

Guy Bourassa Discusses Scandium Canada's Exclusive Mining Rights to the World's Primary Scandium Source

written by InvestorNews | January 28, 2025

Further elaborating on the uniqueness of their Quebec-based project, Bourassa described Scandium Canada as owning “100% of mining rights of the unique primary source of scandium in the world.” He stressed the significance of being a primary source, which allows them to be a cornerstone in the development of aluminum-scandium alloys for large manufacturers. This is crucial, he noted, because most scandium production globally is a byproduct, often making expansion unfeasible. Bourassa also touched on the company's recent technological developments, including a patent application filed with McMaster University for scandium aluminum alloys amenable to 3D printing, stating, “We are in the pre-commercialization phase of these products, working with end users in different industries to prototype with them.”

Peter Cashin of Imperial Mining Talks about Scandium

and its Crater Lake Project in Quebec

written by InvestorNews | January 28, 2025

In this InvestorIntel interview during PDAC 2023, Byron W King talks to [Imperial Mining Group Ltd.](#)'s (TSXV: IPG | OTCQB: IMPNF) President, CEO, and Director Peter Cashin about an update on Imperial Mining's Crater Lake Project in Quebec, Canada that focusses on scandium and rare earths. Speaking about the NI 43-101 PEA for its Crater Lake Project, Peter provides an update on Imperial Mining's patented technology for the extraction of scandium and rare earths.

With the global scandium supply dominated by Russia, Peter discusses how scandium is a critical mineral with several crucial applications in aerospace, defense, EV battery sector, and hydrogen production. He mentions that scandium is an important alloying agent with aluminum that makes it lighter, stronger, and corrosion and heat-resistant. He goes on to discuss how scandium can help in reducing carbon footprint as it is used in solid oxide fuel cells and will be part of the hydrogen infrastructure. Peter adds, "we're working on some strategic alliances that I think will be very important announcements for our shareholders."

To access the full InvestorIntel interview, [click here](#).

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About Imperial Mining Group Ltd.

Imperial is a Canadian mineral exploration and development company focused on the advancement of its technology metals

projects in Québec. Imperial is publicly listed on the TSX Venture Exchange as “IPG” and on the OTCQB Exchange as “IMPNF” and is led by an experienced team of mineral exploration and development professionals with a strong track record of mineral deposit discovery in numerous metal commodities.

To learn more about Imperial Mining Group Ltd., [click here](#).

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Imperial Mining Patents its Process in Next Steps to Become a Leading-edge Supplier of Scandium and Rare Earths

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The race is on. It seems like there are a lot of junior miners out there working on new or improved technology to process or refine their commodity in a better, more efficient manner. This makes a lot of sense when you think about it. Obviously, the world is on a decarbonization kick, so it's only a matter of time before the carbon footprint of the raw materials starts to come into focus. It will help differentiate you from any competitors out there mining the same mineral, assuming you have any. If you happen to be fortunate enough to be located in a jurisdiction that is close to the demand centers and has abundant clean energy (like hydroelectric power) then that could make you the #1 supplier of a commodity.

One entity looking to control its own destiny, while being fortunate enough to be located in a key jurisdiction, is [Imperial Mining Group Ltd.](#) (TSXV: IPG | OTCQB: IMPNF). Imperial is a Canadian mineral exploration and development company focused on the advancement of its technology metals projects in Québec, Canada. The Company's flagship [Crater Lake Scandium-Rare Earth property](#) is located 200 km northeast of Schefferville, Québec, and is accessible via fixed-wing aircraft or helicopter. The property consists of 96 contiguous claims covering 47.0 km², owned 100% by Imperial. The Company is led by an experienced team of mineral exploration and development professionals with a strong track record of mineral deposit discovery in numerous metal commodities.

