

# Bezos, Bloomberg and Gates look to Greenland's rare earths for a greener future

written by InvestorNews | September 6, 2022

What's going on in Greenland? It's quickly becoming the hot spot in the search for rare earths to power the green energy transition. It's a somewhat ironic twist of fate that climate change is contributing to the melting of ice cover in Greenland at an unprecedented rate, creating the opportunity for investors and mining companies by making exploration and mining in Greenland easier and more accessible. It also appears there is no shortage of capital available to pursue this chase for rare earths.

The month of August saw a couple of interesting news items come to light with respect to Greenland. First, the world learned that [Jeff Bezos, Michael Bloomberg and Bill Gates](#) are betting that there are enough critical minerals to power hundreds of millions of electric vehicles below the surface of Greenland's Disko Island and Nuussuaq Peninsula. This is part of a very rich, very powerful investor group in privately held mining company called [KoBold Metals](#). In February the [company raised US\\$192.5 million](#) in a Series B funding round that also included Canada Pension Plan (CPP) Investment Board, Bond Capital, BHP Ventures, Standard Investments, Sam Altman's Apollo Projects, Mitsubishi, and Sarah Kunst's Cleo Capital. Some of this capital goes towards funding the company's exploration of the joint venture 2,776 km<sup>2</sup> [Disko-Nuussuaq](#) Magmatic Massive Sulphide nickel-copper-platinum-cobalt project located on the southwest coast of Greenland with London listed [Bluejay Mining PLC](#) (AIM: JAY).

Then at the end of August [Neo Performance Materials Inc.](#) (TSX: NEO) announced it had [executed a binding agreement](#) whereby Neo will acquire from [Hudson Resources Inc.](#) (TSXV: HUD | OTC: HUDRF) an exploration license covering the [Sarfartoq Carbonatite Complex](#) in southwest Greenland. The Sarfartoq Project hosts a mineral deposit that is enriched in neodymium and praseodymium, two essential elements for rare earth permanent magnets used in electric vehicles, wind turbines, and high-efficiency electric motors and pumps that help reduce greenhouse gas emissions. It makes a lot of sense for Neo to develop the Sarfartoq Project to further diversify its global sourcing of rare earth ore and to expand the rare earths supply chains that feed Neo's rare earth separation facility in Estonia. Neo is also pursuing plans to break ground on a greenfield rare earth permanent magnet manufacturing plant in Estonia that is intended to provide European manufacturers with their permanent magnet needs.

But what is the significance of all this activity in Greenland? This giant North Atlantic landmass, with only 57,000 residents, was famously sought after by none other than President Trump, who floated the idea of buying Greenland multiple times back in 2019 from Denmark, its former colonial power. Bluejay Mining believes that both previous studies and work conducted by the company have already highlighted the Disko Project area potential to host mineralization similar to the world's largest nickel/copper sulphide mine Norilsk-Talnakh in Siberia. In fact, Kurt House, CEO of KoBold Metals is quoted as saying: "We are looking for a deposit that will be the first- or second-largest most significant nickel and cobalt deposit in the world." Perhaps this is what is making Greenland so popular.

Another factor that has brought Greenland to the forefront in the hunt for critical minerals is the rapidly changing northern climate, which is making ice-free periods in the sea longer, allowing teams to ship in heavy equipment and ship out metals to

the global market more easily. Additionally, retreating ice is exposing land that has been buried under the ice for centuries or even millennia, but could now become a potential site for mineral exploration. This is playing out on a much smaller scale in British Columbia's "golden triangle", where retreating glaciers have exposed continuations of some of the gold plays in the region.

If anything good can come from climate change, perhaps Greenland's environmental misfortune can potentially help the world turn the corner in its quest to advance the green revolution as quickly as possible. Whatever happens, some big names and a lot of money is being thrown at projects in Greenland right now, bringing this barren and desolate part of the world back into the news and to the attention of investors.

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# **China owns the Green revolution with falling prices of critical technology minerals**

written by Jack Lifton | September 6, 2022

Why haven't the world's senior miners (aka, the actual producers of non-fuel minerals as well as of oil, gas, and coal) alerted the global manufacturing industry to the limitations on the annual production of the critical mineral resources needed for any Green transformation of the world's energy economy away from fossil fuels? The simple answer is that they're making too much

money with the nonsensical distortions of the fossil fueled energy economy led by natural resource production illiterates.

Buying back their stock to raise the share prices, so that the insiders (aka management and its bankers) seems to be the most common use of earnings among the seniors.

