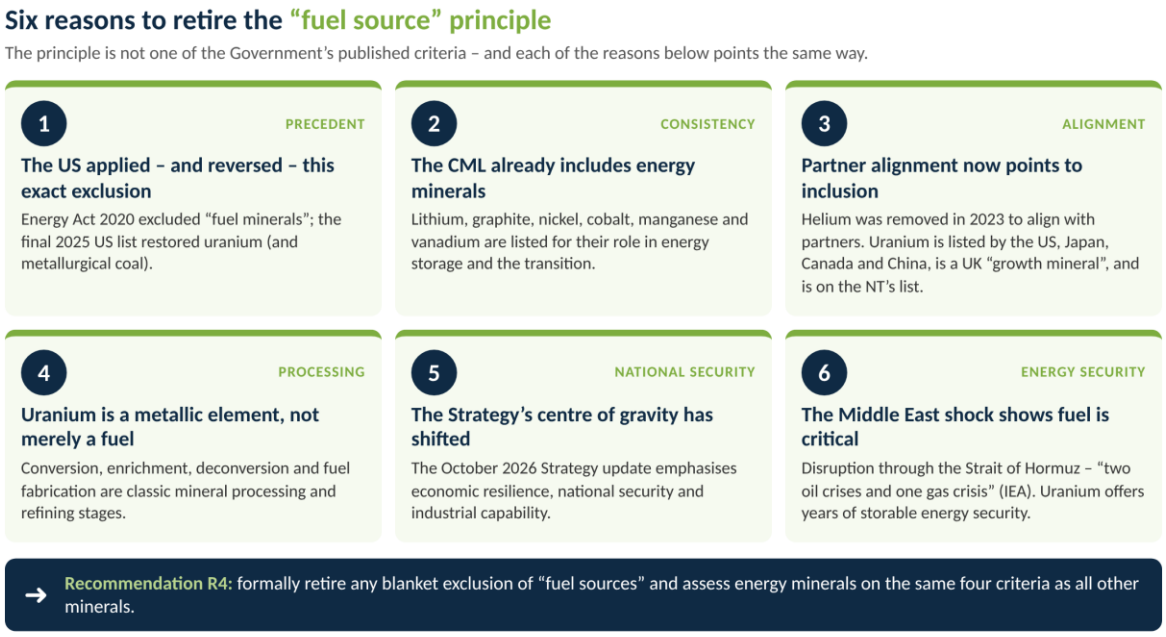


Figure 71 Six reasons to retire the "fuel source" principle

14.1. Reason 1: The United States applied – and then reversed – exactly this exclusion

14.1.1. The US initially included uranium on its 2018 critical minerals list. The *Energy Act of 2020* then redefined critical minerals to exclude "fuel minerals", automatically disqualifying uranium despite its obvious importance, which created a policy contradiction in which US agencies continued to fund uranium supply programmes while the material lacked critical status.

14.1.2. In November 2025, the final 2025 US list restored uranium – alongside metallurgical coal, also an energy material – as one of 10 additions. The US experience shows the fuel exclusion to be a definitional artefact rather than a substantive judgement about supply risk.

14.2. Reason 2: Australia's current CML already includes some energy minerals

14.2.1. Lithium, graphite, nickel, cobalt, manganese and vanadium are on the CML principally because of their role in energy storage / generation and the energy transition.

14.2.2. Uranium is the energy-transition material with the highest energy density of all. There is no principled reason why minerals that *store* energy are critical while the mineral that *is* the energy source for a quarter of the world's clean electricity is not.

14.3. Reason 3: Alignment with partners now points towards inclusion

14.3.1. In December 2023 helium was removed from the CML in order to align Australia's list more closely with the lists of its international strategic partners.

14.3.2. Applying that same rationale today, **alignment requires the inclusion of uranium** – it is on the lists of the United States, Japan and Canada, as well as China, and on the UK's growth list. Domestically, the NT has included it on its own list too.

14.3.3. Where partners have not placed uranium on their critical minerals lists, they generally support it through separate, dedicated frameworks. The European Union manages uranium supply security through the Euratom Treaty and its Supply Agency, and has adopted a roadmap to end its reliance on Russian nuclear materials; the United Kingdom has funded nuclear fuel capability through dedicated programmes (such as its Nuclear Fuel Fund and HALEU programme) and now classes uranium as a "growth mineral"[60]; and India treats uranium as a prescribed substance under its Atomic Energy Act, with exploration and mining undertaken by state entities as part of its strategic nuclear programme. **Australia has no equivalent framework for uranium.** It is neither on the CML nor supported by any dedicated program – so for Australia the CML is the most appropriate mechanism through which to recognise uranium's strategic importance.

14.4. Reason 4: Uranium is a metallic element, not merely a fuel

14.4.1. Uranium is a heavy metal and actinide element with applications in medicine, research and defence, and with processing stages (conversion, enrichment, deconversion and fuel fabrication) that are classic mineral processing and refining activities.

14.4.2. The updated Critical Minerals Strategy 2023-2030 emphasis on processing, refining and capturing value onshore applies directly to the uranium value chain.

14.5. Reason 5: The Critical Minerals Strategy has changed its centre of gravity

14.5.1. The October 2026 Update to the Critical Minerals Strategy places greater emphasis on **economic resilience, national security and industrial capability**.

14.5.2. Uranium is perhaps the clearest example of a mineral whose importance is defined by exactly these considerations.

14.5.3. A list built around national security that omits the mineral at the heart of allied nuclear fuel security is, in our view, incomplete.

[60] UK Department for Business and Trade, Critical Minerals technical annex to the UK Critical Minerals Strategy (first published November 2025; updated 23 January 2026), Annex 1: complete list of UK growth minerals.

14.6. Reason 6: Recent events in the Middle East show that fuel sources are critical

14.6.1. The conflict involving the United States, Israel and Iran, and the resulting disruption to shipping through the Strait of Hormuz, has caused the most severe energy supply shock in decades. The International Energy Agency's Executive Director, Dr Fatih Birol, has described the disruption as equivalent to "two oil crises and one gas crisis" together, and warned of a "major, major threat" to the global economy.[61]

14.6.2. The scale of the shock is summarised in Figure 72. Before the conflict, around 20 million barrels of oil a day – about one-fifth of world consumption – and more than a fifth of global LNG trade passed through the Strait – which was essentially cut off. Brent crude rose from US$72 a barrel before the conflict to futures peaking at around US$118 a barrel in October, its highest since July 2022 (noting physical cargoes actually traded higher than futures); IEA members agreed the largest collective emergency stock release in the Agency's history (400 million barrels); and the IMF has warned that the shock is weighing on energy-importing economies and has stalled the fall in inflation.[62]

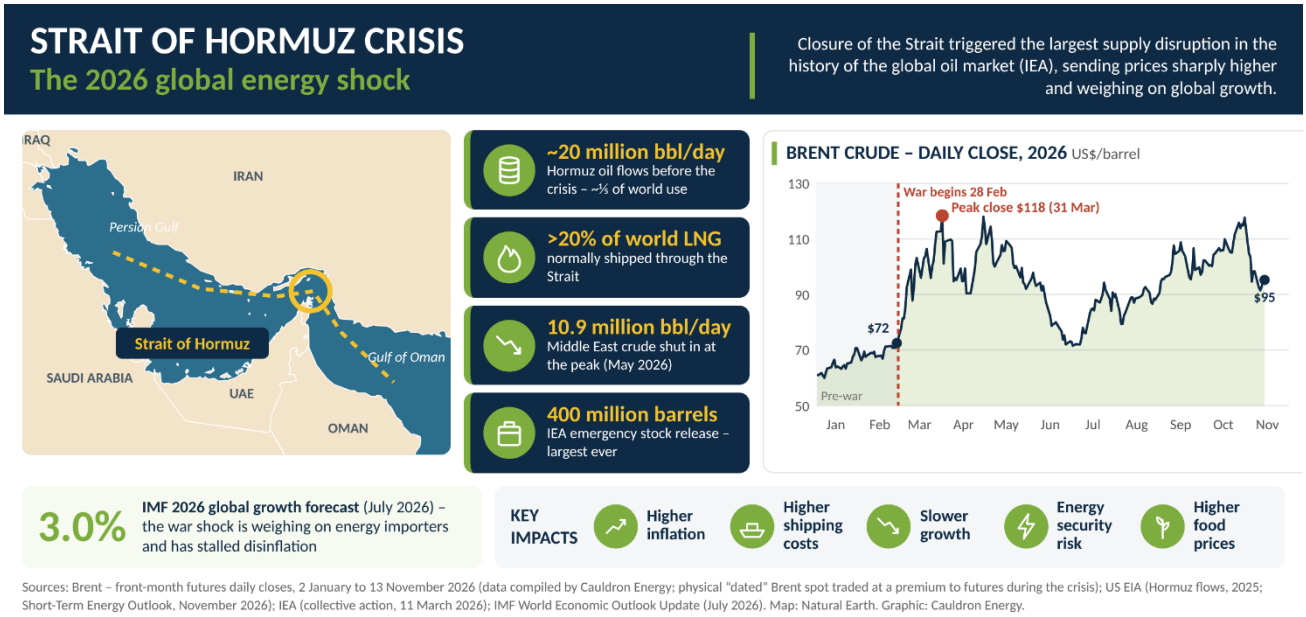


Figure 72 The 2026 Strait of Hormuz shock in numbers
Sources: Brent futures daily closes, 2 January–13 November 2026 (data compiled by Cauldron Energy); US EIA; IEA; IMF; Natural Earth (map). Graphic: Cauldron Energy.

[61] Dr Fatih Birol, Executive Director, International Energy Agency, as reported by RTHK (23 March 2026) and Fortune (23 April 2026); see also Cauldron Energy, Supplementary Submission to the WA Economics and Industry Standing Committee, May 2026.
[62] US EIA, 'Amid regional conflict, the Strait of Hormuz remains critical oil chokepoint' (2025) and Short-Term Energy Outlook, 10 November 2026, https://www.eia.gov/outlooks/steo/; IEA, 'IEA confirms member country contributions to collective action to release oil stocks in response to Middle East disruptions' (March 2026); IMF, World Economic Outlook Update, July 2026; vessel transit data from IMF PortWatch and Lloyd's List as reported by hormuz.now (November 2026). Tonnes calculated by Cauldron Energy at 7.33 barrels per tonne.

14.6.3. The lesson for policymakers is direct: **fuel is critical** – and while oil is not a "mineral" in a geological sense, and hence does not fit the criteria for inclusion on the CML, uranium is, and does. A mineral whose disruption can threaten a nation's economy and way of life is, by any ordinary meaning of the word, critical.

14.6.4. Uranium offers exactly the energy security that oil and gas shocks undermine. Because of its extraordinary energy density, years of reactor fuel can be stored in a single warehouse – a strategic buffer that is impossible with oil or gas. After the oil shocks of the 1970s, countries such as France responded by building nuclear fleets, and the IEA expects the current crisis to give "a significant boost to renewables and nuclear power". To exclude uranium from the list because it is a fuel is, after 2026, to exclude it for the very reason that makes it critical.

14.6.5. Put simply, **energy security is national security**. Recent events have shown that a nation that cannot secure its fuel cannot secure its economy, its defence or its way of life. Uranium allows Australia's partners to insulate themselves from oil and gas shocks, and ensuring that it flows from a trusted, allied supplier is a national security interest shared by Australia and its partners.



Figure 73 SA Minister Tom Koutsantonis speaking at the Global Uranium Conference, October 2025, Adelaide

"This is the industry that will lead the decarbonisation charge. This is the industry that will decarbonise energy"

– Tom Koutsantonis (referring to uranium mining!)

15. Strategic Importance to Australia and Future Made in Australia

The Consultation Paper invites comment on strategic importance to sovereign capability, economic resilience, national security, industrial capability and the objectives of Future Made in Australia.

15.1. Economic resilience and diversification

15.1.1. Australia's export base remains heavily concentrated in iron ore; but that market faces structural headwinds in coming years.

15.1.2. With the Simandou project in Guinea now shipping (first cargo December 2025) and targeting up to 120 Mtpa at full ramp-up, downward pressure on iron ore prices is widely expected, with direct consequences for royalties, employment and regional economies, particularly in WA. Recent market commentary confirms the effect is already being felt: Macquarie notes that Simandou "has single-handedly supported seaborne volumes", offsetting supply declines elsewhere. Guinea's iron ore exports rose to 8.9 Mt in the September quarter 2026 (from 6 Mt in the June quarter), full-year exports of around 28 Mt are possible, and iron ore prices have fallen around 24% from their May 2026 peak to below US$90/t[63] – all at a fraction of Simandou's 120 Mtpa design capacity. Much greater impacts are likely as production ramps up. S&P Global expects exports of around 70 Mt by 2028[64].

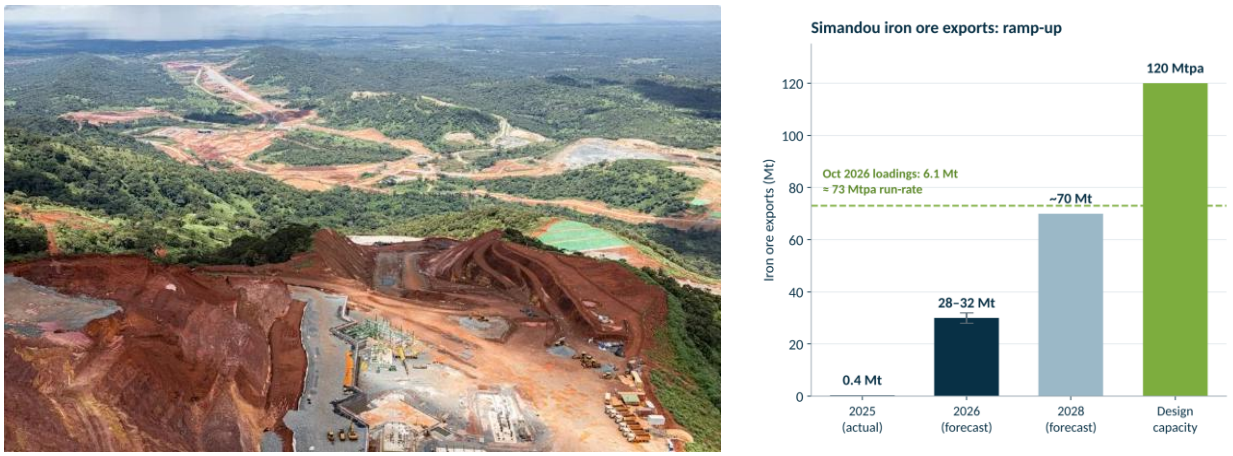


Figure 74 Simandou, Guinea: the mine (left) and its export ramp-up (right)

Sources: Yahoo Finance (5 February 2026) (photo); S&P Global Commodity Insights (June 2026); Argus Media using Kpler data (October 2026); Macquarie (November 2026). Chart: Cauldron Energy.

15.1.3. Uranium – with rising demand, constrained supply and strong partner interest – is one of the most compelling diversification opportunities available. The Chamber of Commerce and Industry of Western Australia (CCIWA) estimates a WA uranium industry alone could deliver more than $1 billion per year in economic benefit and up to 9,000 jobs.

[63] Bloomberg, "Simandou offsets iron ore supply cuts elsewhere, Macquarie says", reported by Mining.com, 3 November 2026.
[64] Argus Media (28 October 2026), citing Kpler ship-tracking data; S&P Global Commodity Insights (17 June 2026).

