

Friday, 29 April 2016

## Cradle Resources

### Anglo transaction highlights demand for niobium

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<b>Stock</b>	<b>CXX:ASX</b>
<b>Recommendation</b>	<b>SPEC BUY</b>
<b>Current Price</b>	<b>\$0.27</b>
<b>Target Price</b>	<b>\$0.48</b>

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#### Event & Impact: Positive

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##### Anglos niobium/phosphate business sells for US\$1.5b

Globally, there are three producing niobium operations, with no new project brought on line in the past ~40 years. In the past two years two of these operations have been acquired for considerable compensation. The latest of these occurred yesterday with Anglo American selling its niobium/phosphate business in Brazil for US\$1.5b to China Molybdenum. Earnings from the Catalão mine, which this business unit is centred upon, is proportioned roughly two thirds to niobium and a third phosphate. In late 2014, the Niobec mine in Canada was divested by IANGOLD Corp. to a consortium led by Magris Resources for US\$500m.

Niobium supply is dominated by Brazilian Companhia Brasileira de Metalurgia e Mineração (CBMM), a family run business which contributes 84% of global supply. In 2011, CBMM divested 30% of its business to Asian steel makers in two transactions for US\$3.9b. Argonaut believes Cradle Resources' (CXX) Panda Hill niobium project in Tanzania (JV: CXX 50%, Tremont Investments 50%) is the only project with near term development potential (first production slated for mid-2018).

##### See through value for Panda Hill

CXX recently released a Definitive Feasibility Study (DFS) for Panda Hill outlining a 30 year mine life producing a life of mine average 8.2ktpa ferroniobium (FeNb) containing 5.4ktpa niobium (see Argonaut Research: [Positive Definitive Feasibility Study](#)). Pre-production capital is estimated at US\$196m and the project will generate average EBITDA of US\$112mpa, a NPV<sub>10</sub> of US\$404m and 27% post tax IRR. Panda Hill will contribute ~6% of global niobium supply.

Niobec has delivered consistent EBITDA of US\$68-88m since 2008. The 2014 acquisition translated to a ~6.8x EBITDA valuation. Catalão generated US\$146m EBITDA in 2015 which translates to a transaction value of ~10x EBITDA. The see through value for Panda Hill is US\$760m to US\$1.1b (unfunded basis). CXX, who has a 50% share in the deposit, has a current enterprise value (EV) of just A\$37m.

We believe Panda Hill has high corporate appeal given the lack of acquirable assets with near term production potential. This is supported by strong margins (detailed below) and Resource upside with potential for a >50 year operation. Unsuccessful bidders engaged in the Catalão process may now turn their interest to Panda Hill.

Figure1: Global niobium mines and market share

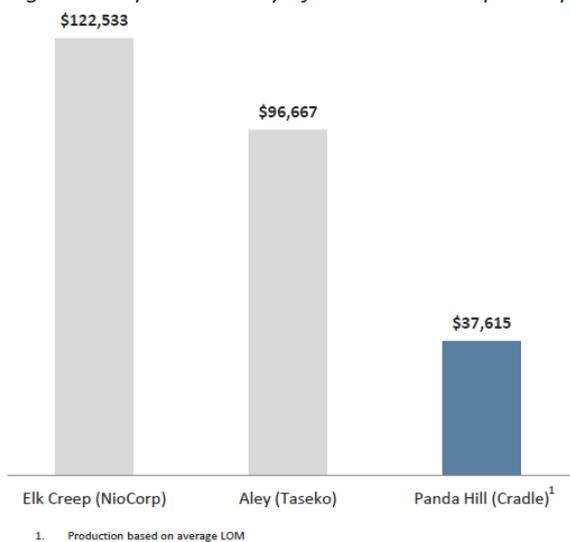


Source: CXX

**Panda Hill is the only development project likely to be brought into production**

Panda Hill is the stand out niobium development project globally, based on low capital intensity, operating cost competitiveness and scale. Cash costs of ~US\$21/kg (niobium produced) are comparable to the Niobec and Catalão mines. This provides a high margin against historically stable prices of US\$37-43/kg. Note that prices are largely controlled by price maker CBMM. We believe other contending projects such as Elk Creek (NioCorp) and Aley (Taseko) are currently unviable due to considerably higher capital intensity.

Figure 2: Capital intensity of niobium development projects (US\$/t annual Nb Production)



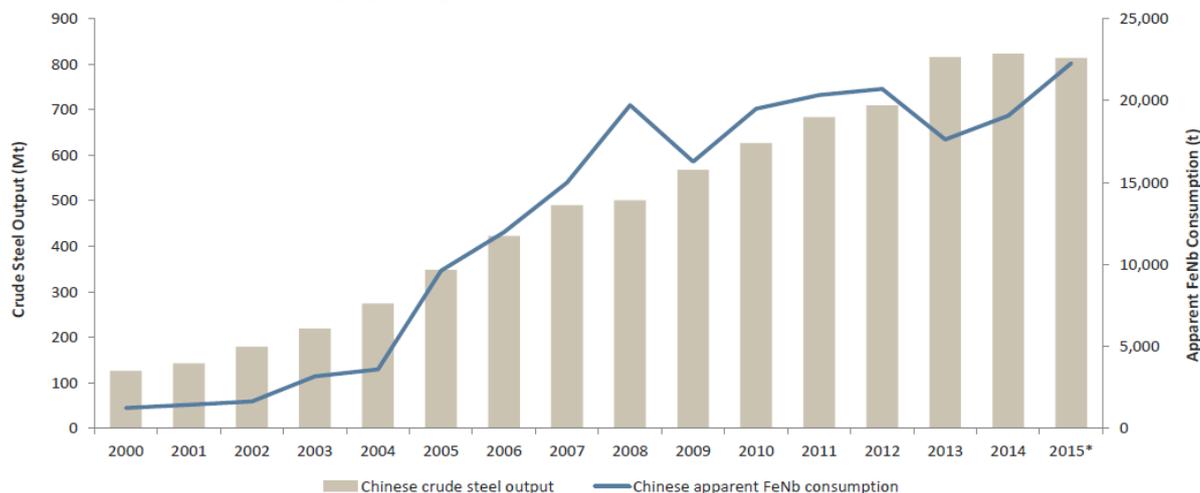
Source: CXX

**What is niobium and why is it in high demand?**

About 90% of niobium is used in the steel industry, primarily in high-strength low-alloy steel (HSLA). HSLA steel is used in pipelines, automobiles, bridges, high rise buildings and welded pipes. Niobium is an alloy metal which strengthens and lightens steel to produce HSLA. Adding ~\$6-9 of niobium to a mid-sized car reduces the weight by ~100kg and improves fuel efficiency by ~5%. Adding niobium to building and bridge structures significantly reduces the amount of cement required in construction. Niobium is a growth metal with increasing appeal in a carbon conscious world.

The intensity of niobium in steel for developed countries averages >50g/t, whereas China and India average ~20g/t. Figure 3 below highlights the recent trend of higher FeNb consumption growth in China compared to steel output growth. Global demand growth for niobium has averaged 6.2% pa for the last 10 years versus average steel production growth of 4.7%.

Figure 3: Chinese niobium usage growing in comparison to crude steel output



Source: RCG, CXX

## Recommendation

Argonaut maintains a SPEC BUY recommendation with a \$0.48 target price.

### Important Disclosure

Argonaut acts as Corporate Adviser to CXX and will receive fees commensurate with these services. Argonaut holds or controls 1,750,000 CXX shares and 1M CXX Options exercisable at \$0.25 on or before 30 April 2018.