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Export of Monazite from India: The Facts

Recently, some sections of the media have alleged that private companies have been allowed to export millions of tons of monazite, and that India has lost large quantities of thorium, worth several lakhs of crores of rupees, through such export. This information is not true.

The coastal region of peninsular India contains economically important minerals such as garnet, ilmenite, leucoxene, monazite, rutile, sillimanite and zircon commonly known as beach sand minerals. Of these, monazite is defined as a 'prescribed substance' under the Atomic Energy Act, 1962 (AE Act) as amended in 2006(Notified in the Gazette of India (57), dated January 20, 2006).Atomic Minerals Directorate for Exploration and Research (AMD) of the Department of Atomic Energy (DAE) has carried out extensive surveys along the coastal region of the country to assess the distribution of beach sand minerals, including monazite.

A licence from the Department of Atomic Energy (DAE) under the Atomic Energy (Working of the Mines. Minerals and Handling of Prescribed Substances) Rules 1984 promulgated under the Atomic Energy Act 1962 is necessary for exporting monazite. Violation of this provision is a cognisable offence under the Code of Criminal Procedure and is punishable with imprisonment for a term, which may extend to five years or with fine or with both.

DAE has not issued any licence to any private entity either for production of monazite, or for its downstream processing for extracting thorium, or the export of either monazite or thorium. Export of the beach sand minerals (not monazite), falls under Open General Licence and does not require any authorisation from DAE.

Since the other beach sand minerals and monazite (which contains thorium) occur together, companies handling beach sand minerals have to get a licence under the Atomic Energy (Radiation Protection) Rules 2004 from the Atomic Energy Regulatory Board (AERB). As per the licensing conditions, the licencee, after separating the beach sand minerals has to dispose of the tailings, which contain monazite, within its company premises or as backfill, depending on the monazite content. These

institutions are under strict regulatory control. They send quarterly reports to AERB stating the amount of tailings disposed of safely either in the premises or as backfill. Inspectors from AERB survey these areas to ensure that the licensing conditions are met. Export of monazite without a licence from AERB is a violation of the Atomic Energy (Radiation Protection) Rules 2004.

Indian Rare Earths Limited (IREL), a wholly owned Public Sector Undertaking of the Government of India (GOI) under DAE, is the only entity which has been permitted to produce and process monazite, and handle it for domestic use as well as for export.

Apart from thorium, monazite contains rare earths too. On account of its radio-activity and other characteristics, extracting rare earths from monazite is commercially not attractive, unless mixed rare earths have to be separated as a by-product following extraction of thorium.

The annual requirement of thorium-oxide for the 300 MWe Indian Advanced Heavy Water Reactor will be about five tons, with a one-time requirement of less than sixty tons (which should remain nearly the same, even if power was increased) for the initial core.

The information available in IAEA documents, about the national nuclear programmes of different countries, does not give any indication that any country, other than India, is planning significant use of thorium either in the reactors currently under operation or in those being considered for deployment in the near future. Hence, it is unlikely that there is a demand overseas for large amounts of thorium.

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