

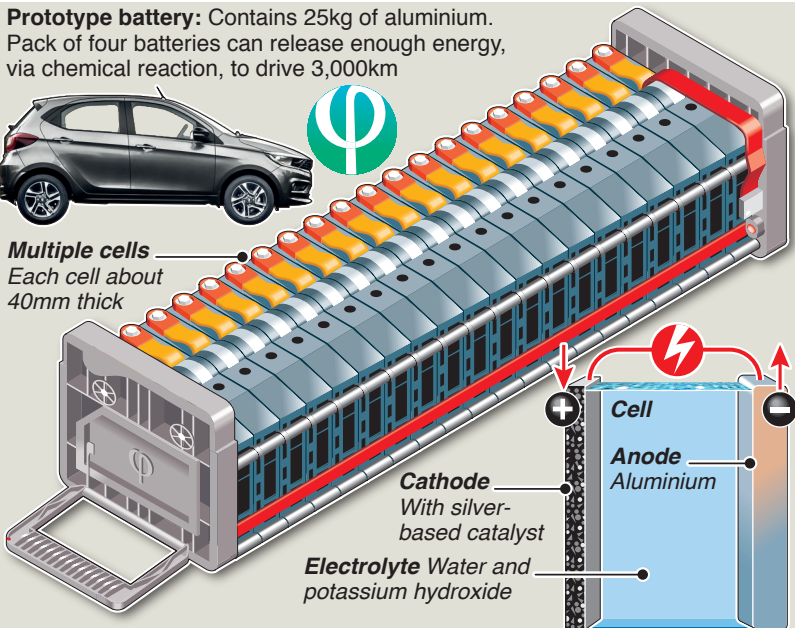
Anatomy of a metal-air battery

Indian Oil Corp. and Israel's Phinergy are developing metal-air batteries that capture oxygen in the air and, together with water and aluminium, create a reaction that generates electricity

Prototype battery: Contains 25kg of aluminium.
Pack of four batteries can release enough energy, via chemical reaction, to drive 3,000km

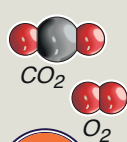


Multiple cells
Each cell about 40mm thick



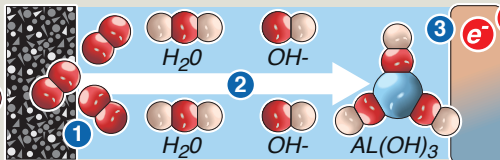
1. Porous cathode:

Oxygen is separated from air by catalyst and passes into electrolyte.
Carbon dioxide is blocked

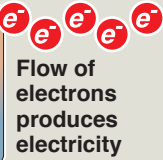


2. Electrolyte:

Oxygen reacts with water to produce negative hydroxide ions



3. Anode: Oxygen and hydroxide ions react with metal, forming aluminium hydroxide and releasing electrons



Aluminium anode: Eventually becomes corroded by electrolyte.
Indian Oil plans to use its 35,000 service stations for high-speed replacement of spent batteries

