

# Defense Metals' Dr. Luisa Moreno on the Wicheeda Project as a Critical Future Source of Rare Earths in North America

written by InvestorNews | March 15, 2024

During the Prospectors & Developers Association of Canada (PDAC) 2024 event, Jack Lifton of the [Critical Minerals Institute](#) (CMI) conducted an insightful interview with Dr. Luisa Moreno, President and Director of [Defense Metals Corp.](#) (TSXV: DEFN | OTCQB: DFMTF). Dr. Moreno elaborated on the company's Wicheeda Rare Earth Element (REE) Project, describing it as a significant carbonatite deposit located in British Columbia, Canada. At the pre-feasibility stage, the project boasts a resource of approximately 30 million tons at an average grade of 2%, with initial years of mining expected to yield even higher grades of 2.5 to 3%. The company's vision includes concentrating the material and establishing a hydrometallurgical plant to produce a chemical concentrate, with a target production timeline spanning about five years. Dr. Moreno highlighted the success of the pilot plant and the potential for another pilot plant focusing on flotation and hydrometallurgy, underscoring the project's viability and its role in supporting the burgeoning EV and hybrid vehicle markets, which are heavily reliant on rare earth permanent magnets.

Defense Metals Corp., under the leadership of Dr. Moreno and CEO Craig Taylor, aims to establish the Wicheeda Project as a critical future source of rare earths in North America. The project's strategic advantages include its location, superior logistics, favorable mineralogy and metallurgy, proven

capability to produce rare earth products through pilot plant operations, significant potential mine life, and the support of the McLeod Lake Indian Band. In line with this vision, the company has taken significant steps by shipping mixed rare earth carbonate samples to major rare earth companies worldwide, validating the high-quality REE product from the Wicheeda deposit. This initiative further positions Defense Metals as a pivotal player in establishing North American rare earth supply chains, emphasizing the importance of diversified supply chains and the need for increased REE production outside China. The company's commitment to contributing to North American rare earth independence is evident through its active participation in industry conventions, such as PDAC 2024, and its ongoing efforts to progress the Wicheeda Project.

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

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## **About Defense Metals Corp.**

Defense Metals Corp. is a mineral exploration and development company focused on the development of its 100% owned, 8,301-hectare (~20,534-acre) Wicheeda REE Project that is located on the traditional territory of the McLeod Lake Indian Band in British Columbia, Canada.

The Wicheeda REE Project, approximately 80 kilometres (~50 miles) northeast of the city of Prince George, is readily accessible by a paved highway and all-weather gravel roads and is close to infrastructure, including hydro power transmission lines and gas pipelines. The nearby Canadian National Railway and major highways allow easy access to the port facilities at Prince Rupert, the closest major North American port to Asia.

Defense Metals is a proud member of Discovery Group.

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## **Energy Fuels Q2-2023: On the Pathway to Reshape America's Critical Minerals Landscape**

written by InvestorNews | March 15, 2024

In the constantly evolving world of critical minerals, every quarter brings about new promise and potential. But, when a company not only meets its benchmarks but pushes the boundaries of what's conceivable, it warrants a closer look. Energy Fuels Inc.'s (NYSE American: UUUU | TSX: EFR) Q2-2023 results have

done just that.

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# Mark Chalmers from Energy Fuels Discusses Uranium Supply Contracts with the US Government and Rare Earth Operations

written by InvestorNews | March 15, 2024

In this InvestorIntel interview during PDAC 2023, Byron W King talks to [Energy Fuels Inc.](#)'s (NYSE American: UUUU | TSX: EFR) President, CEO and Director Mark Chalmers and receives an update on Energy Fuels' rare earths, uranium, and vanadium operations. At their White Mesa Mill in Utah, Energy Fuels currently processes monazite into a rare earths carbonate that is currently shipped to a third party for further processing but Energy Fuels is building its own separation plant to move that step in-house.

Mark goes on to discuss Energy Fuels' [recently acquired](#) rare earth and heavy mineral project in Brazil to supply the raw materials needed by their White Mesa Mill in Utah for processing into high-purity rare earth carbonate and other materials.

As a leading U.S. producer of uranium and vanadium, Mark provides an update on Energy Fuels' long-term uranium supply contracts with U.S. nuclear utilities and the U.S. government to

supply the strategic U.S. Uranium Reserve. With Russia exerting a disproportionate influence over global uranium and nuclear fuel supply chains, Mark discusses how Energy Fuels is helping to secure a domestic uranium supply chain in the United States.

