



6 Reasons why the first quarter of 2019 could be a game-changer for ASX listed Pensana Metals

Everybody is looking for the stock which is going to race out of the blocks in the New Year.

Those stocks with a strong tail wind are usually the best bet and the biggest thematic of them all for next year is EV.

Whether it is Elon Musk with his Mark 3 Tesla, VW's \$40 billion bet or the legendary Porsche enraging its die hard petrol-head fan base with the \$130,000 all electric 600bhp Taycan, the next few years is going to be about the biggest energy transformation in history – the switch from the internal combustion engine to the EV.

Increasingly what many of these EVs have in common is that they use highly efficient permanent magnet motors. Which require NdPr. Lots of it in fact. Every vehicle needs around 0.7 to 1.2 kg of NdPr oxide.

And it's not just the estimated 300 million EV's that are going to need NdPr permanent magnets. Wind turbine use them as well.

A 3MW wind turbine uses close to 600 kg of pure NdPr oxide.

According to Adamas Intelligence demand for NdPr is going to outstrip supply within the next five years, possibly as early as 2020.

At present over 87% of NdPr is supplied by mines in China to the magnet manufacturers. A further 9% comes from Lynas Corporation ASX:LYC.

Which is causing many car manufacturers and magnet producers to start to look at where the new supply of NdPr is going to come from.

Rare earth projects are not rare. According to some Chinese industry sources there are over 60-70 rare earths projects around the world. For one reason or another most haven't been able to get into production.

Often the reason is that the project needs to refine the rare earth all the way to a metal oxide to be economic. Which means very high capital costs.

During the first quarter of 2019 we will update you on the 6 reasons why we think Pensana is on track to become the second major NdPr producer outside China

1. The Longonjo deposit is going to get much bigger: Executive Director Dave Hammond commented: *“With just over half of the drill results received to date it's clear that much of the weathered blanket covering the 3.8 square kilometre carbonatite is mineralised and that we are already looking at the potential for a very substantial expansion of the maiden Mineral Resource estimate.”*

2. Longonjo has some of the highest grades of any NdPr project worldwide. . Drill results to date have reported thick intersections up to 65 metres from surface and several exceeding 5% REO and 1% NdPr. In some areas the grades reach 8% REO and 1.98% NdPr.

3. Our Customers will be Chinese. We asked them what they want and they want our concentrates. They don't want us to build a major rare earths refinery. They already have their own. This is a big relief. It means that the capital cost for us is orders of magnitude lower. Floating a concentrate is one thing. Building a complex refinery is another.

4. Metallurgical testwork results indicate that a high grade concentrate can be produced. The advantage of these higher grades is that mineralisation can be selectively mined for treatment. Early metallurgical testwork results have been encouraging. Testwork is now focusing on producing a high grade concentrate.

5. Longonjo is adjacent to one of Africa's major rail lines linking the project to the Atlantic Port of Lobito. Getting concentrate onto transport is crucial to the economics for any project selling concentrates. Longonjo has a huge economic advantage being located just 4 kilometres from the Longonjo loading facility on the Chinese built Central Benguela rail line.

6. It's too early to talk about financing. Except to say that China has invested over US\$20 billion into Angola. When the customers are comfortable with the country risk it takes us a long way down the road of de-risking the project when the time comes for financing.

ASX:PM8