

Project Appraisal and Monitoring Services

India's Titanium Value Chain: From Ore Exporter to Processor

The Ganjam titanium dioxide investment and what it signals for India's ilmenite-to-alloy supply chain



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Our Project Appraisal and Monitoring vertical assists in both pre- and post-disbursement decision-making for lenders. We have delivered over 2000 TEV studies and more than 750 LIE reports. Furthermore, we are empanelled with nearly all public sector banks, several private banks, and NBFCs for LIE and TEV studies, and with the Indian Banks' Association (IBA) for ASM services. With over 20 years of experience and our team of experts, including engineers, chartered accountants, and industry specialists, we have completed numerous assignments in TEV across various sectors like Agriculture, Logistics, Packaging, Education, FMCG, Textiles, Real Estate, Solar Power, Chemicals, Pharmaceuticals, Infrastructure, Healthcare, Hotel, Ethanol, Iron & Steel, etc. Mall Retail Real Estate in India: Sector Expansion, Occupancy Trends, and Investment Outlook.

Summary

A reported ₹2,800 crore investment by Odisha-based **World Metal Industries (WMI)** to set up a titanium dioxide slag and pigment plant at Ganjam, Odisha, with state incentives cleared in early July 2026, has drawn attention as a potential import-substitution and downstream-value-addition play. The project's significance lies less in its size and more in what it represents: a shift from raw ilmenite export toward domestic processing into titanium slag, pigment, and high-grade pig iron. It targets the underlying industry structure, the demand-supply gap in titanium dioxide (TiO₂), and the strategic read-through to India's titanium sponge and alloy capability for aerospace and defence.

World Metal Industries: A New Entrant in an Already Competitive Market

World Metal Industries is reported to be setting up a titanium dioxide slag and pigment facility in Ganjam district, Odisha, at a project cost of approximately ₹2,800 crore. The Odisha government is reported to have cleared incentives for the project in early July 2026, consistent with the state's broader push to attract mineral-processing investment tied to its beach-sand mineral reserves.

WMI would not be the first Titanium Dioxide producer in India; it would be entering a market that already has two state-sector pigment producers (KMML and TTPL) and two private-sector producers (Meghmani Group and VV Titanium Pigments – see below). Its distinguishing feature is location and integration: a slag-and-pigment facility sited directly in Odisha's beach-sand mineral belt, with high-grade pig iron as a byproduct stream, rather than being a first mover nationally.

The plant's stated product mix:

- Titanium slag and titanium dioxide pigment – the higher-value output of the ilmenite smelting process, used mainly in paints, coatings, plastics, and paper.
- High-grade pig iron as a byproduct, which can feed into the domestic steel industry rather than being discarded or exported as low-value slag.

Why Ilmenite Matters: India's Resource Base

Ilmenite (FeTiO_3) is the primary titanium-bearing ore and is found in significant quantities in the beach-sand mineral belts of Odisha, Kerala, Tamil Nadu, and Andhra Pradesh. India is widely regarded as holding one of the world's largest ilmenite reserve bases, yet historically the country has exported a large share of this ore in raw or semi-processed form rather than smelting it domestically into titanium slag, synthetic rutile, pigment, or ultimately titanium sponge.

The economic consequence of this pattern is straightforward: value addition (smelting, upgrading, pigment manufacture, and alloying) has largely occurred outside India, and the finished products – titanium dioxide pigment and titanium metal – are re-imported at a price that reflects that value addition. A domestic processing plant like Ganjam is positioned to capture more of that value onshore, converting a mineral-export model into a mineral-processing model.

The Demand-Supply Gap in Titanium Dioxide

India's annual TiO_2 consumption is estimated in the broad range of 70,000–100,000 tonnes, with paints and coatings accounting for over 60% of demand (the remainder split across plastics, paper, inks, and other applications). Domestic supply comes from a mix of state-sector and private-sector producers, including:

- Kerala Minerals and Metals Limited (KMML) – a Kerala PSU and India's principal TiO_2 pigment producer, sourcing ilmenite from Kerala's coastal deposits.
- Travancore Titanium Products Limited (TTPL) – the other established Kerala-based pigment producer.
- Meghmani Group (Meghmani Organics Limited) – a private-sector entrant that commissioned a TiO_2 plant at Dahej, Gujarat (Phase 1: ~16,500 TPA, commissioned January 2023; Phase 2 expansion planned to ~33,000 TPA), after acquiring Kilburn Chemicals Limited to enter the segment.
- VV Titanium Pigments (V.V. Titanium Pigments Pvt. Ltd.) – a Tuticorin (Tamil Nadu)-based private producer of Anatase-grade TiO_2 (~14,500 TPA capacity), sold under the OpaTi brand and used mainly in lower-grade paints, paper, and textile applications.