The seniors are, of course, the world's suppliers of energy fuels and of structural metals, such as iron and aluminum, and infrastructure metals, such as copper. Those three metals constitute 95% of all the metals produced annually, and iron constitutes 95% of that total.

60% of all metals are produced or processed and utilized in manufacturing in just one nation – China. 90% of all of the critical technology metals necessary for a Green transformation are produced, processed and utilized in manufacturing in China!

It is actual Chinese demand for ALL metals that sets the production goals and prices charged by the seniors.

China now owns or has contracted to buy the [critical technology minerals](#) – for which it already has the capability and capacity to process and fabricate end-user products enabled by these same technology metals – sufficient to meet its domestic (world dominating) demands for years to come.

The critical metals China doesn't already control are insufficient to support a green energy transition outside of China.

China has the pick of the litter of deposits and mines, globally. It has achieved this enviable position by not being concerned about price, but rather targeting national self-sufficiency in critical materials.

China will now allow “free market” capitalism to eliminate

competition for the remaining critical mineral assets it doesn't control. They are simply too expensive for private development even among the senior miners, whose goal is profit, not security of supply regardless of cost.

China's industrial policy supported by state capitalism has achieved their goal of energy independence.

Oil from the Mid-East and (sanctioned) Russia, plus domestic coal and Kazakh uranium, ensure Chinese energy independence from imbecilic Western policies.

China's attitude towards immigration also ensures that the great energy/food migration that is already occurring will not disrupt China's economy internally.

Profit equals selling price minus cost of goods sold.

China offered enormous one-time profits to senior and junior miners producing or developing critical minerals.

It was a trick.

It worked.

The lesson is that an [industrial policy](#) supported by state capitalism to secure the supplies of critical minerals for national self-sufficiency in the world's largest domestic economy has worked. Crony capitalism in the world's second largest domestic economy has been an abject rudderless failure in that regard.

Low metal prices mean no profit means no domestic American security of supply.

Even subsidies (aka, state capitalism) cannot help in any short term, because the legacy skills to re-industrialize America have

been de-emphasized to the point that American education does not support them at all.

Got it?

The new normal, “engineered and made in China.”

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# Canada gets it right with new critical materials report

written by Jack Lifton | September 6, 2022

## Government report should be mandatory reading

Last week, Canada’s House of Commons Standing Committee on Industry and Technology issued a report entitled: “[POSITIONING CANADA AS A LEADER IN THE SUPPLY AND PROCESSING OF CRITICAL MINERALS](#).” I urge everyone to read it. Canada is the leader in the Americas in the mining of the critical metals for EVs, and as this report shows it is embarked upon a government-supported and funded initiative to become a world class provider of not only the downstream end-user forms of those critical materials, but of the consumer products dependent upon them, such as EVs and the batteries they need as well as stationary storage batteries, and the rare earth permanent magnet motors that most efficiently propel EVs.

The report is, not “should be,” mandatory reading for the

elected officials and bureaucrats of the USA, the UK, and the EU. Just go to the table of contents page, which has live links for each topic, and you have the outline of a textbook on the topic of “How can a government support the development of a domestic, world class, critical metals enabled high tech consumer industry?” Note well that China has already done this! The United States and Europe publish voluminous reports patting themselves on the back but showing no consultation with industry or finance whatsoever. This Canadian report puts Canada at the forefront of a revolution in how a democracy can compete with an autocracy and can implement an industrial policy without falling into the “just throw money at a problem” mentality of the USA and Europe.

It has been said that to accomplish anything, you need people who come from a culture that honors work and expects results. This is no longer the culture in the United States, and this is why the United States cannot catch up with Asia in technological prowess or “reclaim” its former and rapidly fading lead. The rapid rise of Canada as a technology products powerhouse will also constrain American production, as Canada uses its own high tech raw materials domestically just as China does.



***From the introduction to the Canadian critical materials report (p. 9)***

The two American bubbles, the Hollywood fantasy culture and the Washington and coastal center cities' economic fantasy, have combined to ensure the end of social mobility through economic improvement for any and all who try hard enough and to replace it with financialized fascism decorated with the appearance of social justice trumping merit and of selective “data”-based clueless illogic replacing scientific inquiry that has created a need to direct the energy economy to oblivion strictly to enrich

an oligarchy.

