



Addressee: WS Amati  
Strategic Metals  
Fund Investors  
United Kingdom

WS AMATI STRATEGIC METALS FUND

# A postcard from Brazil

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By  
Mark Smith, Fund Manager

Amati  
Global Investors

I have just returned from the inaugural Canaccord Genuity Latam Natural Resources Conference in São Paulo, Brazil, featuring over 60 companies listed on the TSX, ASX, LSE and NASDAQ from the mining (battery, base & precious), energy (including uranium), and agri-tech sectors. There were over 300 attendees including over 100 institutional clients (predominantly from Brazil, Chile, and Peru) but and some intrepid investors from Australia, UK (me), Europe and North America.

I had 16hrs of 1 on 1 corporate meetings with our portfolio companies but also some very exciting new companies emerging out of the lithium valley. In true Amati style I had to get my boots on the ground so I attended a post-conference site visit, to Brazil's "Lithium Valley" to see the operations of Sigma, Lithium Ionic, and Latin Resources.

The message from the conference (capital markets) was pretty clear in that equity investors are looking

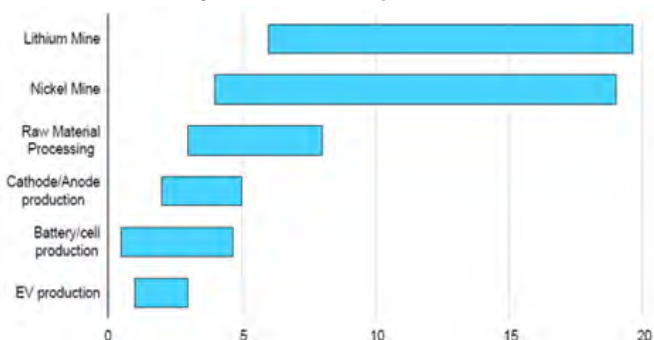
into the energy transition in tandem with fiscal and political support to advance these much needed mining projects.

Hot on the heels of the International Energy Agency's first-ever international summit in Paris on diversifying critical minerals supply chains, with nearly 50 different countries in attendance, the theme from São Paulo was similar in that the mining industry needs to move quicker. The challenges for the miners are that the battery manufacturers and tech companies move a lot quicker in business development. The mining community, regulators and policy makers move a lot slower. (As discussed in our newsletters and presentations).

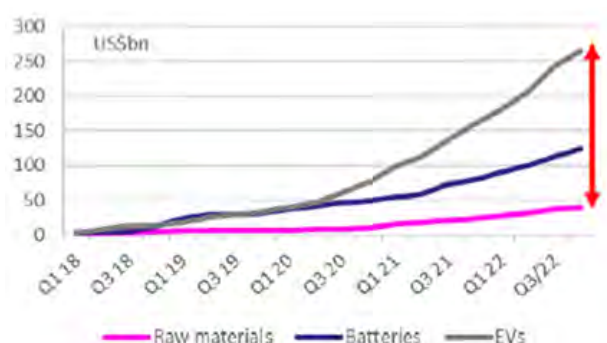
The address from Romeu Zema, Governor of the state of Minas Gerais on the "Investment Opportunities in Minas Gerais" suggests Brazil understands this. It is a careful balance between managing the expectations of the mining industry with the national interests at every stakeholder level.

**Figure 1 – A gentle reminder of the development time frame and investment in the battery sector**

**Lead times in years to initial production**



**Cumulative development capital 2018-22; US \$bn**



→ Source: IEA

Behind the scenes and away from the 'red Bloomberg screens', the battery metal sector is buoyant. There are deals being done with global industry leaders in the energy, auto, battery and refining industries. It is not surprising that 'Big Oil' is looking at 'white oil' or the lithium market for energy diversification. This industry tie up becomes ever more important once the consumer demands greener products.

The paradox currently is that the supposed green battery metals still attract large environmental footprints and so at some point the auto/battery industry and consumer will have to pay a carbon tax, unless they use greener sources of metal. Currently economics is dictating the cheapest supply route for metal on to the market.

Examples are:

**Lithium:** Low grade lithium feedstock cannot sustainably supply the growing lithium deficit?

- 1 tonne of lithium hydroxide (LCE) generates 12 tonnes of waste (industry average)
- 1 tonne of lithium carbonate produced from lepidolite in China generates 35 tonnes of waste.

The majority of lithium carbonate is imported into China for Lithium iron phosphate batteries, or converted into lithium hydroxide and exported to Japan and South Korea to make high density/capacity batteries. This double handling creates price volatility, and one could argue the need for hydroxide conversion plants outside of China. Plenty of conference rumours around this topic.

