

ARUNACHAL HARBOURS A VANADIUM SOURCE

Relevant for: Indian Economy | Topic: Infrastructure: Energy incl. Renewable & Non-renewable

Vanadium is a high-value metal used in strengthening steel and titanium.

Arunachal Pradesh, considered a sleeping hydropower giant, is likely to become India's prime producer of vanadium, a high-value metal used in strengthening steel and titanium.

Exploration being carried out by the Geological Survey of India (GSI) has placed the eastern Himalayan State on the vanadium map of the country, and geologists are confident of identifying a deposit soon. India is a significant consumer of vanadium, but is not a primary producer of the strategic metal. It is recovered as a by-product from the slag collected from the processing of vanadiferous magnetite ores (iron ore), GSI officials said.

According to data provided by the GSI, India consumed 4% of about 84,000 tonnes of vanadium produced across the globe in 2017. China, which produces 57% of the world's vanadium, consumed 44% of the metal. "We found promising concentrations of vanadium in the palaeo-proterozoic carbonaceous phyllite rocks in the Depo and Tamang areas of Papum Pare district in Arunachal Pradesh. This was the first report of a primary deposit of vanadium in India, with an average grade of 0.76% V₂O₅ [vanadium pentoxide]," a GSI specialist said.

Vanadium mineralisation in Arunachal Pradesh is geologically similar to the "stone coal" vanadium deposits of China hosted in carbonaceous shale. This high vanadium content is associated with graphite, with a fixed carbon content of up to 16%.

Geologists discovered two bands of about 7-metre thick carbonaceous phyllite for a length of more than 6 km in the Depo area. This prompted the GSI to extend its search to other areas of the State.

"Good prospects" of vanadium for a cumulative length of 15.5 km and an average thickness of 7 m were found in the Deed, Saiya and Phop areas of Lower Subansiri district. Vanadium content was also found in the Pakro area of Pakke-Kesang district, Palin-Sangram in Kra Daadi, Kalamati in West Siang, Kalaktang in West Kameng and Kaying in Siang district.

"The expected grade of vanadium mineralisation in Arunachal Pradesh is comparable to the important vanadium deposits of the world. The largest deposits are in China, followed by Russia and South Africa," the specialist said.

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