In mid-2022, Imperial [announced the results](#) of a positive Preliminary Economic Assessment (PEA) for the Crater Lake TG Zone Scandium (Sc) – Rare Earth Element (REE) deposit from Imperial's independent consultants WSP Canada. The results show positive cash flow, strong Internal Rate of Return (IRR), and positive Net Present Value (NPV) metrics at discount rates of up to 15% for a potential mining operation at the Crater Lake project. Highlights of the PEA include: a pre-tax NPV of C\$2.97 billion and an after-tax NPV of C\$1.72 billion (10% discount rate); pre-tax IRR is 42.9% and an after-tax IRR of 32.8%; and a pre-tax capital payback of 2.5 years from the start of production.

All of the PEA information was completed prior to the summer drilling program where the Company completed a total of 8 drillholes for 1,663.0 m. [Results](#) were encouraging and give inference to grade and tonnage increases to the TG North Lobe Deposit resource. Drilling indicates that the southern portion of the TG scandium Zone is composed of two different Sc bearing ferrosyenites and hosts a higher proportion of the higher-grade

pyroxene-rich ferrosyenite. The mineralization of both Sc-bearing ferrosyenite zones is open at depth below the 200 m vertical level and along strike and appears to show great potential for additional scandium mineralization. With all of the results in, Imperial plans to undertake an updated 43-101 Mineral Resource Estimate with the goal of converting all of the Inferred Mineral Resources into the Indicated or Measured Mineral Resources category.

With all that said, the Company's latest news is my main focus today. Imperial Mining just [announced](#) the filing of patent applications for its two-stage hydrometallurgical methods and processes for the extraction of scandium and rare earth elements from Crater Lake project mineralization titled "HIGH PRESSURE CAUSTIC LEACH METHODS AND PROCESSES FOR RECOVERY OF SCANDIUM AND RARE-EARTH OXIDES". Imperial also provided an update on the Crater Lake Scandium Project flowsheet development program which commenced in early 2022 at SGS Canada, Quebec City and Peterborough and is partially financed by a \$245,355 grant from the Quebec Ministry of Energy and Natural Resources. The flowsheet development program was focused on further optimization of the mineral processing flowsheet by rejecting olivine, a non-Sc-REE-bearing mineral from the mineral concentrate and processing the olivine-depleted mineral concentrate through the patent-pending high-pressure caustic leach process for recovery of Sc and REE. During the flowsheet development program, Imperial invented a patentable process for rejecting olivine from the scandium-bearing mineral concentrate.

I won't begin to try and explain the science of what this all means other than to say simpler is usually better. The easier and more efficiently you can do something typically equates to a lower carbon footprint and less of an environmental liability. Just having the right, in-demand resource isn't good enough anymore, at least in most parts of the world. The production of

that resource has to be done in a responsible, sustainable manner. This C\$15 million market cap company is taking steps to be a leading-edge processor of Sc and REE which could help propel them to the top of the supply chain.

Chris Gibbs and Marty Weems of American Rare Earths talk about tripling its Halleck Creek Target

written by InvestorNews | January 28, 2025

In this InvestorIntel interview, host Tracy Weslosky is joined by [American Rare Earths Limited](#) (ASX: ARR | OTCQB: ARRNF) CEO & Managing Director Chris Gibbs, and President – North America Marty Weems, to talk about the company recent announcement that it has more tripled its JORC-compliant rare earths Exploration Target at its Halleck Creek project in Wyoming.

In the interview, which can also be viewed in full on the InvestorIntel YouTube channel ([click here to access InvestorChannel.com](#)), Chris tells Tracy that “in completing the maiden drill campaign we came out with a significant upgrade to the Exploration Target. It’s 328 percent more than the previous Exploration Target and it’s a whopping around 1.1 billion tons of mineralized rock at this actual deposit.”

Marty Weems also talks about American Rare Earths’ close relationship with innovation hubs at the US Department of Energy

and the EERE. “The research community has a real keen interest in our feed stock because of the low thorium content,” he tells Tracy. “There’s hundreds and hundreds of millions of dollars being poured into changing the technology of this supply chain and making it greener, cleaner, and more sustainable. That funding is coming from DOE as well as the Department of Defense programs like the DARPA EMBER [Environmental Microbes as a BioEngineering Resource] program which we’re also part of.”

