Scandium International's IX Process offers an extraction technology of critical materials from existing mine operations

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When it comes to producing much needed and valuable critical minerals there are two ways to do this. The traditional way consists of developing a proven deposit into a mine by spending hundreds of millions of dollars, on average, and up to 16.5 years to reach production. However, a far quicker way is to develop and prove a new extraction technology that can selectively recover, as byproducts, critical materials from existing mines. Today's company, Scandium International Mining Corp. (TSX: SCY), has been working on both ways at once, with both their own advanced stage scandium project and also with the creation of a joint venture to use a recent milestone achieved in their, in-house developed, critical materials recovery technology. They are, in addition, working on developing a high purity alumina ("HPA") production technology business.

Scandium International owns 100% of the Nyngan Scandium Project, located in New South Wales, Australia. The Project is at an advanced stage with a DFS completed, all required governmental approvals in place, and is now seeking financing. The Company also owns a 100% interest in the Honeybugle Scandium Property, an exploration property adjacent to the Nyngan Scandium Project.

Scandium International has developed and is ready to deploy an ion exchange ("IX") technology to recover scandium, cobalt, and

other critical metals. The Company has also developed a process to manufacture an aluminum-scandium master alloy (Al-Sc2%) from scandium oxide and has a High Purity Alumina ("HPA") manufacturing process. All of these processes are likely to have free-standing value in the critical metals' marketplaces on their own.

Critical metals recovery mining strategy using ion exchange (IX) technology

As a result of Scandium International's IX recovery technology process success, the Company recently announced that it had signed a Letter of Intent ("LOI") with Nevada Gold Mines to pursue critical metals recovery at Nevada Gold Mines' Phoenix Mine, in Nevada, USA. As reported: "The program is anticipated to require 15 months to complete. With program completion, the partners intend to take an investment decision on the construction and operation of a plant facility to recover critical metals from mine solutions. The LOI also outlines key parameters of a partnership, including formation of a joint venture to hold the plant facility, and a 50:50 ownership in the recovery circuit asset."

The net result of the above news is that Scandium International will now get a chance to prove their IX selective recovery technology at scale, and when it is successful, to be able to create a new revenue stream from the 50:50 JV. As stated: "This (critical metals recovery) CMR project, and other similar projects in development, **have the potential to produce material quantities of strategically important metals,** tailored to today's tech-driven products, and can do so from a distributed global copper production base. The environmental impact from this production process is minimal – **no new mines are required**."

Phoenix Mine critical metals recovery Scoping Stage INDICATIVE

ONLY economics (not yet reliable)

Source: Scandium International company presentation

I would expect that this could lead to many other similar projects globally to recover added value byproducts from existing mines wanting to capture more critical metals from their mining process. It seems the market remains cautious as the stock price has not reacted yet. Of course, this is not unusual, as it usually takes actual results and dollars to flow before the market wakes up – but therein is the potential opportunity for early investors.

Scandium International stock price has not yet reacted to the potential value-add of their ion exchange (IX) technology to extract critical materials from existing mine operations.

Source: Yahoo Finance

Scandium International states:

"The Company is also currently pursuing CMR opportunities with various copper industry groups, where SCY proposes to employ ion exchange technology to extract unrecovered critical metals from existing mine process streams. This program represents a fast-track concept to make battery-grade nickel and cobalt products, scandium master alloy product, and other critical metals, from North American sources."

High purity alumina opportunity

On May 27 Scandium International announced the filing for patent protection on their High Purity Alumina ("HPA") manufacturing

process. Scandium International intends to pursue a business in producing high purity alumina, and to employ the designs and methods contained in the patent application to manufacture HPA, for use in both the LED lighting industry and the lithium-ion battery industry. More details here.

Scandium International has broadened their strategy now with 3 key areas of focus

Source: Scandium International company presentation

Closing remarks

It is still early days for Scandium International in regards to commercializing their ion exchange critical metals recovery technology. However recent news gives significant impetus to the idea that one day the process will become a significant regular commercial success with wide application in commercial mining.

Scandium International is concurrently developing their high grade Nyngan Scandium Project in Australia and multiple high-purity alumina and aluminum-scandium master alloy opportunities.

Trading on a market cap of just C$52 million there is a lot to like about the potential of Scandium International Mining Corp. Stay tuned for more developments.

Disclosure: The author is long Scandium International Mining Corp. (TSX: SCY)