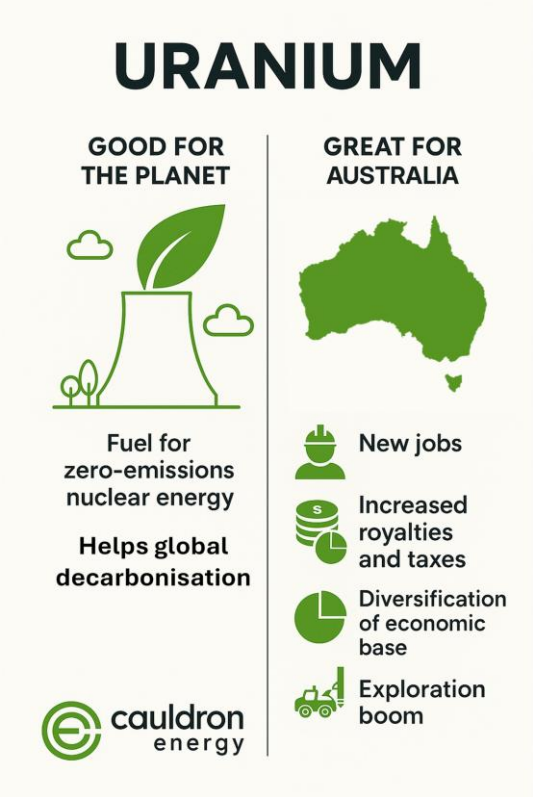


Figure 75 Uranium: good for the planet, great for Australia

15.1.4. Uranium won't on its own fill the gap that may be left from declining iron ore prices – but it can be part of the solution. And given it can take time to bring new mines online, initiatives – such as inclusion on the CML – must be undertaken at the earliest convenience to help get things moving.

15.2. Onshore processing and value-adding

15.2.1. Australia currently exports uranium as concentrate (U_3O_8), with conversion and enrichment undertaken offshore – predominantly in North America and Europe, but in a global market where Russia and China hold over 60% of enrichment capacity. Australia also has world-leading enrichment technology in Silex Systems' laser enrichment process. Listing uranium would enable the Critical Minerals Strategy processing and refining focus to be applied to the uranium chain over time. We note that enrichment and fuel fabrication are currently prohibited under section 140A of the EPBC Act (and conversion under some State laws, including South Australia's); listing does not require any change to that position but would ensure the strategic option is properly assessed.

15.2.2. Under full listing, the Critical Minerals Production Tax Incentive – which supports eligible processing and refining of listed critical minerals – should apply to uranium concentrate production (Recommendation R9). ISR projects such as operating projects in SA or the proposed Yanrey project in WA involve on-site hydrometallurgical processing (ion exchange, elution and precipitation) to produce a refined, export-grade product – exactly the type of downstream processing the incentive is designed to reward.

15.2.3. **Beyond concentrate: conversion, enrichment and fuel fabrication.** Australia currently captures value only at the mining and milling stages. Yet the downstream stages – conversion to UF_6, enrichment and fuel fabrication – are where Western supply chains are tightest and most exposed to Russia and China. Western conversion capacity is very tight; Rosatom (Russia's state nuclear corporation) alone holds ~44% of global enrichment capacity; and the Sapporo 5 partners (Canada, France, Japan, the UK and the US) have committed to pursue at least US$4.2 billion of investment in conversion and enrichment capacity free from Russian influence.

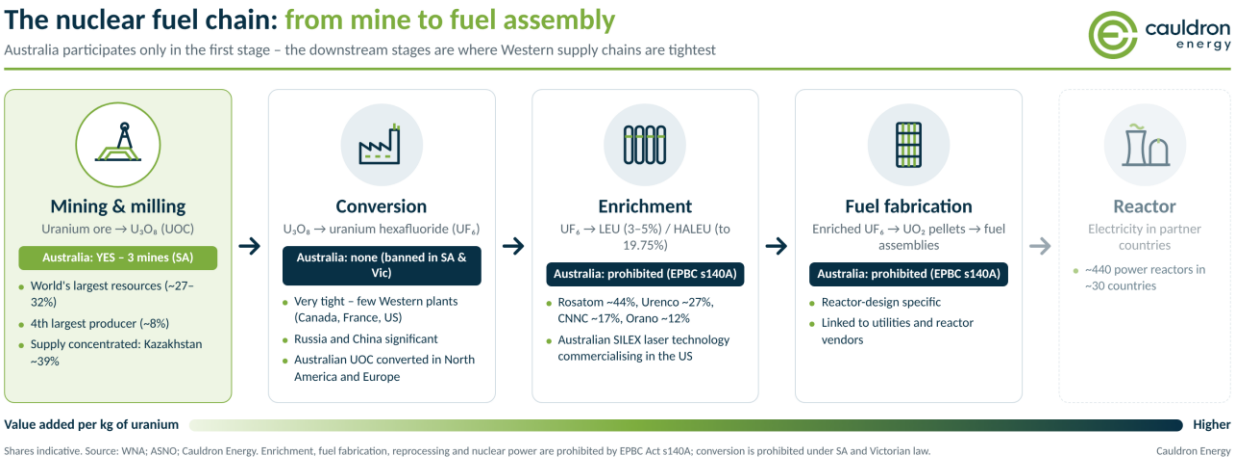


Figure 76 The nuclear fuel chain: from mine to fuel assembly

Graphic: Cauldron Energy.

15.2.4. Importantly, **developing these fuel-cycle capabilities is a very different question from whether Australia builds nuclear power reactors.** Australia could become a producer of value-added nuclear fuel products for export to its partners without any change to the domestic electricity debate. Australia also already has world-leading enrichment technology – the SILEX laser enrichment process, developed in Australia and now being commercialised through Global Laser Enrichment in the United States.

15.2.5. Becoming a producer of further-processed, value-added fuel would be a strategically important capability that Australia's trading partners would be very interested in, and would be fully consistent with the updated Critical Minerals Strategy emphasis on processing, refining and capturing value onshore. We acknowledge that enrichment and fuel fabrication are currently prohibited by section 140A of the EPBC Act (and conversion by some State laws); listing uranium does not require that position to change, but it would ensure these strategic options are properly assessed rather than excluded by default.

15.3. Sovereign capability and national security

15.3.1. Western Australia will host Submarine Rotational Force–West from 2027 and is building a large radiation-qualified workforce through AUKUS. A domestic uranium industry is complementary to that capability: it builds radiation-safety, regulatory and technical skills, and it demonstrates to Australia's AUKUS partners that Australia is a reliable contributor to allied nuclear fuel security – not just a recipient of nuclear technology. Australia's broader existing nuclear capabilities are summarised in Appendix A.

15.3.2. More broadly, **becoming more deeply enmeshed in our strategic partners' energy supply chains is itself good for Australia's national security.** When our allies and partners rely on Australian uranium to keep their lights on, that reliance strengthens our relationships and gives Australia leverage to pursue its other objectives – in defence, trade and diplomacy. Australia has long experience of this through its liquefied natural gas (LNG) and iron ore relationships with Japan and Korea; uranium offers the same mutual dependence with an even more strategic commodity.

15.4. Global emissions abatement

15.4.1. ASNO estimates that Australia's uranium exports in 2023–24 generated around 193 TWh of emissions-free electricity – equivalent to approximately 69% of Australia's total electricity generation – and that the associated avoided emissions are of the order of 200 Mt CO_2 per year relative to coal, around 45% of Australia's national emissions.[65] Uranium export is, in our judgement, the highest-impact contribution Australia can make to partners' decarbonisation.

15.4.2. Applying the World Nuclear Association's rule of thumb that every ~22 tonnes of uranium used saves around one million tonnes of CO_2 relative to coal, the abatement potential is very large. Australia's national inventory is approximately 440 Mt CO_2-e per year. Current exports from South Australia already avoid ~200 Mt per year offshore; the CCIWA's modelled Western Australian industry (~10,800 t per year) would avoid a further ~415 Mt. **On this basis, if the emissions avoided through Australian uranium exports were recognised, Australia would be net carbon negative** – before counting any contribution from Queensland or the Northern Territory.[66]

[65] ASNO Annual Report 2023–24; DCCEEW National Greenhouse Gas Inventory Quarterly Update, March 2025. Abatement is an estimate based on coal-fired generation as the alternative.

[66] Cauldron analysis using ASNO estimates, the CCIWA (2024) production scenario and the WNA abatement factor (22 tU / 26 t U_3O_8 per Mt CO_2 versus coal); national emissions per DCCEEW National Greenhouse Gas Inventory Quarterly Update, March 2025. Illustrative only – avoided emissions are not counted towards Australia's inventory under UNFCCC accounting rules.

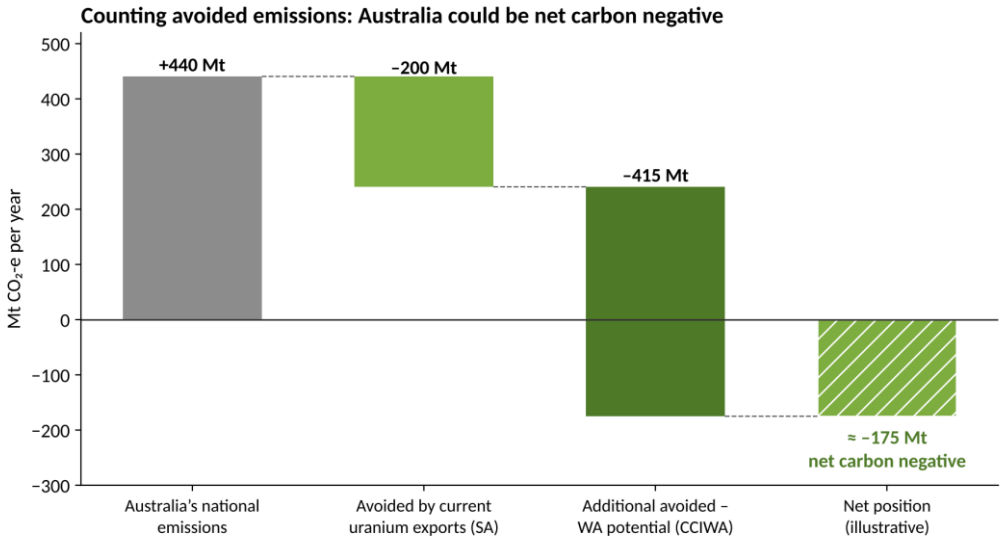


Figure 77 Australia's emissions versus emissions avoided offshore by uranium exports
Illustrative. Source: Cauldron analysis of ASNO, CCIWA, WNA and Department of Climate Change, Energy, the Environment and Water (DCCEEW) data.

15.4.3. We recognise that international carbon accounting does not credit exporting countries for emissions avoided by their customers. The point is one of perspective: no other activity available to Australia can deliver abatement at this scale for our partners, and the Government's own Strategy recognises Australia's role in supporting partners' energy transitions.

15.4.4. Further, listing uranium on the CML is not the only thing required to help increase Australia's uranium exports – however, for the reasons explained in this Submission – it would greatly assist new projects to come on line quicker, especially through the co-ordination benefit.

15.5. Trade leverage

15.5.1. In a world of rising tariffs and bilateral bargaining, uranium is a strategic asset that partners need for energy security. Recognising it as critical strengthens Australia's hand in negotiating favourable terms for other export industries, and positions Australia as a central, trusted node in allied nuclear fuel chains.

15.5.2. This is what we have previously described as uranium's "**trump card**" (pun intended!). The relatively open global trading environment of a decade ago has given way to tariffs, protectionism and bilateral bargaining, in which market access is increasingly negotiated rather than assumed. In that environment, a reliable supply of a strategic commodity that partners cannot easily source elsewhere is a powerful bargaining asset.

15.5.3. For many of Australia's key trading partners with established or expanding nuclear programmes – including Japan, the Republic of Korea, India, the United States and members of the European Union – stable, long-term access to uranium is a matter of national energy security, considered on a different level to ordinary commercial transactions. Australia can agree to supply that security, and in doing so reasonably expect improved and more durable terms for other

export industries – for example wool, wheat, wine, beef and seafood – that have at times faced disadvantageous trading terms.

15.5.4. Because of uranium's strategic value, the dollar value of other exports that could benefit from better trading terms could far exceed the value of the uranium exports themselves.

> ***"Many Australian export industries stand to benefit from Australia allowing its uranium industry to grow."***
>
> *– Jonathan Fisher, CEO, Cauldron Energy*



Figure 78 Uranium exports can strengthen trading terms for other export industries
Source: Cauldron Energy (prepared for the WA decarbonisation inquiry, May 2026).

15.6. Aboriginal partnership

15.6.1. Uranium projects are typically long-life assets in regional Australia. Cauldron works closely with its Traditional Owners, the Thalanyji people, represented by the Buurabalayji Thalanyji Aboriginal Corporation, including on heritage surveys and site employment. Existing SA operations are conducted under ILUAs. Long-life uranium projects can underpin durable Aboriginal economic participation consistent with the Critical Minerals Strategy objectives.

15.6.2. Long-life uranium projects can deliver substantial and durable benefits for Traditional Owners and Aboriginal communities, including:

15.6.2.1. **Employment and training** – stable, local jobs in operations, environmental and radiation monitoring, field services and rehabilitation, with traineeships and apprenticeships that build transferable skills;

15.6.2.2. **Business and contracting** – procurement from Aboriginal-owned businesses in areas such as earthmoving, drilling support, camp services, transport, fencing and land management;

15.6.2.3. **Native title agreements and ILUAs** – negotiated agreements providing compensation, royalty or production-linked payments and community benefits, governed by Traditional Owners themselves;

15.6.2.4. **Heritage protection and cultural input** – Traditional Owners lead heritage surveys before ground is disturbed, so that sites are identified and protected, with cultural monitoring during operations;

15.6.2.5. **Caring for Country** – ranger and land-management roles, groundwater and environmental monitoring, and Traditional Owner input to rehabilitation and closure; and

15.6.2.6. **Community investment** – education, health and youth programmes, scholarships and community infrastructure funded through agreements and company programmes.

15.6.3. ISR is particularly well suited to these partnerships: its small, temporary surface footprint and progressive rehabilitation allow access to Country, land use and cultural activities to continue around operations. These are the kinds of benefits that a modern agreement for a uranium project would be expected to deliver.



Figure 79 Heritage surveys with Thalanyji partners before drilling at Yanrey, 2024

15.6.4. Whilst we acknowledge certain challenges from earlier industry; this does not rule out future productive work and support based on current best practice principles.

16. How Listing Could Support Development

16.1. The Consultation Paper rightly notes that inclusion on the CML does not automatically confer government support. Cauldron and the broader uranium industry are **not seeking a subsidy** per se: our Scoping Study for the Bennet Well deposit assumed no government financial support, and uranium projects – particularly low-capex ISR projects – stand on their own at current prices. The most valuable benefits of listing are instead coordination, signalling and partner alignment.

