

# Tantalus reaches another milestone with another rare earth offtake agreement

☒ Tantalus, AG, a German rare earth junior miner with a mostly ionic adsorption clay deposit on the Indian Ocean nation of Madagascar that last month announced an off-take agreement with the Chinese, Shanghai exchange listed, vertically integrated rare earth magnet producer, Shenghe Industries, has announced today that it has now executed a second off-take agreement. This time with Thyssen-Krupp Metallurgical Products, the long established global metals and alloys trading unit of German steel giant, Thyssen-Krupp.

The two off-takes now in force are each for 30% of Tantalus' output for an initial period of three years at full production renewable for additional terms of 7 years by mutual consent. Perhaps the most important aspect of these two agreements is that each off-take receiver in order to get the 7 year extension has agreed to finance the development of the deposit into a producing mine in an amount proportional to their off-take percentage. This, of course, indicates a high degree of confidence, by large and experienced global players in the rare earths trade, in the probability that the company will be able to put the Madagascar deposit into production beginning by late 2016 and ramp up the output to the full target amount of 10,000 tpa by 36 months after start-up.

Tantalus capex for the project as well as its opex are among the lowest proposed so far, and for their output size are the lowest I have ever seen for a non-Chinese project while their predicted profit margins are impressive. Their target date to begin production is also the nearest in time of any project I know of.

Perhaps the most significant aspect of the Thyssen-Krupp off-take is the fact that they have been granted exclusivity for Tantalus products are to be exclusively sold into the German domestic market. T-K M is a member of the well known German Rohstoff Alliance and my guess is that it will be offering its allocation to other Alliance members.

Those of you who follow the announcement circus of the rare earth juniors will recognize that the German Rohstoff Alliance is a group that almost every rare earth junior has approached and been rebuffed by. German manufacturers maintain the manufacturing world's tightest specifications for quality, on-time delivery, service and price among the world's manufacturing industries.

Investors should note that Tantalus is a public (German) company, and that its shares traded yesterday on the Dusseldorf exchange at a price of 16 euros, a figure that no other rare earth junior can match.

Tantalus has been invisible to North American investors, because it doesn't as of yet market its shares in North America, and its announcements are few and far between although they are always significant.

The Tantalus project on Madagascar has been in development for more than five years. I was on its supervisory board of directors from 2011-2013. I resigned from the supervisory board as its vice-Chairman in August, 2013. Its current chairman, Mr Ulrich Krauskopf was my colleague then and is my friend now. The board and highly competent management team have guided the company's development to a venture that is the right size, and their combined years and extensive contacts in the International and German metallurgical industry assured that Tantalus was designed to produce what the market(s) want and in quantities and qualities dictated by the needs of those markets.

All but a very few North American rare earth juniors have overspent and thereby wasted their investors' capital trying to emulate the major miners. Tantalus, has instead, worked with its potential customers from the first day so as to become a valued and reliable supplier of the right size. This cannot be emphasized enough it is the size and cost of the output of a rare earth venture that determines success or failure not the grade of its deposit.

The cost of separating the rare earths depends in great part on what extractive and pre-separation separations it takes to prepare a clean PLS for ultimate mixed rare earths separation into individual elements

The Tantalus deposit is one of the closest in type to China's ionic adsorption clays. This makes the extraction of the mixed rare earths far easier and far less costly than hard rock mining.

Thirty percent of Tantalus output is already sold and dedicated to the Chinese domestic market and thirty more percent is now sold and dedicated to the German domestic market. I doubt that the remaining forty percent will be hard to pre-sell, and I suspect that some North American and Japanese global100 corporations are sharpening their pencils and doing the math already.

Marketing of the rare earths is not of the "we will mine it and they will buy it" type as so many Canadians and Americans thought. It was the very first thing that Mr Krauskopf addressed when he joined the company's board.

Knowledge, experience, skill and contacts have now brought Tantalus to the brink of success.

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# Niocorp publishes encouraging results for the United States' only primary niobium deposit

✘ Niocorp Developments Ltd. ("Niocorp", TSXV: NB | OTCQX: NIOBF) announced the final assay results from the third phase of its drilling program at Elk Creek, Nebraska. Elk Creek is rich in barium, rare earth element mineralization and especially high grade concentrations of niobium (formerly known as columbium), a rare metal that is the focus of the project. On January 19, Niocorp published the final results from the third and final phase III of the 2014 drilling program at its Elk Creek project in Nebraska, in preparation for the release of its feasibility study toward the spring of this year. Niocorp is pleased with the high-grade assay results, which add to the already successful drilling campaign of 2014. The recent results concern drillholes NEC14-020, NEC14-021, NEC14-022 and NEC14-023, showing that niobium mineralization continues both within the defined resource zone and at depth.

