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India-Australia Mineral Partnership: Future of Electric Vehicles

Neha Mishra

Research Associate, Centre for Air Power Studies

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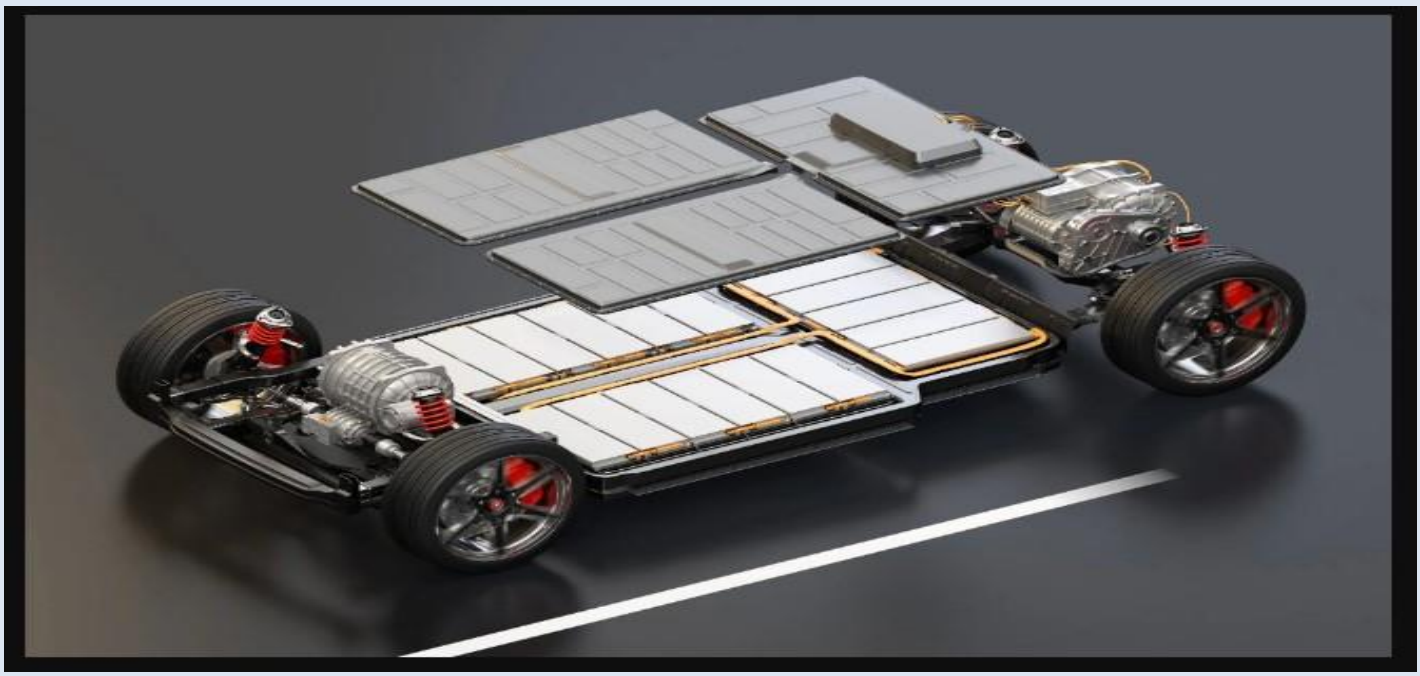

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Under the Paris Agreement 2015, India's priority is automotive electrification with the aim of reducing emission intensity and achieving a green energy transition. To boost the adoption and use of EVs, India requires a stable supply of critical minerals. The recent agreement between India and Australia on a partnership for investing in critical minerals promises to be a fundamental step in this path.

The India-Australia critical mineral investment partnership represents an initiative towards their energy transition commitment. The Australian Resource Minister, Madeleine King, and the Indian Minister for Coal and Mines, Prahlad Joshi, announced the cooperation. The partnership incorporates cooperation to strengthen critical minerals, and is followed by a three-years Memorandum of Understanding (MoU) signed between Khanij Bidesh India Ltd. and the Critical Minerals Facilitation Office.[1]

India is the world's fifth largest car market, with a customer base expected to exceed 40 crores by 2030. Currently, the sale and consumption of EVs in India is two per cent, but has the potential to increase if the involved problems are solved.[2] The major challenges faced by India in its transition to EVs are: a) Dependence on imports for its lithium-ions required for battery manufacturing; b) Consumer issues and limited development of EV infrastructure; c) Lack of technology and skilled labour required for three backbones of EV industry- batteries, semiconductors, and controllers.