Mechanism	How it would help uranium development	Significance
Critical Minerals Facilitation Office (CMFO) (Recommendation R6)	Coordination across the dual State and Commonwealth approvals that uniquely apply to uranium – including the EPBC Act nuclear action trigger (s22), ARPANSA, ASNO export permits and port licensing	**High** – approvals complexity is the binding constraint, not capital
International partnerships (Recommendation R7)	Inclusion in the US–Australia Critical Minerals Framework and engagement with Japan, Korea, UK, France/EU, which already treat uranium as strategic	**High** – aligns with partner priorities and offtake
Investor signalling	Reduces perceived sovereign risk for Australian uranium relative to other jurisdictions	**High**
Critical Minerals Strategic Reserve (offtake / aggregation model) (Recommendation R8)	Partners (US, Japan) are building strategic uranium inventories; aggregation and forward contracting fit the uranium market's long-term contracting structure	Medium
Production Tax Incentive (Recommendation R9)	Support for concentrate processing and any future conversion / enrichment	Medium
Critical Minerals Facility (EFA), National Reconstruction Fund (NRF), Australian Renewable Energy Agency (ARENA)-type programmes	Access to finance for larger or downstream projects, on the same terms as other critical minerals	Medium
Geoscience and pre-competitive data (Recommendation R10)	Restoring national uranium resource data and pre-competitive surveys; some State data not updated since 2016	Medium
Research and development (R&D) (Commonwealth Scientific and Industrial Research Organisation (CSIRO), ANSTO)	Contribution to potential R&D areas such as ISR chemistry (including low-acid lixiviants), processing technologies, environmental monitoring and closure science	Medium

Figure 80 How CML listing could support uranium development

16.2. An alternative: facilitation-only ("B-List") listing

16.2.1. Discussion of the CML often centres on one consequence of listing: that it may make projects eligible for Commonwealth concessional finance and grant programmes. **Whilst cheap money would be appreciated, that is not what the uranium industry needs.** At long-term prices of around US$98/lb, uranium projects – particularly low-capital ISR projects – are economic in their own right, and private capital, strategic partners and offtakers are ready to fund them. Cauldron's Bennet Well Scoping Study assumed no government financial support of any kind.[67]

[67] Cauldron Energy Limited, 'Bennet Well Scoping Study', ASX announcement, 13 December 2023, https://yourir.info/resources/24fa3f0ca3538252/announcements/cxu.asx/6A1186316/CXU_Bennet_Well_Scoping_Study.pdf

16.2.2. What the industry needs is **help navigating government**. Uranium projects face a uniquely complex, multi-agency approvals pathway – more so than any other commodity:

16.2.2.1. State mining, environmental, heritage and radiation approvals;

16.2.2.2. automatic Commonwealth referral under the EPBC Act nuclear action trigger, which applies to every uranium mine regardless of its actual environmental significance – no other commodity is currently treated this way[68];

16.2.2.3. radiation protection oversight involving ARPANSA and State radiation regulators, many of which are under-resourced (for example, WA's Radiation Health Unit);

16.2.2.4. ASNO safeguards obligations and export permits, and the need to export through a federally licensed port (currently only the Port of Adelaide), with cross-border transport of radioactive material; and

16.2.2.5. native title and Indigenous land use arrangements across multiple jurisdictions.

16.2.3. The South Australian Government – the government with the most practical experience in approving uranium projects – has long called for consistent and efficient regulation of uranium mining across jurisdictions, and duplication between Commonwealth and State processes has been a recurring theme of reviews of the EPBC Act. **The binding constraint on new Australian uranium supply is approvals coordination, not capital.** This is precisely the problem the Critical Minerals Facilitation Office was created to solve.[69]

16.2.4. Cauldron therefore proposes, **in the alternative to full listing**, that uranium be added to the CML on a **facilitation-only basis** – a "B-List" or **Facilitation Tier** – that would:

[68] Noting the EPBC Act is currently subject to new reforms with a proposed "radiological exposure action" trigger to replace the Nuclear Action trigger. The impact of these reforms are the subject of separate advocacy.
[69] See, for example, South Australian Government, Submission to the Productivity Commission Review of Regulatory Burden on Business – Primary Sector (August 2007), p. 6, calling for "consistency of regulatory processes between jurisdictions" for uranium mining; and G. Samuel, Independent Review of the EPBC Act – Final Report (October 2020), on duplication between Commonwealth and State assessment and approval processes.

16.2.4.1. **include:** access to the Critical Minerals Facilitation Office and its case-management and whole-of-government coordination services; coordination of State and Commonwealth approvals (including the EPBC Act nuclear action trigger, ARPANSA and ASNO processes); inclusion in Australia's international critical minerals engagement and partner frameworks (including the US–Australia Critical Minerals Framework); investment attraction and promotion (for example, through Austrade's critical minerals prospectus); and national geoscience and research collaboration; but

16.2.4.2. **exclude:** eligibility for concessional finance (such as the Critical Minerals Facility administered by Export Finance Australia, or concessional National Reconstruction Fund Corporation lending), grant programmes, the Critical Minerals Production Tax Incentive and Strategic Reserve funding.

Element	Full CML listing (Recommendation R1)	Facilitation Tier – "B-List" (Recommendation R2)	SML only (Recommendation R3)	Not listed (status quo)
Recognised as critical to Australia's interests	Yes	Yes	Partial – "strategic"	No
Critical Minerals Facilitation Office access and approvals coordination	Yes	**Yes**	No	No
International critical minerals engagement and partner frameworks	Yes	**Yes**	Limited	No
Investment promotion and signalling to partners	Yes	**Yes**	Limited	Negative signal
Concessional finance and grants	Eligible (subject to programme criteria)	**Not eligible**	Generally not eligible	Not eligible
Production Tax Incentive / Strategic Reserve funding	Eligible (subject to criteria)	**Not eligible**	Not eligible	Not eligible
Fiscal cost to the Commonwealth	Programme-dependent	**Negligible**	Negligible	Nil

Figure 81 Comparison of listing options for uranium

16.2.5. **This is readily achievable within the existing framework.** The Consultation Paper itself states that inclusion on the CML "does not automatically confer government support" and that each programme "has its own eligibility criteria and objectives". Listing and funding eligibility are therefore already separate: the Critical Minerals Strategic Reserve, for example, initially prioritised only antimony, gallium and rare earth elements. A Facilitation Tier could be implemented simply by annotating uranium's entry on the list, or by specifying its exclusion in individual programme guidelines.

16.2.6. **It offers the Government significant advantages:**

16.2.6.1. it captures most of the strategic value of listing – coordination, partner alignment and signalling – at **negligible fiscal cost**;

16.2.6.2. it addresses any community or political sensitivity about public funding for uranium projects, while still recognising uranium's strategic importance;

16.2.6.3. it brings Australia into closer alignment with the US, Japan and Canada, which list uranium as critical; and

16.2.6.4. it is flexible – uranium could be moved to full listing at a future review if circumstances warrant, in the same way nickel moved from the SML to the CML in 2024.

"Cheap money would be appreciated – but it is not what the uranium industry needs most. What it needs is a coordinated, efficient path through government approvals. A facilitation-only listing would deliver exactly that, at almost no cost to the taxpayer."

– Jonathan Fisher, CEO, Cauldron Energy

16.2.7. A Facilitation Tier may also prove useful for other minerals in the future – for example, minerals of clear strategic importance whose projects are commercially viable without public finance but face complex or multi-jurisdictional approvals.

16.3. What listing would not do

16.3.1. For the avoidance of doubt, listing uranium **would not**:

16.3.1.1. override any State or Territory policy or legislation on uranium mining – mining remains a State matter;

16.3.1.2. alter Australia's uranium export policy, which permits exports only to countries with bilateral safeguards agreements and only for peaceful purposes, tracked from cradle to grave by ASNO;

16.3.1.3. imply any change to Commonwealth policy on domestic nuclear power, which is an entirely separate question; or

16.3.1.4. dilute the stringent radiation protection and environmental standards that apply to the industry.

16.3.2. **The question of mining and exporting uranium is completely separate from whether Australia builds nuclear reactors.** It is important that the two are not conflated. The Federal election did not pass judgement on uranium mining and export, and Australia has exported uranium safely for decades under governments of both persuasions.

16.4. The current signal to partners

16.4.1. At present, Australia – holder of the world's largest uranium resources – lists 31 critical minerals but not uranium. In our experience this sends a confusing signal to partners seeking long-term supply.

16.4.2. Australia rightly prides itself on being an energy and commodity supplier of choice to partners such as Japan and the Republic of Korea – in iron ore, LNG, coal and now critical minerals. Yet we are unable to supply what several of those partners most need for their energy security: more uranium. Listing would help address this, spurring international investment into the Australian uranium sector and reducing perceived sovereign risk for investors and offtakers.

16.4.3. Listing would bring us into line with the partners the list is intended to serve.

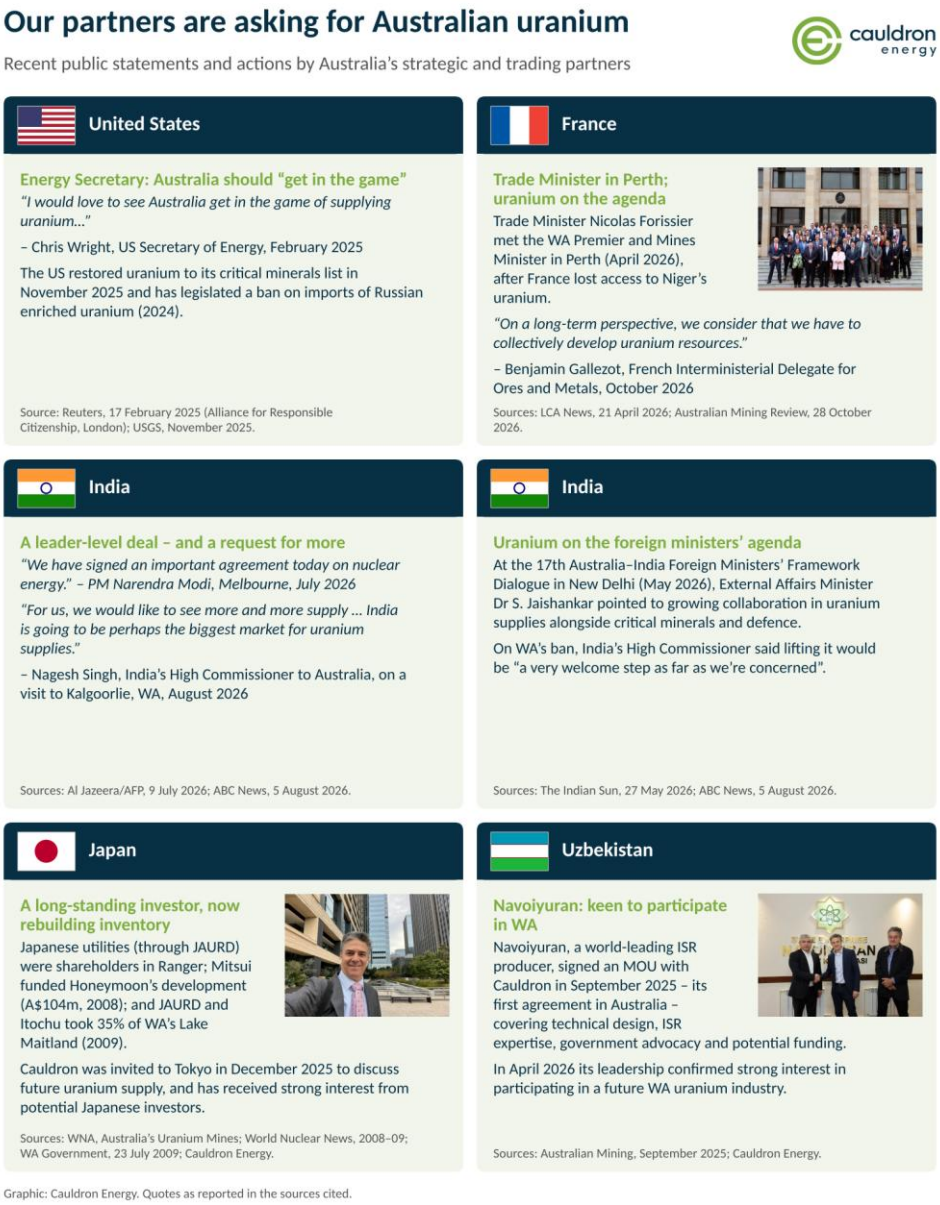


Figure 82 Our partners are asking for Australian uranium – recent statements and actions

17. The Purpose and Usefulness of the Strategic Materials List

17.1. The Consultation Paper seeks comment on the ongoing role of the SML. Cauldron supports retaining the SML, with improvements.

17.2. **The SML works as a stepping stone.** Nickel's move from the SML to the CML in February 2024, in response to market events, shows the SML can function as a transparent watchlist that allows the Government to respond quickly when circumstances change.

17.2.1. **Nickel also disposes of a common objection.** Nickel was added to the CML in 2024 despite already being a large, established Australian industry with a deep, liquid market (it is traded on the London Metal Exchange). The fact that uranium is already mined in Australia and has an established market therefore cannot be a reason to deny it a place on the CML.

17.3. **It should have clearer, published assessments.** We recommend the Department publish, for each mineral on either list (and those considered but not listed), a summary assessment against each of the four criteria, with the evidence relied on. This would greatly assist industry and partners, and would make clear exactly what would need to change for a mineral to move between lists (Recommendation R5).

17.4. **It should be reviewed more frequently than every three years.** Uranium shows how quickly circumstances can change – the US, Japan and the NT all changed their position within the three-year cycle. An annual light-touch review of the SML would allow timely promotion.

17.5. **Uranium should, at minimum, be on the SML.** The SML is defined as containing minerals important to the global transition to net zero and broader strategic applications, for which Australia has geological potential and which are in demand from international partners. On any reading uranium satisfies that definition today. Its absence from both lists is, in our view, the clearest gap in the current framework (Recommendation R3).

17.6. **SML listing alone would not deliver what the industry most needs.** The SML does not, of itself, provide access to the Critical Minerals Facilitation Office. For that reason Cauldron's clear preference, if full CML listing is not adopted, is the facilitation-only CML listing described in Section 16 (Recommendation R2), with SML listing as the minimum outcome.

17.7. **If a fuel-source distinction is retained**, the Government could consider a clearly labelled "critical energy minerals" sub-category within the CML – which could operate on the same facilitation-only basis – so that uranium is recognised on the basis of the same four criteria while acknowledging its distinctive regulatory framework.

18. Conclusion

18.1. In December 2023 uranium was assessed and judged not to meet two of the four criteria – demand from strategic partners and supply chain vulnerability – and fuel sources were not then regarded as critical minerals.

18.2. Since then, the United States and Japan have listed uranium as critical; the US has reversed the very fuel-mineral exclusion that Australia's approach mirrored; Russia and the US have imposed reciprocal restrictions on nuclear fuel trade; Niger has nationalised a Western-operated mine; Kazakhstan has tightened state control of its uranium sector and moved to reserve supply for domestic use; partner contract coverage is falling sharply; and reactor requirements are projected to more than double by 2040 against a supply base that cannot keep pace.

18.3. Uranium now clearly meets **all four** criteria – and does so with an Australian endowment larger, relative to the world, than that of any mineral currently on the list. Its listing would align Australia with its partners, give practical effect to the updated Critical Minerals Strategy emphasis on economic resilience and national security, and send a clear signal that Australia regards its uranium endowment as a strategic national asset.

Cauldron Energy respectfully recommends that uranium be added to Australia's Critical Minerals List in the 2026 review; in the alternative, that it be listed on a facilitation-only ("B-List") basis giving access to the Critical Minerals Facilitation Office without concessional finance; or, at a minimum, that it be added to the Strategic Materials List immediately.



Figure 83 Uranium – the most critical of minerals

19. Further Involvement

19.1. Cauldron would welcome the opportunity to meet with the Critical Minerals Office to discuss this submission, and to provide any further data, analysis or clarification that would assist the review – including more detailed information on Australian uranium resources, ISR processing, partner demand, and the regulatory pathway for uranium projects.

19.2. Cauldron has engaged extensively on these issues through Commonwealth and State parliamentary inquiries, and remains committed to supporting a well-informed, evidence-based approach to the development of Australia's uranium industry. With that in mind, we further note additional opportunities to provide practical support to the uranium industry beyond simple inclusion on the CML, which are discussed in Appendix E.

Thank you for the opportunity to make this submission.

Yours sincerely,

Jonathan Fisher

Chief Executive Officer

Cauldron Energy Limited (ASX:CXU)



Figure 84 Cauldron CEO Jonathan Fisher onsite at Yanrey, WA, 2026

A. Overview of the Nuclear Fuel Cycle and Australian Participation

A.1. The nuclear fuel cycle is the process that turns uranium ore into electricity and then manages the spent fuel. It is usually described in three parts:

A.1.1. the "front end" (mining and milling, conversion, enrichment and fuel fabrication);

A.1.2. the reactor itself; and

A.1.3. the "back end" (interim storage of spent fuel, reprocessing in some countries, and disposal).

