



Re-Exploration of J&K's Lithium Reserve

Why in News?

Recently, the **5.9 million tonnes** of [lithium reserves in Jammu & Kashmir \(J&K\)](#) are set for re-exploration after failed attempts to auction the reserve due to insufficient exploration data and industry reluctance.

- This move aims to boost [India's domestic lithium production](#), which is critical for energy transitions and reducing dependence on imports.

Key Points

▪ Current Status of the Reserve:

- The Salal-Haimana block in the Reasi district of J&K holds an estimated **5.9 million tonnes of lithium reserves**. It is India's largest lithium find, announced in February 2023.
 - The [Salal-Haimana block](#) also contains **titanium and bauxite**, which may have additional extraction potential.
 - However, the block is still at the **G3 level of exploration**, which involves preliminary prospecting and mapping

▪ Re-Exploration to G2 Level:

- The Ministry of Mines has directed the [Geological Survey of India \(GSI\)](#) to elevate the exploration to at least the **G2 level**.
 - This involves more detailed surveys and geological studies, which provide better data on the commercial viability of the reserves. Achieving **G2 means clearer reserve estimates and improved resource confidence**.

- **G2 exploration** is more detailed compared to G3. It includes drilling and trenching to estimate the size, grade, and shape of the mineral deposit. **Further exploration to G1 (the final stage) is necessary for a more precise assessment before mining**

▪ Lithium Ores and Extraction:

- [Lithium](#) is extracted primarily from **spodumene** (a lithium-bearing mineral found in pegmatites) or from **brine pools where lithium salts** are concentrated. In places like **Chile and Argentina, lithium is mainly extracted from brines, while in Australia, it is mined from spodumene**

▪ Challenges Faced in Auctioning:

- The first auction attempt in November 2023 failed due to a lack of sufficient bidders. The second attempt, which allowed for a single bidder, also saw no success. The key issue is [inadequate exploration data](#), which makes potential bidders reluctant to commit.
- Experts caution that detailed exploration should not be rushed, as premature auctioning without solid resource estimates might deter future interest

▪ India's Lithium Import Dependency:

- India currently imports all its lithium, with lithium-ion battery imports reaching **USD 2.9 billion in 2023-24**, primarily from **China and Hong Kong**. This underscores the importance of developing domestic lithium resources
- The discovery of lithium in J&K is seen as pivotal for reducing import dependence, particularly as India pushes for electric vehicle (EV) adoption

▪ Global Lithium Reserves and India's Efforts:

- Globally, **98 million tonnes of lithium** resources exist, but only **26 million tonnes** are considered reserves. Countries like [Chile, Australia, and Argentina](#) dominate the market.

India has partnered with Argentina for lithium exploration and is exploring opportunities in Chile, Bolivia, and Australia



Properties of Lithium

- It is a chemical element with the **symbol Li**.
- It is a soft, **silvery-white metal**.
- Under standard conditions, it is the lightest metal and the lightest solid element.
- It is highly **reactive and flammable**, and must be stored in mineral oil.
- It is an alkali metal and a rare metal.
 - The alkali metals consist of the chemical elements lithium, sodium, potassium, rubidium, caesium, and francium. Together with hydrogen they constitute group, which lies in the s-block of the periodic table.
 - Rare Metals (RM) include **Niobium (Nb), Tantalum (Ta), Lithium (Li), Beryllium (Be), Cesium (Cs) etc. and Rare Earths (RE) include Lanthanum (La) to Lutetium (Lu) besides Scandium (Sc) and Yttrium (Y)**.
 - These metals are strategic in nature with wide application in the nuclear and other high tech industries such as **electronics, telecommunication, information**

technology, space, defense etc.

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