‘Holiday Snap 1’ - Trip Highlights



→ Amati; CG Latam Conference in downtown São Paolo; Xuxa north pit and south pit, Sigma lithium

**Nickel:** The carbon intensity of nickel production from various mineral deposit types must have a cost?

- 7t CO2/t refined Ni for Class 1 nickel production from sulphide ore
- 27t CO2/t refined Ni for Class 1 nickel production from laterite ore
- 45t CO2/t refined Ni for ferronickel production from laterite ore
- 69t CO2/t refined Ni for nickel pig iron (NPI) production from laterite ore

Assuming a global carbon price of \$70/t, the minimum carbon cost to supply class A nickel from NPI (Nickel Pig Iron) is around \$4830/t. Add this onto the all-in-sustainable-cost (90th percentile) and you have theoretical nickel floor prices of >\$22,000/t. Amati’s approach to avoiding the ‘green paradox’ is to invest in companies that circumvent the big carbon footprint. At some point a greener product should attract a premium price.

- **Sigma Lithium** produces Triple Zero Green Lithium – a spodumene concentrate product with zero tailings, non-hazardous chemicals, 100% water recycling, renewable energy and a very low carbon footprint. • This feedstock can produce carbonate and/or hydroxide.

- **Centaurus Metals** – plans to produce nickel sulphate with a life of mine CO2 footprint lower than 97% of global nickel production via pressure oxidation-solvent extraction using Brazil’s renewable energy (80% national supply).

With such a fragmented and complex supply chain in battery metals, there is a theme emerging that the metal trading houses play an integral role between the miner and the Original Equipment Manufacturer (OEM). The direct OEM investments into miners have been few and the preferred route is to enter into long term take or pay contracts with the traders, who in turn deal direct with the miners and provide lower rates of finance.

**My conference thoughts**

While the drop in lithium prices (lowest in 2 years) may curb supply, especially from Chinese lepidolite mines, and car and battery manufactures have been cautious when it comes to restocking because of weaker consumer demand - we are not going back to the internal combustion engine. We know the supply-demand equation longer term, the uncertainty is just when this scenario plays out in the metal and equity prices. Meanwhile the corporates continue to conduct acquisitions - ‘you are one ride away from a good mood – the M&A cycle continues’.

## Welcome to Lithium Valley Brazil

The state of Minas Gerais in south eastern Brazil hosts one of the world's largest belts of granitic pegmatites hosting high quality lithium bearing spodumene and petalite. The belt covers 150,000km<sup>2</sup>, stretching from the state of Bahia through Minas Gerais to Rio de Janeiro. Within this belt the Lithium Valley was formed with the initiative to focus on attracting companies, investment, workforce training and technology development.

The permitting process and regulatory framework have been simplified, but the environment and sustainability remain a key priority.

The valley's area is comprised of the 14 municipalities that have the largest lithium reserves in the country. There are over 45 deposits in the area with high economic potential, which could increase proven reserves by 20 times.

### 'Holiday Snap 2' – Sigma lithium's Xuxa north pit and south pit



→ Source: Amati; Stripping the open pit to expose the (white) lithium bearing pegmatites

### 'Holiday Snap 3' – Sigma lithium's plant



→ Source: Amati; primary crusher, conveyors to DMS plant to final Triple Zero product and dry stack tailings

'Holiday Snap 4' – Review exploration activities of Lithium Ionic



→ Source: Amati; The exploration at Itinga project with a focus on the Bandeira license.

'Holiday Snap 5' – Review exploration activities of Latin Resources



→ Source: Amati; technical orientation and exploration activities on the Colina prospect, Salinas Lithium project

## Sales Team Contacts

### Rachel Le Derf

Head of Sales & Marketing  
rachel.lederf@amatiglobal.com  
07979601223

### Colin Thomson

Head of Intermediary Distribution  
Northern England, Scotland & NI  
colin.thomson@amatiglobal.com  
07884026517

### Jonathan Woolley

Sales Director  
London, Midlands, SW England & Wales  
jonathan.woolley@amatiglobal.com  
07818203013

### Thomas Whitfield

Sales Director  
London & SE England  
thomas.whitfield@amatiglobal.com  
07714839155

### Samantha Dalby

Sales and Insights Manager  
samantha.dalby@amatiglobal.com  
+44 (0) 131 503 9116

### Olivia Pattison

Senior Sales Support Executive  
olivia.pattison@amatiglobal.com  
+44 (0) 131 503 9126

### Milly Stevenson

Sales Support Executive  
milly.stevenson@amatiglobal.com  
+44 (0) 131 503 9125

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This review does not provide you with all the facts you need to make an informed decision about investing in the fund. Before investing you should read the Prospectus, the Key Investor Document (KIID) and Supplementary Information Document (SID). The Prospectus sets out the main risks associated with the fund, the KIID shows you how costs and charges might affect your investment, and the SID details your cancellation rights. If you are in any doubt as to how to proceed you should consult an authorised financial intermediary. Fund documentation can be requested from Waystone or Amati and is available to download from our website.

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