With a current net cash position of over \$100 million, an existing processing plant, and a portfolio of mineral projects that are important for decarbonization and electrification, Mark explains how Energy Fuels is advancing “quicker than anybody else that [he thinks] of, in the entire world and outside of China.”

Special Note: Mark Chalmers is scheduled to be a keynote speaker at the upcoming [Critical Minerals Institute Summit II, Driving to the Future, Critical Minerals for the EV Market](#), a 2-Day Event on June 14-15th at The National Club in Toronto.

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

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## About Energy Fuels Inc.

Energy Fuels is a leading US-based critical minerals company. The Company mines uranium and produces natural uranium concentrates that are sold to major nuclear utilities for the production of carbon-free nuclear energy. Energy Fuels recently began production of advanced rare earth element (“REE”) materials, including mixed REE carbonate, and plans to produce commercial quantities of separated REE oxides in the future. Energy Fuels also produces vanadium from certain of its projects, as market conditions warrant, and is evaluating the recovery of radionuclides needed for emerging cancer treatments. Its corporate offices are in Lakewood, Colorado, near Denver,

and substantially all its assets and employees are in the United States. Energy Fuels holds two of America's key uranium production centers: the White Mesa Mill in Utah and the Nichols Ranch in-situ recovery ("**ISR**") Project in Wyoming. The White Mesa Mill is the only conventional uranium mill operating in the US today, has a licensed capacity of over 8 million pounds of  $U_3O_8$  per year, has the ability to produce vanadium when market conditions warrant, as well as REE products, from various uranium-bearing ores. The Nichols Ranch ISR Project is on standby and has a licensed capacity of 2 million pounds of  $U_3O_8$  per year. The Company recently acquired the Bahia Project in Brazil, which is believed to have significant quantities of titanium (ilmenite and rutile), zirconium (zircon) and REE (monazite) minerals. In addition to the above production facilities, Energy Fuels also has one of the largest NI 43-101 compliant uranium resource portfolios in the US and several uranium and uranium/vanadium mining projects on standby and in various stages of permitting and development.

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

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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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## Energy Fuels Strengthens Its Rare Earths Supply Portfolio

written by InvestorNews | March 15, 2024

When I last discussed [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR), it was all about the working capital the Company had cobbled together to move forward. [The article](#) was entitled "Show



me the money!", a quote stolen from the movie *"Jerry McGuire"*. The reason being, following the closing of [the sale of three wholly-owned subsidiaries](#) to enCore Energy Corp. (NYSE American: EU | TSXV: EU), which together held Energy Fuels' Alta Mesa ISR Project, for total consideration of US\$120 million, the Company had accrued a war chest of roughly US\$240 million. Subsequently, Energy Fuels has converted some of its marketable U308 inventory into US\$18.5 million cash with [a deal to sell](#) 300,000 pounds of natural uranium concentrates to the US government for the establishment of a strategic uranium reserve. This is all good news but the question becomes what will the Company do with all this capital?

On Monday, we gained some insight into how Energy Fuels was going to invest some of its capital going forward to expand its uranium and rare earth business lines. As a reminder, Energy Fuels is a leading US-based critical minerals company. The Company mines uranium and produces natural uranium concentrates that are sold to major nuclear utilities for the production of carbon-free nuclear energy. Energy Fuels recently began production of advanced rare earth element ("REE") materials, including mixed REE carbonate, and plans to produce commercial quantities of separated REE oxides in the future. Energy Fuels also produces vanadium from some of its projects, as market conditions warrant, and is evaluating the recovery of radionuclides needed for emerging cancer treatments. The Company's White Mesa Mill in Utah is the only conventional uranium mill operating in the US today, has a licensed capacity of over 8 million pounds of U308 per year, and from various uranium-bearing ores, has the ability to produce vanadium when market conditions warrant, as well as REE products.

# Completes the Acquisition of Rare Earth and Heavy Mineral Project in Brazil

The latest update from Energy Fuels sheds some light on its emerging rare earths business segment. First, the Company [announced](#) that it has completed its previously announced acquisition of seventeen (17) mineral concessions between the towns of Prado and Caravelas in the State of Bahia, Brazil totaling 15,089.71 hectares (approximately 37,300 acres or 58.3 square miles). At the Closing, the Company paid the mineral owners the remaining US\$21.9 million in cash. Acquisition of the Bahia Project is expected to supply the raw materials needed by the Company's US facility for the production of advanced rare earth materials used in EVs, clean energy, and defense technologies.

