

# Tasman Metals ever closer to achieving a European heavy rare earth supply chain



Tasman has the only NI 43-101 compliant rare earths resource in mainland Europe featuring one of the highest concentrations (50%) of heavy rare earths (HREE) vs. total rare earth oxides (TREO), especially rich in yttrium and dysprosium. The

project is backed by excellent infrastructure and it is based in one of the most politically stable regions of the world.

Last July, Tasman Metals Ltd (“Tasman”, TSXV: TSM | NYSE MKT: TAS) announced that it has obtained a heavy rare earths concentrate as part of the hydrometallurgical testwork at its Norra Karr heavy rare earths project in Sweden. Tasman said that this is the last step “in defining the Norra Karr flowsheet”, representing a major achievement and that the related beneficiation and hydrometallurgy testwork has delivered enough quality data to help complete the ongoing Norra Karr Pre-Feasibility Study (PFS). Investors have been pleased by Tasman’s progress in 2014. Last March, Tasman’s shares almost hit CAD\$ 2.00/share, hovering at around the CAD\$ 1.4/share level throughout most of the spring and hitting a low of about CAD\$ 1.10 in June. It is now trading in the CAD\$ 1.12-1.15 range, which is still higher than the 200 day average of CAD\$ 1.10/share. Tasman’s potential remains high and the preparation of the HREE concentrate will help to generate the flow chart for the Norra Karr project, leading up to the all important production phase.

Norra Karr is one of the world’s richest deposits of heavy

rare earths. They have the additional benefit of being characterized by a relatively simple mineralogy, which allows for a less 'intrusive' than expected metallurgy, requiring little more than conventional processing facilities and readily available and commonly used chemicals. Indeed, the ore at Norra Karr – eudialyte – responds well to crushing and grinding using readily available equipment. Using a single-phase magnetic separation courtesy of equipment manufacturer Metso Minerals, tests have suggested that it is possible to raise the rare earths content to over 86% "in less than 35% of the original mass", eliminating the need for flotation. Magnetic separation systems are sufficient with the advantage that no chemical processing is required. Meanwhile, the Australian ANSTO Minerals has performed sulfuric acid leaching hydrometallurgical research. ANSTO chose sulfuric acid because it is relatively inexpensive and widely available in Sweden; moreover, the Norra Karr project is located just 25 km from a railway line used for the bulk transport of sulfuric acid. The relatively simple magnetic separation allows for a reduction of the amount of sulfuric acid needed to separate the REE concentrate. So far the testing has revealed that the very high in demand dysprosium (Dy) accounts for as much as 4.8% of the REE content at Norra Karr; other notable concentrations include high grade zirconium (Zr), hafnium (Hf), niobium (Nb) and yttrium (Y).



The fact that Tasman Metals is operating in Sweden is a significant bonus because of that country's highly predictable mining regulatory framework. Indeed, if anything, the Swedish government has become even more generous in approving exploratory drilling,

despite the fact that some environmentalist organizations have become more vociferous on trying to limit mining activity. In

the last week of July, there were highly publicized protests along the shore of Lake Vattern, close to Tasman's project. These protests have been frequent and regular but the mining regulatory bodies have never threatened license repeals or other punitive or restrictive measures. In Sweden, mining concessions – provided the Company has obtained all applicable environmental permits as Tasman has done – have been very tough to challenge. In fact, the Swedish Mining Inspectorate has become more generous in granting permits: between 2004 and 2009, it approved 85 percent of all exploration applications according to its statistics; in the past five years, that proportion has risen to 90 percent. At Norra Karr, it would appear that the many Swedes who use smart phones, laptops, electric cars, digital cameras and a host of other devices requiring rare earths are not afraid to realize that the necessary metals must be extracted 'from somewhere'.

Tasman is one the keys to achieving a more European rare-earth supply chain. Moreover, the Russian-Ukrainian crisis – and related sanctions – have led many European investors to be less concerned about a negative impact on global economic growth dynamics and more aware that raw material prices are increasing in price, benefiting from the uncertainty. Tasman Metals says there are some 70 million tons of ore at its Norra Karr property and with an annual mining rate of 1.5 million tons a year; the company expects the mine could run 40 years.