

‘Thursday Thoughts’ – Cobalt: The Forgotten Mineral in the Lithium Boom

Lithium has become the latest darling of the share market, its meteoric rise driven by the demand story linked to its role in hot new battery technologies. Of specific interest to my thoughts today is cobalt, the unsung hero of the lithium boom. For those who dare to look past the lithium hype there is cause for concern for future market and economic implications related to shortfalls in the supply of other minerals related to new clean energy technologies.

Lithium cobalt oxide constitutes 60% of all manufactured batteries mostly utilised in smartphones, computers and the crop of new energy storage technologies set to revolutionise electric vehicles and home solar generation. In 2014 global cobalt demand surged by approximately 15% on 2013 levels reaching 81,000t. The quantity of cobalt demanded by the battery industry increased by 67% between 2006 and 2014. A total of 40% of global cobalt demand is driven by the battery industry and this demand is expected to rise by a further 30% over the next 5 years. The unique versatility of the mineral due to its unique chemistry constitutes essential applications in other high end compound materials for industries of economic importance. These areas include aerospace, military uses, and diamond tooling. To the casual observer, cobalt might seem to occupy an advantageous market position of core economic importance and it might be reasonable to think that new supply should be incentivised by these changes in demand.

However, where red flags emerge, is in cobalt's supply side economics. An astonishing 94% of world cobalt is produced as a by-product of copper and nickel mines, this essentially results in cobalt being mined as an afterthought in the mine plan. Given the state of current copper and nickel prices, it is unlikely that even a sharp rise in cobalt prices would be enough to incentivise significant new production. The result for cobalt is a fundamentally flawed supply-chain that is directly dependent upon the production of and demand for copper and nickel. Furthermore, approximately 60% of global cobalt supply comes from the Democratic Republic of the Congo (DRC), a country notorious for political and economic instability. It is estimated that in the first quarter of 2016 cobalt production from the DRC fell 20% as a repercussion of decreasing copper prices. Copper prices sunk to 5 year lows in 2016 (AU\$6,050t in June) as a result of a market surplus of 850,000t over the previous 4 years, a situation that is forecast to get worse before it improves. Compounding the issue are diminishing global copper and nickel grades and the massive drop off in exploration expenditure making discovery of new supply more difficult. Combine these factors with increasing recovery costs and in recent periods cobalt prices have begun to see upward pressure.

Overwhelming evidence suggests that cobalt is sprinting at an Olympic pace toward a market deficit and skyrocketing prices. It will be interesting to see how the lithium-ion championing entrepreneurs, such as Tesla, plan to approach the potential cobalt shortage and whether or not they are able to quickly address the problem through innovation and substitution. In a nutshell; availability of cobalt resources may just be a more decisive ingredient in the future direction of the current technological space than lithium itself. Cobalt, a forgotten mineral lost in the lithium boom.