Prior to closing on the Bahia Project, Energy Fuels commenced a sonic drilling program on the property to further define and quantify the heavy mineral sand resource, particularly at depth. The Company expects to finalize the Phase 1 sonic drilling at the Bahia Project this month, totaling 2,250 meters. The Company plans to announce the Phase 1 drilling results this year and start Phase 2 drilling in Q3/2023. Once data from both drill programs are available, the Company plans to engage industry leaders to calculate an initial mineral resource estimate for use in an S-K 1300 (US) compliant Initial Assessment and an NI 43-101 (Canada) compliant Technical Report.

## Expanding the White Mesa Mill

Another area Energy Fuels is deploying capital is the production of separated Neodymium-Praseodymium (NdPr) products at the White

Mesa Mill and plans for future REE separation. The Company is currently separating lanthanum ("La") and cerium ("Ce") from its commercial rare earth carbonate stream utilizing existing Mill infrastructure. Energy Fuels is proceeding with the modification and enhancement of its infrastructure at the Mill ("Phase 1") to expand its "light" REE separation facilities to be capable of producing commercial quantities of separated NdPr oxide. Earlier this year, the Company began construction on its "Phase 1" REE separation facilities, which includes modifications and enhancements to the solvent extraction circuits at the Mill. Because Energy Fuels is utilizing the existing infrastructure at the Mill, "Phase 1" capital is expected to total only about \$25 million. "Phase 1" is expected to be operational later this year or early 2024, at which point Energy Fuels believes it will be the 'first to market' among US companies with commercial quantities of separated NdPr available to EV, renewable energy, and other companies for offtake.

Granted the capital expenditures noted above will barely make a dent in Energy Fuels' war chest, it's good to see the Company prudently spending capital to advance and diversify its business. However, keep in mind this is the largest US producer of uranium. Uranium production still remains the Company's core business, and it continues to make progress on resuming production at its mines.

Energy Fuels currently trades at a market cap of approximately US\$1.13 billion (C\$1.51 billion).

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# Energy Fuels says “Show me the money!”

written by InvestorNews | March 15, 2024

One of the more famous movie quotes of all time comes from the movie “*Jerry McGuire*” (played by Tom Cruise). The scene has athlete Rod Tidwell (Cuba Gooding, Jr.) not being thrilled with Jerry’s performance as his agent, and he wants Jerry to convince him to stay on as a client. He has a simple way for Jerry to convince him to stay: “Show me the money!” Without getting further into the details, it’s a pretty funny scene if you haven’t [watched it](#). However, it culminates with Jerry yelling “Show me the money!” and he manages to retain his client. After all, it’s all about the money.

Where am I going with this? It may be a bit of a reach, but to me, the two most recent press releases from [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR) are screaming “Show me the money”. As a refresher, Energy Fuels is a leading U.S. based uranium mining company, supplying U308 to major nuclear utilities. The Company also produces vanadium from certain of its projects, as market conditions warrant, and is ramping up to full commercial-scale production of Rare Earth (RE) Carbonate. The Company’s flagship White Mesa Mill is the only conventional uranium mill operating in the U.S. today, with a licensed capacity of over 8 million pounds of U308 per year, and has the ability to produce RE Carbonate from various uranium-bearing ores. All its assets and employees are in the United States.

The first news I’m referring to is [Energy Fuels Q3 results](#), reported on Nov 4<sup>th</sup>, where a key takeaway was the US\$122.3 million of working capital, including US\$88.7 million of cash and cash equivalents and marketable securities and US\$27.3

million of inventory, including approximately 692,000 pounds of uranium and 987,000 pounds of high-purity vanadium, both in the form of immediately marketable products. Based on current spot prices, the Company's uranium and vanadium inventories have a current market value of US\$44.0 million. Other important facts include that Energy Fuels has recently secured three long-term uranium contracts with major U.S. utilities for a base quantity of 3.0 million pounds of total U308 deliveries over next 8 years (starting in 2023), and up to a total of 4.2 million pounds of deliveries, if all options are exercised. Additionally, during the nine months ended September 30, 2022, the White Mesa Mill produced approximately 205 tonnes of partially separated RE Carbonate, containing approximately 95 tonnes of high-value partially separated TREO.

