

The new dawn of critical minerals industry

American Geosciences Institute considers critical minerals as those that are essential to the economy and whose supply may be disrupted. Critical minerals also tend to be those on which a country is heavily import-reliant, so the minerals that are deemed critical will vary from country to country. Demand for many of these minerals has skyrocketed in recent years with the spread of high-tech devices that use a wide variety of materials.

The ‘criticality’ of mineral changes with time as supply and society’s needs shift. Table salt, for example, was once a critical mineral, not as much now as the sources have multiplied and the supply is stable. Rare earth elements include 17



Processed oxides and carbonates of some critical minerals
(Courtesy: American Geosciences Institute)

elements: yttrium, scandium, and the lanthanide Series. Many critical minerals are metals that are central to high-tech sectors like solar panels and photovoltaics, electric vehicle batteries, photo-catalytic technologies and even smartphone applications. These industries depend on the rare earth elements and other metals such as lithium, indium, tellurium, gallium, and platinum group elements.

Interestingly, scarcity of critical minerals is creating strange bed-fellows both regionally and internationally. Otherwise contentious in trade matters, America and Canada agreed on a U.S.-Canada Critical Minerals Action Plan in

December 2019. Cooperation under the Action Plan includes securing the supply of critical minerals for strategic industries and defense; improving information sharing on critical mineral resources; engaging with the private sector; and working together in multilateral fora and with third countries. The Action Plan outlines a range of joint activities, such as research and development cooperation, supply chain modelling, and increased support for industry. The comprehensive, whole-of-government approach outlined in the Action Plan will strengthen and strive to achieve the U.S.-Canada supply chain for critical minerals, which are essential to U.S. and Canadian security and future prosperity.

Largely ignored by the countries like India, much of such resources can be looked within the countries, in allied countries and also, can be recovered from existing resources like mineral processing lines or from the waste. The US-Canada cooperation agreement can be a basis of sound learning and a clarion call for the governments. Good business is waiting.

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