



The Resource Calculator

Commodity Focus: Tantalum

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When Apple Inc. recently launched its newest retail store in Washington D.C., the grand opening drew not just eager shoppers, but angry protestors. The protest highlighted the growing concern among consumers and regulators that the tantalum, tin, tungsten and gold, the so-called 'conflict minerals' found in many electronics, are helping to finance militia groups responsible for horrific violence and deaths in Central Africa.

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Of these 4 minerals, tantalum is in the position of being of the greatest concern due to the fact that in the last 10 years ever increasing amounts of conflict tantalum has entered the western world, while recently there have also been significant shutdowns of western tantalum producers.

The sale of tantalum concentrate (also known as coltan) originating from the Democratic Republic of Congo (DRC) has continued to grow as it is produced at the very lowest cost – that of child and forced labor. The United Nations Group of Experts report on conflict tantalum production in the DRC refers to this extraction method as “mining by military motivation” – that is, people with guns at the top of the hole watching children digging for minerals in the hole.

Over the last 10 years, the amount of tantalum and tantalum products that are from feed stock originating in the DRC has increased to be up to approximately 50% of all the tantalum being used in the western world. It is highly unlikely that there is any electronic OEM that has not been the recipient of conflict tantalum.

And if you happen to see a photograph of a Congolese boy or girl of perhaps 10 years of age smiling for the camera, as they are digging for tantalum, they are smiling because they are alive – as opposed to the approximately 5 million of their countrymen who have died over the last 15 years in this extraction process and related violence. Make no mistake: this is the single greatest loss of life since the Second World War and is the reason that there are more United Nations troops mobilized in the DRC than in any other jurisdiction globally.

In terms of conflict-free tantalum production, there should arguably have been a tantalum price increase sometime in 2008, due to the normal operation of supply and demand. Although overall economic conditions were not robust in 2008, it was the continued and 'cheap' conflict production of tantalum that subverted the normal operation of these market forces.

In late 2008, Australia's Talison Minerals shut down its Wodgina mine, formerly the world's top tantalum producer at two million pounds per annum. Talison's move was followed by the closure of Cabot Corporation's Tanco mine in Canada (175,000 pounds per annum) in early 2009.

To exacerbate this supply problem, the United States Defense Logistics Agency – which provided up to 500,000 pounds annually - exhausted its tantalum stocks between 2001 and 2007 and suspended sales in 2008.

Industry initiatives to address the use of conflict minerals has been minimal, creating an explosive environment within the industry as governments and interest groups have been forced to weigh in. And they have.

On July 15, 2010, US President Barack Obama signed the Wall Street Reform and Consumer Protection Act which included an amendment which is directed to curtail the importation of minerals such as tantalum from areas of conflict. The amendment demands US-based or listed companies to be transparent about the origins of certain minerals in their products. This amendment is a “game changer” as this will affect many major electronics companies operating in the western world.

“Support has quickly mounted in the US and internationally for an accountability system

similar to the Kimberley Process for diamonds that would strive to eliminate the trade of minerals originating in conflict areas and prevent sales from funding violence. The OECD [Organisation for Economic Co-operation and Development] is also making progress in this direction,” says Ron MacDonald, a former Canadian MP who advises resource companies on regulatory issues through his consulting company Cansource Inc. “They've already come up with a fairly detailed draft of recommendations and we should expect to see new guidelines from the OECD by the end of the year.”

The recent developments in the market are starting to have a significant effect on the supply chain of tantalum raw materials. For example, a recent transaction was at a 30% premium to the historic tantalum price and this was paid to one of the very few conflict-free tantalum producers, Brazil's Companhia Industrial Fluminense.

The head of marketing for Talison Minerals, Bryan Ellis, told Reuters recently that he expects demand to recover to 2007 levels of about 6 million pounds per annum and for prices to climb in step with increasing demand from the electronics industry for historic tantalum products. In addition, new technologies will contribute to its growth including a significant number of new tantalum applications that could be grouped under the 'green energy' umbrella.

Tantalum has several characteristics that make it virtually irreplaceable in most applications - new and old – including the highest 'capacitance'; i.e., the ability to hold and release instantaneously the most electricity per gram.

In terms of current market conditions, notwithstanding the most gloomy prognostications about an impending 'double dip' for the US economy, it is very clear that the demand for high-end electronics is very robust. For example, the new iPhone and iPad are products



whose design and manufacture are dependant upon the use of tantalum.

Other potential producers include Commerce Resources Corp. (TSXv: CCE) and Gippsland Ltd. (ASX: GIP) who are developing deposits of tantalum in Canada and Egypt respectively. The development of additional sources of tantalum raw materials could have a significant positive effect on the marketplace.

Commerce Resources is aiming to become an alternative supplier through its 100%-owned Blue River tantalum-niobium project in central British Columbia, Canada. AMEC is conducting a preliminary economic assessment on the deposit expected to be released by the fall of 2010. Australian explorer Gippsland Ltd. is seeking financing for the development of its Abu Dabbab project within the Central-Eastern Desert in Egypt.

The obvious benefits of new producers of conflict-free tantalum would be the long-term stability that alternate sources would bring to the marketplace. Makers of electronic components such as capacitors would have fewer worries of a future price spike in the market and there would be no viable reason to source tantalum from a conflict region where the 'cost' should not ever discount the value of human life.