The drilling campaign have allowed Niocorp to gain insights into the ore body ahead of an updated resource report to be issued, perhaps, as early as the end of January. Some of the most encouraging niobium interceptions were noted at holes NEC14-021 (304 metres @ 0.98% Nb – 88 metres of which @ 1.28% Nb) and at Hole NEC14-020 (351 metres @ 0.71% Nb). Niocorp advised that "due to the angle of the drilling and other factors", these results have not revealed the full scope of the Niobium resource.

Niocorp had a very productive year in 2014 but was not the first to realize the potential for niobium mining at Elk

Creek. In the 1960's, Molycorp (NYSE: MCP) was the first to explore Elk Creek, which has the third largest niobium deposit in the world and the only primary niobium deposit in the United States. This is especially important because all the niobium used in the United States has to be imported; most of it is produced at a mine in Brazil. While it is crucial for the electric car industry, niobium's appeal stretches across most sectors and countries.

In the last weeks of 2014, Niocorp secured an offtake agreement with ThyssenKrupp Metallurgical Products in Germany, one of the largest steel makers in the world. As part of a ten-year purchase contract, ThyssenKrupp shall acquire 3,750 tons of ferro-niobium per year, as much as 50% of Niocorp's total projected production. ThyssenKrupp Metallurgical Products GmbH is both a producer of advanced alloys and one of the leading trading houses for raw materials worldwide. The contract period is expected to begin after the start of production in 2017. Niocorp has virtually no competitors in the United States and niobium demand is only increasing but most is now produced at a mine in Brazil and the total world market is in the 80,000 to 100,000 ton range.

Niobium is mainly used in the form of Ferro-Niobium to produce HSLA (High Strength, Low Alloy) steel and mostly used in the construction sector, especially in such things as bridges and roads because it adds strength to steel while reducing weight. The automotive sector is the second largest user and any steel bodied car (the vast majority, only a handful are made using aluminium or carbon fiber) made in the world today has niobium in it, because it helps reduce fuel consumption and add safety. Niocorp has filed an NI 43-101 compliant resource report with Indicated resources of 28.2 Million Tonnes @ 0.63% Niobium pentoxide (Nb<sub>2</sub>O<sub>5</sub>), containing 177 Million Kg's of Nb<sub>2</sub>O<sub>5</sub>, and an Inferred resource of 132.8 Million Tonnes grading 0.55% Nb<sub>2</sub>O<sub>5</sub>, containing 733.7 Million Kg's of Nb<sub>2</sub>O<sub>5</sub>, (at a 0.3% Nb<sub>2</sub>O<sub>5</sub> cut-off grade)., to produce lighter, stronger

steel for use in automotive, structural and pipeline industries. Niocorp's project enjoys strong local support because the eventual niobium mine could employ a few hundred people and benefit the community at a larger scale.

Niobium is one of fourteen metals or groups of metals that the Council of Europe has identified as critical. The United States National Research Council considers it even more important, listing it as one of the five "most critical" metals. Niobium carries great economic importance, made all the more so by its high level of supply risk. As has been the case for rare earths, niobium is one of the metals needed to produce 'new technology' items. It is needed to develop a wide range of super-alloys, which have applications in aerospace, nuclear energy (associated with zirconium for their resistance to the flow of neutrons) or in powder form to make micro-capacitors. However, niobium's demand continues to derive from 'ferroniobium' thanks to the former metal's ability to improve steel's mechanical properties. This is because alloys used in steel must add strength and reduce brittleness while also reducing weight and malleability. Just a few grams of niobium added to a ton of steel can help raise the resulting alloy's strength by 40%.

A fractional amount of niobium can add enough strength to steel, that it can help engineers reduce weight of any steel based product by as much as 10%. In automobiles, niobium enhanced steel can contribute to significant fuel consumption reductions. China is the largest consumer of niobium in the world, because of the booming infrastructure in place in the country. Even the most recent earthquakes, with dramatic damage in terms of loss of life, have highlighted the consequences of the use of inferior materials in construction, but China needs to import niobium, because unlike the rare earths, graphite, zinc and iron ore, it cannot produce even a gram of niobium. The Brazilian CBMM (Companhia Brasileira de Metalurgia and Mineração) singlehandedly addresses 85% of

global niobium demand. Such is the context in which, Niocorp is developing Elk Creek, the only primary niobium deposit in the United States and it may soon become one of the most important production sites of niobium outside of Brazil. Not surprisingly, Niocorp's shares have grown by over 300% in 2014, going from \$ 0.14 to \$ 0.80. And there is no reason why that race cannot continue moving up.