Chris Gibbs also tells Tracy that its Halleck Creek project is still open at depth and open laterally. “We’re super excited with this project and look we can’t wait to get drills on the ground.”

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

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About American Rare Earths Limited

American Rare Earths Limited (ASX: ARR, OTCQB: ARRF, FSE: 1BHA) is an Australian company listed on the ASX with assets in the growing rare earth metals sector of the United States of America, emerging as an alternative international supply chain to China’s market dominance of a global rare earth market expected to expand to US\$20 billion by the mid-2020s. The Company’s mission is to supply Critical Materials for Renewable Energy, Green Tech, Electric Vehicles, National Security, and a Carbon-Reduced Future.

Western Rare Earths (WRE) is the wholly owned US subsidiary of the Company. ARR owns 100% of the world-class La Paz Rare Earth Project, located 170km northwest of Phoenix, Arizona. As a large tonnage, bulk deposit, La Paz is potentially the largest, rare-earth deposit in the USA and benefits from containing

exceptionally low penalty elements such as radioactive thorium and uranium.

In the first half of 2021, ARR acquired the USA REE asset, the Halleck Creek Project in Wyoming. Since acquiring the asset, the company has increased the land holding to over 6,000+ acres. Approximately 1,015 to 1,268 million tonnes of rare earths mineralised rocks were identified as an exploration target for the Halleck Creek project area with an average Total Rare Earth Oxide (TREO) grade of 2,245 – 2,807 ppm.

La Paz and Halleck Creek's mineral profiles are incorporated into emerging US advanced rare earth processing technologies in collaboration with US national laboratories, major universities and the US DOE innovation hub, the Critical Materials Institute.

To know more about American Rare Earths Limited, [click here](#)

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Imperial Mining is set to announce a Resource Estimate that will Highlight Significant Grades of Scandium and Related Technology Metals

written by InvestorNews | January 28, 2025

[Imperial Mining Group Ltd.](https://www.imperialmining.com) (TSXV: IPG | OTCQB: IMPNF)

("Imperial") is due to shortly release a 43-101 preliminary Resource Estimate for their 100% owned Crater Lake Scandium-Rare Earth Project in northeastern Quebec, Canada. What can investors expect?

The Crater Lake Project consists of 57 contiguous claims covering 27.8km². The Project has [~14 km of potential mineralized horizon](#) (only 1/4 drill tested) spread over several zones, some of which have drill tested high-grade scandium and some rare earths deposits, including and yttrium. There is also potential for niobium and tantalum.

Imperial Mining's Crater Lake location showing excellent infrastructure nearby



Drilling has defined several mineralized zones of over 600m in total strike length and from surface to a vertical depth of up to 200m.



Source: [Company presentation](#)

Excellent drill results at Crater Lake continue in 2021

Past drilling has shown some excellent long length, high-grade, scandium oxide results ranging from 0.0235% to 0.056% (235-506 g/t).

For example, in April 2021 the Company [announced](#) excellent drill results at Crater Lake that included **92.5 m @ 291g/t scandium oxide (Sc₂O₃)**. Elevated levels of total rare earth oxides plus yttrium of up to 0.42% were also found. There is also a parallel niobium target showing grab assay results of between [0.20% and](#)

[1.42% Nb205](#) which sits 250m west of the scandium target.

Then in May 2021, Imperial [announced](#):

- “Assay results from the first four drill hole continue to return impressive intercepts of **111.9 m (367.0’)** **grading 298 g/t scandium oxide (Sc_2O_3)**, including 40.5 m (132.8’) grading 336 g/t Sc_2O_3 and 34.77 m (114.0’) grading 321 g/t Sc_2O_3 .
- Elevated levels of **total rare earth oxides plus yttrium (TREO+Y) of up to 0.38 %.**”

More recent drill results [announced](#) in June 2021 included:

- “**99.8 m (327.3’)** **grading 299 g/t scandium oxide (Sc_2O_3)**, including 24.2 m (79.4’) grading 331 g/t Sc_2O_3 and 77.3 m (253.5’) grading 313 g/t Sc_2O_3 .
- Elevated levels of **total rare earth oxides plus yttrium (TREO+Y) of up to 0.46%** characterize the scandium-bearing intercepts.”