Unlike the USA, Canada has a clean sheet, technologically. It has not lost its respect for merit-based scientists, and although badly infected by clueless social justice, its universities and government still retain a culture that values scientific accomplishment and is against [man-made energy poverty](#) (aka, the green new deal). American readers should note that Canadians use more energy per capita than Americans. Winnipeg's climate is not like San Diego's.

Thus, I am not surprised, and I have some pride (note: my parents emigrated from Winnipeg to Detroit in 1923-26 seeking the opportunities offered by the then "American dream" of social mobility) in the fact that Canada's Parliament has the making and keeping of Canada's standard of living for everyone a top priority. The Canadian dream is, in my opinion, today more viable than the fading American dream.

The founder of Amazon, Jeff Bezos, said last week of recent pronouncements by the White House: "It's either straight ahead misdirection or a deep misunderstanding of basic market dynamics."

Let me add that the U.S. government also has a deep misunderstanding of the technology of natural resource production and its limitations. Canada's Parliament could give some good tips to the Americans.

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# Jack Lifton, Byron W. King and Ur-Energy's John Cash explore the future direction of the American uranium industry

written by InvestorNews | September 6, 2022

In this episode of **Critical Minerals Corner**, Jack Lifton and Critical Minerals Corner Co-Host & InvestorIntel Columnist Byron W. King speak with John Cash, CEO of [Ur-Energy Inc.](#) (NYSE American: URG | TSX: URE).

John explains that Ur-Energy is today producing yellowcake, the commercial form of uranium, by the environmentally friendly method of "in-situ" mining, which he explains. Ur-Energy then processes the mine output to commercial yellowcake.

John rounds out the discussion by defining the size of the American domestic market for uranium. He tells us where and in what form uranium for domestic American civilian use originates; what parts of the domestic American uranium supply chain are deficient; and whether or not America can ever have a secure domestic supply of uranium for its largest in the world civilian nuclear electricity generation industry.

This is a must-see video for all of those interested in green energy self-sufficiency for America.

To access the complete episode of this Critical Minerals Corner discussion, [click here](#)

## About Ur-Energy Inc.

Ur-Energy is a uranium mining company operating the Lost

Creek *in-situ* recovery uranium facility in south-central Wyoming. We have produced, packaged, and shipped approximately 2.6 million pounds  $U_3O_8$  from Lost Creek since the commencement of operations. Ur-Energy now has all major permits and authorizations to begin construction at Shirley Basin, the Company's second *in situ* recovery uranium facility in Wyoming and is in the process of obtaining remaining amendments to Lost Creek authorizations for expansion of Lost Creek. Ur-Energy is engaged in uranium mining, recovery and processing activities, including the acquisition, exploration, development, and operation of uranium mineral properties in the United States. The primary trading market for Ur-Energy's common shares is on the NYSE American under the symbol "URG." Ur-Energy's common shares also trade on the Toronto Stock Exchange under the symbol "URE." Ur-Energy's corporate office is located in Littleton, Colorado and its registered office is located in Ottawa, Ontario.

To learn more about Ur-Energy Inc., [click here](#)

***Disclaimer:*** *Ur-Energy Inc. is an advertorial member of InvestorIntel Corp.*

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If you have any questions surrounding the content of this interview, please contact us at +1 416 792 8228 and/or email us direct at [info@investorintel.com](mailto:info@investorintel.com).

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## **Get Ready, Get Set, Go – EV Demand Raises the Boron Bull Flag.**

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# NASDAQ listed 5E Advanced Materials is building a vertically integrated boron products operation in California to supply growing EV and decarbonization demands

Today we take a look at the chemical element boron and at a NASDAQ-listed boron company with a globally significant boron resource in California. 'Boron' is element number 5 in the periodic table and its demand is growing as we move towards a green energy and electric vehicle (EV) future. That is because boron is lightweight, very hard (boron carbide), and has strong heat and corrosion resistance. It is also quite rare, making up just [0.001%](#) by weight of the Earth's crust.

About 2.5–3.0% of an EVs [weight is boron](#), or put another way there is about 46–50 kg of boron in the form of alloys in a passenger EV. Examples of boron use in EVs include high-strength boron-infused steel and boron containing magnets used in drivetrains. Boron alloys and compounds are also used in solar panels and wind turbines, in micronutrients and super fertilisers, in nuclear reactors, and in military applications such as boron-infused tank armor plating.

Boron demand is increasing especially in the areas of green energy (decarbonization applications). Boron demand is forecast to grow 10x by 2050, with a supply gap (deficit) forecast to widen from the end of 2022. [~60%](#) of global boron supply comes from Turkey and its state-owned assets and 85% of global supply comes from just two companies (Eti Maden & Rio Tinto).