A.2. The cycle is international by nature. As ASNO observes, it is unusual for any country to be entirely self-contained in the processing of uranium for civil use: a Japanese utility buying Australian uranium may, for example, have it converted in Canada, enriched in France, fabricated into fuel in Japan and reprocessed in the United Kingdom.[70] Because uranium from different origins is mixed during conversion and enrichment, safeguards obligations attach to equivalent quantities of material rather than to individual atoms – the basis of the AONM accounting system described later in this Appendix.

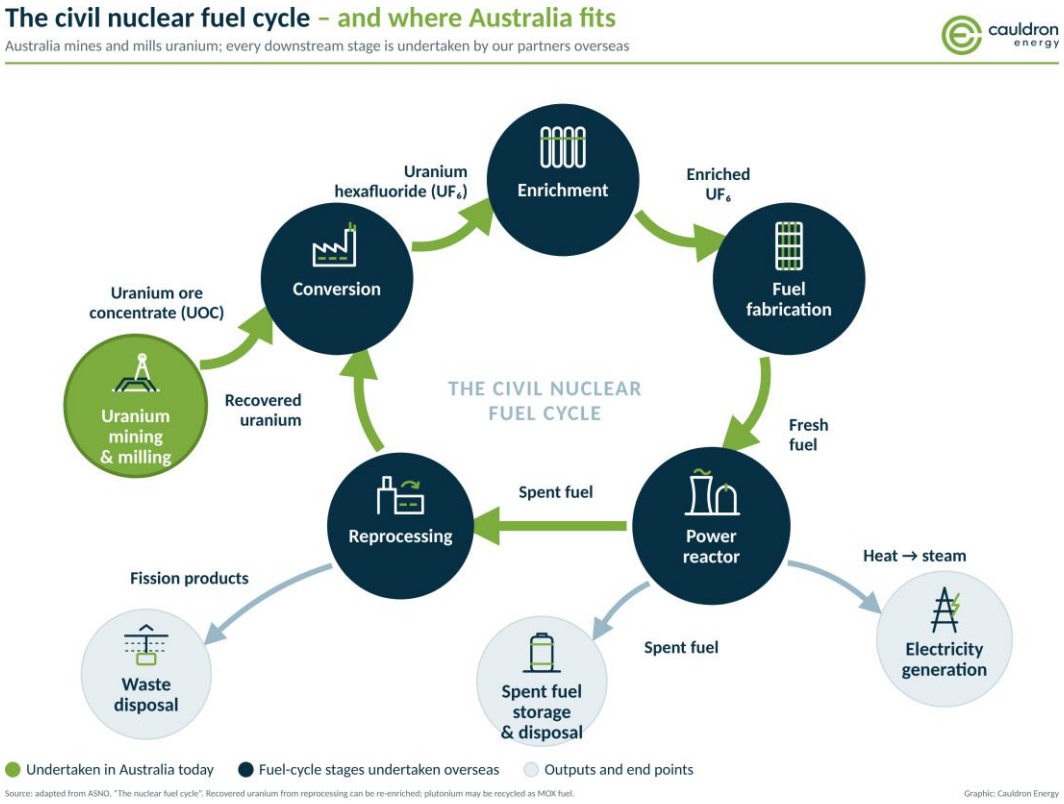


Figure 85 The civil nuclear fuel cycle (adapted from ASNO). Graphic: Cauldron Energy

[70] Australian Safeguards and Non-Proliferation Office, Annual Report 2021–22, Appendix C: The International Nuclear Fuel Cycle.

A.3. The stages of the fuel cycle

A.3.1. Because supply chain vulnerability, demand and value-adding opportunities differ at each stage of the nuclear fuel cycle, it is useful to set out the stages explicitly. Australia currently participates only in the first two.

Stage	Product / form	Australian participation	Global market structure
1. Mining	Uranium ore (conventional open pit / underground, In Situ Recovery (ISR), or by-product e.g. Olympic Dam)	**Yes** – SA (3 mines); NT and QLD historically; WA, QLD, NSW and Vic currently prohibited	Kazakhstan ~39%, Canada ~24%, Namibia ~12%, Australia ~8% (2024)
2. Milling / processing	Uranium oxide concentrate (UOC, U_3O_8, "yellowcake"), min. ~65% U by mass	**Yes** – all Australian output exported as UOC	Co-located with mines
3. Conversion	Uranium hexafluoride (UF_6)	No – not prohibited by Commonwealth law, but prohibited in SA and Victoria under State law	Very tight; few Western facilities (Canada, France, US); Russia and China significant
4. Enrichment	Enriched UF_6 – low-enriched uranium (LEU, 3–5% U-235), high-assay low-enriched uranium (HALEU, 5–20%)	No (prohibited by Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) s140A); Australian laser technology (Silex) commercialising in US	Rosatom ~44%, Urenco ~27%, China National Nuclear Corporation (CNNC) ~17%, Orano ~12%
5. Deconversion & fuel fabrication	UO_2 pellets and fuel assemblies	No (prohibited by EPBC Act s140A)	Reactor-design specific; utility/vendor-linked
6. Use in reactors	Power, research, medical isotope and naval reactors	OPAL (Open Pool Australian Lightwater) research reactor (Australian Nuclear Science and Technology Organisation, ANSTO); AUKUS	~440 power reactors in ~30 countries; ~60+ under construction

Figure 86 The nuclear fuel cycle: stages, forms and market structure

A.3.2. As a rule of thumb, each gigawatt of reactor capacity requires around 0.5 Mlb U_3O_8 (~190 tU) of natural uranium each year. Fuel is a small share of the cost of nuclear electricity, but without it no reactor can operate – which is why security of supply at every stage of the front end matters so much to Australia's partners.

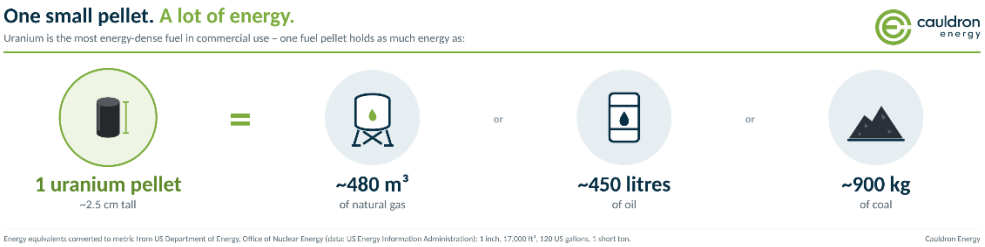


Figure 87 The staggering energy density of uranium

A.4. Australia's existing sovereign capabilities

Australia is often described as having no nuclear industry. That is incorrect. Australia has significant sovereign capabilities across the fuel cycle, summarised below:

A.4.1. **Mining and milling** – the world's largest uranium resources and the 4th largest producer, with ~40 years of safe production in South Australia from three operating mines. Australia could supply much more to world markets with more supportive State and Federal domestic policies;

A.4.2. **Enrichment** – the SILEX laser enrichment process, invented in Australia, is being commercialised in the United States in part because of the ban on enrichment currently in s140A EPBC;

A.4.3. **Research and nuclear medicine** – ANSTO has operated research reactors at Lucas Heights since 1958; OPAL is a major global supplier of molybdenum-99 and is regarded as the best performing research reactor globally;

A.4.4. **Radioactive waste management** – the Sandy Ridge facility in Western Australia is Australia's first commercially operated radioactive waste repository, and ANSTO has developed the SYNROC waste-form technology;

A.4.5. **Defence** – through AUKUS, Australia is acquiring nuclear-powered submarines and building a radiation-qualified workforce; and

A.4.6. **Regulation, safeguards and export controls** – experienced regulators in ARPANSA, ASNO and the State radiation health bodies, supported by a national radiation dose register[71]. ASNO administers one of the world's most rigorous safeguards and accounting regimes for exported uranium (see below)



Figure 88 Australia already has a world-class nuclear industry

[71] Note radiation regulation is more than just uranium; for example dealing with large industries in Mineral Sands and rare earths which have radioactive components.

A.5. What Australia does not do – and why

A.5.1. Australia participates only in the first two stages of the cycle – mining and milling. The downstream stages are mostly prohibited:

A.5.1.1. **enrichment and fuel fabrication** (together with reprocessing and nuclear power plants) are prohibited at Commonwealth level by section 140A of the EPBC Act and section 10 of the *Australian Radiation Protection and Nuclear Safety Act 1998*;

A.5.1.2. **conversion** is not prohibited by Commonwealth legislation, but is prohibited by State law in South Australia and Victoria, and no conversion facility has been proposed in Australia; and

A.5.1.3. **spent fuel** from ANSTO's research reactors is sent overseas for reprocessing, with the resulting waste returned to Australia. The Federal Government is in the process of determining a permanent disposal solution for higher level wastes, a commitment it has made as part of the AUKUS arrangements.



Figure 89 How uranium is safely mined and exported from Australia
Source: ASNO; company websites (compiled by Cauldron Energy).

A.5.2. These are significant gaps. As Section 9 shows, conversion and enrichment are the stages at which Western supply chains are most exposed to Russia and China, and Australia's partners are investing billions of dollars to rebuild capacity. Australian participation in enrichment or fuel fabrication would require amendment of the EPBC Act (and the ARPANS Act). That is a separate question for Government: nothing in this submission depends on it, and listing uranium does not require any change to these prohibitions (Section 15).

A.6. Safeguards: every kilogram tracked from mine to reactor

Uranium is exported from Australia as UOC packed in sealed drums in standard shipping containers, under Australian Safeguards and Non-Proliferation Office (ASNO) permits, to conversion facilities in North America and Europe. Each kilogram is accounted for as Australian Obligated Nuclear Material (AONM) through to its final use.

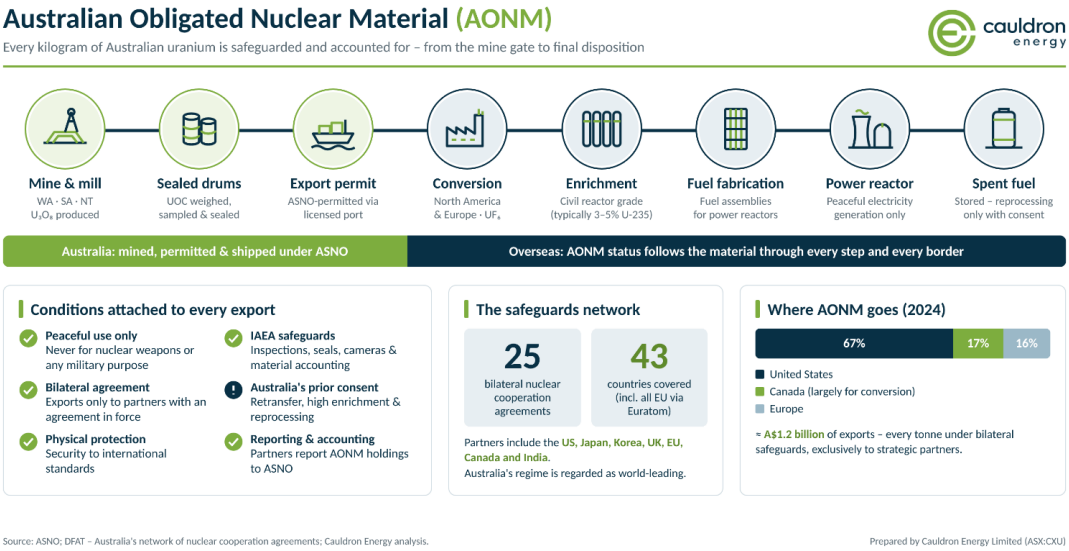


Figure 90 Australian Obligated Nuclear Material (AONM) – safeguarded from mine to reactor

Source: ASNO; Department of Foreign Affairs and Trade; Cauldron Energy analysis.

A.7. Safe transport and best practice for UOC

A.7.1. Australian uranium ore concentrate (UOC) is moved from mine to customer through a well-established and tightly regulated chain. UOC is packed in sealed steel drums, which are loaded and restrained in standard shipping containers and trucked on public roads to the Port of Adelaide – currently Australia's only licensed export port for uranium – before being shipped to conversion facilities in North America and Europe.

A.7.2. Contrary to what many may believe and what anti-nuclear campaigners may claim, **UOC is a low-hazard cargo**. As the World Nuclear Transport Institute (WNTI) notes, it is radioactive, though at relatively low levels, and as a heavy metal it is non-flammable, insoluble in water and non-reactive in water[72]. The main risks are managed through robust packaging, contamination control, security and emergency planning rather than heavy shielding.

A.7.3. Transport is regulated at every step: by the IAEA Regulations for the Safe Transport of Radioactive Material (SSR-6), given effect in Australia through the ARPANSA Transport Code and State radiation licensing; by the UN Model Regulations and the International Maritime Dangerous Goods (IMDG) Code

[72] World Nuclear Transport Institute, "Q&A session on best practice for transport of uranium ore concentrates" (14 July 2025), https://www.wnti.co.uk/news/qa-session-on-best-practice-for-transport-of-uranium-ore-concentrates/

(Class 7) at sea; and by ASNO export permits and physical protection requirements.

A.7.4. Industry best practice is codified in the WNTI Standard for the Packaging and Transport of Uranium Concentrates (version 4, March 2025), developed by producers, converters and carriers[73]. It covers drum integrity and sealing, container restraint and stacking, inspection checklists, contamination monitoring and free-release, documentation, secure routing and tracking, and emergency response planning.

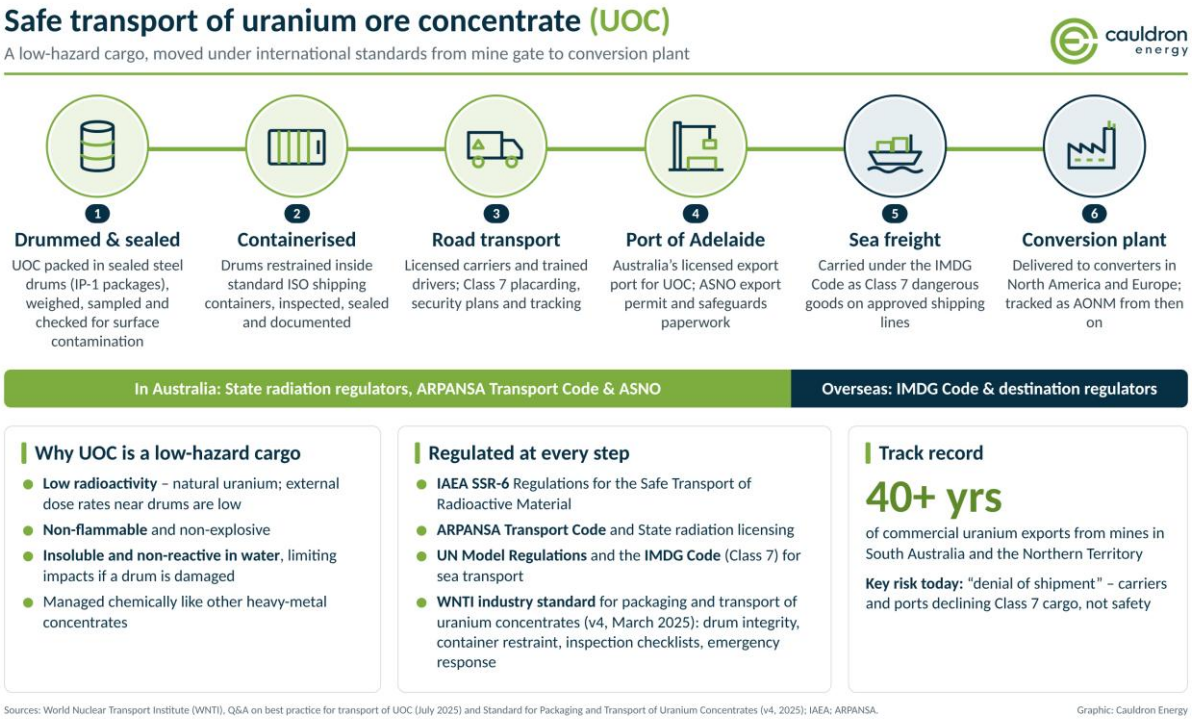


Figure 91 Safe transport of uranium ore concentrate – from mine gate to conversion plant

Source: WNTI; IAEA; ARPANSA. Graphic: Cauldron Energy.

