

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

written by InvestorNews | September 29, 2021

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)

Imperial Mining Sets Comprehensive 2021 Plan at Crater Lake after \$2.6M Financing

written by InvestorNews | September 29, 2021

After a positive summer drill program at its flagship **scandium-rare earth** Crater Lake Property in northeastern Quebec, [Imperial Mining Group Ltd.](#) (TSXV: IPG) successfully closed a \$2.6 million financing in December to accelerate the project forward in 2021.

Imperial Mining plans to use the proceeds to complete definition drilling at Crater Lake's "TG Zone", and to deliver both a 43-101 Resource Report and a Preliminary Economic Assessment (PEA) by the end of June 2021.

Last trading at \$0.16, Imperial Mining Group has a market cap of \$20 million and a PEA could re-rate the company, shifting it closer to the \$175 million market cap of NioCorp Developments Ltd. (TSX: NB | OTCQX: NIOBF) that has a Feasibility Study at its Elk Creek niobium-scandium project in Nebraska, United States.

Peter Cashin, President & CEO of Imperial Mining Group, recently [commented](#), "I am very pleased of the positive response that the market has shown for our private placement. The financing was oversubscribed, and we believe that it was motivated by the recent significant announcements in the critical metal space, in particular for scandium and the rare earths."

Scandium Alloys at Home and in Space

Manufacturers in many industries, including automotive,

aerospace, and defense, recognize that scandium-modified aluminum alloy materials could become a critical input into their production processes.

With the push for lighter and stronger materials to make vehicles more fuel-efficient and the need for tough and durable metal alloys for the resurgence in space activity, scandium-aluminum “superalloys” have been already used by NASA and the European Space Agency (ESA).

In a March 2020 speech at the Satellite 2020 Conference, Elon Musk, founder of Tesla (NASDAQ: TSLA) and SpaceX stated that the aerospace engineers at SpaceX were going to switch to a different alloy “pretty soon” to replace the current stainless-steel alloy, known as 301.

Scandium-aluminium alloys are highly valued as an important lightweight material and are one-third the weight of steel and 60 % of the weight of titanium alloys.

Scandium-aluminium alloys are also corrosion-resistant and can be used in a variety of industries, including aerospace, automotive, and consumer products, such as baseball bats, bicycle frames, and golf clubs.

A small percentage of scandium alloyed with aluminum enables aluminum to be effectively welded to another piece of scandium-aluminum alloy, without the need for heavy hardware to join the pieces together.

Scandium-aluminium alloys are currently being used by California-based Relativity Space, a private aerospace manufacturing company. Relativity Space’s massive 3D printer can create a rocket from raw material to flight in 60 days.

The automotive industry could be a large market opportunity for

scandium. With scandium-aluminum's self-welding abilities, engine blocks could be constructed using 3D printers.

In addition, according to a recent report, the average passenger vehicle contains over 150 kilograms of aluminum and the average light truck contains over 230 kilograms of aluminum. If only 1% of the traditional aluminum used in the approximately 17 million light vehicles (cars and light trucks) produced in the United States each year, switched to scandium-aluminum, that impact would create a demand for 35 tonnes of scandium each year.

With current scandium production estimated between 25-35 tonnes per year as such, this type of demand would immediately double the current supply requirement.

Scandium

Scandium is an element, sometimes classified as a rare earth metal, and currently, there are no primary scandium mines. Supply comes from the by-product of other mineral extractions from deposits in China, Russia, and more and recently, Australia.

Scandium is not traded on any metal exchange and the price is negotiated between buyer and seller. According to the most recent USGS data sheet on scandium, over the past five years, the price for scandium-oxide has averaged \$4,560 per kilogram.

Scandium and other "critical metals" were thrust into the spotlight last year when President Trump signed an Executive Order addressing the threat to the United States' supply chain from relying on "critical minerals" from "foreign adversaries", specifically identifying China. The 35 mineral commodities deemed critical under the definition included aluminum, gallium, graphite, lithium, manganese, niobium, the rare earth elements group, and scandium.

Crater Lake Property – Scandium & Rare Earth Metals

The 100%-owned Crater Lake Project is located 200 kilometres northeast of Schefferville, Quebec, and covers 2,780 hectares (approximately 6,900 acres). The project hosts three zones of mineralization (Boulder, TG Zone (TGZ), and STG), determined by scandium-rich outcrops, boulders, and recent drilling.

Highlights from the summer drill program included Hole #CL20037 from the TGZ that returned intervals grading up to 253 grams per tonne (g/t) Scandium Oxide (Sc_2O_3) over 29.14 metres (m), including 9.3 m grading 299 g/t Sc_2O_3 and 21.69 m grading 271 g/t Sc_2O_3 including 9.16 m grading 299 g/t Sc_2O_3 .

Importantly, the true thickness of the scandium mineralized zone is estimated to be up to 110 m and is open at depth and along strike.

The company sees major positive factors with the project, including:

- The resource is exposed at the surface, so it is amenable to a low-cost open-pit operation.
- The deposit is high grade relative to its peers and could reduce the CapEx to develop the mine and the OpEx to run the mine.
- The preliminary metallurgy showed strong scandium mineral recoveries.
- The project is in the mining-friendly jurisdiction of Quebec and supported by Quebec's recently launched \$90 million "critical minerals" development fund and Plan Nord, Quebec's economic development strategy to develop natural resource extraction in northern Quebec.
- The deposit is located in close proximity to the 9 aluminum smelters and one alumina refinery in Quebec.

Final Comment

Look for the definition drill results, 43-101 Resource Report, and the PEA to potentially lift the stock price higher this year.

Scandium International's CEO on how scandium increases heat tolerance for stronger parts

written by InvestorNews | September 29, 2021

Recently during [PDAC 2019](#), George Putnam, President, CEO and Director of [Scandium International Mining Corp.](#) (TSX: SCY), shared updates on the results from Eck Industries testing of scandium in alloys with InvestorIntel's Tracy Weslosky.

George said: "We did an interesting announcement on results from Eck Industries which we are pretty excited about. This is a group that has been working to put scandium along with cerium into a casting alloy and they are getting spectacular results. They are really pleased with the results. Let me tell you what those results are. They are making stronger parts, but they are making parts that are much more heat tolerant. Their customers are asking for that improvement in heat tolerance and they are delivering that with a new recipe that includes scandium."

Scandium International Mining Corp. is focused on developing its Nyngan Scandium Project, located in NSW, Australia, into the world's first scandium-only producing mine. The project owned by the Company's 100% held Australian subsidiary, EMC Metals

Australia Pty Limited, has received all key approvals, including a mining lease, necessary to proceed with project construction.

To access the complete interview, [click here](#)

Disclaimer: Scandium International Mining Corp. is an advertorial member of InvestorIntel Corp.