*Note: When you hear about electric motors being made with NdFeB permanent magnets, the 'B' refers to boron.*

**Boron uses** 

Source: [5E Advanced Materials company presentation](#)

**Boron supply gap forecast from end 2022 as demand increases and the new pipeline of projects supply is small**



Source: [5E Advanced Materials website – Boron 101](#)

### **5E Advanced Materials Inc.**

5E Advanced Materials Inc. (NASDAQ: FEAM | ASX: 5EA) (5E) core business is founded on its low cost, light environmental touch, boron resource in Southern California, USA. [According to](#) 5E: “The Resource is designated Critical Infrastructure by the U.S. government and is the largest known conventional boron deposit globally.”

5E is building a BORON<sup>+</sup> Advanced Materials business that operates across the value chain from resource extraction, to refinement, to distribution. The business is backward integrated from customer product offering into processing and extraction methods. In other words, 5E finds the customer first and then works backwards from there.

The 100% owned Fort Cady Project in Southern California has a Total Resource of [~327 million tons at 8.22% boric acid content](#) and 323ppm lithium. The Total JORC Code Compliant Mineral Resource Estimate is [120.44 million tons at 6.51% B2O3, 11.57% H3B03](#) and 344ppm lithium. Either way, it is a very large resource with a high boron content and some lithium by-product.

5E has already achieved an eDFS for Fort Cady and has all substantive permits in place. Next steps in 2022 will include a BFS, a small scale boron facility, and advancing off-take and

potential partnerships. Beyond that production is targeted to begin by 2024+, subject to the above steps being completed.

5E's [management and board](#) have a wealth of relevant experience including CEO Henri Tausch having worked for Honeywell and COO Tyson Hall having worked for lithium giant Albemarle.

**There are very few near term new boron projects, especially now that the Serbia government has blocked Jadar**



Source: [5E Advanced Materials company presentation](#)

### **Closing remarks**

It is quite interesting that an EV has about the same amount of boron as lithium. As a critical technology material boron's use in rare earth permanent magnets is, indeed, critical. As an essential structural material boron's use in the many alloys and glass in an EV is necessary for light-weighting of the vehicle. While there are 100's of junior lithium miners scrambling to meet future lithium demand, there are very few companies focused on boron. Therein lies the opportunity. Even more important is the fact that 5E has a USA based project. It should not be overlooked, either, that 5E's boron deposit is the largest one known in the world.

5E has recently listed on the NASDAQ under the ticker "FEAM" so this should start to raise more awareness about the company and the 'under the radar' demand boom for boron potentially ahead as the green revolution takes off.

5E Advanced Materials Inc. trades on a market cap of [US\\$801 million](#).

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# Focused on the key green metals, Murchison Minerals has quadrupled the HPM claims in Quebec

written by InvestorNews | September 6, 2022

One effect, on the global green energy transformation, of the Russian invasion of Ukraine is that Western governments have finally woken up to the emphatic need to create local supply chains for critical materials such as those needed to support the green energy revolution. In the past few weeks, the USA has released a fact sheet titled [\*Securing a Made in America Supply Chain for Critical Minerals\*](#) and last week the Intercept reported [\*Biden Administration Drafting Order to Invoke Defense Production Act for Green Energy Storage Technology\*](#). In Canada, 2 weeks ago the Ontario government released their [\*Critical Minerals Strategy\*](#). Also in March the Australian government released their [\*2022 Critical Minerals Strategy\*](#).

All of the above means companies with promising critical materials projects in Western countries are set to be the winners in 2022 and beyond. Today's company has two key critical materials projects in Canada, with strong exploration potential for nickel, copper, cobalt, and zinc.

**The green energy revolution will lead to an enormous opportunity for miners of the green energy metals**



Source: [Murchison Minerals website](#)

[Murchison Minerals Ltd.](#)'s (TSXV: MUR | OTCQB: MURMF) (Murchison) two Canadian projects are:

- HPM (Haut-Plateau de la Manicouagan) Project – Nickel sulphide-copper-cobalt project (Quebec) (100% owned)
- BMK (Brabant-McKenzie) Deposit – Copper-zinc-precious metals project (Saskatchewan) (100% owned)

Both of the above are at the exploration stage with multiple strong targets for drilling.

