



## Exploring the rare earths market

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FOR iron ore and coal players times are a bit tough. But one Australian company is well-positioned to outgrow this volatility through a specialised commodity known as heavy rare earths.

Hastings Rare Metals is in a coveted position most of its junior counterparts can only dream about right now.

At a time when the spot price of iron ore and even metals such as copper and zinc slide, impacting share prices and forcing companies to halt development plans, Hastings is forging ahead with its plan to develop a heavy rare earths (HRE) mine in Australia.

Dubbed the Hastings project, it's located 18km southeast of the historical gold mining centre of Halls Creek and is considered the largest HRE project in Australia and the fourth largest globally.

The company is fresh from releasing a scoping study on the project, which proved it was economically viable.

Based on the project's existing resources of 36.3 million tonnes, the study confirmed the operation would have a 25-year mine life.

Annually, the project would produce 140t of dysprosium oxide, 830t of yttrium oxide, 590t of a mixed rare earths oxide, 630t of niobium oxide and 6170t of zirconium oxide.

Speaking to *MiningNewsPremium* on the results of the study, Hastings chief executive Alastair Metcalf said the project continued to get more and more prospective.

"It's a really big and exciting project," Metcalf said.

With a pilot plant set to come online early next year, Hastings is hitting the ground running.

But it's not just the project which excites the company - it's the supply and demand nature of the HRE specialty market that has got the company talking.

Among the group of 17 metals, dysprosium oxide and ferro-dysprosium are the most lucrative HRE metal, being the key ingredients in phones, wind turbines, iPads and even electric car batteries.

Yttrium is also another key HRE metal, often used in alloys.

While light rare earths such as lanthanum and cerium currently sell for about \$20 per kilogram, dysprosium is selling for as much as \$950/kg and yttrium is going for about \$90/kg.

While the prices of HRE, like most of the other commodities, have come down since the price boom in 2011, Metcalf said current pricing of the metals was still very favourable.

“They (prices) have come off a bit but they are still very attractive from our perspective,” he said.

At the moment, the Hasting’s project is about one in six projects which are endowed with dysprosium and yttrium which are classified in an advanced stage.

Projected metallurgical recoveries are expected to be 75% for dysprosium and 70% for yttrium, niobium and zirconium.

It’s expected that the Hastings project, once fully operation, will supply 10% of the world’s dysprosium.

This could be considered a blessing for Hastings, considering demand for dysprosium is projected to rise significantly in the next few years.

“Our chart shows demand for dysprosium going up two-and-a-half times between 2010 and 2020 - supply can’t keep up with that,” Metcalf said.

“All dysprosium is coming out of China, so at the moment we’ll probably be one of a few suppliers of dysprosium elsewhere in the world.”

The China story proves another boon for Hastings given that the country is working to limit its supply of HRE.

China currently accounts for about 95% of the world’s production of rare earths but in recent years has imposed regulations to keep supply for itself.

This has included introducing export quotas, implementing price levies, setting minimum operating standards and stockpiling supply.

Hastings technical director Steve Mackowski told MNP China had limited exports on the metal through price in the past 15 years and had been doing it on quotas for the past seven years.

Mackowski said this should be a wakeup call for the end users in regard to future supply of the metal.

“We think (China) will become a net importer of specific rare earths very quickly,” he said.

While China's controlling ability in the HRE space will most likely continue for some time, China's decision to take a back seat in the supply of HRE puts companies like Hastings in a very good position.

A few months ago Mackowski took part in a rare earths and lithium trade mission in Europe, where the company got the chance to meet with high-technology and energy-efficient industry manufacturers who remain dependent on rare earths.

Mackowski said the trip gave the company an opportunity to talk to the supply chain and it was now currently in discussions with potential partners, who would likely be end users of its products.

"We've formulated a couple of production and partner opportunities into Europe but also developed partner opportunities into China, Korea and North America," he said.

"We'll be deciding between about 10 strategic opportunities and will probably only be able to supply one.

"The situation we're in at the moment is deciding if the BMW or the Lexus is going to be the best hybrid in the world, because there's not going to be enough dysprosium for everybody," Mackowski laments.

The next 12 months for the company will undoubtedly be a busy one, with plans to develop a pilot plant for the first quarter of 2013 already in full swing.

Hastings also plans to undertake more drilling on the southern extension of the project, which would either help extend the mine life beyond its projected 25 years or improve the project's economics.

In parallel to this, Hastings will continue to do optimisation work and then will roll into a full feasibility study, planned for the second quarter of 2013.

If everything goes to plan, construction on the Hastings project could be under way by 2014 with production to follow in 2016.

While a few promising rare earth plays have run into troubles recently, with projects experiencing long lead times getting into the production phase, Metcalf assured it would not have the same financing issues as some of the other proposed rare earth developments.

Hastings admits it's probably about a year behind Arafura Resources' development of its Nolans rare earth project in the Northern Territory, but is catching up fast.

"It has taken 10 years to get where (Arafura) is now, whereas it has taken us six months," Mackowski said.

While Hastings may be only slightly trailing behind Alkane Resources, which is developing the Dubbo zirconia project in New South Wales, which is mainly endowed with light rare

earths and a small portion of HRE, Hastings believes it could be the next majority HRE producer in Australia.

“We’d like to think so,” Metcalf concedes.

With a handful of rare earth projects projected to come on line in the next few years, Metcalf can see the industry making a name for itself outside of China.

“It’s almost like the dawn of the industry outside of China,” Metcalf said.

And while concerns surrounding a slowdown in China create an uncertain outlook for Australia’s iron ore export market, Hastings knows it doesn’t have to worry about demand for HRE abating anytime soon.

It’s as simple as this.

“What would you do if there were no rare earths?” Metcalf asks. “No iPads, no mobile phones and no touch screens.

“People will find more and better ways to use rare earths in the future, so I think the outlook is actually pretty good.”