Crater Lakes’ critical minerals mean a 10MT resource can potentially be very valuable

Imperial’s ‘target’ at Crater Lake is to define a scandium-REE mineral resource of a minimum of 10 Mt, sufficient for a 25-year operating model. What some investors miss is that a small relatively shallow resource-rich in valuable metals such as scandium, niobium, and rare earths can be highly valuable. The chart below highlights this by expressing the results as 6.5 to 12.0 g/t ‘gold equivalent’. If Imperial Mining was able to achieve 10MT of ore at say 6.5 g/t Au equivalent (lower range) that would be equivalent to 65 million grams (2.1 million troy ounces) of gold in terms of value. If the grade was in the higher range then the gold equivalent would be almost double. Of course, the 10MT is a ‘target’ and not yet a reality, as we will

have to wait to see what the upcoming resource estimate is.

The Crater Lake TG Zone drill results are equivalent to 6.5 to 12.0 g/t gold equivalent



Source: [Company presentation](#)

Once a resource is grown the other important issue is the extraction method and recovery rates. In June 2021 news Imperial [announced](#) that they had developed a “high-recovery extraction process for scandium and rare earth elements for Crater Lake mineralization...as part of its current Phase 3 Hydrometallurgical Development Program.” Scandium extraction was at **84-87%**, and total rare earth elements, including yttrium (TREE+Y) was **84%**. This is excellent news.

Near term stock catalysts

Imperial President & CEO, Peter Cashin, [stated](#) in August: “We are now in the final stages of the surface evaluation of our Crater Lake property. In addition to delivering the inaugural 43-101 resource estimation on our TG Zone later this month, we look forward to delivering on the results of the remainder of the targets present on the Crater Lake property. We clearly believe that much additional critical metal potential remains to be evaluated on our property as we have only drill-tested one-quarter of the favourable 14-km-long mineralized horizon. We also intend to assess a high-grade niobium-tantalum mineralized area identified in 2010, north and northwest of the scandium-bearing Crater Lake Complex.”

Imperial will now embark on a Summer 2021 campaign that will include surface evaluation of additional high priority scandium rare earth exploration targets outside of the drilled TG Zone

mineralized area. 50-tonne bulk samples at the STG mineralized Zone will be used in a pilot plant study to further test and optimize Imperial's metallurgical process method. Next, a detailed assessment of historical high grade rare earth, niobium, tantalum occurrences at the Crater Lake Extension property area will be undertaken. Following this will be a pilot plant study and a Preliminary Economic Assessment.

Closing remarks

Imperial Mining trades on a market cap of a mere C\$20 million. Considering the outstanding drill results over the past year, outstanding hydromet recovery rates achieved to date, and the impending 43-101 preliminary Resource Estimate due out any day now the stock looks likely to be potentially re-rated higher soon. Don't wait too long!

Rare earths and scandium drill results at Imperial's Crater Lake continue to 'exceed all expectations'

written by InvestorNews | January 28, 2025

As electric vehicle (EV) manufacturers focus on achieving great energy efficiency and range lightweighting using a scandium-aluminum alloy continues to gain traction. By lowering a vehicle's weight the range can either be improved or if kept the same the cost can be reduced by using fewer batteries.

