# How the American recent policy shift has inspired a rare earths revival

The American Federal Government's recent policy shift to require national self-sufficiency in critical metals for technology for the Defense Department has led it to a focus its interest on whether total domestic supply chains can be constructed or revived. In the case of the rare earths, the U.S. Defense Department has always required that its war fighting equipment, e.g., weapons, aircraft, ships, and battlefield vehicles be finally assembled in the United States. There has been leeway though for most of the supporting supply chains of technology metal based/enabled components.

Rare earth permanent magnet raw materials, mined, refined, and even fabricated into magnets in China, for example, have until now been regularly sourced there but used only in the United States in final component assemblies for warfighting equipment built both for the U.S. DoD, and by America's closest allies. However, it is traditional for allied nations to require "domestic content" even for war fighting equipment built in the allied nation for the US Dept of Defense. As an example, warships built in Halifax for the Royal Canadian Navy by a US shipbuilder are required to have at least 10% Canadian content. Among that content are subassemblies manufactured in Canada but utilizing Chinese made rare earth permanent magnets. Under the 2019 US National Defense Authorization Act if those ships were being built even in Canada for the US Navy the use of Chinese manufactured rare earth permanent magnets would be prohibited! The future of this practice is unclear, and it is under review by both the American and Canadian defense establishments as the US and its allies try to harmonize their concerns about Chinese sourcing of critical

materials and components.

For the civilian market the entire supply chain for rare earth permanent magnet using devices, such as automobile components, large and small finished appliances and consumer electronics, and industrial machines is today predominantly in China. Other than automobiles and trucks most civilian appliances and devices utilizing rare earth permanent magnets are today assembled completely in China and distributed and marketed in the USA by so-called domestic American companies.

The total supply chain for rare earth permanent magnets was developed in and sited in the USA until the early 21st century when the last vertically integrated operations of Magnequench were sold to a Canadian company that then sold them to a Chinese company and moved them bodily to China. This was possible, because China had become far and away the largest miner of rare earths in the world and had built up a dominant position in refining rare earths into metals, alloys, and was then aggressively entering the rare earth permanent magnets' markets. Cheap but increasingly skilled Chinese labor plus a disregard for mining and industrial health and safety gave China an unbeatable competitive advantage.

Now with the threatened weaponization of rare earth permanent magnet supplies by China the governments of the US, Canada, the EU, and Australia are scrambling to become independent of as much of the Chinese supply chain for rare earth permanent magnets as possible. Certainly, they want to eliminate the need for rare earth permanent magnets manufactured in China.

In order to accomplish the re-creation of a China free supply chain of rare earth permanent magnets it will be necessary for the downstream components of that supply chain to be rebuilt. This means that rare earth separation facilities, rare earth metal making, rare earth alloy making, and rare earth permanent magnet making facilities MUST be built and put into efficient operation with sufficient capacities not only to

meet Defense Department needs, but also after that to meet civilian (consumer product) needs. This is the bottleneck at the moment. Non-Chinese rare earths' deposits and even producing mines sufficient to supply defense needs for the raw materials for rare earth permanent magnets exist today. But there is no funded (guaranteed) demand large enough for free market capitalism to speculate on the construction of a rare earth permanent magnets for the US military only supply chain.

The key will be the consumer products' supply chains. If, for example, the demands of the UAW that GM return auto manufacturing for the US market from China to North America become a general requirement for US industry then the demand for rare earth permanent magnets in North America could well become large enough to trigger the financing of a large scale domestic total rare erath permanent magnet supply chain in North America. The consumer appliance and electronics industries are watching the auto negotiations carefully to see if an insourcing trend is coming.

I believe that Chinese costs are rapidly rising to first world levels, and that this fact as much as any other is driving the rebirth of a domestic total North American rare earth permanent magnet supply chain.

I will be interviewing those mining, processing, and manufacturing companies in the US, Canada, the EU and Australia that I think are in the forefront of the rare earth revival.

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# President Trump's support of

# US uranium producers awaits the Nuclear Fuel Working Group report

The Nuclear Fuel Working Group (NFWG) is due to release its report to President Trump in the next few days (by mid October) and a positive outcome is going to be needed to help re-establish the US domestic uranium supply chain. Whilst a positive report is no guarantee, it is hard to see President Trump not supporting US uranium producers, especially when considering how much the US relies on uranium.

