

Explained | Lithium Mining in India

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Why in the News?

- Exploration of lithium in Chhattisgarh's Korba district has moved a step further with one block advancing to the second round of auctions and promising deposits now being found in the initial exploration of another block.

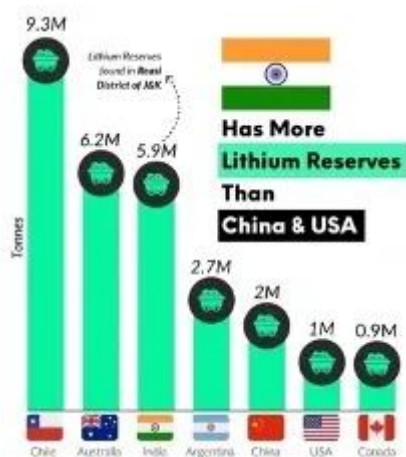
About Lithium

- Lithium is a chemical element with the symbol Li and atomic number 3. It is a **soft, silvery-white** alkali metal.
- Lithium is a special metal in many ways. It's light and soft — it can be cut with a kitchen knife and so low in density that it floats on water.

Applications of Lithium

- The most important use of lithium is in **rechargeable batteries for mobile phones, laptops, digital cameras and electric vehicles (EVs)**.
 - Lithium is often dubbed as “**white gold**” for electric vehicles.
- Lithium metal is made into alloys with aluminium and magnesium, improving their strength and making them lighter.
 - Aluminium-lithium alloys are **used in aircraft, bicycle frames and high-speed trains**.
- Lithium has no known biological role. **It is toxic**, except in very small doses.

Where is Lithium Found Naturally?



- Lithium makes up a mere **0.0007 per cent of the Earth's crust** and it's only found locked up in minerals and salts.
- With 9.3 million tonnes, **Chile has the world's largest known lithium reserves**.
- Chile is followed by **Australia (6.2 million tonnes)**.
- In 2023, the Geological Survey of India, found that **5.9 million tonnes** have been found in Salal-Haimana area of Reasi district of J&K.
 - India now has the third largest resource of lithium globally, but it will take time to convert it to reserves.
- India is followed by **Argentina (2.7 million tonnes)** and **China (2 million tonnes)**.
- Global lithium production surpassed **100,000 tonnes** for the first time in 2021, quadrupling from 2010. Currently, **Australia alone produces 52% of the world's lithium**.

Future of Lithium Production

- As the world produces more batteries and EVs, the **demand for lithium is projected to reach 1.5 million tonnes of lithium carbonate equivalent (LCE) by 2025 and over 3 million tonnes by 2030.**
- Based on the above demand projections, production needs to triple by 2025 and increase nearly six-fold by 2030.

News Summary

- Lithium exploration in Chhattisgarh's Korba district has advanced, with one block moving to the second auction round and another showing promising deposits.
- This is a good news as recently, India has been seeing setbacks in the Lithium mining sector. For example, **cancelled auction in Jammu and Kashmir's Reasi district due to low investor interest** and **halted exploration in Manipur's Kamjong district due to local resistance.**
- Exploration efforts in **Manipur, Ladakh, and Assam** have been less successful.
- Local resistance stopped work in Manipur's Kamjong district, Ladakh's Merak block yielded poor results, and exploration plans in Assam's Dhubri and Kokrajhar districts were abandoned.
- Amongst these challenges, the National Mineral Exploration Trust (NMET) funded a private company that found lithium deposits in Korba ranging from 168 to 295 parts per million (ppm).
- Since November, the Mines Ministry has auctioned 38 critical mineral blocks, including lithium blocks in J&K and Chhattisgarh.
 - While the Korba block attracted investors, the Reasi block did not and is being re-auctioned.
- Preliminary surveys in Korba showed lithium concentrations in bedrock samples ranging from 10 to 2,000 ppm, while Reasi's deposits exceeded 200 ppm.
- Despite mixed domestic results, India has secured lithium assets abroad, such as in Argentina's Catamarca province through Khanij Bidesh India Limited (KABIL), and is exploring opportunities in Sri Lanka and Australia.

Q1. What is an Ore in Mining?

Ore is natural rock or sediment that contains one or more valuable minerals concentrated above background levels, typically containing metals that can be mined, treated and sold at a profit. The grade of ore refers to the concentration of the desired material it contains.

Q2. What do you mean by rare earth elements?

The rare earth elements (REE) are a set of seventeen metallic elements. These include the fifteen lanthanides on the periodic table plus scandium and yttrium. Rare earth elements are an essential part of many high-tech devices.

Source: Amid setbacks, first signs of progress in lithium mining in Chhattisgarh | Mining Technology

Source: <https://vajiramandravi.com/current-affairs/lithium-mining-in-india/>

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