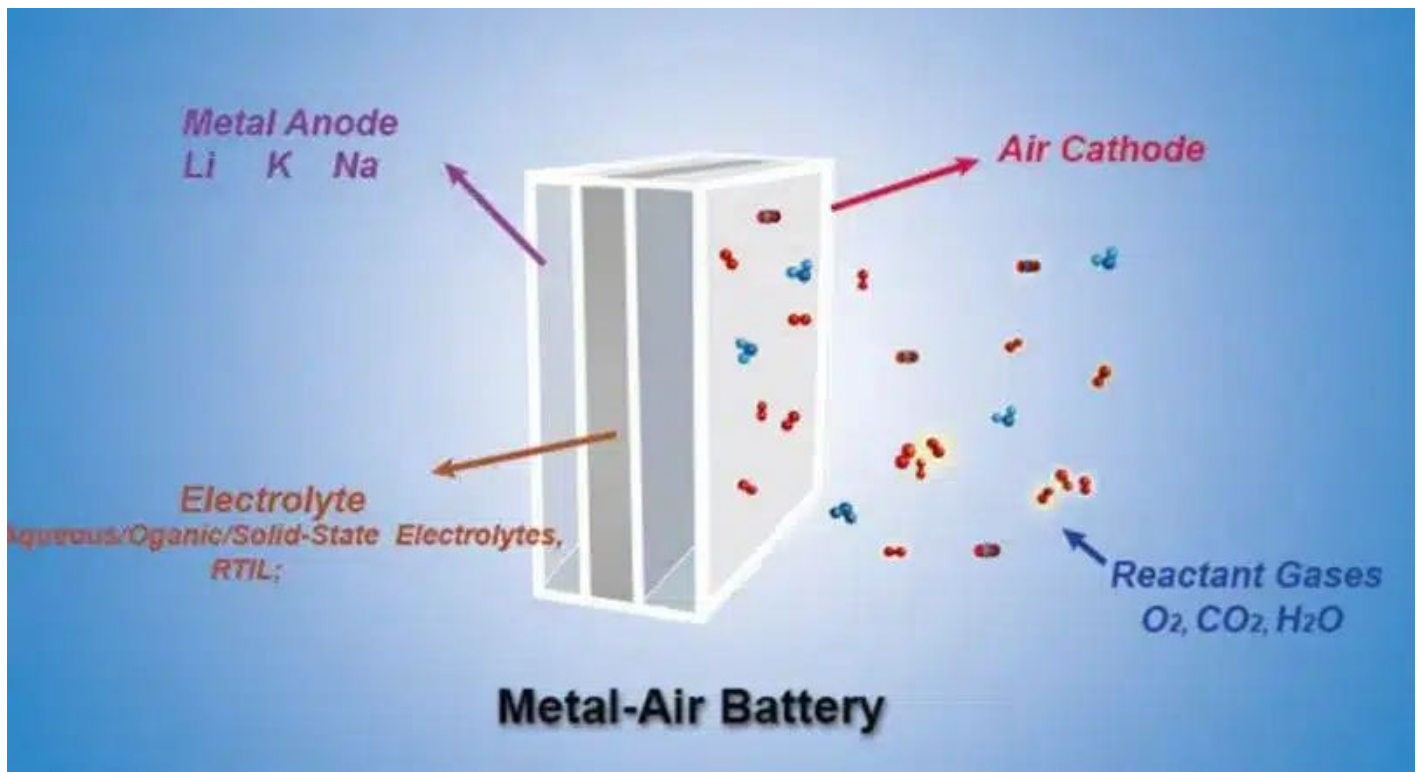


Metal-air batteries

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About Metal-air batteries:

- It is an **energy storage** system based on electrochemical charge/discharge reactions that occur between a positive “**Air Electrode**” (cathode) and a negative “**Metal Electrode**” (anode).
- The **negative electrode** is typically made of metals such as Li, Zn, Al, Fe, or Na, while the **positive** usually contains some form of **porous carbon material** and a catalyst.
- **Advantages :**
 - These batteries **have higher energy density** than a lithium-ion battery.
 - **Accessibility:** Metal-air batteries **use readily available metals** in India, making them more accessible than lithium-ion batteries.
 - **Cost-Effective:** Producing these batteries locally reduces imports.
 - **Environment-Friendly:** Metal-air batteries **are recyclable**, offering a safer alternative to lithium-ion batteries that pose environmental hazards.
 - **Lightweight:** Metals like aluminum are lightweight and can provide comparable or even higher energy density than lithium-ion batteries, making them an attractive choice.
- **Applications:** Due to their high scalability and energy density, M-Air batteries can be used in a large variety of applications:
 - It is used in large-scale stationary **energy storage applications**

- Transportation
 - Renewable generation
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Q1: What is Lithium?

It is a chemical element with the symbol Li and atomic number 3. Classified as an alkali metal, lithium is a solid at room temperature. It is the lightest of the solid elements. It is soft, white, and lustrous. It reacts vigorously with water.

Source: Durable efficient battery for energy solutions in remote sub-zero conditions

Source: <https://vajiramandravi.com/current-affairs/metal-air-batteries/>

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