FACT SHEET

What is uranium and what is it used for?

Who is Cauldron Energy?

Cauldron Energy Ltd (Cauldron) is an Australian mineral exploration and resource development company listed on the Australian Securities Exchange (ASX:CXU). The company focuses on exploring uranium, a resource that is critical to the nuclear power renaissance occurring globally.

Cauldron's flagship project is the world-class Yanrey Uranium Project located in northern Western Australia (WA), which encompasses three separate uranium deposits – Bennet Well, Manyingee South and Manyingee North. In addition, Cauldron holds several sand tenements in the Onslow region of WA.

Subject to policy change in WA, Cauldron proposes to mine uranium via the in-situ recovery (ISR) mining method at Yanrey.

What is uranium?

Uranium is a naturally occurring heavy metal found in rocks, soils, rivers and oceans. It is slightly radioactive, meaning it gives off very low levels of natural radiation – like many other minerals found in Australia's geology.

92 U Uranium

Uranium is a naturally occurring metallic element in the actinide series of the periodic table with an atomic number of 92.

Where is it found?

Uranium is found everywhere – in rocks and seawater, as well as our teeth and bones.

In rocks, uranium occurs in minerals such as uraninite, carnotite and brannerite. Economically viable deposits form where these minerals are naturally concentrated.[1] These deposits formed over millions of years through natural geological processes such as groundwater movement, volcanic activity, and mineralisation in ancient basins.[2]



Carnotite-bearing ore from Radium Hill, South Australia (Source: Geoscience Australia)

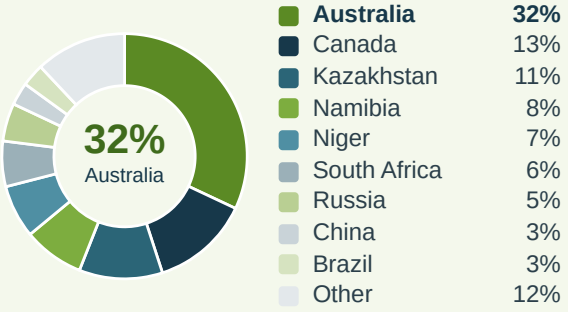
Major deposits are found in Australia, Canada, Kazakhstan, Namibia and Niger.[3] Australia holds the world's largest identified uranium resources, accounting for about one-third of the global total, with major deposits in WA, South Australia (SA) and the Northern Territory (NT).[4]

Western Australia has several significant sandstone-hosted uranium deposits, including the Yanrey region (Bennet Well) in northern Western Australia, the site of Cauldron's proposed Yanrey Uranium Project.

Exploration across WA slowed dramatically after the uranium mining ban was enacted in 2017. Therefore, there is significant potential for further discoveries of uranium in WA.

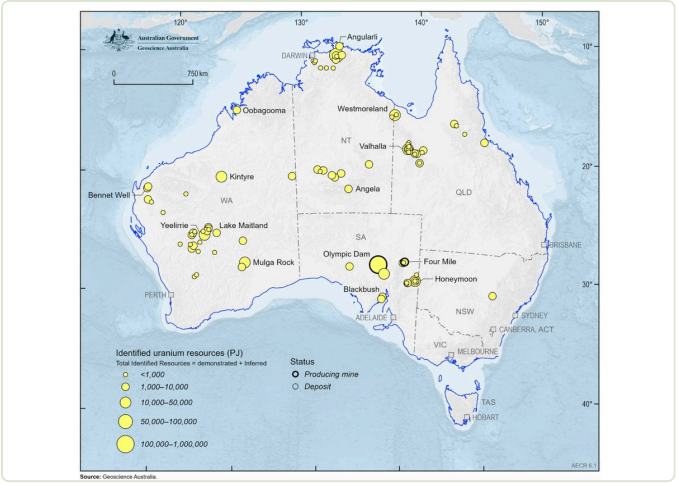
For further information, see our factsheet: 'The uranium mining ban in Western Australia'.

Share of global reasonably assured resources of uranium



Global distribution of uranium, 2024 (Source: Geoscience Australia)

1. Australian Government Geoscience Australia 2026. 'Australia's Energy Commodity 2026 Uranium and Thorium'. Accessed August 2026. **2.** World Nuclear Association 2026. 'Geology of Uranium Deposits'. Accessed August 2026. **3.** Australian Government Geoscience Australia 2026. 'Australia's Energy Commodity 2026 Uranium and Thorium'. Accessed August 2026. **4.** Australian Government Geoscience Australia 2026. 'Australia's Energy Commodity 2026 Uranium and Thorium'. Accessed August 2026.



Australia's identified uranium resources by deposit, 2023 (Source: Geoscience Australia)



Uranium occurrences in historic drill-hole data across Australia (Source: Needle Digital). Map recoloured by Cauldron Energy.

Uranium mining in Australia

Australia's uranium mining industry began in 1954 with operations at Rum Jungle in the NT and Radium Hill in SA. Since then, uranium has been mined in SA, the NT and Queensland, including major operations such as Ranger in the NT.

