High-tech metal resources of New South Wales

**What are high-tech metals?**
High-tech metals are a group of rare and high-value metals that are essential for modern technologies. They include platinum group elements (PGEs), rare earth elements (REEs), and other strategic minerals like scandium. These metals are used in various applications such as aerospace, automotive, and electronics.

**Where are they found in NSW?**
NSW has some of the richest deposits of high-tech metals in the world. Key locations include Cadia Valley, Narraburra, and the Murray Basin. Cadia Valley is one of the largest PGE deposits globally. Narraburra is a significant REE deposit, and the Murray Basin hosts major deposits of zircon, rutile, and ilmenite.

**Why are they important?**
These metals are crucial for the development of modern technologies. For example, REEs are essential in the production of permanent magnets used in electric vehicles, while PGEs are vital for catalytic converters in automotive applications.

**How are they extracted?**
Extraction methods vary depending on the metal. For example, REEs are typically recovered from heavy mineral sands, while PGEs are often extracted from base metal sulfide deposits.

**Future of high-tech metals in NSW?**
NSW has set ambitious targets to reduce CO₂ emissions and promote the uptake of electric vehicles. This will increase the demand for high-tech metals. The state is actively exploring new deposits and investing in research to sustain its position as a global gateway for high-tech metal resources.

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**Map of high-tech metal deposits in NSW**

- **Cadia Valley**: One of the largest PGE deposits in the world, with operations running since 1999. Cadia is also a significant copper and gold deposit.
- **Narraburra**: Located near Broken Hill, this deposit is rich in REEs, including the rare PGEs such as osmium, iridium, and ruthenium.
- **Murray Basin**: Known for its heavy mineral sands deposits, containing zircon, rutile, and ilmenite.

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**Projected population growth**
Projected population growth in NSW from 2020 to 2050 shows a steady increase, driven by migration and natural increase. The state aims to balance population growth with economic and environmental sustainability.

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**Credits**