### **HPM (Haut-Plateau de la Manicouagan) Project (100% owned)**

The HPM Project has a dominant land position of 576 km<sup>2</sup> with camp scale Ni-Cu-Co potential. It has rail access within 8 km of project area and is 225 km to Port of Sept Iles. Murchison has recently completed an [acquisition of an additional 43,689 hectares](#) of mineral claims.

The Project has upwards of 50 anomalous EM targets identified. The [best historical result](#) is at the Barre de Fer Deposit and is **43.18 m of 1.74% nickel, 0.90% copper and 0.09% cobalt.**

At the 1.95 km long PYC geophysical anomaly, mineralization has been outlined so far over a strike length of ~550 metres. Murchison's inaugural drill program was completed at the PYC target in December 2021 with assay results below and others expected soon. Murchison has already [reported](#): "Intersected sulphide mineralization in all holes completed in 2021 at the PYC target- portable Niton X-ray fluorescence (XRF) spectrometer analyses confirm the presence of nickel, copper and cobalt within the sulphide intervals." And, "sulphide mineralization in drill core from PYC is similar to that observed on surface where 2021 backpack drill core samples assayed up to 0.79% Ni, 0.14%



Cu, and 0.15% Co.” The recently [announced](#) assay results at PYC included:

- Hole PYC21-007 drilled to a depth of 158 m included **25.5 m grading 0.30% Ni Eq** (72.5 m to 98.0 m) and 27.41 m grading 0.23% Ni Eq (3.24 m to 30.65 m).
- Hole PYC21-008 drilled to a depth of 182 m included **39.5 m grading 0.24% Ni Eq** (5.5 m to 45.0 m) and 13.0 m grading 0.27% Ni Eq (From 75.0 m to 88.0 m).

*Note: Murchison still has assays pending from the remaining six holes at the PYC target, which tested 0.55 km of the 1.95 km strike length.*

At the Syrah target (just 350 m from the Barre de Fer Deposit), Murchison has recently [reported](#) some 2021 outcrop assay results with more to come soon. The results included a newly discovered mineralization to the northeast extending the surface strike length by approximately 200 metres and assaying as high as **0.69% Ni Equivalent** (0.42% Ni, 0.10% Cu, 0.08% Co). Murchison [stated](#): “Today’s results confirm Ni-Cu-Co sulphide mineralized outcrops and sub-crops over approximately a 375-metre strike length, within the footprint of an approximately 600-metre-long conductive geophysical anomaly at the Syrah Target.”

### **BMK (Brabant-McKenzie) Deposit (100% owned)**

The BMK Deposit is on a 627 km<sup>2</sup> land package which has year round road and power access. It has an [Indicated Resource of](#) 2.1 Mt @ 9.98% ZnEq and an Inferred Resource of 7.6 Mt @ 6.29% ZnEq. The Property has 10 highly prospective VMS targets with VMS style mineralization already intersected at Main Lake and Betty target areas.

In 2022 at BMK, Murchison intends to do a comprehensive desktop study on results to date, in order to systematically optimize

future drill programs. Also, Murchison plans to do further testing along strike and down dip from current deposit extents as well as to continue exploration drilling at Main Lake and Betty.

### **Closing remarks**

With nickel, copper and cobalt prices surging higher in 2021 and 2022 it means any junior explorer who finds significant amounts of these key green energy metals can expect their stock price to surge higher. At the HPM Project, Murchison is still awaiting further drill assays and has a total of 50 anomalous EM targets to explore. Results so far are solid for nickel, copper, and cobalt and suggest there is significant mineralization to explore, so really it is still very early days.

At the BMK Deposit, there is already a zinc resource and exploration upside in 2022.

Both opportunities are in Canada which these days is a huge advantage.

Murchison Minerals trades on a market cap of only [~C\\$17 million](#), meaning any significant discovery can be company changing. Stay tuned for more assay results soon at HPM.

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# **America's Energy Fuels offers investors a way to make the**

# “green” revolution happen in the USA

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This decade is all about converting our society from fossil fuels to green energy and establishing locally sufficient and secure supply chains. If we agree that nuclear is the best form of base-load electricity to get us off of fossil fuels, then that makes uranium the key green energy source. Solar and wind will also play an important role in future years but are at best intermittent sources of electricity so that they require that lithium-ion and vanadium batteries be used for energy storage. Our motor vehicles will increasingly be powered by electric motors of the permanent magnet type, the best of and most efficient of which are those made from the magnet rare earths (Nd, Pr, Dy, Tb) and “fueled” from rechargeable storage batteries onboard the vehicles,

To make the “green” revolution happen in the USA a local supply chain must be developed to supply the key and critical materials to manufacture the electricity required and the batteries required to store that electricity until it is needed. This is why late last month the White House released a fact sheet: [“Securing a made in America supply chain for critical minerals.”](#)

We can see by the price action below (for the full year 2021) how demand for key metals is pushing up prices:

- Uranium oxide – Up 38%.
- Neodymium-Praseodymium oxide (NdPr) – Up 112%.
- Vanadium oxide – Up 62%.

