

R4bn investment in Richards Bay titanium pigment plant

A R4bn titanium dioxide pigment (TiO_2) production plant is planned for the Richards Bay industrial development zone (IDZ).



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The plant, a technology partnership between Nyanza Light Metals and Avertana of New Zealand, will utilise waste steel slag that Evraz Highveld Steel and Vanadium has been stockpiling at its Witbank operations - about 45m tonnes, which equates to about 200 years of project life.

South Africa consumes around 35,000 tonnes per annum (tpa) of titanium pigment, mainly in paint manufacturing. The Nyanza project will produce 50,000 tpa of titanium dioxide pigment, which it will sell locally and export to the rest of Africa and the Middle East.

Job creation

The agreement follows a successful pre-feasibility study coupled with piloting studies conducted between 2015 and 2017 by Nyanza and its technical partners. About 550 permanent jobs and 1,200 indirect jobs are anticipated when the plant is fully operational, with 800 being created during construction. Building of the plant is expected to start in 2018, with production scheduled to begin in 2020.

New technology

The project will bring new technology to South Africa and help the government's industrialisation programme and efforts to add value to the South African mining and mineral processing value chain.

Avertana, which has developed a proprietary process to extract titanium from the waste steel slag, refines titanium as well as other industrial minerals and chemicals from steel waste, with a lower carbon footprint than existing processes and with minimal residual waste.

“The overall manufacturing process is novel and unique and will be a world first. This is largely because conventional processes use purer feed stocks such as rutile and ilmenite, which have titanium content ranging from 50% to 96% while Nyanza’s feed stock has a TiO_2 content of 32% or less. The focus of the feasibility studies has been to develop a unique process and demonstrate that we could use this waste steel slag and produce a world-class grade pigment,” says Donovan Chimhandamba, CEO of Nyanza.

Market

Titanium dioxide pigment is the most widely used white pigment in the world, accounting for about 70% of the pigment market. Due to its unique opacifying and whitening capabilities, it is used in everything from paints and coatings, cosmetics, and foods to papers and plastics.

Global annual demand for titanium dioxide pigment is estimated at about six million tonnes, equating to approximately \$15bn, with the paints and coatings sector accounting for more than 57% of demand. Titanium dioxide pigment prices in 2011 reached heights of \$4,300 per tonne.

Successful implementation will see the following benefits accrue to the country:

- Import substitution to the value of more than \$60m per year;
- Export of value added product in excess \$90m per year;
- IDZ due to the closure of the only titanium pigment plant in Umbogontwini in KZN;
- Access to manufacturing technology predominantly owned by Americans and Europeans; and
- Reprocessing of material that had been classified as waste to generate high value products.

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