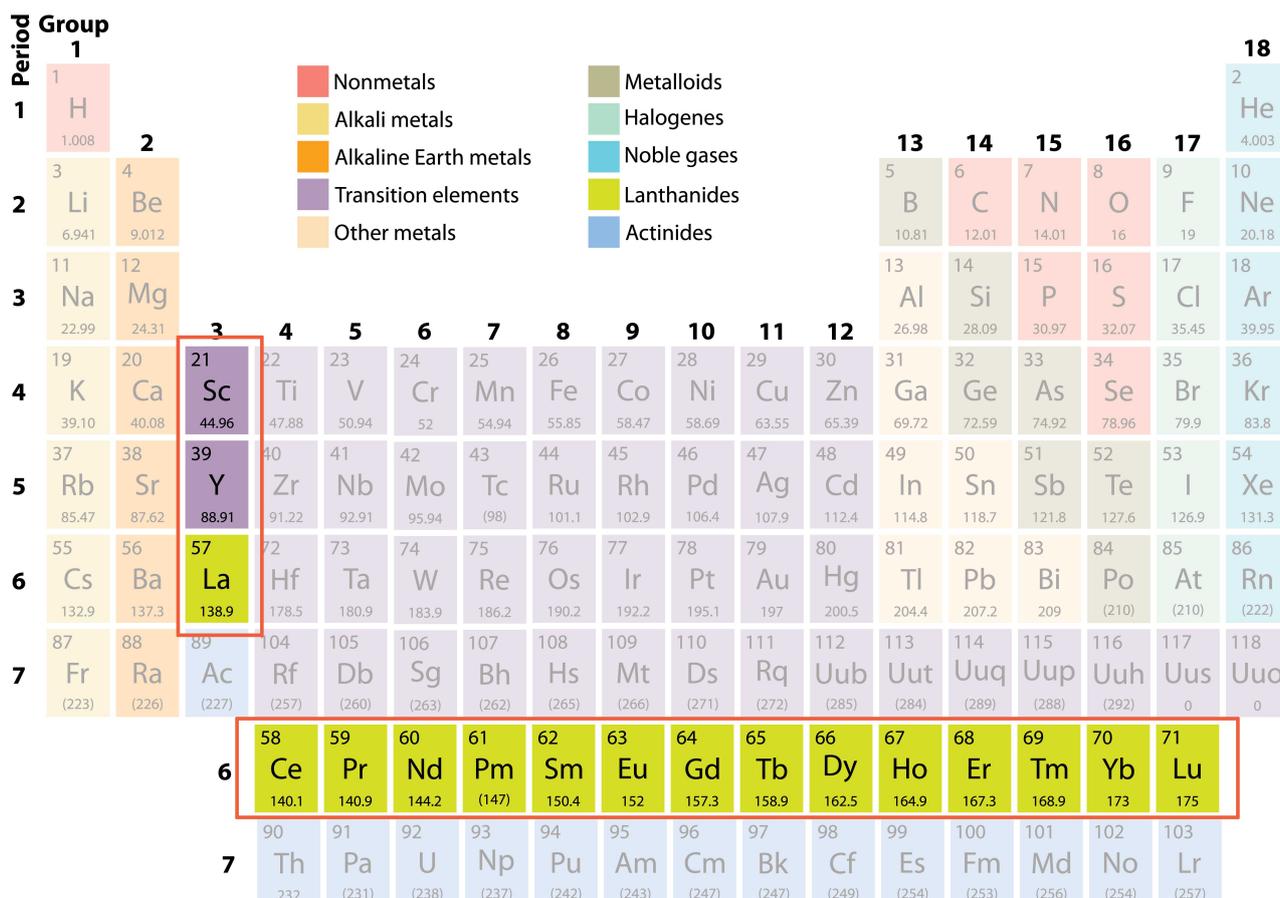


# Scandium International soars 41.67% last week on positive news from its Nyngan Scandium Project

Called the “seeds of technology” by the Japanese and the “technology metals” by the US Department of Energy, rare earth elements make it possible for the high tech world we live in today. With [rare earth supply concerns](#) centered around China’s 70% supply chain dominance and the US-China trade war, did you know scandium is considered one of the 17 rare earth elements?