20% of US energy comes from nuclear plants yet the US has almost no uranium production. I highly doubt that President Trump would want to be vulnerable to any Chinese or Russian threats to US uranium supply. On top of electricity production, the US military depends on uranium supply needed to fuel the US warships that run on nuclear fuel.

**The Nimitz class is a class of ten nuclear-powered US aircraft carriers**

**US relies on Russia for uranium, and China and India are increasing their demand for uranium**

Since the 1990's the US has sourced uranium from outside the US, mostly from other countries like Canada, Australia, and Russia. While both Canada and Australia are close economic allies maybe the same can't be said about Russia/Kazakhstan.

China in particular is building many nuclear reactors as a way to reduce pollution from coal power stations. It is quite likely one day we may see Russian uranium choose to go to China and not to the US. That day may be sooner than we think given the current trade war tensions being stirred up by the US.

India is also a rising nuclear country planning to source uranium from Russia. Just recently Russia inked an action plan for expanding its civil nuclear partnership comprising a second site for Russian nuclear reactors in India. The two countries intend to develop a project of six nuclear power units of Russian design at a new site in India. When Russia contracts to build nuclear reactors in other countries it

bundles the sale of nuclear fuel thus creating a captive supply relationship.

**The Nuclear Fuel Working Group (NFWG)**

The NFWG has been mandated to determine what to do about the issues raised in the Section 232 investigation, and they have until mid October 2019 to provide recommendations to the President.

Under Section 232 of the Trade Expansion Act, President Trump concluded that trade barriers on uranium imports were not warranted. The President formed the Nuclear Fuel Working Group to examine the entire fuel supply chain and conduct a fuller analysis of national security issues therein. There are two major issues this Group should address:

1. Protect and plan for defense infrastructure needs.
2. Provide some sort of assistance to support domestic uranium supply.

Some possible conclusions for the NFWG would be:

- Increase US uranium reserves.
- Subsidize US uranium producers or place quotas on foreign state owned  subsidized uranium imports or both. Tariffs are unlikely, but tax breaks or incentives may be possible.
- Other measures to boost the US nuclear fuel supply chain and compete on a level playing field. One example might be fast tracking uranium mining licences and permits.

In any case we there is a good chance we will see some kind of boost for US uranium producers.

**Three uranium companies to consider**

Energy Fuels Inc. (TSX: EFR | NYSE American: UUUU) is a leading integrated US-based uranium mining company. Their 100% owned White Mesa Mill in Utah is the only fully-licensed and

operating conventional uranium mill in the United States, having a 21% share of all US produced uranium (2011-2015).

Western Uranium & Vanadium Corp. (CSE: WUC | OTCQX: WSTRF) current key focus is the Sunday Mine Vanadium Project located in western San Miguel County, Colorado. The Company has a total uranium resource of 70,000,000+ lbs. The Company has several previous producing uranium mines that could go back online at minimal CapEx pending a favourable result from the working group.

Blue Sky Uranium Corp. (TSXV: BSK | OTCQB: BKUCF) is one of Argentina's best-positioned uranium & vanadium exploration companies with more than 4,000 km2 (400,000 ha) of prospective tenements. Blue Sky's close proximity of properties and targets provides the potential for an integrated, low-cost uranium-vanadium producing operation, making Blue Sky an excellent candidate to be the first near-term uranium producer in Argentina.

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# MI3 Market Alert: Palladium up $597 over the year

Mario Drolet President of MI3 Communications Financières Inc. (MI3) released a technical note at market open today on 21C Metals Inc. (CSE: BULL | OTCQB: DCNNF) for exclusive distribution on InvestorIntel. In this note, MI3 highlighted the following points on 21C Metals Inc.

- 21C Metals is an exploration company focused on the acquisition and development of deposits of production grade metal which are critical components to current and future vehicle technology.

- 21C has 2 projects: East Bull Palladium Property in Sudbury, Ontario and Tisova Copper-Cobalt located in Czech/German border.
- East Bull contains an Inferred resource of **523 000 Ounces PdEq** or 11.1 M/Tons @ 1.46 PdEq0020 – **PALLADIUM UP $597 over the year!!!!**
- Top management with Wayne Teasdale ‘’A Company Builder’’ sold his two previous companies: Rainy River and US Cobalt
- Only 62.6 million shares outstanding
- Support: S2; $ 0.065 – S1; $ 0.095 Resistance: R1; $ 0.10 – R2; $ 0.135
- *** **North Palladium buyout by IMPALA Palladium for 1.0 Billion**


**About 21C Metals:**

21C Metals is an exploration company focused on the acquisition and development of deposits of production grade metal which are critical components to current and future vehicle technology. Palladium is necessary for internal combustion engines (specifically catalytic converters) and cobalt is necessary for electric vehicle batteries.

