

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO-1925
ANSWERED ON 12/12/2024

**AGREEMENT BETWEEN IREL AND UST-KAMENOGORSK TITANIUM &
MAGNESIUM PLANT**

1925. SHRI AYODHYA RAMI REDDY ALLA

Will the PRIME MINISTER be pleased to state:-

- (a) the strategic implications of this joint venture for India's titanium industry, and the manner in which it will impact domestic production and global competitiveness;
- (b) the details of the technology transfer arrangements and intellectual property rights agreements between IREL and Ust-Kamenogorsk Titanium & Magnesium Plant JSC; and
- (c) the details of the projected economic benefits and job creation potential of this joint venture, and the manner in which they will be measured and evaluated; and
- (d) how this collaboration will enhance India's self-reliance in the aerospace and defence sectors, and potential applications of titanium in these industries?

ANSWER

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND
PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH)

- (a) The Joint Venture between IREL (India) Limited (IREL) and Ust-Kamenogorsk Titanium & Magnesium Plant JSC (UKTMP JSC) proposes to convert low TiO₂ ilmenite produced in Odisha to high Titanium oxide (TiO₂) Titanium slag - an intermediate product in the Titanium value chain. Titanium Slag can be used as the feed material to produce Titanium Sponge, which is required for strategic use by Defence, Aero Space and Atomic Energy sectors.

The intended downstream products are of strategic nature and demand/ consumption depends upon existence of manufacturing facilities in aviation sector, which is being focused now in India by private sector. Moving forward to slag level is expected to attract value chain in aviation sector in India.

At present, in the country the titanium sponge capacity is extremely limited (500 tpa) with production of the order of about 260 tpa. The setting up of this JV plant is expected to catalyse the establishment of chloride pigment/Ti Slag/sponge manufacturing industry, which has been hindered by non-availability of high TiO₂ feed stock.

- (b) Under the JV agreement as a part of technology transfer, UKTMP JSC will grant the licence for the technology of an automated furnace for the production of Titanium slag, including the technical design of the plant. They will further provide assistance during the Commissioning of the furnace and develop standard operating procedures for the working process of the plant. UKTMP JSC will provide assistance in the commissioning of the plant in operation and hand-holding training to the plant operators, which in turn will result in developing skill set of the employees of the JV Company.

IREL will safeguard the intellectual property rights of UKTMP JSC regarding the utilisation of titanium slag production technologies in India.

- (c) The proposal for setting up JVC with UKTMP JSC would result in production of titanium slag which is an intermediate value-added product in the titanium value chain. In addition, pig iron will also be produced in the plant having commercial value.

The assured offtake of titanium slag by UKTMP JSC will significantly contribute to increase export value. Further, it will pave the way for Indian Industries to produce titanium pigment/ sponge which are the ultimate end use products.

The proposal once implemented is expected to develop industry in titanium value chain and generate direct and indirect employment including the downstream industry to the tune of 8,000 to 10,000, along with foreign exchange earnings.

- (d) Titanium Slag is an intermediate product in the value chain of Titanium. It can be used as a feed material to produce Titanium Sponge which is used in the aerospace and defence sectors. The setting up of this JV plant is expected to catalyse the establishment of Titanium Sponge manufacturing industries which has been hindered by the limited availability of high grade TiO₂ feed stock in Odisha.

The quality of Ti slag produced in Indian facility will be at par with the one required for producing Ti sponge/metal essential for strategic application in aerospace, defence and atomic energy.

Titanium Sponge is used in preparing critical components in the aerospace industry like Aircraft fuselage, engine parts and landing gear. In defence, it is used in armour plating, hull and heat exchanger in submarine, missiles, fighter jets etc. In atomic energy it is used for nuclear reactor shields, heat exchanger and condenser tubes etc.