Scandium oxide demand has potential to rise from 175 tpa to 5,000-10,000 tpa if lightweighting is adopted widely across the EV sector



Source: [Imperial Mining company presentation](#)

Scandium junior miner [Imperial Mining Group Ltd.](#) (TSXV: IPG | OTCQB: IMPNF) (“Imperial”) 100% owns the Crater Lake Scandium-REE Project in northeastern Quebec, Canada. The Project has a large 6km diameter complex host to high-grade scandium and some rare earths deposits. Drilling has defined a mineralized zone of over 600m in total strike length and from surface to a vertical depth of up to 200m. Scandium oxide drill result grades have ranged from 0.0235% to 0.056% (235-506 g/t) which makes the resource look potentially to be commercially viable, as viable scandium grades are typically >200-300 g/t. There is also a parallel niobium target showing grab assay results of between [0.20% and 1.42% Nb₂O₅](#) which sits 250m west of the scandium target.

Scandium is best known for increasing the strength and hardness of aluminum and is therefore used commercially for lightweighting in the automotive industry, space industry, for fuel cells and defense applications. Niobium is used mostly in the steel industry to significantly increase steel strength, resulting in less steel required and overall cost savings.

[Announced](#) on April 28, 2021, recent drill results at Crater Lake included results of **92.5 m @ 291g/t scandium oxide (Sc₂O₃)**. Elevated levels of total rare earth oxides plus yttrium of up to 0.42% were also found. Imperial stated in the release that “at a gold price of \$1,750US/oz and a scandium oxide price of \$1,250US/kg, the intersections represent a gold-equivalent value of 6.5 to 8.0 g/t Au”, Imperial’s President and CEO Peter

Cashin [stated](#):

“The winter drilling results for the Crater Lake property continue to exceed all expectations.... mineralization has been traced by drilling over 600m in total strike length from surface to a vertical depth of up to 200m. **Importantly, the zone appears to get wider and higher grade with depth.**”

Imperial Mining’s Crater Lake Scandium-REE Project in northeastern Quebec, Canada



Source: [Imperial Mining corp. website](#)

Further drill assay results [announced](#) on May 27, 2021, included an intercept of **111.9 m @ 298 g/t Sc_2O_3** . Elevated levels of **total rare earth oxides plus yttrium (TREO+Y) of up to 0.38%** were also found across the scandium-bearing horizon. Given current high prices for the magnet rare earths such as neodymium, praseodymium, dysprosium, the rare earth oxides found should help boost the projects by-products and hence project economics. The current drilling program is now completed with a total of 14 drill holes having tested the TG Zone.

Next steps and business strategy

Imperial will now undertake a 43-101 preliminary Resource Estimate of the TG zone for delivery in June 2021. Imperial’s strategy is to become a producer of scandium and valuable rare earths using simple process recovery methods. Imperial would like to be a scandium disruptor and to capture market share. Over time the Company’s goal is to move downstream to deliver high-margin scandium-aluminum alloy products for the automotive, aerospace, defense and fuel cell sectors. The Project’s location in Canada’s aluminum capital of Quebec should also lead to

further market opportunities.

One such opportunity has already emerged with Eck Industries (“Eck”) with a letter of intent (“LOI”) [to develop scandium-modified aluminum alloys](#) for transportation, defense and aerospace markets. The research work will be directed towards developing a novel scandium-enhanced version of the currently commercially available 535 Aluminum which Eck uses for a wide array of applications. The initial scope of work will include casting and testing of various compositions as well as characterization of the finished alloys.

Closing remarks

Imperial is still in the early stages of proving up a resource. But given scandium at economic grades is rare the Company is doing very well by finding good grade scandium and valuable rare earths. The Resource estimate is a significant near term catalyst, which would typically be followed by a Preliminary Economic Assessment (PEA) or PFS.

All of this is ahead, so given the current market cap of just C\$29 million, investors with a long-term time frame can have a chance at a potentially big reward if all goes well. The usual risks of junior miners also apply.

Betting on scandium-aluminum lightweighting to take off,

Imperial Mining Group is set to benefit from EV market demand

written by InvestorNews | January 28, 2025

[Imperial Mining Group Ltd.](#) (TSXV: IPG | OTCQB: IMPNF) is an early stage scandium junior miner (also with two prospective gold properties) in Quebec hoping to cash in on the move towards scandium-aluminum alloys for lightweighting of vehicles such as spacecraft, airplanes, and especially electric vehicles (EVs).

