



## Lithium

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### Why in News

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Various **provinces of Argentina** are building mining logistics nodes and access roads, lowering tax rates and rationalizing rules for the sector **to attract investment in the Lithium metal**.

- Rising global lithium demand and surging prices have drawn increased interest in the so-called '**lithium triangle**' that spans parts of **Argentina, Bolivia and Chile**.
- Lithium has become the new '**white gold**' as the demand for high performing **rechargeable batteries** is rising.



## Key Points

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- **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 1, 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.
- **Uses:**
  - Lithium metal is used to make **useful alloys**.

For example, **with lead to make 'white metal' bearings** for motor engines, **with aluminium to make aircraft parts**, and **with magnesium to make armour plates**.
  - In Thermonuclear reactions.
  - To make electrochemical cells. Lithium is an important component in **Electric Vehicles**, Laptops etc.
- **Countries with Largest Reserves:**

Chile> Australia> Argentina
- **Lithium in India:**

Researchers at the Atomic Minerals Directorate (under India's Atomic Energy Commission) have estimated lithium reserves of **14,100 tonnes in a small patch of land surveyed in Southern Karnataka's Mandya district** recently.

Also to be **India's first ever Lithium deposit site found**.

- **Other Potential Sites in India:**

- The major **mica belts in Rajasthan, Bihar, and Andhra Pradesh.**
- **Pegmatite** (igneous rocks) **belts in Odisha and Chhattisgarh.**
- Brines of **Sambhar and Pachpadra** in Rajasthan, and **Rann of Kachchh** in Gujarat.

- **Related Government Initiative:**

India, through a newly state-owned company **Khanij Bidesh India Ltd**, had signed an agreement with an Argentinian firm to **jointly prospect lithium in Argentina.**

Khanij Bidesh India Ltd has a **specific mandate to acquire strategic mineral assets such as lithium and cobalt** abroad.

- **Lithium Production in Stars:**

Scientists from the Indian Institute of Astrophysics (IIA) have provided evidence for the first time that **Lithium (Li) production** is common among low mass Sun-like stars during their Helium (He) core burning phase.

**Source: IE**