A.7.5. The principal constraint on uranium transport today is not safety but "denial of shipment" – shipping lines and ports declining to carry Class 7 cargo even when it fully complies with the regulations, which narrows routing options and adds cost and delay[74]. Securing reliable port and shipping access for a growing industry is exactly the kind of whole-of-government coordination that listing on the Critical Minerals List would support (Section 16).

[73] World Nuclear Transport Institute, Standard for Packaging and Transport of Uranium Concentrates, Version 4 (March 2025), https://www.wnti.co.uk/wp-content/uploads/2025/03/Standard-for-Packaging-and-Transport-of-Uranium-Concentrates-V4-March-2025-web_final_final.pdf

[74] World Nuclear Transport Institute, "Denial of shipment: the importance of global transport", https://www.wnti.co.uk/news/denial-of-shipment-the-importance-of-global-transport/

A.8. Australia's potential

A.8.1. Australia is already a significant exporter – it produced around 5,390 tU (6,353 t U_3O_8) and exported around 5,460 tU (6,434 t U_3O_8) in 2025, worth approximately A$1.5 billion (Figure 33)[75] – but it could do much more. With the world's largest resources, Australia's output is constrained not by geology but by policy: new uranium mining is prohibited in Western Australia and Queensland, which host many of Australia's most advanced undeveloped deposits.[76]

A.8.2. Were those prohibitions revisited, Australian production could roughly quadruple (see Section 7), making Australia a supplier on the scale its partners need. Australia also has the technology, institutions and skills to play a larger role further along the fuel cycle in future, should the Government choose to pursue that option.



Figure 92 Inspecting a new nuclear fuel assembly containing uranium. Its safe to be this close!

[75] Geoscience Australia, Australia's Energy Commodity Resources 2026: Uranium and Thorium.
[76] Department of Industry, Science and Resources, Resources and Energy Quarterly – September 2026, historical data (Table 36, Uranium). Calendar-year totals compiled by Cauldron Energy from quarterly data; tonnes U converted from tonnes U_3O_8 at 0.848. 2025 data are preliminary.

B. Evidence Summary for Each of the Four Criteria

The table below summarises the evidence in this submission against each Critical Minerals List criterion.

Criterion	Key evidence	2023 finding	2026 assessment
1. Essential to modern technologies, economies and national security	Sole fuel for ~440 power reactors; record 2,702 TWh nuclear generation (2025); AI/data-centre demand; nuclear medicine; naval propulsion; no practical substitutes. IAEA high case 992 GW by 2050; WNA Reference 746 GWe by 2040	Not in dispute	**Met**
2. Australian geological potential	World's largest resources (~32% of resources <US$130/kgU, WNA and GA, 2024 data); more than one-third of known resources; 4th largest producer (4,656 tU, 2024); exploration spend $71m (2024), a decade high. WA alone could produce ~10,800 tU/yr (CCIWA)	Not in dispute	**Met**
3. Demand from strategic international partners	All 2024 exports to the US (67%), Canada (17%) and Europe (16%); uranium listed as critical by the US (2025), Japan (2024), Canada (2021) and China; US requirement ~49 Mlb/yr; Australia–India arrangement (July 2026); WNA requirements ~150,000 tU by 2040; EU contract coverage 36% by 2034, US 9% by 2033	Judged not met	**Met**
4. Vulnerability to supply chain disruption	Kazakhstan 39% of mine supply; Russia-linked control ~25% of mining; Rosatom ~44% of enrichment; top four enrichers ~99.5%; Russia–US trade restrictions; Niger nationalisation; Kazakhstan law changes; primary supply ~90% of requirements; 10–20 year lead times; no practical substitutes; shortfall widening and moving forward in time	Judged not met	**Met**

Figure 93 Evidence matrix – uranium against the Critical Minerals List criteria

C. Treatment of Uranium by Partners and Other Jurisdictions

The table below summarises how uranium is treated in the critical or strategic minerals lists of Australia's key partners and other jurisdictions.

Jurisdiction	Uranium on critical / strategic minerals list?	Notes
United States	**Yes** – final 2025 US Geological Survey (USGS) List of Critical Minerals (60 minerals), November 2025	Previously listed 2018; excluded 2020–2025 by Energy Act of 2020 "fuel minerals" definition; restored 2025. Section 232 review of uranium; DOE US$2.7b enrichment programme (Jan 2026).
Japan	**Yes** – added by METI, reported February 2024	Stated aim to reduce dependence on Russia and support exploration and R&D.
Canada	**Yes** – since inception of Canada's list (2021)	Major producer; processes Australian concentrate.
China	**Yes** – among China's strategic minerals	Building national inventories; largest new-build programme.
European Union	No – not on the Critical Raw Materials list	Supply security managed via Euratom Supply Agency; roadmap to end reliance on Russian nuclear materials. – i.e. **a dedicated alternative framework outside the Critical Raw Materials list.**
United Kingdom	Growth minerals list – uranium classed as a "growth mineral" (Critical Minerals Strategy technical annex, November 2025; updated January 2026); not on the UK critical minerals list	Separate support for nuclear fuel through dedicated programmes (e.g. Nuclear Fuel Fund, HALEU programme); AUKUS and Sapporo 5 partner.
India	No – not on India's critical minerals list	Dedicated alternative framework outside Critical Minerals list - Uranium is a prescribed substance under the Atomic Energy Act 1962; exploration and mining by state entities (Atomic Minerals Directorate; Uranium Corporation of India); Australia–India arrangement (July 2026).
Northern Territory (Australia)	**Yes** – added in 2026 alongside bismuth, iron ore, lead and silver	First Australian jurisdiction to list uranium as critical.
Australia (Commonwealth)	**No** – not on CML or SML	Considered in 2023; judged not to meet criteria 3 and 4; fuel sources not then regarded as critical.

Figure 94 Treatment of uranium in critical minerals frameworks

Jurisdictions that do not list uranium – notably the European Union and India – support it through dedicated nuclear-fuel frameworks instead. Australia has no such framework (Section 14, Reason 3).

Sapporo 5 (Canada, France, Japan, the United Kingdom and the United States), December 2023: resolved to establish a resilient global uranium supply market free from Russian influence and invited "all likeminded nations seeking reliable nuclear energy partners to join us in securing the global uranium supply chain".

D. Strategic Partner Nuclear Programmes and Uranium Needs

This Appendix provides further detail on the nuclear programmes of Australia's major strategic and trading partners, and hence their demand for secure uranium supply (Criterion 3). It updates material in Cauldron's October 2025 and January 2026 submissions. Below each summary, a table lists major nuclear milestones in that jurisdiction since 2023, with links to the original news reports.

The table below quantifies these programmes. Australia's strategic partners listed (excluding China) operate 260 reactors with around 244 GWe of capacity and required some 38,500 tU in 2025 – more than half of world requirements – yet, apart from Canada, produce little or no uranium. China is shown separately. Although it is not a strategic partner in the same sense, Australia is able to sell uranium to China because China is a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and has a bilateral nuclear cooperation agreement with Australia (in force since 2007), under which Australian uranium may be used only for peaceful purposes and remains subject to IAEA safeguards.

Country	Operable reactors (No. / GWe)	Under construction (No. / GWe)	Planned (No.)	Proposed (No.)	Nuclear share of electricity (2025)	Uranium required, 2025 (tU)
United States	94 / 97.0	0	0	25	17.7%	19,011
Japan	33 / 31.7	2 / 2.8	0	1	9.4%	2,135
Republic of Korea	26 / 25.6	4 / 5.7	0	0	31.0%	4,703
United Kingdom	9 / 5.9	2 / 3.4	3	16	10.7%	896
France	57 / 63.0	0	2	4	68.1%	8,389
Canada	17 / 12.7	1 / 0.3	1	20	13.0%	1,455
India	24 / 7.9	8 / 6.6	14	26	3.2%	1,884
Partners above (total)	**260 / 243.8**	**17 / 18.8**	**20**	**92**		**38,473**
China	65 / 65.1	40 / 45.2	40	142	5.0%	13,872
World	**443 / 405.7**	**81 / 88.5**	**120**	**336**	**c. 9%**	**68,920**

Figure 95 Nuclear power programmes and uranium requirements of Australia's strategic partners

Source: World Nuclear Association, World Nuclear Power Reactors & Uranium Requirements (updated 6 November 2026). Operable capacity net; under construction gross.

D.1. United States

The world's largest nuclear operator (~94 reactors), yet almost entirely reliant on imported uranium: US reactors require ~49 Mlb U_3O_8 per year against domestic production of only a few million pounds. Nuclear energy enjoys strong bipartisan support – the previous Administration committed to triple US nuclear capacity by 2050; the current Administration aims to quadruple it. Russia was historically the largest supplier of US enriched uranium (27% of requirements in 2023, ~20% in 2024); imports are prohibited by statute from 2028. The US has restored uranium to its critical minerals list, committed US$2.7 billion to rebuild enrichment, and is building a strategic uranium reserve. Australia is already a major supplier (67% of Australian exports in 2024) and the AUKUS partnership deepens the strategic relevance.

Date	Milestone	Source (click to open)
Apr 2024	Vogtle 4 enters commercial operation, completing the two-unit AP1000 expansion in Georgia (Vogtle 3 followed July 2023).	Commercial operation marks completion of Vogtle expansion
May 2024	Prohibiting Russian Uranium Imports Act signed into law (13 May 2024); ban runs to end-2040.	US President signs uranium import prohibition
Jul 2024	ADVANCE Act signed into law to speed licensing of advanced reactors (passed Senate 88–2, House 393–13).	President Biden signs ADVANCE Act into law
Sep 2024	Constellation and Microsoft sign 20-year PPA to restart 837 MWe Three Mile Island Unit 1 (Crane Clean Energy Center).	Constellation to restart Three Mile Island unit, powering Microsoft
Oct 2024	Google and Kairos Power agree a 500 MW SMR fleet by 2035 – the first corporate SMR fleet deal.	Google and Kairos Power team up for SMR deployments
Oct 2024	Amazon anchors US$500m X-energy raise; targets up to 5 GW of Xe-100 SMRs by 2039.	Amazon invests in X-energy, unveils SMR project plans
Nov 2024	Russia imposes temporary ban on enriched uranium exports to the United States.	Russia places 'tit-for-tat' ban on US uranium exports
May 2025	Executive Orders set target of 400 GW nuclear by 2050 (quadrupling) and 18-month licensing decisions.	Trump sets out aim to quadruple US nuclear capacity
May 2025	Velvet-Wood uranium mine (Utah) fast-tracked under federal emergency permitting procedures.	Utah uranium project fast-tracked under US emergency procedures
Aug 2025	Palisades (Michigan) becomes the first US plant to return from decommissioning to operational status.	Palisades re-enters operational status
Oct 2025	US Government, Brookfield and Cameco agree at least US$80 billion of new Westinghouse reactors.	Brookfield, Cameco team with US government for AP1000 deployment
Nov 2025	Uranium included on the final 2025 US List of Critical Minerals.	Interior Department releases final 2025 List of Critical Minerals (USGS)
Jan 2026	DOE awards US$2.7 billion to rebuild domestic uranium enrichment (LEU and HALEU).	DOE awards USD2.7 billion to strengthen US uranium enrichment
Mar 2026	NRC issues construction permit for TerraPower's 345 MWe Natrium plant (Wyoming) – first non-LWR commercial permit in four decades.	NRC issues construction permit for first Natrium plant
Apr 2026	Diablo Canyon licences renewed for 20 years – the 99th and 100th US licence renewals.	Diablo Canyon receives licence renewals
Jun 2026	First microreactor criticality under the DOE Reactor Pilot Program (Antares Mark-0, Idaho National Laboratory).	First criticality for US microreactor under DOE programme
Jun 2026	DOE conditionally commits US$17.5 billion of loans for long-lead items for up to 10 AP1000 reactors.	US federal loan to jumpstart AP1000 reactor supply chain
Jul 2026	Fourth microreactor reaches criticality by the DOE's 4 July 2026 deadline (Aalo Atomics).	Criticality for fourth US microreactor to meet 4 July deadline
Sep 2026	DOE closes loan of up to US$1.9 billion for restart of the 615 MWe Duane Arnold plant (Iowa).	US Department of Energy closes loan for Duane Arnold restart
Sep 2026	First US construction permit for a BWRX-300 SMR, at TVA's Clinch River site (Tennessee).	First construction permit issued for BWRX-300 SMR in the US

Figure 96 Major nuclear milestones since 2023 – United States
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

D.2. Japan

Japan has no domestic uranium production. After shutting its entire fleet of 54 reactors post-Fukushima, it is steadily restarting its operable reactors – the restart of Kashiwazaki-Kariwa Unit 6 in February 2026 was the 15th – and is supporting new build domestically and investment in US SMR technology. Japan historically invested directly in Australian uranium projects (as it did in WA iron ore and LNG), sold down its national inventory after 2011 and must now rebuild it. Japan added uranium to its critical minerals list in 2024. Cauldron was invited to Tokyo in December 2025 to discuss potential future supply from Western Australia.

Date	Milestone	Source (click to open)
Feb 2023	Cabinet approves GX policy allowing new reactors and operation beyond 60 years.	Cabinet approves change in Japanese nuclear policy
Feb 2024	Uranium added to Japan's critical minerals list to reduce dependence on Russia.	Japan adds uranium to list of critical minerals (Mining.com)
Oct 2024	Takahama 1, Japan's oldest reactor, cleared to operate beyond 50 years.	Japanese reactor cleared for use beyond 50 years
Oct 2024	Onagawa 2 restarts – the first boiling water reactor restarted since 2011.	First BWR restarts in Japan
Dec 2024	Shimane 2 restarts after 13 years offline – Japan's 14th restart.	Shimane 2 restarts after 13 years being offline
Feb 2025	7th Strategic Energy Plan targets ~20% nuclear share of electricity by FY2040.	Japan aims for increased use of nuclear in latest energy plan
Apr 2025	Regulator finds Tomari 3 meets new safety requirements.	Regulator agrees Japan's Tomari 3 meets safety requirements
Nov 2025	Kansai Electric begins site surveys at Mihama for Japan's first new reactor since 2011.	Kansai begins surveys of Mihama site for new reactor
Nov 2025	Niigata governor consents to restart of Kashiwazaki-Kariwa 6 and 7.	Niigata governor consents to restart of Kashiwazaki-Kariwa reactors
Feb 2026	Kashiwazaki-Kariwa 6 (1,356 MWe) restarts – the first Tepco reactor since Fukushima.	Tepco restarts Kashiwazaki-Kariwa unit 6
Apr 2026	Kashiwazaki-Kariwa 6 resumes commercial operation.	Kashiwazaki-Kariwa 6 resumes commercial operation
Jun 2026	METI proposes replacing up to 14 reactors by the 2050s to sustain a ~20% nuclear share.	Japan proposes replacement of up to 14 nuclear reactors

Figure 97 Major nuclear milestones since 2023 – Japan
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

D.3. Republic of Korea

A global nuclear industry leader (builder of the four-unit Barakah plant in the United Arab Emirates (UAE) and preferred bidder in Czechia), Korea has reversed its earlier phase-out policy and targets a nuclear share of at least 30% of generation. It is entirely reliant on imported uranium; Australia is a major supplier and all safeguards arrangements are in place.

