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## E-vehicles, solar power plants on mind, India looks to source lithium from Latin America

By: [Huma Siddiqui](#) | New Delhi | Updated: February 28, 2017 3:18 PM



Countries including Argentina, Chile and Bolivia are members of International Solar Alliance (ISA), initiative of Prime Minister Narendra Modi, which fosters South-South Cooperation. (Reuters)

India is planning to reach out to Bolivia, Argentina and Chile to procure supplies of lithium that are used to make batteries for electric vehicles (EV) and solar power plants. And also to meet defence production requirements and to cut India's dependence on imports India has set an ambitious target to achieve 6-7 million sales of electric/hybrid vehicles in India by the year 2020 and of meeting target of 100 GW of solar power generation by 2022. But it has no lithium to power these dreams and so is expected to turn to the three countries in South America, the so-called "lithium triangle" which hold the world's greatest reserves of the metal.

Countries including Argentina, Chile and Bolivia, are members of International Solar Alliance (ISA), initiative of Prime Minister [Narendra Modi](#), which fosters South-South Cooperation.

Speaking to The FE on condition of anonymity, an officer in the Ministry of Mines & Minerals, said, "Lithium has been designated as of the strategic metal. India does not have reserves of the rare metal needed for making lithium-ion batteries."

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Debajit Palit, senior Energy Researcher in TERI explained to FE, “Such large scale use of EV will save considerable amount of money on petroleum fuels as well as reduce pollution. These vehicles will run on batteries, which are going to be mostly lithium based.”

Further, India has set an ambitious target of 100 GW of solar power generation by 2022 which also includes 40 GW from rooftop solar. These roof-top plants will also require batteries for storage, if the institution or household want to store the solar energy and use it in the evening. Most of the advanced storage systems, used with rooftop solar plants, currently are lithium-ion based.

“Both are expected to create a huge demand for lithium-ion batteries in the near future. However, India does not have reserves of lithium. Most deposits are in the “lithium triangle” in Bolivia, Argentina and Chile. We are going to be completely dependent on exports from these countries for the battery storage system – whether for electric vehicles or for using solar energy for electricity or in portable electronic devices,” according to experts.

According to Palit, “Bolivia has the world’s largest untapped reserves, so from India’s geo-economic standpoint, Bolivia is very important. Indian industries may forge partnerships to set up joint ventures in these South American countries, especially, to produce processed lithium that will be required for the batteries,”

As reported by FE earlier this year, “the landlocked country which has vast reserves of natural gas, and is largely dependent on natural gas and mineral exports, is seeking Indian capital to invest in developing Bolivia’s massive lithium deposits, which account for 60% of the world’s reserves.”

Estimates indicate that Bolivia has the world’s largest deposits of Lithium in the Salar de Uyuni. Some studies indicate that Salar de Uyuni has 140 million tonnes of Lithium. The government of that country is inviting expression of interest from Indian companies to set up and operate a Lithium Carbonate plant in Salar de Uyuni.

Experts have suggested that as part of [Make in India](#) Programme, the government should strive to set up R&D and technology development centres for indigenous lithium ion battery manufacturing plants, which is crucial to India’s ambitions of achieving energy security.

Chile is the current major producer; but deposits of Lithium are found in entire

According to diplomats of both Chile and Argentina “there are lots of possibilities for cooperation with India as all are part of the Solar Alliance and Lithium is big in the region and can be exported to India.”

For the first time, last year, the Central Electrochemical Research Institute (CECRI), Karaikudi in Tamil Nadu, set up the first indigenous Li-ion fabrication facility that has applications in defence, solar powered devices, railways and other high end usages. CECRI is part of the Council of Scientific and Industrial Research (CSIR).

For now, 100% of Li-ion batteries or cells are imported. Lithium-ion batteries are commonly used in portable electronic devices, solar power plants as well as electric vehicles due to their high energy density and high charge and discharge rate capabilities, as compared with other type of batteries such as Ni-MH or Lead Acid.

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**ASEEM GOYAL**

Oct 28, 2017 at 3:20 pm

It's absolutely inevitable GoI needs to look at the complete xEV ecosystem in totality both from "Upstream" "Downstream" value chain. Quite Insightful read on Upstream Battery Value Chain s: inc42 /resources/upstream-battery-value-chain-much-lithium-need-lithium-ion-battery/

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