**PLEASE DO YOUR DUE DILIGENCE**

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# Amanda Lacaze on the rare earths market and Lynas' Mt Weld resource

"We have three significant things that set us apart. The first is our Mt Weld resource which is recognized as a premier resource throughout the world. It is true Tier 1 Resource: high-grade, long life. It is so high grade that some of it we don't even need to put it through concentrator to process it. The second thing is that we have the benefit of being first in the market. We are the only non-Chinese miner and processor of any scale. And the third… we have been running our rare earths separation plant here in Malaysia for over six years and we have developed IP (Intellectual property) within our business with respect to how to separate those materials (rare

earths).” States Amanda Lacaze, Managing Director and CEO of Lynas Corporation Ltd. (ASX: LYC), in an interview with InvestorIntel’s Tracy Weslosky.

Amanda went on to comment on the ongoing trade war between China and the US. She said that having major international economies speaking about rare earths is a positive thing. She added, “The rare earths market is quite a small market. If you are for example the CEO of a car company, you are not going to care about rare earths if you are looking at your bill of materials. In a $25,000 bill of materials, rare earths may only be a couple of hundred dollars. You are going to care about rare earths when you can’t get them because you cannot put your car on the road”. She further added in the 2011 rare earths crisis Japan funded Lynas, as a result, the Japanese rare earths processing market and consumption has increased by about 60% since 2012. If there is a secure and reliable supply there is a strong and growing market.

Amanda also said that the increased interest in rare earths at this time is a net positive as a lot of outside-China markets and customers are thinking very seriously about how they are going to secure their future needs. She further added that the demand for rare earths outside China remains very strong and the US and Australia have referenced that both the countries will continue to work closely and work even more closely on the supply of critical minerals and rare earths in particular.

To access the complete interview, click here

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# A technology incubator that

# offers a green sky for the cannabis industry

The cannabis sector will soon get another boost. New cannabis products such as edibles, beverages, topicals and extracts will become legal to sell in Canada in mid-December 2019. Added to that is continued progress on the legalization of cannabis use globally. The following countries are all moving towards cannabis legalization and any could be next – USA, Jamaica, Czech Republic, Colombia, Peru, The Netherlands, Portugal, Spain, Iceland and France. All this change leads to innovation. In particular better ways to extract and consume cannabis, especially for medicinal purposes.

Green Sky Labs Inc. (GSL) is a technology incubator for the cannabis industry with five business verticals that are currently being commercialized. By bringing capital and superior science and technologies, GSL is improving the current standards of cannabis extraction. With a common goal, the focus for the Company's team of experienced business professionals, entrepreneurs, doctors, professors, researchers and administrators is clear: To drive innovation, better products, and better outcomes in the cannabinoid industry, from plant to patient and all stages in between.

**Green Sky Labs five business verticals that are currently being commercialized**

**1) Kalmex Inc. (Membrane-based extraction technology)**

With their strategic partners, PetroSep Corporation and Kayzan Holdings, GSL has formed a new company, Kalmex Inc., to commercialize the membrane technology licensed to GSL by PetroSep. Kalmex is in the design and planning stages of building its initial facility in California, targeting production in Q4 2020. At full capacity Kalmex's anticipated 5

tonne feed extraction facility is expected to harvest approximately 10 acres of biomass on a daily basis. With outdoor grown hemp being more robust, significantly cheaper and more widely available than marijuana, it will be highly complementary to Kalmex's large scale technology.


**2) Trichome Agronomy (Manitoba hemp)**

By leveraging its relationship with the Manitoba government and its hemp processing research GSL is developing an opportunity in the hemp industry. The Company has contracted local farmers in Manitoba to grow 4,200 acres of hemp using high CBD yielding hemp varieties. The Company anticipates its new processing facility will be completed in January 2020 and begin to generate cash flow shortly thereafter.