This tells me that there is plenty of cash to grow the business today, as well as at least two diverse revenue streams evolving. The long-term uranium sales contracts with major U.S. nuclear utilities will see sales, and sales revenues, beginning in 2023. Plus Energy Fuels continues to make progress on rare earth elements with the announcement that they plan to install a commercial-scale "light" rare earth separation circuit within the existing footprint of the White Mesa Mill in Utah that is expected to be operational in the next 12 – 18 months. No other company in the U.S. can do the things Energy Fuels does with 'one-of-a-kind' competencies that are critical to uranium, rare earth elements, medical isotopes, and vanadium markets. The Company has the ability to process feedstocks that are naturally radioactive and recover critical materials needed for the clean energy transition.

And if that wasn't enough, Energy Fuels showed us even more money on November 14<sup>th</sup> with the [announcement](#) that it has entered into a definitive agreement to sell three wholly-owned

subsidiaries that together hold Energy Fuels' Alta Mesa ISR Project to enCore Energy for total consideration of US\$120 million. The transaction is significant for the Company, as the cash received is expected to fully finance much of the Company's uranium, REE, vanadium and medical isotope business plans for the next two to three years without diluting shareholders. For those keeping score Energy Fuels acquired Alta Mesa in 2016 for approximately US\$13.6 million of shares, and currently carries this project on its balance sheet at US\$8.2 million, so the deal represents an exceptional return on investment.

With the enCore deal expected to close by year-end or early 2023, Energy Fuels will be sitting on a war chest of roughly US\$240 million. Having already signed long-term contracts for a minimum of 3.0 million pounds of U308 starting in 2023, the Company can ramp-up uranium production at one or more of the White Mesa Mill, the Nichols Ranch ISR Project, the Pinyon Plain mine, the La Sal Complex, and/or the Whirlwind mine which total up to 2 million pounds of U308 per year of near-term production capacity. Energy Fuels is also looking to establish an ore purchasing program to secure additional feed to the White Mesa Mill, as uranium mining picks up, thereby maximizing the facility's existing 8 million pounds per year of licensed uranium production capacity. On the Rare Earth front the Company can finance the construction of RE separation infrastructure at the White Mesa Mill, including expected capacity to produce approximately 2,500 – 5,000 tonnes per year TREO capacity, including 500 – 1,000 tonnes per year of NdPr oxide or oxalate by the end of 2023 or early 2024. I have to admit that until now I've been a Cameco or bust investor when it comes to uranium. However, with the change in world dynamics (primarily Putin's senseless/vindictive action in Ukraine) and the emergence of Energy Fuels rare earth business to complement their uranium business, I'm beginning to second guess my views.

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# Rare earths expert Alastair Neill on Vital Metals

written by | March 15, 2024

“Overall Vital appears well on the way to producing commercial quantities of rare earth concentrate, a first in Canada.” – Alastair Neill, President, Critical Minerals Institute

[Vital Metals Limited](#) (ASX: VML | OTCQB: VTMXF) is an Australian listed company whose subsidiary, [Cheetah Resources](#), is developing the Nechalacho project in the Northwest Territories of Canada. The deposit was previously owned by [Avalon Advanced Materials Inc.](#) (TSX: AVL | OTCQB: AVLNF), and they sold the rights in 2019 to Cheetah for the material 150 meters above sea level. Avalon retained the rights to the basal zone deposit which is underground. The deposit is reported to have 94.7 million tonnes at 1.46% REO (0.1% Nd/Pr cutoff). The mineral hosting the rare earths is bastnaesite, which is good as this mineral has been processing successfully for many years.

Vital raised A\$45 million recently through a targeted share placement at A\$0.04 per share. According to their [press release](#) the funds will be used for:

- Finalisation of construction activities and undertake commissioning, ramp-up and operations at its Rare Earth Extraction Facility in Saskatoon, which will produce a rare earth carbonate product
- Accelerated development of Tardiff deposit at Nechalacho, Canada, including mining studies

## **A strong balance sheet for ongoing working capital requirements**

This project is the most advanced rare earth project currently in Canada. The initial focus is the North T zone which has a resource of 101,000 metric tonnes at 9.01% contained Total Rare Earth Oxides (TREO). Based on tests run at their Saskatoon rare earth extraction plant they can get a 75% recovery to produce a 43.7% concentrate. Based on this, the deposit would produce 6,825 metric tonnes of TREO which would contain 1,600 tonnes of Neodymium (Nd) and Praseodymium (Pr). Tests have been done using X-ray Transmission (XRT) to sort the ore as the ore is hosted in quartz, which is white, and the rare earth mineral which is red. This is a simple way to upgrade the TREO content at site.