Date	Milestone	Source (click to open)
Apr 2024	Shin Hanul 2 enters commercial operation – Korea's fourth domestic APR-1400.	Fourth Korean APR-1400 begins commercial operation
Sep 2024	SMART100 SMR receives standard design approval.	South Korean SMR design approved by regulator
Oct 2024	Ground broken for Shin Hanul 3 and 4 (APR1400s), due 2032–33.	South Korea breaks ground for two new reactors
Feb 2025	11th Basic Plan confirms two new large reactors (2.8 GWe) and 700 MW of SMRs by 2038.	South Korea confirms need for new reactors
Jun 2025	KHNP signs contract to build two units at Dukovany, Czech Republic.	Czech-KHNP Dukovany contract signed after court lifts injunction
Nov 2025	Kori 2 approved for continued operation to 2033.	Korean reactor cleared for extended operation
Jan 2026	Government reconfirms two new large reactors by 2038; Saeul 3 receives operating licence.	Plans for two new reactors confirmed by South Korea
Apr 2026	Saeul 3 (APR1400) reaches first criticality.	Third unit at Korea's Saeul plant starts up
Jun 2026	KHNP selects Yeongdeok for two large reactors and Gijang (Busan) for an SMR.	Sites selected for Korean nuclear new build
Oct 2026	US–Korea framework targets six AP1000 and two APR1400 units in the US (~US$120 billion).	USA, South Korea targeting six AP1000 and two APR1400 units

Figure 98 Major nuclear milestones since 2023 – Republic of Korea
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

D.4. United Kingdom

The UK connected the world's first commercial-scale nuclear plant (Calder Hall) and now targets up to 24 GW of nuclear capacity by 2050, with Hinkley Point C under construction, a final investment decision on Sizewell C and an active SMR programme including UK–US cooperation agreements (September 2025). It is entirely reliant on imported uranium and is an AUKUS and Sapporo 5 partner.

Date	Milestone	Source (click to open)
Jan 2024	Civil Nuclear Roadmap targets up to 24 GW of nuclear by 2050.	UK releases roadmap to quadruple nuclear energy capacity
Mar 2024	Government buys Wylfa and Oldbury sites from Hitachi for new nuclear.	UK government buys Wylfa and Oldbury nuclear sites from Hitachi
Jun 2025	Government commits £14.2 billion to Sizewell C.	UK government announces GBP14.2 billion for Sizewell C
Jul 2025	Final investment decision on the £38 billion, 3.2 GW Sizewell C project.	Sizewell C gets final go-ahead decision
Sep 2025	Heysham 1 and Hartlepool life extended to March 2028.	Further life extension of two UK nuclear power stations
Sep 2025	UK–US Atlantic Partnership for Advanced Nuclear Energy to fast-track reactor approvals.	Raft of US-UK nuclear deals ahead of Trump visit

Date	Milestone	Source (click to open)
Nov 2025	Wylfa selected to host at least three Rolls-Royce SMRs.	UK selects Wylfa to host at least three Rolls-Royce SMRs
Nov 2025	Nuclear Regulatory Taskforce recommends radical reform of UK nuclear regulation.	Radical reforms needed to UK nuclear regulation, says taskforce
Apr 2026	Contract signed for delivery of the UK's first three SMRs at Wylfa.	Contract signed for delivery of UK's first SMRs
Jun 2026	Second Hinkley Point C reactor vessel installed.	Second Hinkley Point C reactor vessel installed

Figure 99 Major nuclear milestones since 2023 – United Kingdom
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

D.5. France and the European Union

France operates ~57 reactors supplying more than 65% of its electricity, is extending 1.3 GW units to 60-year lives and plans up to 14 new EPR2 reactors. French supply security was badly damaged by the loss of Orano's Niger operations. France's Minister Delegate for Foreign Trade visited Western Australia in April 2026, shortly after conclusion of the Australia–EU Free Trade Agreement (24 March 2026). Across the EU, ~100 reactors provide around a quarter of electricity; the bloc is fully import reliant and has adopted a roadmap to end dependence on Russian nuclear materials. Sweden, Poland, the Czech Republic, Bulgaria, Slovenia, Slovakia, Estonia, Italy and others are pursuing new build or re-entry to nuclear.

Date	Milestone	Source (click to open)
Dec 2024	Flamanville 3 EPR (1,630 MWe) connected to the French grid.	France's Flamanville EPR starts supplying power
Mar 2025	France agrees subsidised state loan for six EPR2 reactors.	EDF may get state loan for six new reactors
May 2025	European Commission REPowerEU roadmap to phase out Russian energy, including nuclear materials.	EU seeks to end all energy imports from Russia
May 2025	Belgium repeals its 2003 nuclear phase-out law.	Belgium reverses phase-out policy as Denmark reconsiders nuclear
Jun 2025	Commission estimates €241 billion of nuclear investment needed by 2050 (PINC).	EU says EUR241 billion investment needed to deliver nuclear plans
Jul 2025	French regulator clears 1,300 MWe units to operate beyond 40 years.	French regulator says 1300 MW units can operate beyond 40 years
Oct 2025	Urenco doubles planned enrichment expansion at Almelo (Netherlands).	Urenco doubles expansion plans for uranium enrichment in the Netherlands
Nov 2025	Swedish parliament votes to lift uranium mining ban (effective 1 January 2026).	Swedish parliament votes to allow uranium mining
Dec 2025	EDF estimates six-unit EPR2 programme at €72.8 billion; FID targeted end-2026.	EDF estimates EPR2 programme cost at EUR72.8 billion
Feb 2026	France's PPE3 energy programme confirms six EPR2 reactors and 50–60 year lives.	Nuclear central in France's latest energy strategy
Mar 2026	Commission President says turning against nuclear was a "strategic mistake"; EU SMR strategy announced.	Von der Leyen: It was strategic mistake to turn against nuclear
Mar 2026	German energy minister calls the nuclear phase-out a "huge mistake".	German energy minister calls nuclear phase-out 'huge mistake'
Sep 2026	Italy's Senate approves the return of nuclear power.	Italy's Senate approves a return to nuclear power

Figure 100 Major nuclear milestones since 2023 – France and the European Union
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

D.6. Canada

A major producer and consumer, and home to one of the few Western conversion facilities, which processes Australian UOC. Canada has listed uranium as a critical mineral since 2021 and is a Sapporo 5 member.

Date	Milestone	Source (click to open)
Apr 2025	CNSC issues licence to construct the first BWRX-300 SMR at Darlington.	Canadian regulator issues SMR construction licence
Apr 2025	Bruce unit 5 refurbishment approved, adding 30–35 years of operation.	Bruce unit 5 refurbishment gets IESO go-ahead
Jun 2025	Ontario energy strategy places nuclear at its core (50% of generation).	Nuclear at heart of Ontario's integrated energy strategy
Sep 2025	Darlington SMR referred to federal Major Projects Office for fast-tracking.	Canadian SMR project shortlisted for federal fast-track
Oct 2025	Canada Growth Fund and Building Ontario Fund commit C$3 billion equity to Darlington SMRs.	OPG secures government equity financing for SMR project
Nov 2025	Ontario approves C$26.8 billion refurbishment of four Pickering units.	Pickering refurbishment gets government go-ahead
Feb 2026	Darlington refurbishment completed ahead of schedule and under budget.	Darlington refurb completed ahead of schedule, under budget
Feb 2026	Denison licensed to build Phoenix – Canada's first ISR uranium mine.	Denison granted licence for Wheeler River
Mar 2026	NexGen's Rook I uranium project receives CNSC construction licence.	Rook I uranium project gets construction approval
Aug 2026	Construction starts at Rook I (~30 Mlb U_3O_8 a year at full production).	Construction starts at Saskatchewan uranium mine
Nov 2026	Federal Budget 2026 funds a national Nuclear Energy Strategy.	Canadian budget sets out nuclear investments

Figure 101 Major nuclear milestones since 2023 – Canada
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

D.7. India

India operates 24 reactors, has several under construction and targets 100 GW by 2047. Australia has a bilateral nuclear cooperation agreement permitting exports under strict safeguards. India's requirements will rise substantially as its fleet expands.

Date	Milestone	Source (click to open)
Feb 2024	Kakrapar 4 (700 MWe PHWR) connected to the grid.	India's newest nuclear unit connected to grid
Sep 2024	NPCIL–NTPC "Ashvini" joint venture approved to build Mahi Banswara (4 × 700 MWe).	Indian nuclear joint venture gets go-ahead
Feb 2025	Budget launches Nuclear Energy Mission: 100 GW by 2047 and INR20,000 crore for SMRs.	Indian budget launches Nuclear Energy Mission
Mar 2025	Rajasthan 7 (700 MWe PHWR) connected to the grid.	India welcomes newest Rajasthan unit to the grid
Sep 2025	Prime Minister lays foundation stone for the Mahi Banswara plant.	PM Modi inaugurates Mahi Banswara nuclear project

Date	Milestone	Source (click to open)
Dec 2025	SHANTI Act passed, opening nuclear power to private and joint-venture investment.	India's nuclear-focused SHANTI Bill completes legislative process
Mar 2026	First concrete for Kaiga 5 and 6 (2 × 700 MWe PHWR).	First concrete poured for new capacity at Kaiga in India
Mar 2026	Cameco agrees to supply ~22 Mlb U_3O_8 to India's DAE over 2027–2035.	Cameco and India sign new uranium supply agreement
Apr 2026	Prototype Fast Breeder Reactor reaches first criticality – stage 2 of the three-stage programme.	First criticality for Indian fast breeder reactor
May 2026	Tarapur 2 cleared to restart after refurbishment; NTPC advances nuclear plans.	Indian reactor set to restart as private sector plans progress
Jul 2026	Australia–India administrative arrangement enables Australian uranium exports to India.	Australia agrees to export uranium to India
Sep 2026	India and Uzbekistan near long-term uranium supply agreement.	India and Uzbekistan eye uranium deal as ties grow

Figure 102 Major nuclear milestones since 2023 – India
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

D.8. China

China is undertaking the world's largest nuclear new build programme and is aggressively building strategic uranium inventories, sourcing heavily from Kazakhstan and Africa. Australia has a nuclear cooperation agreement with China. China lists uranium among its strategic minerals – a reminder that the competition for secure uranium supply is intensifying.

Date	Milestone	Source (click to open)
Dec 2023	HTR-PM high-temperature gas-cooled reactor (Gen IV) at Shidaowan enters commercial operation.	China's demonstration HTR-PM enters commercial operation
Aug 2024	State Council approves 11 new reactors across five projects.	China approves 11 new reactors
Jan 2025	Zhangzhou 1 (Hualong One) enters commercial operation.	Zhangzhou unit 1 enters commercial operation
Apr 2025	State Council approves 10 more reactors, including eight Hualong One units.	Ten new reactors approved in China
Jul 2025	IAEA review says China's regulator must keep pace with its rapid nuclear expansion.	Chinese regulator must keep up with nuclear expansion, says IAEA
Dec 2025	Linglong One (ACP100) – the first commercial land-based SMR – completes turbine start-up test.	Chinese SMR completes non-nuclear steam start up test
Jan 2026	Construction starts at Xuwei – HTGR coupled with Hualong One units for industrial heat.	China starts construction of innovative nuclear project
Mar 2026	China signs the Declaration to Triple Nuclear Energy by 2050.	China and Brazil among new signatories to tripling nuclear goal
Apr 2026	San'ao 1 (Hualong One) enters commercial operation.	First unit at San'ao enters commercial operation
Jul 2026	State Council approves eight more reactors, including Hualong One 2.0 and CAP1400 units.	China approves construction of eight more reactors
Aug 2026	Changjiang 3 grid-connected; Taipingling 2 enters commercial operation.	New Chinese reactors reach start-up milestones
Sep 2026	Groundwork begins for the first Hualong One 2.0 demonstration units (Jinqimen).	Groundwork begins for demonstration Hualong One 2.0 units
Nov 2026	Construction begins on Xuwei 3, a 660 MWe HTGR.	Construction of Chinese HTGR begins

Figure 103 Major nuclear milestones since 2023 – China
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

D.9. Indonesia, Singapore and Taiwan

Indonesia plans ~7 GW of nuclear capacity by 2040 and 35 GW by 2060 and signed a safeguards cooperation arrangement between ASNO and BAPETEN (Indonesia's Nuclear Energy Regulatory Agency) in February 2025. Singapore is studying advanced reactors with US cooperation. Taiwan has moved from full phase-out (May 2025) to formal restart plans within a year. Each represents emerging regional demand on Australia's doorstep.

Date	Milestone	Source (click to open)
Feb 2025	Indonesia: ThorCon lodges first site licensing documents for a 500 MWe molten salt reactor.	Thorcon applies to build Indonesia's first nuclear power plant
May 2025	Taiwan: Maanshan 2 shut down – Taiwan's last operating reactor.	Reactor closure marks Taiwan's nuclear exit
May 2025	Taiwan: legislature passes proposal for a referendum on restarting Maanshan.	Referendum proposed for restart of Taiwan's Maanshan nuclear power plant
Aug 2025	Indonesia: regulator BAPETEN approves first nuclear site evaluation programme.	Regulatory approval for Indonesian site survey
Aug 2025	Taiwan: restart referendum wins 74% support but falls short of turnout threshold.	Taiwan's pro-nuclear vote fails to hit turnout threshold
Sep 2025	Singapore: Energy Market Authority commissions SMR feasibility study.	Study to evaluate deployment of nuclear in Singapore
Oct 2025	Singapore: Government "seriously studying" nuclear energy.	Singapore 'seriously' considering nuclear energy
Nov 2025	Taiwan: Ministry finds restart of Kuosheng and Maanshan feasible.	Restart of two Taiwanese plants feasible, ministry says
Mar 2026	Singapore: KHNP and the Energy Market Authority sign SMR cooperation MoU.	KHNP, EMA to cooperate on Singapore SMR study
Mar 2026	Taiwan: Taipower applies to renew Maanshan's licence and restart the plant.	Taipower applies to restart Maanshan plant
Sep 2026	Taiwan: regulator completes review of Maanshan restart plan; restart possible from 2028.	Taiwan regulator completes review of restart plan
Oct 2026	Region: IEA analysis says nuclear could add ~30 GW in Southeast Asia by 2050.	ASEAN nations assessing nuclear energy option

Figure 104 Major nuclear milestones since 2023 – Indonesia, Singapore and Taiwan
Source: World Nuclear News and other sources as linked; Cauldron Energy compilation (November 2026).

E. Beyond the CML: Additional Opportunities for Support

E.1. Although they fall outside the scope of this review, for completeness we set out below further practical measures that would help Australia's uranium industry grow and fulfil its potential as a major contributor to global decarbonisation, allied energy security and Australia's prosperity. Many would complement listing uranium on the CML, and some depend on it. They are summarised in Figure 105.

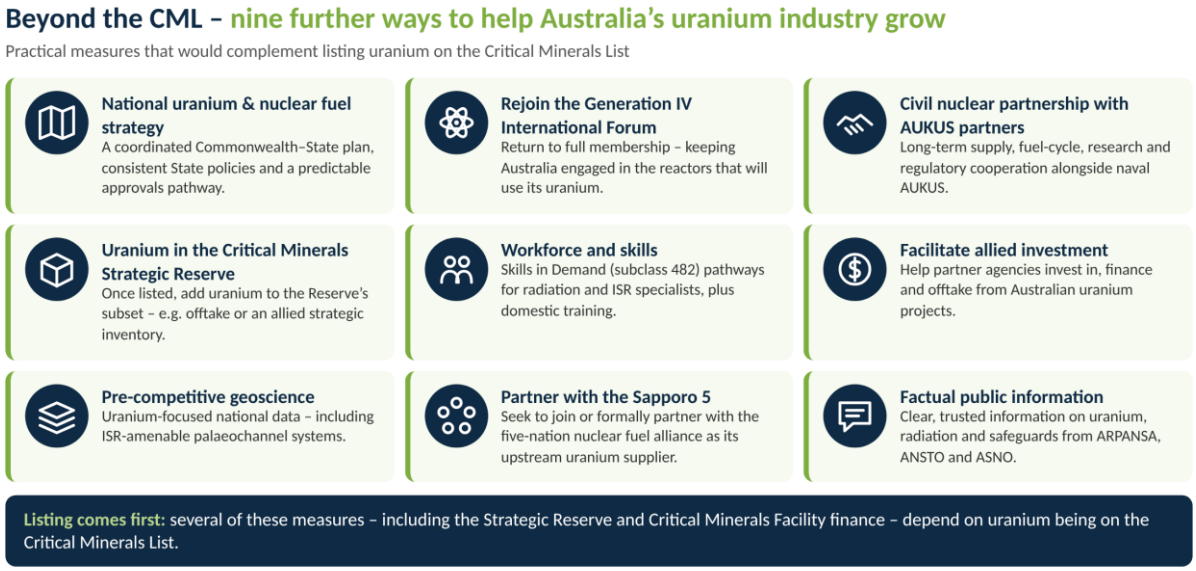


Figure 105 Beyond the CML: further measures to help Australia's uranium industry grow

Graphic: Cauldron Energy.