[Source](#)

Note: Prices for each of these commodities have continued to

show significant strength in 2022, especially uranium.

Today's Company is the USA leader in uranium production processing, which also has vanadium production processing, and is a growing rare earths processor, which today is America's only producer of the mixed rare earth carbonates required by the rare earth industry as a feedstock for the manufacturing of individual and blended rare earth chemicals used in the production of rare earth permanent magnets.

### **Energy Fuels Inc.**

[Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR) has been very busy for the past two years. While others were talking, Energy Fuels was taking action. The Company has been **building up uranium & vanadium inventory and producing and selling mixed rare earths' products,**

Financial results of a net income of [US\\$1.5 million](#) for 2021 are very deceptive, as Energy Fuels chose not to sell uranium and was still in the process of developing its rare earths processing capabilities and securing additional feed sources. In fact, Energy Fuels is sitting very nicely as they state in their [March 2022 update](#):

"At December 31, 2021, the Company had a robust balance sheet with \$143.2 million of working capital, including \$113.0 million of cash and marketable securities, \$30.8 million of inventory, and no short term (or long term) debt. At current commodity prices, the Company's December 31, 2021 product inventory would have a value of approximately \$60.6 million.....While the Company chose to not sell any uranium during 2021, it is now actively engaged in pursuing selective long-term uranium sales contracts."

**Uranium prices have almost doubled the past year**

The current uranium price is [US\\$57.25/lb](#), almost double that from a year ago when it sat at about US\$30/lb. This means it makes sense for Energy Fuels to “actively engaged in pursuing selective long-term uranium sales contracts”. This may allow Energy Fuels to dramatically ramp up revenues in 2022.

Furthermore, if we get a uranium supply chain disruption from Russia controlled Kazakhstan ([41%](#) of supply) or Russia ([6%](#) of supply) we may see uranium prices move well above US\$100/lb.

Energy Fuels would be in pole position to start selling their uranium inventory and ramping up U.S based uranium production.

**Energy Fuels is the leader in U.S. uranium production used for nuclear fuel that can be used for fossil free U.S. electricity**



Source: [Energy Fuels website](#)

### **China dominates rare earths supply**

Around [85%](#) of the global supply of rare earths comes from China. Should the USA and China have any type of “trade war” or disagreement over the current Russia-Ukraine war, China could choose to stop exporting rare earths products to the USA. Just as with uranium, this would have crippling consequences for the USA.

There are very few secure and available sources of rare earths outside of China. U.S. based Energy Fuels would suddenly become a key and critical supplier.

Energy Fuels is rapidly moving to grow their range of rare earths products. In their March update the Company [stated](#):

- “The Company produced approximately 270 metric tonnes of

mixed rare earth element (**REE**) carbonate (**RE Carbonate**), containing 120 metric tons of total rare earth oxides (**TREO**) during 2021, as it commenced ramping up its REE recovery infrastructure. Energy Fuels' RE Carbonate is the most advanced REE material being produced in the U.S. today.

- The Company is currently in active discussions with several sources of natural monazite sands around the world to significantly increase the supply of feed for its growing REE initiative.
- During Q1-2022, the Company began commercially separating Lanthanum (La) and Cerium (Ce) on a small scale from its RE Carbonate, using an existing solvent extraction circuit at the Mill. This represents the first commercial level REE separation to occur in the U.S. in many years.
- The Company is planning to install a full separation circuit at its White Mesa Mill (the **Mill**) to produce both "light" and "heavy" separated REE oxides in the coming years, subject to successful licensing, financing, and commissioning, and continued strong market conditions."

**Energy Fuels is producing rare earths used in many electric vehicles and wind turbine electric motors**



Source: [Energy Fuels website](#)

Energy Fuel CEO & President, Mark Chalmers, summed up Energy Fuels nicely, [stating](#):

**"In 2021, we believe Energy Fuels further strengthened its position as America's leading multi-commodity, critical mineral company, as we made excellent progress on our uranium, REEs, vanadium and medical isotope initiatives. We are deploying our 'one-of-a-kind' licenses, facilities, and expertise to**

responsibly recover the critical elements needed for carbon-free nuclear energy, electric vehicle powertrains, wind generation, advanced electronics, grid-scale batteries, other clean energy and advanced technologies, and potentially cancer therapeutics.”