There is an offtake agreement with REEtec, a Norwegian company that is developing a new rare earth separation process. The agreement is for Vital to deliver 1,000 tonnes per year (TPY) of TREO (excluding Cerium (Ce)). Based on that Ce will be eliminated before shipping the concentrate to Norway. This is a step that has been done before by Molycorp in the 1980s. It reduces the material handling by 50% and obviously the size of downstream processing equipment. The North T zone will provide 3,400 of the 5,000 tonnes which means Cheetah will have to open the Basal zone to meet the balance of the supply contract.

Looking at today's prices on Shanghai Metal Market (SMM) the separated value of this contract is over US\$286 million. Assuming Vital gets 1/3 of the value for the concentrate this would produce revenues of over US\$95 million of which US\$92 million would come from Nd/Pr. Details of the agreement are not revealed so REEtec may be a toll arrangement which could produce more revenue for Vital though I expect the initial target would be to sell La, Nd and Pr in Europe as there are customers in Europe.



Interestingly the extraction plant is located beside the Saskatchewan Research Council (SRC) which has announced that they will be building a rare earth separation facility to process monazite by 2024. SRC has two rare earth experts from China on staff. SRC is also putting in an Nd/Pr metal facility which takes the oxide to the next level in the supply chain.

In addition to the Nechalacho project, Vital has a project in Tanzania called Wigu Hill. Vital has signed a project development and option agreement with Montero Mining & Exploration Ltd. (TSXV: MON), to acquire and develop the Wigu Hill project. The Wigu Hill project is a light rare earth element deposit and consists of a large carbonite complex with bastnaesite mineralization with a NI 43-101 Inferred resource estimate of 3.3Mt at 2.6% light REOs. This is also a bastnaesite mineral.

Overall Vital appears well on the way to producing commercial quantities of rare earth concentrate, a first in Canada. Questions that do need to be answered are what are the costs of operating an open pit mine in Northern Canada and the costs to transport material to Saskatoon.

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**Greg Andrews of Search Minerals talks about their newly released rare earths**

# project PEA

written by InvestorNews | March 15, 2024

In this InvestorIntel interview with host Tracy Weslosky, [Search Minerals Inc.](#) (TSXV: SMY | OTCQB: SHCMF) President, CEO, and Director, Greg Andrews talks about the company's new [preliminary economic assessment](#) report (PEA) reporting a low CAPEX and pre-tax NPV of \$2.23B for their Deep Fox and Foxtrot Rare Earth Element (REE) deposits located in Labrador, Canada.

In the interview, which can also be viewed in full on the InvestorIntel YouTube channel ([click here](#)), Greg explains how their technology and reduction in size of the equipment and reagents resulted in very low initial capital costs reported at just \$422 million. Greg goes on to talk about how the four magnet rare earth elements present in Search Minerals' project – neodymium, praseodymium, dysprosium, and terbium – drive over 90% of the gross revenue in the PEA due to increased and ongoing demand by the permanent magnet industry.

Greg also talks about Search Minerals' other properties in its 63km district not covered in the recent PEA, including Fox Meadow where drilling is expected to commence in the fall on identified channel sample targets. He also provides an update on technological advances in the Company's innovative patented Direct Extraction Metallurgical Process that significantly reduces CAPEX and operational costs while offering a more environmentally conscientious solution for managing waste residue.

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

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## About Search Minerals Inc.

Led by a proven management team and board of directors, Search is focused on finding and developing Critical Rare Earths Elements (CREE), Zirconium (Zr) and Hafnium (Hf) resources within the emerging Port Hope Simpson – St. Lewis CREE District of southeast Labrador. The Company controls a belt 63 km long and 2 km wide and is road accessible, on tidewater, and located within 3 local communities. Search has completed a preliminary economic assessment report for **FOXTROT**, and a resource estimate for **DEEP FOX**. Search is also working on three exploration prospects along the belt which include: **FOX MEADOW**, **SILVER FOX** and **AWESOME FOX**.