At present, there are three uranium mines operating, all in SA. These are:

- Olympic Dam near the town of Roxby Downs, about 560 kilometres north of Adelaide in SA, operated by BHP
- Beverley Four Mile Mine in the Frome Basin east of the Flinders Ranges, about 550 kilometres north of Adelaide in SA, operated by Heathgate Resources
- Honeymoon Uranium Mine in SA, about 80 kilometres north-west of Broken Hill in New South Wales (NSW), operated by Boss Energy.

Field recovery trial mining has also recently commenced at Alligator Energy's Samphire Uranium Project located about 20 kilometres south of Whyalla in SA.

Underground and surface mining is used at Olympic Dam whereas the in-situ recovery (ISR) method of mining is used at Four Mile and Honeymoon.[5, 6, 7]

Due to policy or legislative barriers, uranium is currently not able to be mined in WA, NSW, Victoria (VIC) or Queensland (QLD).

For further information, see our factsheets: 'In-situ recovery mining of uranium' and 'The uranium mining ban in Western Australia'.



Honeymoon Uranium Mine, South Australia

5. BHP 2026. 'Olympic Dam, South Australia'. Accessed September 2026. **6.** Heathgate 2026. 'Heathgate, no ordinary mining company'. Accessed September 2026. **7.** Boss Energy 2026. 'Honeymoon Uranium Operation'. Accessed September 2026.

What is uranium used for?

Uranium is mined because it is essential for clean energy production, medical and industrial uses, and for defence.

Clean energy production
Fuel for nuclear energy

Medical and industrial uses
Isotopes, radiography and research

Defence
Naval propulsion e.g. AUKUS

Australian uranium cannot be used for any military purpose including nuclear weapons or AUKUS.

Clean energy production

The primary use of uranium is as fuel for nuclear energy, which:

- Produces large amounts of electricity
- Provides reliable baseload power for countries with growing energy needs
- Has very low greenhouse gas emissions
- Supports global decarbonisation and climate goals.

For further information, see our factsheet: 'Uranium's role in global decarbonisation'.

Medical and industrial uses

Uranium and its byproducts are used to produce:

- Medical isotopes for cancer diagnostics and treatment
- Industrial radiography for inspecting pipelines and equipment
- Research reactors that support scientific and technological development.

> **Medical isotopes produced using uranium-powered reactors are used every day to diagnose and treat a wide range of conditions, including heart disease, kidney disorders, lung disease, neurological conditions, infections, thyroid disease and cancer. About 80% of all nuclear medicine procedures worldwide rely on technetium-99m, an isotope commonly produced from uranium-derived molybdenum-99.**



Chief Executive Officer (CEO), Jonathan Fisher, and Environment and Community Manager, Sophy Townsend, visiting ANSTO, November 2026

Uranium is used at ANSTO's Open Pool Australian Lightwater (OPAL) Reactor located in southern Sydney at Lucas Heights, NSW. It uses high-assay low-enriched uranium (HALEU) fuel for health research, environmental research and nuclear materials research.

Enrichment: what do the terms mean?[8]

Mined uranium is only about 0.7% uranium-235, the type that releases energy in a reactor. Enrichment increases that share.

LEU – **Low-enriched uranium** – less than 20% uranium-235. Most nuclear power reactors run on LEU enriched to about 3–5%, made from mined uranium.

HALEU – **High-assay low-enriched uranium** – more than 5% and less than 20% uranium-235. Used in research reactors such as OPAL, for medical isotopes and by many advanced reactor designs.

HEU – **High-enriched uranium** – 20% or more uranium-235. Used in some naval reactors and in nuclear weapons. Australian uranium is exported only for peaceful uses.

For further information on ANSTO, see our factsheet: 'Our expert advisors'.

8. World Nuclear Association 2026. 'High-Assay Low-Enriched Uranium (HALEU)'. Accessed November 2026.

Defence

Globally, uranium is used in naval propulsion for nuclear-powered submarines, such as those that will be built under AUKUS.

Australia exports uranium only for peaceful, civilian purposes under strict regulations governed by the Australian Safeguards and Non-proliferation Office (ASNO).

> **Australia's uranium cannot be used to develop nuclear weapons.**[9]

For further information, see our factsheet: 'Peaceful use of uranium and global safeguards'.



USS North Carolina (SSN 777) visiting Perth, August 2023 (Source: United States Embassy and Consulates in Australia)

AUKUS Nuclear-powered submarines for Australia

THE SUBMARINES

Under **AUKUS**, Australia will acquire and build nuclear-powered submarines using technology supplied by the United Kingdom and the United States. These nuclear submarines (which are essentially floating nuclear reactors) would be stationed at HMAS Stirling on Garden Island just off Perth.

FROM AS EARLY AS 2027

AUKUS partners will have a rotational presence of nuclear submarines at HMAS Stirling. This presence will be known as Submarine Rotational Force - West (SRF-West).

THE OPPORTUNITY

AUKUS will create tens of thousands of new skilled jobs, investment of billions of dollars into facilities, and ongoing maintenance activities, putting WA on the map as a strategic defence hub in the Indo-Pacific.

Contact us

Cauldron Energy Ltd (Cauldron) is an Australian mineral exploration and resource development company listed on the Australian Securities Exchange (ASX:CXU).

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9. Australian Government Department of Foreign Affairs and Trade 2026. 'Australian Safeguards and Non-Proliferation Office (ASNO), Australia's Uranium Export Policy'. Accessed August 2026.