E.2. A national uranium and nuclear fuel capability strategy

E.2.1. Responsibility for uranium is divided between the Commonwealth (environmental approval of uranium mines, safeguards and export permits) and the States and Territories (tenure, mining approvals and, in several jurisdictions, outright bans or restrictive policies). We recommend that the Commonwealth, working with the States and Territories, develop a national uranium and nuclear fuel capability strategy that sets a coordinated, long-term direction across exploration, mining, export, workforce and research – and, in time, value-adding through the fuel cycle (Section 15).

E.2.2. Such a strategy should also address inconsistent State policies that currently prevent much of Australia's uranium endowment from being developed (recognising the States retain primary rights over their minerals policies, it is not uncommon to have coordination with the Commonwealth, especially in matters of national significance), and establish a timely, predictable and coordinated Commonwealth–State assessment pathway for uranium projects.

E.3. Rejoin the Generation IV International Forum as a full member

E.3.1. The Generation IV International Forum (GIF) is the principal international collaboration on next-generation reactor systems. Australia joined in 2016, with

ANSTO as its implementing agent.

E.3.2. In November 2024, however, the Government declined to sign the new GIF Framework Agreement (which came into force on 1 March 2025), and Australia now participates only as an observer.[77]

E.3.3. Rejoining as a full member would come at little cost, keep Australian scientists engaged in developing the advanced reactors that will use Australian uranium, and signal to partners that Australia remains a serious and capable nuclear nation.

E.4. A civil nuclear partnership with our AUKUS partners

E.4.1. AUKUS has created a deep naval nuclear partnership with the United States and the United Kingdom, both of which depend on imported uranium.

E.4.2. A complementary civil nuclear partnership – covering long-term uranium supply, cooperation on conversion and enrichment (where both partners are rebuilding Western capacity), research and regulatory cooperation – would strengthen allied fuel security and build on the nuclear capabilities Australia is already developing for AUKUS.

E.5. Join or partner with the Sapporo 5

E.5.1. The Sapporo 5 – Canada, France, Japan, the United Kingdom and the United States – is investing billions of dollars to rebuild a nuclear fuel supply chain free from Russian influence, and has invited like-minded nations to join it (Section 10).

E.5.2. Australia already supplies uranium to all five members. Joining, or establishing a formal partnership with, the group as its upstream uranium supplier would align Australia with its closest partners' fuel-security priorities, give Australian producers a direct line of sight to new conversion and enrichment demand, and complement listing uranium on the CML.

E.6. Consider uranium for the Critical Minerals Strategic Reserve

E.6.1. The Export Finance and Insurance Corporation Amendment (Strategic Reserve) Act 2026 establishes the Critical Minerals Strategic Reserve, backed by $1.2 billion. The Reserve secures rights to Australian-produced critical minerals – through offtake agreements, aggregation, stockpiling and price-support mechanisms such as contracts-for-difference – and on-sells them to meet demand. It draws on an initial subset of minerals from the CML: antimony, gallium and light and heavy rare earths.[78]

[77] World Nuclear News, 'USA and UK sign new Gen IV nuclear collaboration agreement', 20 November 2024, https://world-nuclear-news.org/articles/usa-and-uk-sign-civil-nuclear-collaboration; NucNet, 'Generation IV advanced nuclear reactor forum signs agreement to ensure continued collaboration', 30 January 2025.
[78] Department of Industry, Science and Resources, 'Critical Minerals Strategic Reserve', https://www.industry.gov.au/mining-oil-and-gas/minerals/critical-minerals/critical-minerals-strategic-reserve; Department of the Prime Minister and Cabinet, 'Critical Minerals Strategic Reserve',

E.6.2. Inclusion on the CML is therefore a prerequisite for the Reserve, but not by itself sufficient: uranium would also need to be added to the Reserve's subset. Building on Recommendation R8, once listed we recommend that uranium be considered for the Reserve – for example through government-backed offtake for new Australian production or an allied strategic uranium inventory – operating within Australia's existing safeguards and export framework.

E.7. Workforce and skills

E.7.1. Growing the industry will require specialists – in radiation safety and health physics, ISR hydrogeology, process metallurgy and environmental management – who are in short supply.

E.7.2. We recommend that the Government ensure these occupations are accessible under the Skills in Demand (subclass 482) visa, or through a dedicated nuclear skills stream, and support domestic training through universities and TAFEs. Many of the same skills are needed for AUKUS, so the benefits would be shared.

E.8. Facilitating allied investment and finance

E.8.1. Partner governments are increasingly willing to invest directly in Australian critical minerals projects.

E.8.2. In September 2025 the US Export–Import Bank backed RZ Resources' Copi mineral sands project in NSW, and in August 2026 the US Department of War's Office of Strategic Capital announced a US$400 million conditional loan commitment to Sunrise Energy Metals' Syerston scandium project, also in NSW.[79]

E.8.3. The Government – through the Critical Minerals Facilitation Office, Export Finance Australia and the US–Australia Critical Minerals Framework (Recommendation R7) – could actively facilitate similar partner investment, finance and offtake for uranium projects. Listing uranium on the CML would make that facilitation possible (Section 16).

E.9. Pre-competitive geoscience

E.9.1. Much of Australia's uranium potential remains under-explored. In addition to restoring national uranium resource data (Recommendation R10), Geoscience Australia's pre-competitive geoscience programmes should include uranium-focused work – in particular on the palaeochannel and sedimentary systems amenable to low-impact ISR – to encourage new discoveries.

https://www.pmc.gov.au/domestic-policy/critical-minerals-strategic-reserve; Resources Review, 'Australia passes new laws to secure fuel supply, critical minerals strategic reserve', 7 April 2026.

[79] Defence Connect, 'RZ Resources secures US backing for critical minerals production in NSW', 29 September 2025; Energy Source & Distribution, 'Pentagon funds world-first scandium mine in Australia', 10 August 2026, https://esdnews.com.au/pentagon-funds-world-first-scandium-mine-in-australia/

E.10. Factual public information

E.10.1. Public debate on uranium is still too often shaped by misconceptions about mining, radiation and safeguards. The Government could support clear, factual public information drawing on the expertise of ARPANSA, ANSTO and ASNO, helping communities make decisions on the basis of evidence.

E.10.2. Proactive outreach programmes to help assure communities and ensure they have relevant resources would be helpful – perhaps drawing on the approach the government has taken, for example, with the renewables industry.



F. Overview of Cauldron Energy and the Yanrey Uranium Project

Cauldron Energy Limited (ASX:CXU) is a uranium exploration and development company with a world-class uranium project, the Yanrey Project, located on Thalanyji lands in the north of Western Australia, ~100 km inland from Onslow.

The Yanrey Project comprises a mostly contiguous group of granted exploration tenements and applications covering approximately 1,250 km², with over 80 km of Cretaceous-age palaeo-coastline prospective for sedimentary-hosted uranium deposits amenable to In Situ Recovery (ISR) – recognised as the lowest environmental impact method of uranium mining, and now more than half of global uranium production.

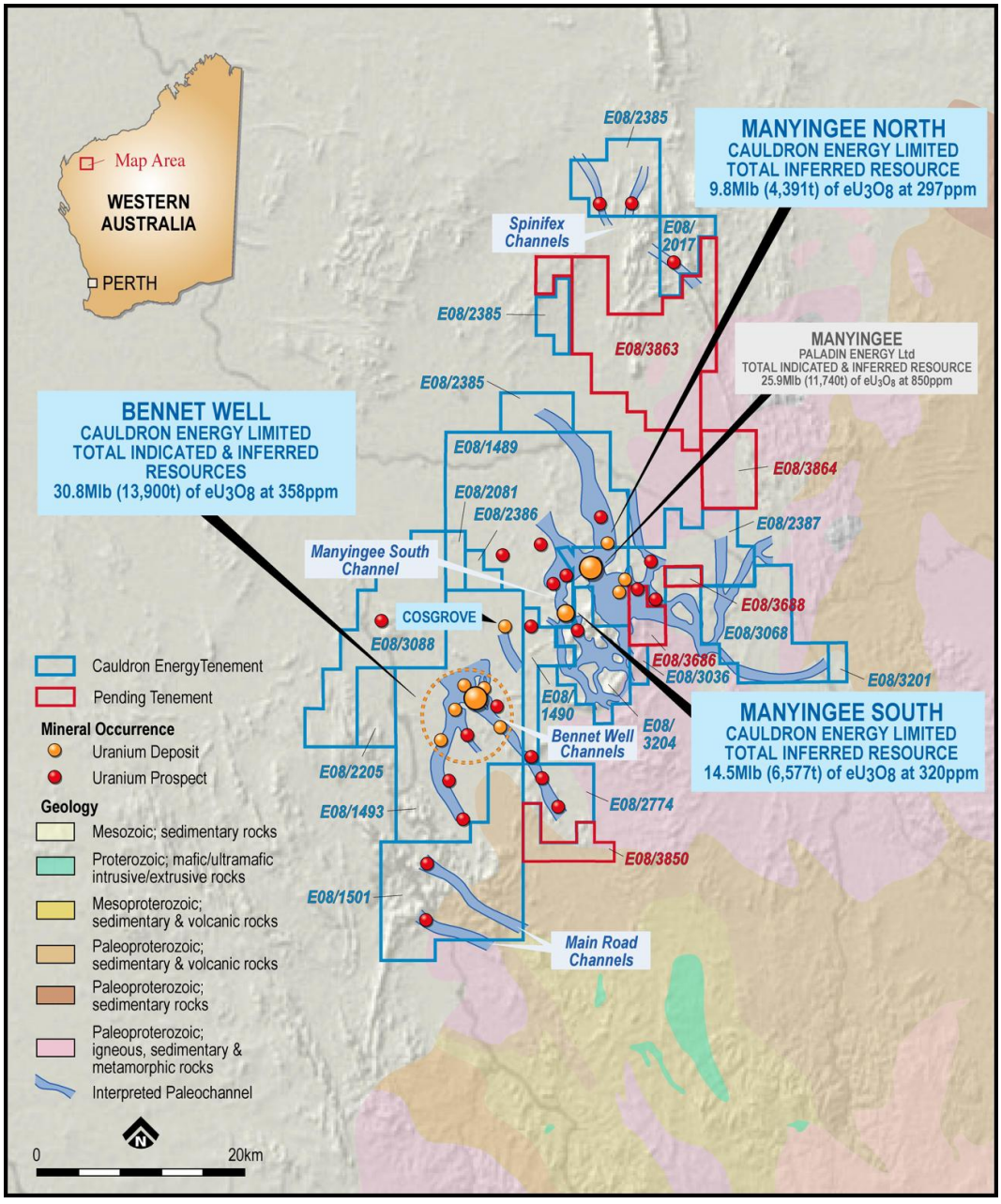


Figure 106 Yanrey Project area, Western Australia
Cauldron's tenements, deposits and the palaeochannel system. Source: Cauldron Energy.

Cauldron has been among the most active and successful uranium exploration teams in Australia in recent years, making three new discoveries across the 2024 and 2025 drilling seasons. Mineral Resources at Yanrey total in excess of 55 Mlb eU_3O_8:

Deposit	Tonnes (Mt)	Grade (ppm eU_3O_8)	Contained (Mlb eU_3O_8)	Cut-off (ppm)	Classification
Bennet Well	38.9	358	30.9	150	Indicated & Inferred
Manyingee South	21.2	319	14.9	100	Inferred
Manyingee North	14.9	297	9.8	100	Inferred
Total			**55.6**		

Figure 107 Yanrey Project Mineral Resources (ASX:CXU announcement, 17 February 2026)

The broader Yanrey uranium province also hosts Paladin Energy's Manyingee (25.9 Mlb) and Carley Bore (15.6 Mlb) deposits. CSIRO laboratory testwork has demonstrated Bennet Well is amenable to conventional ISR, and a Scoping Study was completed in December 2023 assuming no government financial support. Cauldron has signed an MOU with Navoiyuran, the national uranium company of Uzbekistan and a global ISR pioneer, and was awarded two WA Government Exploration Incentive Scheme grants (Round 33, April 2026).

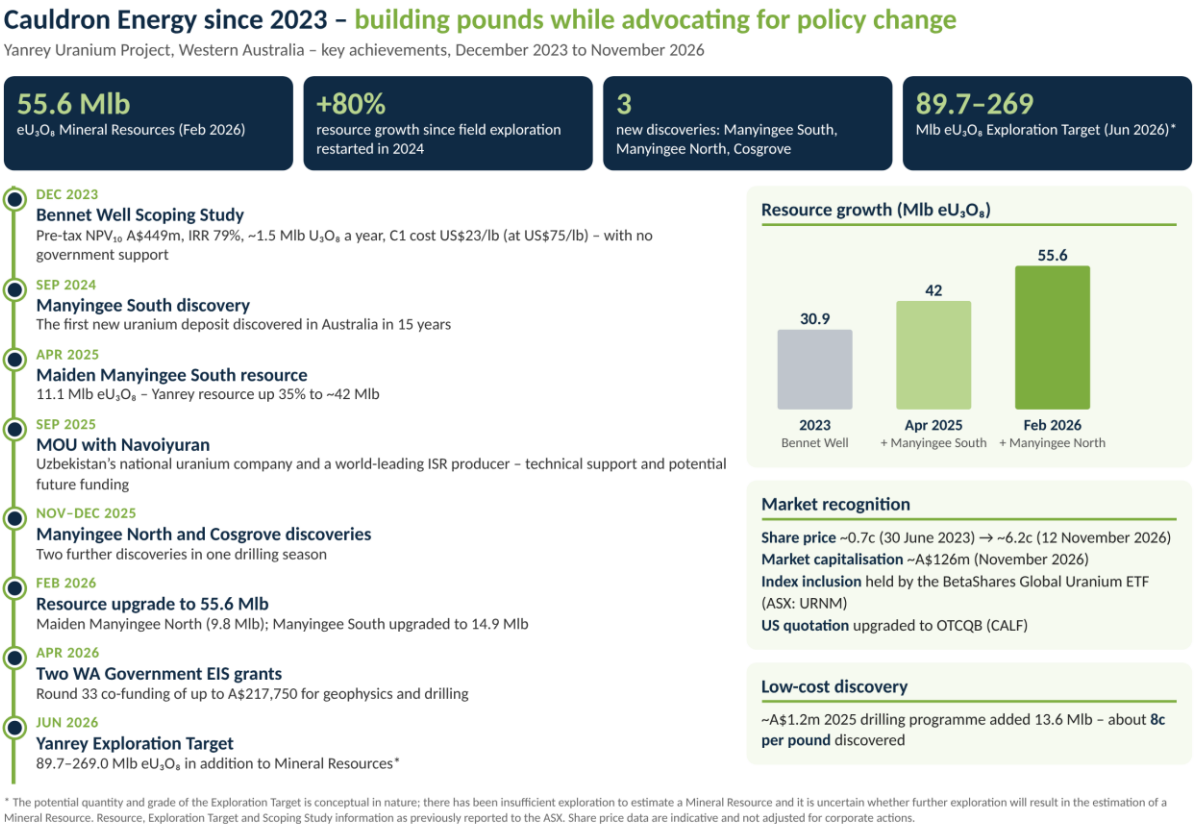


Figure 108 Cauldron Energy – key achievements since 2023
Source: Cauldron Energy ASX announcements (13 December 2023 to 30 June 2026); share price and market capitalisation indicative (Market Index; StockAnalysis, 12 November 2026). Graphic: Cauldron Energy.