Search has continued to optimize our patented Direct Extraction Process technology with support from the Department of Industry, Energy and Technology, Government of Newfoundland and Labrador, and from the Atlantic Canada Opportunity Agency. We have completed two pilot plant operations and produced highly purified mixed rare earth carbonate concentrate and mixed rare earth concentrate for separation and refining. We also recognize the continued support by the Government of Newfoundland and Labrador for its Junior Exploration Program.

Search Minerals was selected to participate in the Government of Canada Accelerated Growth Service (“AGS”) initiative, which supports high growth companies. AGS, as a ‘one-stop shop’ model, provides Search with coordinated access to Government of Canada resources as Search continues to move quickly to production and contribute to the establishment of a stable and secure rare earth element North American and European supply chain.

To learn more about Search Minerals Inc., [click here](#)

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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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## Mark Chalmers on Energy Fuels

# planned vertical integration into commercial rare earth products

written by InvestorNews | March 15, 2024

In a recent InvestorIntel interview, Tracy Weslosky spoke with Mark Chalmers, President and CEO of [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR) about developing a fully-integrated rare earths supply chain in the US with commercial scale rare earths separation capability at Energy Fuels' White Mesa Mill.

In this InvestorIntel interview, which may also be viewed on YouTube ([click here to subscribe to the InvestorIntel Channel](#)), Mark Chalmers said that Energy Fuels is currently seeking to secure additional monazite supply for their White Mesa Mill in Utah and is in advanced discussions with half a dozen monazite suppliers globally. "If we had more monazite right now, we could process it immediately into mixed rare earth carbonate," he added. With the rare earths market rising sharply, Mark went on to provide an update on Energy Fuels' collaboration with the French chemical engineering firm, Carester SAS, to support development of a downstream rare earth separation system at its operating White Mesa, Utah, uranium and vanadium processing mill.

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

## About Energy Fuels Inc.

Energy Fuels is a leading U.S.-based uranium mining company, supplying  $U_3O_8$  to major nuclear utilities. Energy Fuels also produces vanadium from certain of its projects, as market conditions warrant, and is ramping up to commercial-scale

production of REE carbonate. Its corporate offices are in Lakewood, Colorado, near Denver, and all of its assets and employees are in the United States. Energy Fuels holds three of America's key uranium production centers: the White Mesa Mill in Utah, the Nichols Ranch in-situ recovery ("ISR") Project in Wyoming, and the Alta Mesa ISR Project in Texas. The White Mesa Mill is the only conventional uranium mill operating in the U.S. today, has a licensed capacity of over 8 million pounds of  $U_3O_8$  per year, and has the ability to produce vanadium when market conditions warrant, as well as REE carbonate from various uranium-bearing ores. The Nichols Ranch ISR Project is on standby and has a licensed capacity of 2 million pounds of  $U_3O_8$  per year. The Alta Mesa ISR Project is also on standby and has a licensed capacity of 1.5 million pounds of  $U_3O_8$  per year. In addition to the above production facilities, Energy Fuels also has one of the largest NI 43-101 compliant uranium resource portfolios in the U.S. and several uranium and uranium/vanadium mining projects on standby and in various stages of permitting and development. The primary trading market for Energy Fuels' common shares is the NYSE American under the trading symbol "UUUU," and the Company's common shares are also listed on the Toronto Stock Exchange under the trading symbol "EFR."

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

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

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Any projections given are principally intended for use as objectives and are not intended, and should not be taken, as assurances that the projected results will be obtained by the Company. The assumptions used may not prove to be accurate and a potential decline in the Company’s financial condition or results of operations may negatively impact the value of its securities. Prospective investors are urged to review the Company’s profile on [Sedar.com](https://www.sedar.com) and to carry out independent investigations in order to determine their interest in investing in the Company.

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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## **Energy Fuels is now producing**

# uranium, vanadium, and mixed rare earths, a first in the world accomplishment

written by InvestorNews | March 15, 2024

Earlier this week I discussed a [rare earths and uranium 'junior'](#); but today I take a look at a uranium/vanadium and rare earths 'producer' that continues to do well over the years by navigating successfully the market's highs and lows and more recently expanding into rare earths processing/production.