*Note: Bold emphasis by the author.*

### **Closing remarks**

Energy Fuels offers investors a critical materials (uranium, vanadium, rare earths) growth play, as well as an investment that can outperform if either Russia (uranium) or China (rare earths) decide to punish the USA.

What a great combination! Growth as the green revolution takes off and protection from Russia and/or China in the unfortunate case that the geopolitical environment gets worse.

Energy Fuels trades on a market cap of [C\\$1.911 billion](#) ([US\\$1.516 billion](#)).

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# **Squeezing the juice out of the idea that endless cash will somehow make more battery materials appear**

written by Jack Lifton | September 6, 2022

It has been said that the (U.S.) Central Bank, the Federal Reserve System, can simply create money by creating bank

reserves on its balance sheet. It does this by purchasing long term U.S. government bonds from the banks; this is known as Quantitative Easing (QE). The purchases are entered as new reserves on the seller's account. This open-ended creation of money is the basis of Modern Monetary Theory (MMT), the idea that governments can never go bankrupt; they can simply create more money when needed.

Modern Mineral Resource Theory (MMRT) has evolved out of Modern Monetary Theory so a brief excursion into MMT will help understand MMRT.

Many, if not most, of those who believe in free-market capitalism also believe in the efficient market hypothesis. This holds that the supply and demand of goods and services always seeks to be in balance, so that, for example, if there is an excess of demand for a good or service, let's say the public wants to buy more electric cars than are available, then the price of electric cars will rise until it is profitable for manufacturers to increase the supply of them.

The efficient market hypothesis assumes that there are infinite amounts of goods and services available, and the only constraint on their supply is a price high enough to allow their production to be profitable. Excess demand causing the price to rise is the motivator for increased supply, and there is no limit to that supply otherwise.

Modern Monetary Theory holds that money, itself, is a commodity whose "price" is determined by demand and supply. Modern Monetary (MM) Theorists, however, do not believe in the efficient market theory. They believe that an excess of money stimulates demand across the board and automatically increases supply of all desired items.

The confused MM Theorists must believe, therefore, as a



necessity that there can be no limit to supply so long as there is enough (commodity) money available. I call, this caveat, Modern Mineral Resource Theory.

This is the terrible mistake that is wrecking “free world” economies through its application to the crisis du jour, climate change.

MMRT is the reason that the [green energy revolution](#) will fail to improve or safeguard lives, and in fact, will cause a resurgence of poverty.

The total mineral resources available to mankind are those, the deposits of which are physically accessible and exist at grades (concentrations) high enough so that state-of-the-art mining and chemical engineering can extract them, separate them, purify them, and fabricate them into end-user forms that are widely affordable for mass production.

To be widely affordable for mass production of consumer goods the total amount of capital necessary for their creation must be reasonable and not interfere, by its allocation, with the standard of living of the society for which the goods are intended. Just like any other “commodity,” capital is not infinitely available.

A good example of the failure of MMRT is lithium, which is already too expensive to support, and in too short an accessible supply, to allow the transformation of personal, commercial, and freight transportation from the use of fossil fuels to the exclusive use of battery electric power trains (BEVs).

Modern Mineral Resource Theory holds that the demand for BEVs will cause the supply of lithium to increase to meet that demand. This is not true, and MMRT, which holds that the supply of mineral natural resources is infinite, if the price is right,

is false.

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# Critical Minerals Corner, Jack Lifton and Byron King discuss the coming War for Green Energy

written by InvestorNews | September 6, 2022

In this episode of the Critical Minerals Corner, Tracy Weslosky is joined by Critical Minerals' industry expert and InvestorIntel Editor-in-Chief, Jack Lifton, and Critical Minerals Corner Co-Host & InvestorIntel Columnist, Byron King, to discuss how the world is heading towards an energy crisis as covered in Byron's recent column published on InvestorIntel titled – [Energy Rundown: 2022, A New Year of Living Dangerously](#).