Despite sitting on some of the world's largest ilmenite reserves, India is reported to import roughly 18,000–20,000 tonnes of TiO_2 pigment annually, principally from China, Germany, and South Korea, to bridge the gap between domestic demand and domestic supply. This import dependency – for a mineral India is naturally endowed with – is the **central inefficiency** that new capacity such as the Ganjam plant is intended to address.

Caveat on import figures: publicly available trade data for TiO_2 should be treated as indicative rather than precise. TiO_2 is produced and traded in multiple grades – principally rutile (higher-durability, used in premium paints, plastics, and coatings) and anatase (used in lower-grade paints, paper, and textiles) – and HS-code-level customs data does not always disaggregate cleanly by grade or end-use. Reported annual import volumes therefore vary across sources; the ~18,000–20,000 tonne range cited above should be read as a directional estimate, and grade-wise import figures should be validated against primary customs data before use in financial modelling.

Metric	Approximate figure (as reported)
Reported WMI investment	₹2,800 crore, Ganjam, Odisha
India TiO2 annual consumption	70,000–100,000 tonnes
Share used in paints & coatings	>60%
India TiO2 annual imports	18,000–20,000 tonnes
Key import sources	China, Germany, South Korea
Leading domestic producers	KMML, Travancore Titanium (Kerala PSUs)

The Strategic Angle: Titanium Sponge and Defence

Titanium slag sits one processing step below titanium sponge – the intermediate metallic form from which titanium ingots, and subsequently titanium alloys, are produced. Titanium alloys are critical inputs for aerospace structures, missile and rocket components, submarine hulls, and fighter-jet airframes and engines, all sectors where India currently relies on a mix of domestic (limited) and imported titanium metal capability.

The strategic argument, therefore, is not only about import substitution in a commodity chemical (TiO2 pigment) but about whether domestic slag-and-pigment capacity can eventually be extended – through further investment in sponge-making capability – into a more indigenous upstream supply chain for titanium metal used in defence and aerospace applications. This is a multi-step build-out: slag/pigment capacity does not by itself create sponge or alloy capacity, but it is a necessary precursor and signals growing private-sector appetite to move up the value chain.

Importance of Import substitution

The project is being framed as import substitution achieved through processing capacity rather than through tariff protection – arguably a more durable form of substitution, since it builds cost-competitive domestic supply rather than merely making imports more expensive. A few considerations for how this plays out in practice:

- Capacity addition helps only if it is cost-competitive with Chinese, German, and Korean pigment on landed price and quality – scale and technology choice will matter as much as the incentive package.
- The byproduct pig – iron stream needs a ready offtake; India's steel sector has absorptive capacity, but realized value will depend on grade and logistics to steel consumers.
- The leap from slag/pigment to titanium sponge and defence-grade alloy is a separate, more capital- and technology – intensive step, typically requiring the Kroll process and specialised metallurgy – this project addresses the pigment/slag layer, not sponge production itself.
- Given the project was only recently cleared for incentives, execution timelines, environmental clearances, and ramp-up should be tracked before treating the import-substitution impact as realized.

Conclusion

India has historically exported ilmenite ore cheaply and re-imported titanium dioxide pigment (and titanium metal) at a premium, despite holding some of the world's largest reserves of the raw material. The Ganjam plant, if it proceeds as announced, represents a step toward correcting that value leakage by localising the ore-to-pigment (and byproduct pig-iron) stage of the chain. Its broader significance for India's defence and aerospace titanium ambitions will depend on whether this processing investment is followed by further capacity in titanium sponge and alloy production – the segment that feeds strategic sectors. For now, it is best read as a meaningful but partial move up the titanium value chain, not yet a resolution of India's titanium-metal import dependency.

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