The Company is [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR). Energy Fuels is [the number one uranium producer in the U.S.](#) and has the potential to become one of the lowest-cost, non-Chinese rare earth producers in the world. In its latest move the Company is looking at commercially developing a newly applied (to rare earths) technology to produce rare earth metals and alloys, a step down the supply chain and higher up the value-add chain.

Below is their stock price chart which is quite impressive given the uranium bear market from 2014 to 2021, when many uranium miners went out of business.

## Energy Fuels 5 year stock price chart



Source: [Yahoo Finance](#)

## Rare earths processing business

In the past year, Energy Fuels has expanded to also become a processor/producer of commercial mixed rare earths. Energy Fuels

is buying U.S sourced rare earths' ore and then processing it to produce a mixed rare earth carbonate using its existing, operational, White Mesa Mill. The Company [states](#): "Because our product is ready for separation into individual rare earth oxides without further processing, we are currently producing an intermediate rare earth product in a more advanced form than any other U.S. company. We will be receiving additional shipments of natural monazite sand in... 2022, and we are in advanced discussions with several monazite suppliers around the world to secure a diverse supply of feed for this exciting initiative."

### **MOU for the development of a novel technology for the production of rare earth element metals**

As [announced](#) on December 15, 2021 Energy Fuels has executed an MOU with Nanoscale Powders LLC (NSP) for the development of a newly applied technology for the production of rare earth element metals. The release [stated](#): "We believe this Technology, which was initially developed by NSP, and will be advanced by the Company and NSP working together, **has the potential to revolutionize the rare earth metal making industry by reducing costs of production, reducing energy consumption, and significantly reducing greenhouse gas (GHG) emissions.** Producing REE metals and alloys (REE Metals) is a key step in a fully integrated REE supply chain, after production of separated REE oxides and before the manufacture of neodymium iron boron (NdFeB) magnets used in electric vehicles (EVs), wind generation and other clean energy and advanced technologies..... Energy Fuels' initial investment in the Project is intended to advance the Technology to allow for: (i) the continuous, pilot-scale production of 10 kilograms per hour of neodymium-praseodymium (**NdPr**) metal that meets typical specifications for NdFeB magnets at TLR Level 7; (ii) the separate build of a batch reactor able to produce key minor magnet metals (e.g., dysprosium, terbium); and (iii) the demonstration of samarium-cobalt alloy

production....The MOU contemplates a phased development of the Project to scale-up to the production of 1,000 metric tonnes of one or more REE Metals per year. Energy Fuels will have the right to earn up to a 100% interest in the entity and Technology.”

*Note: Bold emphasis by the author.*

### **Existing uranium and vanadium business**

Energy Fuels has the largest uranium resource portfolio in the U.S. among producers, with an ability to rapidly scale up low-cost U.S. uranium and vanadium production if needed.

With the recent tight supply situation for uranium, Energy Fuels is now looking at entering again into long term uranium supply contracts. The Company [states](#): “We believe this new dynamic could create opportunities for Energy Fuels to enter into long-term supply contracts for a portion of our production with nuclear utilities at prices, quantities and other terms that generate sufficient project cashflow, all while keeping the majority of our production leveraged to further potential increases in uranium prices.”

### **Energy Fuels White Mesa Mill and a list of their businesses**



Source: [Company presentation](#)

### **Closing remarks**

The smartest mining companies these days are able to quickly adapt to price swings in the commodity markets as well as bring on new products. Even better to be able to sell value-added products and form an integrated supply chain in the USA.

In the case of Energy Fuels, they now offer investors so much more than a year ago, including:

- Uranium/vanadium production that can rapidly scale when needed from their existing mines and Mill.
- Mixed rare earths carbonate production using the White Mesa Mill.
- Potentially, in the near future, rare earth metals production using a novel production technology with their agreement to buy 100% of Nanoscale Powders LLC. If successful, Energy Fuels [believes](#) "Nanoscale's metal-making technology could be orders of magnitude safer and less expensive than the current established technology."

Finally, if we do happen to get a Russian invasion of Ukraine there is also the possibility we may get interrupted supply of Russian sourced uranium if sanctions are applied. That could potentially send uranium prices higher.

2022 looks set to be another good year for Energy Fuels. Their market cap is [US\\$1.03 billion](#) after a recent dip, so worth a look for investors wanting to gain U.S exposure to uranium, vanadium, and rare earths.