

# Scandium International: The first scandium-only mine development project?

2017 marks twenty years since a junior mining company made a seemingly insignificant scandium discovery close to the city of Port Macquarie in New South Wales (“NSW”). Recent developments suggest it may also be the year that the resulting Nyngan scandium project begins production, potentially making it the world’s first primary scandium mine and Australia’s only producing scandium resource.

In November 2016 Scandium International Mining Corp. (TSX: SCY) (“SI”), 80% owner of both the Nyngan Scandium Project and the adjacent Honeybugle Scandium Property, received both Ministerial Development Consent for Nyngan from the NSW Minister of Planning, and a subsequent Government cash injection of A\$629,000. The cash was earned from the Australian Government’s R&D Tax Incentive Program, designed to encourage R&D activities that benefit Australia.

Australia, specifically the NSW lateritic clay belt, represents a recent, game-changing discovery of scandium at grades approximately four times the grade of existing sources. These resources are surface-mineable and can deliver scandium in sufficient quantities to promote much wider use of the metal. SI believes that an assured source of scandium, offered at realistic pricing levels, will promote dramatic increases in commercial scandium demand.

Scandium has long been recognized as a valuable commodity, but economic concentrations of scandium are rare and current supply is sourced from low-grade stockpiles or as a by-product from other mineral operations. These limited supply sources have resulted in high market prices and inadequate volume for

wide-scale adoption.

Despite scandium's scarcity, over the past two decades multiple potential high-value commercial uses for the metal have been developed. Of particular interest is the addition of scandium into various aluminium alloys. It has been found that relatively small additions of scandium into aluminium alloys produces stronger, lighter, more heat and corrosion resistant and weld-friendly aluminium products. The aircraft industry depends on advanced aluminium alloys, and would incorporate Aluminium-Scandium alloys if consistent scandium supply was available. At present, it is estimated world supply is no greater than 15 tonnes. As such, Airbus, Boeing and similar large corporations simply cannot take the risk given such short supply. However, the mines of NSW could change this.

The Nyngan scandium resource is located approximately 500 kilometres northwest of Sydney. Minerals exploration at the site has defined a measured and indicated resource seven times larger than the currently planned twenty-year mine life outlined in their feasibility study which was completed in 2016. The Development Consent follows an in-depth review of the Environmental Impact Study, (EIS), the project plan, community impact studies, public EIS exhibition and commentary, and economic viability. It involved more than 12 specialised governmental agencies and groups and so represents a great show of confidence in the project on behalf of the state of Australia.

According to its feasibility study, Nyngan holds a resource totalling 16.9 million tonnes, grading 235 ppm in the measured and indicated categories. The capital cost estimate for the project is US\$87.1 million, with an operating cost estimate of US\$557/kg scandium oxide and envisages an average of 37,690 kg of production per year over 20 years.

With only one significant Government flag-waving to go, the 2,925 hectare property in a mining-friendly, politically and

economically stable jurisdiction, is really taking shape as the world's first scandium-only mine development project. An initial offtake agreement is already in place and production for this year is expected to be the full 38,000kg.