*Scandium is one of the rare earth elements*

Long recognized as a valuable commodity, economic concentrations of scandium are actually rare. Scandium is sourced from low-grade stockpiles or as a by-product from

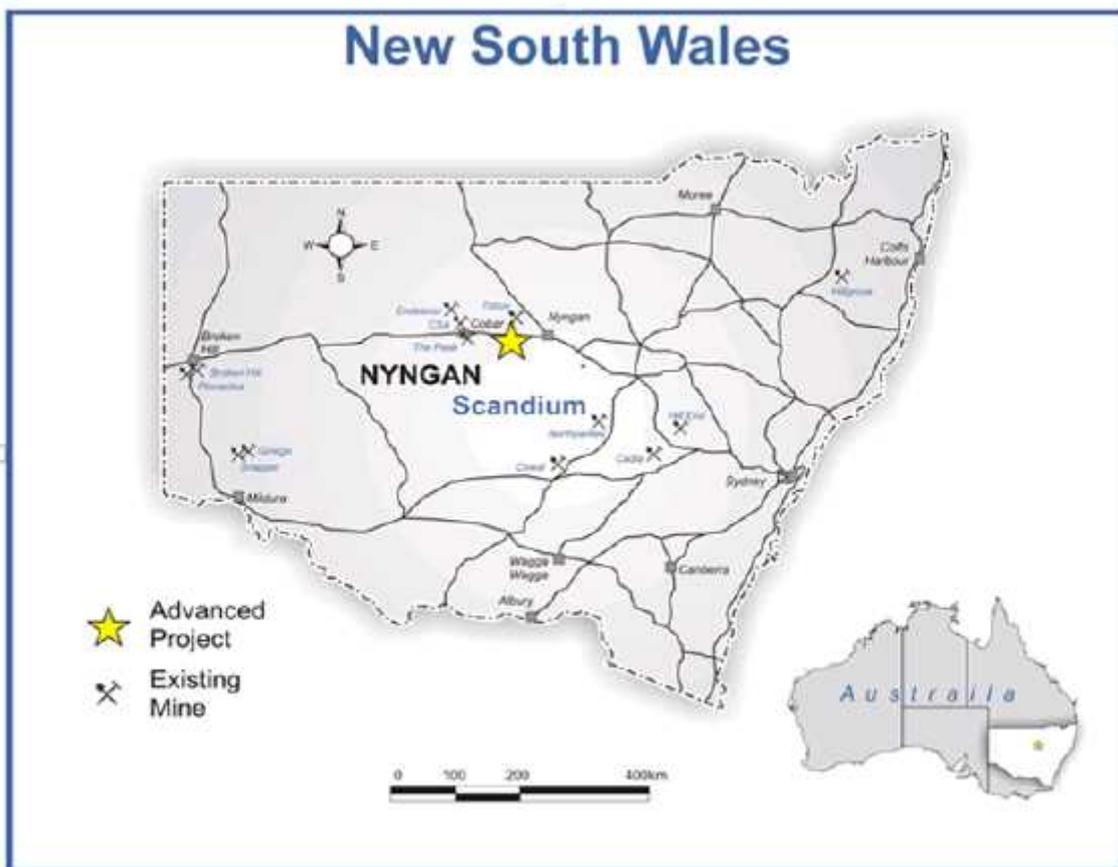
other processing operations. The current supply is limited and has resulted in high market prices and hence limited adoption. Scandium is used typically with aluminum as alloys for the aerospace industry, and for lightweight sports equipment such as bicycle frames, fishing rods, golf iron shafts, and baseball bats.

[Scandium International Mining Corp.](#) (TSX: SCY) has [just advised](#) (July 24, 2019) that its Australian subsidiary, EMC Metals Australia Pty Ltd. (EMC), has been granted a new mine lease pertaining to the [Nyngan Scandium Project](#) in New South Wales, Australia. The 100% owned lease will cover 364 hectares of freehold land. The company will be able to construct a mine of similar scale to current plans within the footprint of the new lease. As a result of this great news and interest in the rare earths sector, Scandium International's stock price soared 41.67% last week.

Background to the mine lease being granted

A formal objection was filed in 2016 by an affected landowner opposing the application of the mine lease. In April 2019, the Company elected to file a new mine lease agreement covering only EMC owned surface rights related to the project that excluded approximately 504 hectares of surface rights owned by the objecting landowner. The validity of the landowner's 'Agricultural Land' objection remains under investigation. Depending on the results of that investigation, it remains possible for EMC to receive several mine lease grants covering a surface area of approx 870 hectares.

George Putnam, CEO of Scandium International Mining Corp. [commented](#): "This replacement mine lease grant for our Nyngan Scandium Project represents a successful resolution to a complicated matter that has been a distraction for both the Company, and for SCY shareholders, since the start of 2019."



