

INDIA TO LAUNCH DEEP OCEAN MISSION

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The Union Cabinet has approved the long-pending deep ocean mission, which among other things involves developing a submersible vehicle that will allow a crew to plunge 6,000 metres into the ocean and hunt the floor for precious metals. If this works, India will be among a handful of countries able to launch an underwater mission at such depths.

In the works since 2018, the mission is expected to cost Rs. 4,077 crore over the next five years. The estimated cost for the first phase of three years (2021-24) would be Rs. 2,823.4 crore. The Ministry of Earth Sciences (MoES) will be the nodal Ministry implementing this multi-institutional mission.

There are six components to the programme. A manned submersible will be developed to carry three people to a depth of 6,000 metres in the ocean with a suite of scientific sensors and tools. An integrated mining system will be also developed for mining polymetallic nodules at those depths in the central Indian Ocean. “The exploration studies of minerals will pave way for the commercial exploitation in the near future, as and when commercial exploitation code is evolved by the International Seabed Authority, an United Nations organisation,” says an accompanying press note.

The second component involves developing Ocean Climate Change Advisory Services, which entails developing a suite of observations and models to understand and provide future projections of important climate variables on seasonal to decadal time scales.

Microbes, minerals

The next component is searching for deep sea flora and fauna, including microbes, and studying ways to sustainably utilise them. The fourth component is to explore and identify potential sources of hydrothermal minerals that are sources of precious metals formed from the earth’s crust along the Indian Ocean mid-oceanic ridges. The fifth component involves studying and preparing detailed engineering design for offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plants.

The final component is aimed at grooming experts in the field of ocean biology and engineering. This component aims to translate research into industrial applications and product development through on-site business incubator facilities.

The Deep Ocean Mission was in 2019 envisaged as a Rs. 8,000 crore mission, as *The Hindu* has earlier reported. India has been allotted a site of 75,000 square kilometres in the Central Indian Ocean Basin (CIOB) by the UN International Sea Bed Authority for exploitation of polymetallic nodules (PMN). These are rocks scattered on the seabed containing iron, manganese, nickel and cobalt.

Being able to lay hands on a fraction of that reserve can meet the energy requirement of India for the next 100 years, say officials at the Earth Sciences Ministry.

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