**3) Nectar Health Sciences (Cannabinoid isolation technology)**

Nectar Health Sciences was formed in the Spring of 2019 as a new subsidiary to commercialize proprietary, chemistry-based cannabinoid isolation technology. Several recent breakthroughs have made the process scalable for commercialization. Detailed

engineering of a commercial system has commenced with the first commercial operation expected by Q3 2020 in Western Canada.

**4) My Pain Sensei (Chronic pain)**

Green Sky Labs Chronic Pain Partnership collaboration with IBM Watson has created a disruptive solution to address how chronic pain is diagnosed, treated and managed. My Pain Sensei is a web portal and mobile application for the management of chronic pain. It operates as a real time, diagnostic, analysis and treatment tool for the public and medical community.

**5) Viscuris (Cannabinoid pharmaceutical)**

GSL has a 50% equity share in Viscuris, a cannabinoid pharmaceutical venture. The other partner is the International Center for Cannabis Therapy (ICCT). Based in Prague Czech Republic, ICCT has over 70 scientists conducting cannabinoid research. Viscuris will be introducing cannabis-based health & wellness products to global markets as well as conducting clinical trials for high-value indications.

**Conclusion**

This continuing revolution has come from the education and understanding of the many uses that cannabinoids and hemp based products give. In Canada, both “cannabis” and “industrial hemp” are legal for medical and recreational uses at the federal level. The exploding cannabis market in Canada will also soon mean licensed vendors can sell cannabis edibles, oils and tinctures. New estimates from cannabis industry analysts forecast the hemp-CBD market alone could hit $22 billion by 2022.

Unlike THC, the chemical compound that gives weed its signature effect, CBD has been shown to help with everything from PTSD and anxiety, to MS and epilepsy, without getting you high. The day is coming when your Doctor will prescribe a CBD

product to ease your pain, or for other health reasons such as Parkinsons or Motor Neuron Disease, and other severe neuralgic conditions, to name just a few.

Green Sky Labs Inc. is at the forefront of innovation and commercialization, and with so much happening will be sure to remain on investor's radar. The Company is currently private and has been financed mostly by private placements.

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# Lacaze on Lynas' proposed heavy rare earths separation plant in the US

"We see the US market as a wide-open market. The US has allowed itself to be disintermediated in the rare earths industry and that is a risk for the US manufacturers. We have seen that the Chinese have, in over 30 years, steadfastly marched down the value chain. So today they are in the business of rare earths mining, separation, metal making, magnet making, component making and ultimately the finished material. Many would say at what stage a US vehicle is a US vehicle. Is it when it is just assembled from components that have been shipped in from China? There is a large component manufacturing industry in the US and having the security of supply for the inputs to that industry is very important. So we see the US as a market where, with the right presence and the right development, there is significant opportunity for growth. With respect to our MOU with Blue Line. Texas is actually a great place to do business. We are very much looking forward to operating there. The first stage of what we do there will be focused on heavy rare earths separation.

Heavy rare earths cannot be separated anywhere except China…Heavy rare earths are essential. High-performance magnets used in electric vehicles must have atleast a small component of either dysprosium or terbium added to them and of course, they are used in many other applications including medical and particularly in some of the defense applications. A heavy rare earths separation line as a starting point we think is very important and it builds out our product portfolio. What we are doing in the US will not be limited only to heavy rare earths, over time we would expect that we will continue to grow, the market will grow… We do believe that if we establish the facility we will create additional activity in the rare earths supply chain…" States Amanda Lacaze, Managing Director and CEO of Lynas Corporation Ltd. (ASX: LYC), in an interview with InvestorIntel's Tracy Weslosky.

Amanda went on to provide an update on Lynas' plant in Malaysia. She said that Lynas had the fourth scientific review done in Malaysia which came out with a clean report card that stated that the plant is low risk and compliant with all regulations. The company also recently announced the renewal of its operating license in Malaysia. She also provided an update on Lynas' growth plan. She said that Lynas is focussed to be a pure-play rare earths company. The company believes that by being a pure play it will be able to give its shareholders the best return. She said that in 2018 Lynas implemented a project called Lynas Next which took the nameplate capacity from about 5,000 tons a year of NdPr to about 7,000 tons a year of NdPr. In May the company announced the Lynas 2025 plans where by 2025 the company will produce 10,500 tons a year of NdPr.

To access the complete interview, click here