*The Nyngan Scandium Project location map (NSW, Australia)*

Scandium International has remained focused on the work to bring Nyngan Project into production and will make progress with existing LOI partners and continue to court new LOI partners. The Company continues to work on off-take agreements and funding for the Nyngan Project so as to commission the world's first primary scandium mine.

#### 2016 Feasibility Study on the Nyngan Scandium Project

A 2016 a [feasibility study at the Nyngan](#) Scandium Project concluded that the Project has the potential to produce an average of 37,690 kilograms of scandium oxide per year, at grades of 98.0%-99.9%, generating an after-tax cumulative cash flow over a 20 year Project life of US\$629 million, with an after-tax NPV10% of US\$177 million (after-tax NPV8% is US\$225 million). The average process plant feed grade over the 20-year project life is 409 ppm of scandium. The capital cost estimate for the project is US\$87.1 million.

Despite its current cost and tiny production volumes, there are multiple potential high-value commercial uses for scandium, especially when used to strengthen aluminium alloys. Just a small amount when alloyed with aluminium produces a stronger lighter, heat and corrosion-resistant, weldable aluminium alloy. The aerospace and aviation industries already use scandium, and the lightweight alloy has the potential to support the emerging electric vehicle industry where weight is also critical. This means the world will benefit from new scandium miners such as Scandium International increasing supply and reducing costs.

Scandium International has a market cap of C\$ 53 million.

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

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.

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## **The super metal that the aerospace and electric vehicle industries dream of...**

Scandium is an element, discovered in Scandinavia in 1879. The world’s production of scandium is very small – approximately 10-15 tonnes per year, in the form of scandium oxide; mostly coming from China, Russia, Ukraine and Kazakhstan. Scandium is used in alloys to increase strength, lighten weight, and help resist corrosion. By adding a small percentage of scandium it allows aluminum sheets to be welded to each other, which is then used in the aerospace and automobile industries. The lightweight, strength and corrosion resistance of aluminum-scandium alloy has huge potential future demand from the aerospace and electric vehicle industries, just to name a few.

[Scandium International Mining Corp.](#) (TSX: SCY) is a development stage company, focusing on the exploration, evaluation, and development of specialty metals with a focus on scandium assets in Australia. Their principal property is the 100% owned Nyngan Scandium Project, located in New South Wales, Australia.

## Nyngan Scandium Project

For Scandium International the lateritic clay belt, in New South Wales, represents a recent game changing discovery of scandium at grades approximately four times the grade of existing sources. The average process plant feed grade over project life is 409 ppm of scandium. These resources are surface mineable and can deliver scandium at large enough scale to promote much wider use of the metal. The Nyngan Scandium [Project](#) is situated 500 km north-west of Sydney, with excellent local infrastructure having nearby water, rail, power and workforce. Mineral exploration at the site has defined a measured and indicated resource significantly larger than the currently planned 20 year mine life.

COMPANY	PROJECT	RESOURCE	ECONOMICS			SCANDIUM OFFTAKES	FINANCE	INITIAL PRODUCT DATE	CAPITAL COST ESTIMATE	PRODUCTS	MARKET CAP/ PROJECT NPV
			PFS	DFS	PERMITS						
Scandium International	Nyngan	●	●	●	●	●	●	2020	US\$87M	SCANDIUM ONLY	19%

## Scandium International progress timeline

The 2016 Feasibility Study highlights include: A capital cost project estimate of US\$87 m, operating costs of US\$557 per kg of scandium oxide, with an estimated 37,690 kg of oxide to be produced per year over the 20 year mine life. This will generate an after tax cumulative cash flow over the project life of US\$629 million, with a post-tax NPV 10% of US\$177 million.

## 2016 Feasibility Study highlights

Summary Nyngan Scandium Project Key Project Parameters	NI 43-101 DFS Result
Capital Cost Estimate (US\$ M)	\$87.1
Average Plant Feed Grade (ppm Sc)	409
Resource Processed (tpy)	71,820
Mill Recovery (%)	83.7%
Oxide Production (kg per year)	37,690
Scandium Oxide (Scandia) Product Grade	98-99.9%
Annual Cash Operating Cost (US\$ M)	\$21.0
Unit Cash Cost (US\$/kg Oxide)	\$557
Oxide Price Assumption (US\$/kg)	\$2,000
Annual Revenue (US\$ millions)	\$75.4
Annual EBITDA (US\$ millions)	\$49.5
NPV (10% <i>i</i> ) (After Tax)	\$177.5
NPV (8% <i>i</i> ) (After Tax)	\$225.4
IRR (% <i>i</i> ) (After Tax)	33.1%
Payback (years)	3.3

On August 16, 2018 the Company [signed](#) a Letter of Intent with PAB Coventry Ltd. to test scandium containing alloys in aluminum sheet forming applications. PAB is recognized as an industry leader in innovation, design, and product development, using Hot Form Quench (HFQ®) technology.



