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see end-use consumption fall by 10-15% year-on-year. With some regional variations, each of these economic regions is expected to experience fairly uniform declines across all sectors. There are some exceptions: in Japan, 20% falls in ceramic manufacture and zirconia production are expected. Both sectors are reliant on export markets, which have weakened greatly in the past six months.

The hardest-hit end-use sector will be ceramics, which is dragged down by the expected very poor performance in Western Europe. The brightest spot is zircon's use in chemicals and materials, which is forecast to fall by just under 10% this year compared with 2008.

Between 2006 and 2008, the zircon market balance oscillated from under-supply in 2006, to over-supply the following year and then back again to moderate under-supply in 2008. TZMI's forecast for the next few years is for over-supply. In 2009, global production of zircon could exceed consumption by over 60,000t. This is likely to be followed a short period of surplus, when the Jacinth-Ambrosia project is brought on-stream and is supplemented by output from Richards Bay Minerals tailings retreatment project.

OUTLOOK

2009 presents the titanium feedstock sector with a unique set of challenges, due to the sharp decline in forecast demand for TiO₂ pigment and zircon.

At the time this report was prepared there were signs that a recovery would occur in 2010, led by China.

HARNESSING GARNET IN CANADA: FREEPORT RESOURCES INC

Garnet is the name given to a group of complex silicate minerals with widely varying chemical composition, but all with isometric crystal structure. Garnet is considered a heavy mineral. The main markets for garnet sand are abrasive waterjet cutting, abrasive blast media and water filtration.

Canadian junior explorer Freeport Resources Inc is advancing towards the feasibility study stage at its high-grade Hutton Garnet Beaches project in Labrador, Canada. Permitting is underway for a 5,000t bulk sample to confirm logistics for commercial-scale production, develop pilot plant design and garnet products, and update tonnage estimates. Preliminary resource and reserve estimates of over 1.25Mt garnet in 2004 included 256,000t as a probable reserve. Production life is expected to be over 20 years, with more potential offshore.

The Hutton deposits have exceptionally high garnet content: South Beach is clearly red on satellite photos and averages over 60% garnet, exceeding 75% locally. A large glacial outwash fan of garnet-rich till below sea level is the source for heavy minerals collecting between headlands as bayhead beaches. The proposed mining method works with natural processes, removing garnet from areas of accumulation, to be subsequently replenished by wave action. A sustainable approach minimising project footprint is a key objective.

The sizing of the angular garnet grains is naturally suited to waterjet cutting. Hutton garnet concentrate performed comparably to higher-end products in three industry-wide tests in the UK, Canada and the US. Freeport, which is listed on the TSX-V, says the project is well positioned to supply Europe and eastern North America.



Freeport Resources hopes to soon have a sample permit for its Hutton garnet project

David Moore, chairman of Australia-based TZ Minerals International, has been involved in the mineral sands industry since 1982, when he was chief executive of Consolidated Rutile Ltd. In 1994 he became a foundation shareholder in TZMI, an independent consulting and publishing company. TZMI provides specialised consulting services for the titanium minerals, zircon, titanium sponge, titanium metal and TiO₂ pigment industries and publishes specialised market studies.

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