

## Critical Elements 'ahead of the wave'

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TORONTO (miningweekly.com) – Quebec project developer Critical Elements on Wednesday said it was “ahead of the wave” as it was nearing completion of a definitive feasibility study and construction of a mine at its Rose lithium/tantalum project, located near James Bay, Quebec.

Executive chairperson **Ron MacDonald** told *Mining Weekly Online* that global demand for lithium was set to take off – not driven by the development of electric vehicles anymore, but by global regulatory changes setting ever-higher targets for renewable energy, which needs energy storage solutions to be effective.

“We are in the midst of a major industrial revolution with the adoption of a technology at lower and lower prices with the major players in the battery industry looking to secure long-term lithium supply,” he said.

MacDonald pointed out that a lot of resources have been put into developing lithium-ion batteries.

“Driven by a significant increase in demand in the past year in the markets for hybrid/electric vehicles, electronics and particularly energy storage, as a result of renewable energy policies in China, Japan and the US, the lithium market has shown considerable strength in terms of price and demand for battery-grade material,” MacDonald said.

One area in which lithium-ion battery manufacturers had realised they could not compromise was the use of extremely high-quality lithium in batteries, which increases energy storage capability.

This had resulted in a glaring hole in the supply side of high-quality lithium, which TSX-V-listed Critical Elements was getting ready to take advantage of.

Uncertainty about the level of rare-earth exports from China and the future global supply of these critical raw materials also added to the critical importance of a domestic supply.

Critical Elements president and CEO **Jean-Sébastien Lavallée**, a third-generation miner, pointed out that the company’s flagship Rose hard-rock lithium project had proven able to produce lithium 99.9% pure. He believed the Rose project to be one of only five mines globally able to produce battery-grade lithium, giving it a significant advantage in the market.

Lavallée said the recent C\$724-million takeover of major lithium producer Talison Lithium by Rockwood Holdings, had restored faith in the hard-rock lithium industry, placing its project, which was expected to begin production by the middle of 2014, in a new league.

### TANTALISING TANTALUM

The Rose mine would also be a significant new source of tantalum, a sought-after metal used in micro-electronics such as electronics, medical devices and other industrial applications.

MacDonald pointed out that global tantalum supply had been significantly reduced by the recent passing of the US Dodd-Frank Act and new guidelines at the Organisation for Economic

Cooperation and Development, barring companies from using tantalum that was illegally mined in Central Africa.

This had driven a high demand for new sources of tantalum that are 'conflict free'.

"This mine, when in production, will provide a much needed supply of ethical tantalum in a market that has not seen a new tantalum mine developed in almost 30 years," Lavallée told *Mining Weekly Online*.

Critical Elements expected to finalise a bankable feasibility study (BFS) for the Rose project by the first quarter of 2013. The company had so much confidence in its resource that it had progressed the project to a BFS after completion of a preliminary economic assessment (PEA), completed in November last year.

The Rose project was expected to be an openpit operation mining ore at an average rate of 4 600 t/d, or 1.5-million tons a year. The estimated resource comprises 24.3-million tons grading 0.89% lithium oxide and 132 parts per million tantalum pentoxide (Ta<sub>2</sub>O<sub>5</sub>).

The Rose PEA estimated a total of 452 306 t of lithium carbonate and 3.5-million pounds of Ta<sub>2</sub>O<sub>5</sub> to be produced over the expected 17 year life of the mine. The mine carries a price tag of about C\$268-million, and at a minimum price of \$6 000/t of lithium and a nominal price of \$118/lb of tantalum, the project carried a net present value (NPV) of \$488-million, using an 8% discount.

However, MacDonald pointed out that the price of lithium had been increasing on a quarterly basis this year and, when a price of \$8 500/t of lithium and \$135/lb of tantalum were used, the NPV increased to \$1.08-billion.

The after-tax internal rate of return was calculated at 25%, using an 8% discount.

"Our tantalum production would give us the leverage to finance building the mine with debt, reducing dilution to our shareholders. Anyone who has tantalum in their resources at this time, will see their stocks rise significantly in the coming years," MacDonald said.

## **QUEBEC BENEFICIATION**

MacDonald believed that Quebec could very well be the next manufacturing centre of excellence for lithium-ion battery manufacturing.

"I would not be surprised if Quebec someday produces lithium-ion batteries directly to the US market. Quebec is one of the most favourable mining jurisdictions and the government is excited about lithium, owing to the significant beneficiation potential the mineral holds," he said.

Lavallée added that the company had the full buy-in from the local First Nations, who would participate in investor opportunities, as well as potential participation in mining activities at Rose.

Critical Elements had Rose as one of several promising projects in this sector, including rare earths projects, in the Rocky Mountains of British Columbia, and rare earths and tantalum/niobium projects, in Quebec.

The company's Toronto-listed shares closed 7.14% higher at 22.5 Canadian cents apiece on Wednesday.

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