

**GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
LOK SABHA**

**UNSTARRED QUESTION No. 3625  
TO BE ANSWERED ON 22.3.2023**

**BATTERY OPERATED VEHICLES**

**3625. SHRI RAMESH CHAND BIND:**

Will the Minister of **SCIENCE AND TECHNOLOGY** विज्ञान और प्रौद्योगिकी मंत्री be pleased to state:

(a) whether it is a fact that, battery operated vehicles pose a major demand in inventions in battery storage technology and battery recycling technology and if so, the details thereof;

(b) the details of the steps taken by the Government in this regard along with the current research projects being conducted and its outcome; and

(c) the details of the challenges being faced by the Government in this research?

**ANSWER**

**MINISTER OF STATE (INDEPENDENT CHARGE) FOR THE  
MINISTRY OF SCIENCE AND TECHNOLOGY AND EARTH SCIENCES  
(DR. JITENDRA SINGH)**

विज्ञान और प्रौद्योगिकी तथा पृथ्वी विज्ञान मंत्रालय के राज्य मंत्री (स्वतंत्र प्रभार)  
(डॉ. जितेंद्र सिंह)

(a) **Yes Sir, Battery operated vehicles pose a major demand in inventions in both storage and recycling technologies. All Electric Vehicles (EVs) have energy storage systems, typically batteries to power the vehicle, which requires advancement in storage technologies to make it affordable and attractive in market adoption. In order to balance the supply of raw materials for batteries and keeping in view the thrust on sustainability & circular economy, inventions in battery recycling technologies are also important.**

**(b) The Ministry of Science and Technology is supporting research to develop indigenous capabilities in the area of Lithium-ion (Li-ion) battery electrode materials, cells and battery packs for EVs. Several research projects with significant funding are in progress with an aim to enable indigenous development of battery technologies. Department of Science & Technology (DST) & Science & Engineering Research Board (SERB) have supported approximately seventy-five R&D-related projects in the area of battery storage, which resulted in several publications and lab level prototypes. In addition, two battery recycling technology research projects are also being supported.**

**Central Electro Chemical Research Institute, (CECRI), a lab under Council of Scientific and Industrial Research (CSIR) has established a small scale (1000 cells per day) Lithium- ion cell manufacturing line at its Chennai unit. This unit has been already given to an Indian Start-up company to enable local manufacturing of lithium ion battery.**

**(c) The key challenge faced by the Ministry of Science and Technology in the research of battery storage technologies is primarily in sourcing of raw materials. Though country's Lithium-ion (Li-ion) battery requirement is huge, there is no domestic manufacturing of Li-ion batteries at present and the majority of the demand is catered through imports. Further, the important raw material resources required such as Lithium, Cobalt are scarce and needs to be imported. There is no established supply chain for electrode materials and components yet in our country.**

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