Resource information is as previously reported to the ASX. Cauldron confirms it is not aware of any new information or data that materially affects the information included in the relevant market announcements.

Cauldron's community and stakeholder factsheets. Cauldron is publishing a series of plain-English factsheets on uranium mining, safety and policy for community members, stakeholders and decision-makers. The first five are available from Cauldron's website, with further factsheets in development:



MINING & ENVIRONMENT

In-situ recovery mining of uranium

How ISR mining works, why it relies on specific geological conditions and how groundwater is protected; covers Cauldron's proposed approach at Yanrey and ISR operations in South Australia.



SAFEGUARDS & POLICY

Peaceful use of uranium and global safeguards

How the Nuclear Non-Proliferation Treaty, IAEA safeguards and Australia's export controls ensure Australian uranium is used only for peaceful purposes, and how it is tracked from mine to reactor.



HEALTH & SAFETY

Radiation

What radiation is, where everyday exposure comes from, and how radiation is monitored and regulated at ISR uranium operations in Australia.



SAFEGUARDS & POLICY

Uranium mining ban in WA

Why Western Australia's ban on new uranium mining was introduced in 2017, how it operates through policy rather than legislation, and why it should be reconsidered.



MINING & ENVIRONMENT

Uranium waste

What waste ISR mining produces and how it is managed – from everyday site waste to process residues – together with groundwater restoration, rehabilitation and closure.

Figure 109 Cauldron Energy community and stakeholder factsheets

Source: www.cauldronenergy.com.au/esg-factsheets (November 2026) - click titles to open



G. Responses to Common Concerns

Although the review concerns the composition of the lists rather than the merits of uranium mining, the following concerns are sometimes raised in relation to uranium and hence used to justify exclusion from government mechanisms. Brief responses are provided for completeness and are covered further in our other publicly available government submissions and stakeholder factsheets available on our website (Appendix F).

Concern	Response
"Listing uranium means endorsing nuclear power in Australia."	No. Mining and exporting uranium is entirely separate from domestic nuclear power, which is prohibited by Commonwealth legislation and is not affected by listing. Australia has exported uranium for decades under governments of both persuasions.
Non-proliferation	Australian uranium may only be exported to countries with bilateral safeguards agreements, only for peaceful purposes, and is tracked as AONM by ASNO from mine to final disposition. Australia's safeguards regime is regarded as world-leading. Listing does not change export policy. See Cauldron factsheet: Peaceful use of uranium and global safeguards.
Safety of mining	~40 years of safe production in SA; average worker doses ~2 mSv/yr, comparable to background; nationally regulated by ARPANSA with a national dose register (Section 7). See Cauldron factsheet: Radiation.
Radioactive waste	Uranium mining produces only low-level wastes, of a type already managed in the mineral sands and rare earths sectors and at licensed facilities such as Sandy Ridge (WA). See Cauldron factsheet: Uranium waste.
Environmental legacy	Historic issues (Rum Jungle, Ranger) arose under standards of decades past. Contemporary approvals require planned and funded rehabilitation; ISR involves minimal surface disturbance. See Cauldron factsheet: In-situ recovery mining of uranium.
"Uranium is uneconomic."	Prices have risen from ~US$20/lb (2017) to US$91.55/lb spot and US$98/lb long-term (October 2026). Cauldron's Bennet Well Scoping Study demonstrated robust economics without government financial support.
"Taxpayers should not fund uranium projects."	Cauldron agrees that uranium projects do not need public money. The facilitation-only ("B-List") option (Recommendation R2) would provide approvals coordination through the Critical Minerals Facilitation Office without any eligibility for concessional finance, grants or tax incentives.
State bans	Mining approvals remain a State matter; listing does not override State policy. Listing reflects national strategic importance and geological potential, both of which exist irrespective of State settings. See Cauldron factsheet: Uranium mining ban in WA.
Community support	Independent polling shows majority support for uranium mining in WA (57%, AMEC, February 2025) and NSW (67% conditional on climate benefit, MCA, August 2026).

Figure 110 Responses to common concerns

H. Overview of Selected Uranium Producers and Projects

This Appendix summarises the uranium producers and projects referred to in this submission, so that they need not be described in detail each time they are mentioned in the main body of the text. It is indicative only and is drawn from public company and industry sources.

Company	Project(s)	Location	Mining method	Status (2026)
Alligator Energy	Samphire (Blackbush, Plumbush)	South Australia	ISR (proposed)	Development – Samphire ISR project advancing through field trials, feasibility and approvals
Bannerman Energy	Etango	Namibia	Open pit, heap leach	Development; CNNC agreed to take a 45% stake (2026)
BHP	Olympic Dam	South Australia	Underground (by-product of copper)	Producing
Boss Energy	Honeymoon	South Australia	ISR	Restarted 2024; ramp-up below expectations in 2025–26
Cameco	McArthur River / Key Lake, Cigar Lake; Inkai (joint venture); Yeelirrie and Kintyre (WA)	Saskatchewan, Canada; Kazakhstan; Western Australia	Underground; ISR; open pit (proposed, WA)	Producing – largest Western producer; Inkai disruptions in 2025–26. WA projects approved before 2017; not developed
Cauldron Energy	Yanrey (Bennet Well, Manyingee South, Manyingee North)	Western Australia	ISR (proposed)	Exploration and resource definition; 55.6 Mlb eU_3O_8 Mineral Resources (Appendix F)
CNNC / CGN (Chinese state-owned)	Rössing; Husab	Namibia	Open pit	Producing
Deep Yellow	Mulga Rock	Western Australia	Open pit	Approved (2017, before the State ban took effect); in development
Heathgate Resources	Beverley / Four Mile	South Australia	ISR	Producing
Kazatomprom	Multiple ISR mines, including joint ventures (e.g. Inkai with Cameco)	Kazakhstan	ISR	Producing – world's largest producer (~40% of world mine supply); 2026 output cut ~10% against prior guidance
Lotus Resources	Kayelekera	Malawi	Open pit	Restart under way; timing extended
Navoiyuran	Multiple ISR mines	Uzbekistan	ISR	Producing – among the world's largest producers; MOU with Cauldron (September 2025)
NexGen Energy	Rook I (Arrow deposit)	Saskatchewan, Canada	Underground (proposed)	Development – provincial environmental approval (2023); federal licensing (Canadian Nuclear Safety Commission) 2025–26
Orano	SOMAIR; Canadian joint ventures; Katco	Niger; Canada; Kazakhstan	Open pit; underground; ISR	Lost operational control of SOMAIR (December 2024); SOMAIR nationalised (June 2025)
Paladin Energy	Langer Heinrich; Manyingee and Carley Bore	Namibia; Western Australia	Open pit; (ISR proposed in WA)	Langer Heinrich restarted 2024, ramp-up slower than nameplate; WA projects subject to the State ban
Peninsula Energy	Lance	Wyoming, USA	ISR	Restart under way; transition to low-pH ISR slower than expected

Figure 111 Selected uranium producers and projects

I. Assumptions, Uncertainties, Limitations and Inconsistencies

Consistent with the Consultation Paper, we identify the following assumptions and limitations:

I.1. **Data sources and minor inconsistencies.** This submission draws on many sources – including Geoscience Australia, the World Nuclear Association (WNA), the OECD-NEA/IAEA Red Book, ASNO, the US Energy Information Administration, UxC, Shaw and Partners and company reports. These sources use different reporting dates, units (tonnes of uranium, tU, versus pounds of uranium oxide, Mlb U_3O_8 – one tonne of uranium is approximately 2,600 lb of U_3O_8), cost categories and scenario assumptions, so some figures differ slightly between sections. For example, Australia's share of world resources is reported as 32% of resources recoverable at under US$130/kgU (WNA and Geoscience Australia, 2024 data), 29% of identified resources in the latest Red Book data (resources at 1 January 2025, OECD-NEA/IAEA Uranium 2026, used in Figure 32) or more than one-third of total identified resources (Geoscience Australia); Australia's 2024 production as 4,656 tU (Geoscience Australia) or 4,598 tU (WNA); and supply and demand projections vary between the WNA scenarios and other sources such as Shaw and Partners' modelling. Where figures differ, we have cited the source used.

I.2. **Demand projections** (WNA, IAEA, Shaws) are scenarios, not forecasts, and depend on reactor construction timelines, life extensions and government policy. Nuclear build programmes have historically experienced delays. However, even the WNA Lower Scenario (over 107,000 tU in 2040) implies requirements far above current primary production.

I.3. Notwithstanding minor inconsistencies in the exact historical data or future projections it is generally accepted now that:

I.3.1. Nuclear is growing

I.3.2. Nuclear will play an important role in future global decarbonisation

I.3.3. Our major strategic partners are short uranium

I.3.4. Existing uranium mines will face exhaustion

I.3.5. Further uranium supply from strategically aligned nations is required.

I.4. **Supply data** for Kazakhstan, Uzbekistan, Niger and Russian-controlled assets are subject to limited transparency. Production and ownership estimates from different sources vary.

I.5. **Enrichment capacity shares** are approximate industry estimates and will change as Western capacity expansions (Urenco, Orano, Global Laser Enrichment and US Department of Energy (DOE)-funded projects) proceed.

I.6. **Kazakhstan's domestic reserve targets** are drawn from media reporting of the April 2026 national strategy; implementation details remain uncertain.

I.7. **Price data** are month-end averages; spot prices are volatile and the term market is the better guide to long-run economics. Minor differences occur amongst different reporting services.

I.8. **Australian production potential** depends on State and Territory policy settings, which are outside the scope of this review. Our judgement on potential future production in WA and Queensland is conditional on policy change.

Glossary of Terms

Term	Meaning
AECR	Australia's Energy Commodity Resources (Geoscience Australia annual report)
AI	Artificial intelligence
AMEC	Association of Mining and Exploration Companies
ANSTO	Australian Nuclear Science and Technology Organisation
AONM	Australian Obligated Nuclear Material
AP1000 / APR1400 / EPR2 / BWRX-300	Reactor designs: AP1000 (Westinghouse), APR1400 (Korea Electric Power Corporation / KHNP) and EPR2 (EDF) large reactors; BWRX-300 (GE Vernova Hitachi) small modular reactor
ARENA	Australian Renewable Energy Agency
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ASEAN	Association of Southeast Asian Nations
ASNO	Australian Safeguards and Non-Proliferation Office
ASX	Australian Securities Exchange
AUKUS	Trilateral security partnership between Australia, the United Kingdom and the United States
BAPETEN	Badan Pengawas Tenaga Nuklir – Indonesia's Nuclear Energy Regulatory Agency
Brent	Brent crude – the international benchmark price for crude oil
BWR	Boiling water reactor
CANDU	Canada Deuterium Uranium (heavy-water reactor design)
CCIWA	Chamber of Commerce and Industry of Western Australia
CGN	China General Nuclear
CML	Critical Minerals List
CMFO	Critical Minerals Facilitation Office
CNNC	China National Nuclear Corporation
CNSC	Canadian Nuclear Safety Commission
Conversion	Process converting U_3O_8 to uranium hexafluoride (UF_6) for enrichment
COP28	28th UN Climate Change Conference (Dubai, 2023)
CPS	Current Policies Scenario (IEA)
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CXU	Cauldron Energy Limited
DAE	Department of Atomic Energy (India)
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DFAT	Department of Foreign Affairs and Trade
DOE	US Department of Energy
EDF	Électricité de France
EFA	Export Finance Australia
EIA	US Energy Information Administration
EIS	Exploration Incentive Scheme (Western Australia)
EMA	Energy Market Authority (Singapore)
Enrichment	Increasing the proportion of the fissile U-235 isotope
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
ESG	Environmental, social and governance
EU	European Union

Term	Meaning
FID	Final investment decision
G7	Group of Seven
GA	Geoscience Australia
GDP	Gross domestic product
GIF	Generation IV International Forum – international collaboration on next-generation reactor systems
GW / GWe	Gigawatt / gigawatt (electrical)
HALEU	High-assay low-enriched uranium (5–20% U-235)
HHI	Herfindahl–Hirschman Index, a measure of market concentration
HTGR	High-temperature gas-cooled reactor
IAEA	International Atomic Energy Agency
ICRP	International Commission on Radiological Protection
ICSID	International Centre for Settlement of Investment Disputes
IEA	International Energy Agency
IESO	Independent Electricity System Operator (Ontario, Canada)
ILUA	Indigenous Land Use Agreement
IMARC	International Mining and Resources Conference
IMF	International Monetary Fund
ISR	In Situ Recovery
JV	Joint venture
KHNP	Korea Hydro & Nuclear Power
LEU	Low-enriched uranium (typically <5% U-235)
LNG	Liquefied natural gas
LWR	Light-water reactor
MCA	Minerals Council of Australia
METI	Ministry of Economy, Trade and Industry (Japan)
METS	Mining equipment, technology and services
Mlb	Million pounds
MOU	Memorandum of understanding
MOX	Mixed-oxide fuel (uranium and plutonium oxides)
MW / MWe	Megawatt / megawatt (electrical)
NCA	Nuclear cooperation agreement – Australia's bilateral treaties governing the use of Australian uranium
NPCIL	Nuclear Power Corporation of India Limited
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NRC	US Nuclear Regulatory Commission
NRF	National Reconstruction Fund
NSW	New South Wales
NT	Northern Territory
NTD	Neutron transmutation doping – irradiating silicon in a reactor to produce precisely doped semiconductor material
NTPC	NTPC Limited – India's largest power utility
NZE	Net Zero Emissions by 2050 Scenario (IEA)
OECD	Organisation for Economic Co-operation and Development
OECD-NEA	OECD Nuclear Energy Agency

Term	Meaning
OPAL	Open Pool Australian Lightwater reactor (ANSTO, Lucas Heights)
OPG	Ontario Power Generation
PHWR	Pressurised heavy-water reactor
PINC	Nuclear Illustrative Programme (European Commission)
PPA	Power purchase agreement
PWR	Pressurised water reactor
QLD	Queensland
Quad	Quadrilateral Security Dialogue (Australia, India, Japan and the United States)
R&D	Research and development
RAR	Reasonably Assured Resources
SA	South Australia
Sapporo 5	Grouping of Canada, France, Japan, the United Kingdom and the United States formed in 2023 to build a nuclear fuel supply chain free from Russian influence
SHANTI Act	India's December 2025 legislation opening its nuclear energy sector to private investment
SILEX	Separation of Isotopes by Laser EXcitation – Australian-developed laser enrichment technology
SIPRI	Stockholm International Peace Research Institute
SML	Strategic Materials List
SMR	Small Modular Reactor
SOMAIR	Société des Mines de l'Aïr (Niger)
STEPS	Stated Policies Scenario (IEA)
SWU	Separative work unit – the standard measure of the effort required to enrich uranium; enrichment plant capacity is expressed in SWU per year
tU	Tonnes of uranium (contained)
TVA	Tennessee Valley Authority
TWh	Terawatt-hour
UAE	United Arab Emirates
UN	United Nations
UxC	UxC LLC (Ux Consulting), a uranium market price reporter
U_3O_8 / UOC	Uranium oxide concentrate ("yellowcake"), the form in which Australian uranium is exported
UDEPO	World Distribution of Uranium Deposits (IAEA database)
UF_6	Uranium hexafluoride
USGS	US Geological Survey
WA	Western Australia
WNA	World Nuclear Association
WNTI	World Nuclear Transport Institute

END OF SUBMISSION