In this InvestorIntel interview, which may also be viewed on YouTube ([click here to subscribe to the InvestorIntel Channel](#)), the panelists discussed how energy security ties in with economic development, and why the world is presently not in a position to reduce its dependence on fossil fuels to zero. They went on to discuss the global push towards green energy and electric vehicles, which has caused a significant increase in prices for critical materials such as lithium, nickel, and the rare earths. Explaining why there is “nothing green about green energy”, the panel also discussed solutions to the impending energy crisis.

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

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# Murchison Targets the Green Energy Metals in 2022: Cobalt, Copper, Nickel, Zinc and Silver.

written by InvestorNews | September 6, 2022

It seems of late that every time I get excited about the technicals of the gold chart and then go on to make a comment about it I quickly get taught a lesson in humility. Well, enough of that, there are plenty of other commodities out there and many of them are far more important to the future build-out of the green economy. I'm talking about key electric vehicle and clean energy production and storage metals like nickel, copper, cobalt, and silver to name a few. Perhaps these commodities and their underlying prices will be a little kinder to me and not crash a day or two after I extol their virtues. Although nickel is trading at 5-year highs and copper isn't far off of its recent highs. At least cobalt is only near 3-year highs and well off the peak it reached in early 2018. So fingers crossed I'm not some sort of a short-term price jinx and fundamentals will rule the day.

A Canadian company developing numerous projects that provide exposure to cobalt, copper, nickel, zinc and silver is [Murchison Minerals Ltd.](#) (TSXV: MUR). Murchison is focused on the exploration and development of the 100% owned [Brabant Lake zinc-](#)

[copper-silver project](#) in north-central Saskatchewan. The Company also owns 100% of the [Haut Plateau de la Manicouagan \(HPM\) nickel-copper-cobalt project](#) in Quebec and holds an option to earn 100% interest in the Barraute VMS exploration project also located in Quebec, north of Val d'Or. Saskatchewan and Quebec are two of the best mining jurisdictions in Canada and, arguably, in the world. Additionally, these projects are surrounded by excellent, established infrastructure.

The last time I had [a look at Murchison](#) I focused on the Betty Zone at Brabant Lake given that was where I saw the bulk of the news being generated at that time. So today we'll focus on the HPM project because that's been the source of most of the excitement for the Company over the last couple of months. The HPM property is located between Baie-Comeau and Fermont, Québec, about 20 km from an all-season road connecting the two communities, 8 km to railroad, and about 225 km to the Port of Sept Iles. The property is associated with the Manicouagan Metamorphic Complex and hosts several nickel-copper cobalt occurrences.

Most activity at the HPM project has been focused on the highly prospective PYC target area where the Company identified significant sulphide mineralization on the surface over [a strike length in excess of 1.7 km](#). Assay results from its June prospecting program, from grab samples and short backpack drill core samples, [feature assays](#) as high as 1.27% nickel equivalent or 2.59% copper equivalent (0.79% Ni, 0.14% Cu, 0.15% Co) from 0.83 metres of backpack drill core. Assay results also confirm mineralization south-east of the PYC target at the newly discovered Dix showing, which assayed as high as 0.90% Nickel Equivalent or 1.83% Copper Equivalent (0.44% Ni, 0.39% Cu, 0.10% Co) from 0.45 metre of backpack drill core.



Source: Murchison Minerals [Aug 16, 2021 Press Release](#)

Following a successful capital raise of [\\$4 million that closed in October](#), the Company is in an excellent financial position to unlock the potential of HPM. To that end, on November 2<sup>nd</sup> Murchison announced it had [commenced a 3,550 m drilling program](#) focusing on the PYC target while concurrently prospecting a number of significant geophysical anomalies that were identified on the HPM project during a 655 line-kilometre airborne electromagnetic survey completed earlier this year. To date, the Company has successfully [completed seven drill holes totaling 1,599 m](#) testing approximately 550 m of the airborne electromagnetic anomaly with significant pyrrhotite and minor chalcopyrite mineralization observed in all seven holes. A handheld portable Niton XRF (X-Ray Fluorescence analyzer that enables real-time, quantitative sample analysis in the field) confirms the presence of nickel, copper and cobalt within the sulphide intervals. Now we await the assays to learn just how much of those valuable commodities are present in these rocks.

One need look no further than the bidding war that broke out over Noront Resources and its nickel-copper-PGE project in neighbouring Ontario, where it looks like BHP Group Ltd will be the successful suitor, to understand the value of these types of resources. Granted Murchison has a bit of work ahead of them to define a comparable asset but that's why they only have a market cap of \$22 million today. A successful winter drilling program at HPM could put Murchison Minerals on the radar of companies like BHP.