Scandium is still not widely used due to limited supply and scandium being expensive. This means the scandium supply chain is minimal as the industry has not yet grown. The current global scandium supply is only about 35 tonnes pa of scandium oxide. Demand is forecast to boom to as high as [1,800 tonnes pa by 2035](#) (Bloomberg forecast, 2018). If that were to happen, it would mean a 51-fold increase in scandium demand over the next 15 years. Interestingly the 2020 Bloomberg forecast for electric vehicles is for them to rise from [2.2M](#) in 2019 to [~54M](#) by 2040. That would be a ~25-fold increase. So clearly the EV boom has the potential to be a strong driver of scandium demand if scandium-aluminum lightweighting becomes widely adopted.

Another estimate of the impact of surging EV sales on the potential demand for scandium



Source: [Imperial Mining Group investor presentation](#)

A major issue with EVs is getting their purchase price down which should lead to mass adoption this decade. If an EV weighs

less then it can use a smaller battery to get the same range, thereby lowering the EVs cost. Looking ahead this decade if scandium-aluminum alloys become much more widely used, this should lead to a virtuous cycle of cheaper scandium as supply expands and far greater scandium use.

The airline industry and the space industry are other examples where lightweighting becomes vitally important to reduce fuel costs.

This brings us back to Imperial Mining Group, which has one of the lowest market caps (currently C\$25M) of all the junior scandium miners as shown below.

Scandium junior miners market cap comparison as of early March 2021



Source: [Imperial Mining Group investor presentation](#)

The Crater Lake Scandium-REE Property/Project

Imperial Mining's focus is on the development of its high-quality scandium-REE Crater Lake Property in northeastern Quebec, Canada. The 100% owned property consists of 57 contiguous claims covering 27.8km². It has a large 6km diameter complex host to high-grade scandium and niobium deposits. Imperial Mining is currently working to expand the resource.

Previous drilling has defined a mineralised zone of over 250m in strike and 170m in depth. Scandium oxide grades ranged from [0.0235% to 0.0319%](#) (235-319 g/t), which is good. Commercially viable grades (>200-300 g/t) of scandium are very rare. Early drill results included [528 g/t](#) scandium oxide over 8.8m.

2020 TG Zone drilling intersected intervals grading up to

[253 g/t Scandium Oxide \(Sc₂O₃\) over 29.14 m](#). These are again very good drill results. Imperial Mining [stated](#) in Nov. 2020:

- “The scandium rich zone also contains elevated levels of total rare earth oxides plus yttrium (TREO+Y) grading up to 0.419%.
- The scandium mineralized zone is estimated to be up to 110 m in true thickness and continues to be open at depth below 200 m down-dip and along strike.
- The evident increase in scandium grades with depth is also very encouraging, however more work needs to be done to fully quantify the scandium and REE resource potential on the property.”

Imperial Mining’s goal is to define a scandium-REE mineral resource of [a minimum of 10 Mt](#). Recoveries to date have been strong at [97-98% for scandium and 79% for rare earths](#).

Well funded after recent [oversubscribed capital raises](#), Imperial Mining plans to spend [C\\$2M](#) to achieve their 2021 plans. These include further drilling, [metallurgical recovery additional method testing](#) (April), a 43-101 Resource report (May), and a PEA (July-August). Beyond that next will be permitting and a completed Feasibility Study by end 2023, subject to financing.

The Company plans the Crater Lake Project to be a small open-pit operation with on-site magnetic concentrator and/or sensor-based sorting resulting in high scandium recoveries. It is expected that the Project will be a low CapEx, OpEx due to the high grades and using simple process recovery methods.

Closing remarks

Imperial Mining Group has recently started trading on the [OTCQB Venture Market](#) in the U.S., which provides US investors with a pathway to invest and participate in the Imperial Mining Group

story.