As part of the Clean Energy Ministerial (CEM), India supports the 'EV 30@30 Campaign' announced in 2017, which implies the goal of reaching 30 per cent sale of EVs by 2030. As part of the campaign, India has instituted various policies to promote the development of charging and parking infrastructure for EVs.[3] India's electric mobility transformation developed with the National Electric Mobility Mission Plan (NEMMP) was introduced by the government in 2013. As part of this program, the "Faster Adoption and Manufacturing of Electric Vehicles" (FAME) norms were launched. It was launched in two phases: FAME-I in 2015 and FAME-II in 2019.[4] FAME-I failed due to technology, material, and market factors. FAME-II was implemented for three years, focusing on developing EV production infrastructure and demand through subsidies for the purchase of EV and hybrid vehicles. As part of FAME-II, it is planned to set up charging stations every 25 km in cities with a million population.[5] In 2018, the Indian government introduced the 'Charging Infrastructure for EVs' Plan with reference to the Electricity Act, 2003. The infrastructure regulation plans to enable the faster adoption of EVs by ensuring reliable and affordable charging infrastructure and ecosystem.[6] In 2019, the 'Central Electricity Regulation' was introduced for the distribution and generation of resources, contributing to the feasibility of the EV infrastructure plan. As per the Centre for Energy Finance data, EV sales are expected to reach more than 15 million by 2030.[7] India launched the 'e-AMRIT Portal' (Accelerated E-Mobility Revolution for India's Transportation) at the COP26 summit in Glasgow (2021) as a one-stop

destination for all information on EVs. The portal reports that there are 7.59 lakh registered EVs, 25+ states with EV policies, 380 EV manufacturers, 1800 EV charging stations, and a reduction of 2656 kilotons of CO_2 emissions in India with the help of EV policies.[8]

Australia's Critical Mineral Wealth

With high reserves of critical minerals, mostly cobalt, lithium, and rare earth elements, Australia's market significance is enhancing for high-import dependent countries committed to developing clean technologies. In terms of production of these critical minerals, Australia is second to only China. In addition, Australia has large unexplored and untapped minerals with the potential to meet the growing global demands. It was the resource and energy exports that powered the Australian economy throughout the COVID-19 Pandemic.[9]

Australia's Critical Minerals Strategy 2022, built on its first Critical Minerals Strategy of 2019, came with the objective of expanding the downstream processing capacity of Australia and meeting future global demand. The goal is to turn Australia into a global critical mineral powerhouse. The strategy will complement other, already ongoing, initiatives for critical minerals in Australia like:

a) The Global Resources Strategy (2021) aims to diversify markets and trade emerging commodities by investing US$ 20.1 million. It intends to promote Australia as a reliable investment destination for resource exploration and supply.[10]
b) The Modern Manufacturing Strategy priorities critical mineral processing as significant for the manufacturing of emerging technologies. It is essentially an action plan for the government to develop four pillars: the right economic conditions for business; priority science and technology for the manufacturing sector; focused projects on national manufacturing; building national supply chain resilience to support global market diversification and the economy.[11]
c) The Technology Investment Roadmap intends to accelerate the development and commercialization of low emission technologies, which also require critical minerals.[12]

Potential of India-Australia Critical Mineral Partnership

The critical mineral partnership between both countries began to take shape with their first lithium deal in 2019. As part of this deal, Australia sends lithium for the production of battery-grade material used in electric vehicles. The deal involved the announcement of a joint grant to research new critical mineral exploration technology. For this purpose, Manikaran Power in Delhi teamed up with rare earth processing facilities in Kalgoorlie, Western Australia.[13] In 2020, both signed a MoU to increase trade, investment, and R&D on

critical minerals. An Australia-India Joint Working Group (JWG) was also established, and Deloitte Touche Tohmatsu LLP India was commissioned by Austrade to analyse the current and future critical mineral demand of India and report possible opportunities for Australia. India and Australia attach mutual importance to eight critical minerals: titanium, vanadium, lithium, cobalt, nickel, and light and heavy rare earth elements.[14] The India-Australia Economic Cooperation and Trade Agreement (IndAus ECTA) that was signed in April 2022 also reflected "their bilateral objectives to increase the supply chain resilience and stability of the Indo-Pacific region," as pointed out by Prime Minister Narendra Modi.[15]

These partnership initiatives reflect the importance of both countries to each other in their goal of energy transition and supply chain resilience. Their critical mineral partnership has the potential to boost EVs production and adoption in India and enhance Australia's significance as a global critical mineral powerhouse.

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