Car parts using HFQ® forming technology

George Putnam, CEO of Scandium International Mining Corp., commented: “We are pleased to add PAB to our list of partners exploring scandium’s advantages in aluminium parts

manufacturing using HFQ<sup>®</sup> technology. PAB is an established, recognized aluminium alloy solutions-provider to UK automotive and UK/European aerospace customers. PAB also represents a pathfinder in the commercial application of HFQ<sup>®</sup> forming technology, developing what is required to meet the tougher demands of large scale production applications. HFQ<sup>®</sup> shows excellent promise for high volume commercial application in aluminium formed parts and products, and we believe scandium additions could offer additional benefits, when combined with this process.”

Scandium has long been recognized as a valuable commodity, but economic concentration of scandium is rare. Having so many uses there are so many marketing opportunities for scandium as it promotes superior performance by widening the aluminium alloy choice. Scandium International proudly state: “We are serious about building a mine and a fresh new specialty metal market. We anticipate Nyngan to be the first to market, with the only primary scandium project.”

Scandium International Mining Corp. has an advanced stage, high grade, large scale, scandium project in a safe jurisdiction. The Company could see itself in an enviable position with supplies of 37,690 kg of scandium oxide per year supplying emerging markets like electric vehicles, and the aerospace and aviation industries; as soon as 2020 or shortly thereafter.

Scandium International Mining Corp. is headquartered in the US state of Nevada, and has a market cap of C\$ 58 m.

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# The Age of Scandium

Historically, scandium applications have flown under the majority of investors' radars since economical deposits are extremely rare. As a result, small quantities of the metal are traded between private entities for undisclosed sums, and as such, the world has no accurate idea of how much is traded and at what price. At the beginning of any market, however, there comes a point when enough material changes hands that people begin to take note; analysts begin to accurately track stockpiles, supply and demand, and the resource may even appear on terminals and futures markets. Right now, the only thing missing to initiate this new age for scandium is decent supply, as unique applications are already widely known.

[Scandium International Mining Corp.](#) (TSX: SCY) ("Scandium International") are inching ever closer to a primary supply out of New South Wales, Australia, and things are looking good; the company recently acquired 100% interest in its flagship resource (previously it held 80%) in order to accelerate its development. The project has now received all key approvals, including a mining lease, necessary to proceed with project construction, which comes in at \$87.1million, according to the Definitive Feasibility Study (DFS) completed in 2016.

Scandium has been used in the past to create uniquely strong aluminium alloys that were thought to be utilised by the Russian military in the construction of lightweight parts for their MiG fighters. Russia still sells these historic stockpiles to industry, but it is thought that the coffers are rapidly emptying. Demand for scandium is still an estimated quantity, but it is believed that global consumption is now around 15 tonnes per year. Looking back, annual scandium consumption was always thought to be around 2 – 10 tonnes, so not only have we seen an increase of late, but furthermore, if only a miniscule fraction (0.1%) of the global aluminium

market were to involve scandium in production, we would see demand surge to around 350 tonnes annually. The only missing ingredient here is stable supply of useful quantities.

I firmly believe that, since Scandium International are on-track to bring online the world's first primary scandium deposit, this company could itself be the black swan that initiates the paradigm shift that takes scandium out of ambiguity and into the hearts and minds of traders and analysts. The company's deposit, known as Nyngan, could produce 37,690 kg of scandium oxide each year according to its Definitive Feasibility Study (DFS), with operating costs of US\$557/kg scandium oxide. The DFS also assumes that the price of the finished oxide material is US\$2000/kg, but in reality, this is the very bottom end of the scandium oxide selling price, with 1kg going for as much as three times that today.

It is well known that scandium is difficult to find due to it being a dispersoid; it can't stand to be around itself. The fact that the Nyngan deposit features grades as high as four times what we'd normally see means that the company has a real chance of pioneering mass consumption of a metal, whilst enjoying the protection from competition afforded by its obstinate loneliness. Scandium is a big deal of an opportunity, and since it cannot currently be traded on futures markets, an interested investor would do well to pay close attention to the company closest to initiating meaningful supply.