Given the potential exponential growth ahead if scandium lightweighting takes off in a big way, first mover scandium junior miners such as Imperial Mining Group can be big winners.

Risk is high and patience is needed. One plus for investors is Imperial Mining also has some gold prospective properties in Quebec ([La Roncière](#) and [Opawica](#)), with a [recent increased](#) interest in La Roncière. Always good to have some gold as insurance.

We will continue to follow the Imperial Mining Group story as it unfolds. Stay tuned.

The White House Executive Order on critical materials heightens scandium interest

written by InvestorNews | January 28, 2025

The September 30, 2020 White House [Executive Order](#) ('E0') on critical minerals is just what was needed to give a huge boost to the mining sector. Not sure why 'scandium' and the 'rare earth group' was listed separately in the E0, since scandium is considered a rare earth, but the end result is that this has escalated market interest in this critical material.

One of the 35 critical minerals is 'scandium', used mostly for the purpose of lightweighting, scandium-modified aluminum alloys have equivalent yield and tensile strength to steel and titanium

alloy but are **1/3 the weight of steel and 40% lighter than titanium.**

Declaring this “[a national emergency](#)”, the EO states that the US intends to support companies that have “projects that support domestic supply chains” and “the establishment of secure critical minerals supply chains”, which could reasonably be expected to include Canadian projects such as [Imperial Mining Group Ltd.](#) (TSXV: IPG).

Peter Cashin, President, CEO and Director of Imperial Mining Group, which own their flagship **scandium-rare earth** Crater Lake Property in northeastern Quebec, commented to InvestorIntel when asked on their thoughts on the EO with the following:

“President Trump’s Executive Order should force an orderly build-up of the necessary steps required to secure a domestic supply chain for rare earth materials. In addition to the European Unions expressed push to lessen Chinese import dependence, our hope is that the order will apply to development of the significant critical mineral resources that exist in Canada.”

What is driving this market demand? Available scandium oxide supply today is estimated at just 25 to 35 metric tonnes per year, insufficient for widespread adoption of scandium-aluminum (“Sc-Al”) alloys for automotive, aerospace and defense sectors where they can be used for high-strength applications and in sectors in which lightweighting is essential. In addition to Sc-Al alloys, scandium is used in the Solid Oxide Fuel Cell (“SOFC”) industry because of its heat stabilization and electrical conductivity characteristics. In essence, the competitive advantage of scandium is as a hardener in aluminum alloys, which is what renders them **corrosion-and thermal-resistant.**

If your not familiar with the Imperial Mining Group Ltd. (TSXV: IPG), Imperial's Crater Lake Property has a large diameter complex which is host to high-grade scandium and niobium deposits. Scandium oxide grades to date have been very good ranging from [0.0235% to 0.0319%](#) (235-319g/t). Other drill results have included [528g/t](#) scandium oxide over 8.8 meters, showing the high grade potential of the Crater Lake Project.

The company expects the Crater Lake Project to be a small open-pit operation with an on-site magnetic concentrator and/or sensor-based sorting. It is anticipated that the project will be low CapEx, OpEx due to the higher grades and expected simple process recovery methods.

Imperial Mining is currently working to expand the resource and have [recently discovered](#) several new areas of scandium mineralization. These new showings lie within the same 14-km arcuate magnetic trend hosting the three previously defined mineralized zones (Boulder, TGZ and STG) on the property. Assay results are expected very soon.

Crater Lake's 14-km arcuate magnetic trend hosting the three previously defined mineralized zones (Boulder, TGZ and STG)



[Source](#)

Peter Cashin [states](#): "The new discoveries are extremely positive news for Imperial in view of the rapidly growing demand and limited supply for this important new technology metal.....Currently, scandium is only produced as a minor by-product in China and Russia and, with supplies limited, it is our belief that Crater Lake represents an important alternative, primary scandium supply source to serve western consuming markets."

A new US Executive Order to boost critical mineral mining, strong management, a high grade growing scandium-rare earths asset in a good mining jurisdiction, and a growing need for scandium and rare earths elements all combine to support Imperial Mining Group. Due to the early stage the current market cap is only C\$9m.

Demand for scandium set to rise and Imperial Mining offers an early stage high grade project

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Scandium is the key to lightweight electric vehicle boom

With the electric vehicle boom set to take off this decade, expect a surge in demand for the 'lightweighting' of key materials. An essential part of reducing the weight of electric vehicles (EVs) is scandium, which mixed with aluminum creates lighter and stronger alloys for EVs. Lighter weight means extending battery range in EVs and improving fuel efficiency and reducing greenhouse gases in combustion engines.

The current scandium market size is estimated to be about [35 tonnes](#) per year, however Bloomberg forecasts this could grow to reach [1,800 tonnes](#) pa by 2035 – a 51 times increase in demand.

However, if the sales of electric vehicles surge as some forecast and reach 30 million by 2030, the demand for scandium would jump to a staggering 5,250 tonnes pa – a 150-fold increase on today's demand based on just a 0.2% scandium oxide-aluminum alloy in each EV.

This exponential increase in demand for scandium does not include its additional consumption by key industries such as solid oxide fuel cells, aerospace & defense, aviation, electronics, sporting goods, and ceramics.

Building 30 million new electric cars a year by 2030 will require an additional 5,250 tonnes of scandium oxide every year to achieve 100% lightweighting



Source: [Imperial Mining Group investor presentation](#)

[Imperial Mining Group Ltd.](#) (TSXV: IPG) owns a diverse portfolio of high-grade assets including gold, base metals and scandium-rare earth projects. The company's focus is on development of its high-quality scandium-rare earth Crater Lake property in northeastern Quebec, Canada. The property has a large 6km diameter complex that is host to high-grade scandium and niobium deposits.

The Crater Lake scandium rare earth project

The 100% owned Crater Lake Project is located 200km northeast of Schefferville, Québec, 95 km from the end of the Trans-Labrador Highway. The property consists of 57 contiguous claims covering 27.8km².

Crater Lake location map



Source: [Imperial Mining Group investor presentation](#)

Imperial Mining Group is currently working to expand the resource. Previous drilling has defined a mineralised zone over 250 meters in strike and 170 meters in depth. Scandium oxide grades ranged from [0.0235% to 0.0319%](#) (235-319g/t), which is pretty good. Scandium is not rare, however finding commercially viable grades (>200-300g/t) of scandium is very rare. More recent drill results have included [528g/t](#) scandium oxide over 8.8 meters, showing the high grade potential of the Crater Lake Project.

The company expects the Crater Lake Project to be a small open-pit operation with an on-site magnetic concentrator and/or sensor-based sorting. This should reject 50-60% of mined material, resulting in high scandium recoveries and lessening transportation risks and costs. It is anticipated that the project will be low CapEx, OpEx due to the higher grades and expected simple process recovery methods.

Future catalysts will include planned further [metallurgical work](#), [a PEA expected by Q1 2021](#), permitting, and an anticipated FS by Q3 2023, subject to financing.

Multiple market opportunities ahead as the demand for scandium increases dramatically



[Source](#)

Closing remarks

I have no doubt that the EV boom will take off, which means lightweighting will become essential for electric cars to boost performance, especially range. In the meantime there are plenty of other areas that demand scandium, so I expect the scandium

sector to perform well this decade.

Imperial Mining Group has an exciting early stage high grade scandium-niobium project in northeastern Quebec. Also of interest is their 100%-owned Opawica Gold Project in the Abitibi region of northwestern Québec where recent drilling discovered [1.21 g/t gold \(Au\)](#) over a 13.3 meter length.

Risks are always high with junior mining stocks at the early stages and in this case the scandium market is another risk as it is yet to be fully developed. Of course with high risk comes the chance for high reward. Imperial Mining Group trades on a current market cap of just C\$9 million. One to follow closely, especially since securing a source of North American scandium could soon be very much in demand.