

# Global Rare Earths Market Heats Up as China Implements Export Ban

written by Tracy Weslosky | December 21, 2023

China's recent decision to ban the export of [rare earth processing technology](#) marks a significant shift in the global rare earths market. This move, aimed at protecting China's dominance in the strategic metals sector, encompasses technology for extracting and separating rare earths, as well as the production technology for rare earth metals, alloys, and some magnets. The ban has major implications for industries reliant on these materials, such as electronics, clean energy, and defense.

In response to this development, experts from the [Critical Minerals Institute](#) (CMI) have shared their insights. Melissa "Mel" Sanderson, a director at CMI, characterizes China's move as predictable and in line with their stated intentions. She stresses the importance of the United States responding proactively, emphasizing the need to advance initiatives in greener, cleaner spaces like bio-extraction, and to invest in conventional technologies. Sanderson warns of the risks of over-reliance on nations like Australia, which have their own market priorities and limitations.

The consensus among experts is clear: the recent developments serve as a crucial wake-up call for the United States, emphasizing the need to prioritize technological advancements, particularly in sustainable sectors. They stress the importance of investing in traditional processing and separation technologies to prevent limitations in capacity. CMI Director [Peyton Jackson](#) further elaborates, "The U.S. government [granted](#)

Lynas Rare Earths Ltd. (ASX: LYC) \$300 million for a project feasibly achievable with just \$30 million invested at White Mesa Utah. Production at White Mesa is expected to begin in January 2024, as scheduled. This exemplifies a vital point: often, solutions are more straightforward than they initially seem. It falls upon us to bring attention to these simpler, yet effective, approaches.”

CMI Co-Chair [Jack Lifton](#) comments: “The ban will impact mostly non-Chinese countries that are building rare earth processing and fabricating facilities de novo. Western companies, such as Solvay, Neo Performance (Sil-Met), and Lynas have been efficiently separating rare earths for some time. America’s MP and Energy Fuels are either re-starting and/or modifying existing solvent extraction processing systems to handle rare earth separations. Solvent extraction separation is a long-established practice everywhere. The issue is the production of rare earth metals and alloys and from them of rare earth permanent magnets. This is where China’s massive lead in manufacturing technology may be insurmountable. Time will tell.”

In this context, [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR), a frontrunner in the industry, has embarked on an ambitious project. Jack Lifton explains: “Energy Fuels has begun construction of an up-to-date solvent extraction system with an initial capacity of 1000 tons per year of the total rare earths contained in monazite. The SX plant, designed in-house, will be among the world’s most streamlined and efficient. It will require only a fraction of the traditional number of mixer-settler stations today considered ‘necessary’ for a legacy SX system. The payable product of the EF system will be separated NdPr, also known as didymium. This first phase plant will produce enough NdPr per year for the production of 700 tons of neodymium-iron-boron type rare earth permanent magnets. Energy Fuels phase one SX plant will be operational on or before May 1,

2024.”

The ban on the export of rare earth processing technology by China and the proactive steps taken by companies like Energy Fuels underscore a larger issue: the strategic importance of rare earth elements and the technological independence of nations. The insights from CMI directors, combined with the initiatives of industry players like Energy Fuels, suggest a path forward for the U.S. to increase investment in both green and conventional technologies. This strategy is essential not only to address the immediate challenges posed by China’s policy change but also to pave the way for a more sustainable and secure future in the rare earths and broader critical minerals sector.

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## **Setback for U.S. Rare Earth Industry: China Tightens Export Laws on Key Technologies, Impeding American Efforts to Gain Independence Despite Financial Incentives**

written by Jack Lifton | December 21, 2023

Bad news for those who think that the shortage of rare earth

processing in America can be resolved by the injection of “free” money (A/K/A subsidies [also known as taxpayer’s money]) into the “free” market as, drum roll, please, “tax credits,” grants, and loans. The Chinese have decided not to give up their decades-long, learned by trial and error as much as by science and engineering, dominance in rare earth processing. China has announced a (further) tightening of its strict laws against the export of rare earth themed industrial technology. In particular, this means that technologies for producing rare earth metals, alloys and MAGNETS may not be shared with ANY foreign (to China) entity as a matter of national security!

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## **Ucore’s Strategic Leap: Pat Ryan Discusses the First Mover Advantage in Rare Earths Processing at Louisiana’s Strategic Metals Complex**

written by InvestorNews | December 21, 2023

In a recent InvestorNews interview with host Tracy Weslosky, Pat Ryan, Chairman and CEO of [Ucore Rare Metals Inc.](#) (TSXV: UCU | OTCQX: UURAF), shared insights into the company’s latest strategic developments, particularly focusing on the Louisiana Strategic Metals Complex (LA-SMC) discussed in Ucore’s most recent [news release](#). Central to Ucore’s progress is the support from Louisiana Governor Jon Bel Edwards, who has played a pivotal role in advancing the LA-SMC project through the

execution of a contract for exemption of ad valorem taxes. This move is part of a larger \$15 million incentive package from Louisiana Economic Development and is expected to yield an estimated \$8.2 million in tax savings over ten years, significantly aiding the project's progression.

The recent visit by Ucore's team to the Kingston, Ontario, RapidSX™ Demo Plant marks a key step in the transition process of replicating the plant's technology in Louisiana. This initiative is part of Ucore's broader strategy to establish a strong operational base in North America, positioning itself as a critical player in the rare earth processing industry.

Additionally, Ryan discussed the potential collaborations Ucore is exploring with both government support in [the US](#) and [Canada](#); along with various industries, emphasizing the company's focus on strengthening the supply chain for metal alloy making and catering to sectors such as automotive, wind energy, and national defense.

Also in the interview, there was a discussion surrounding feature coverage of Ucore in a Reuters' [article](#) titled *Insight: Western start-ups seek to break China's grip on rare earths refining*, dated December 4, 2023, Ucore Rare Metals stands out for its innovative approach in the rare earths sector. Ucore aims to revolutionize rare earths processing by mid-2025 using RapidSX technology, which is touted to be thrice as fast as the traditional solvent extraction process, without generating hazardous chemical waste, and requiring significantly less physical space. Ucore's initiative is a part of a broader movement among Western companies to establish a non-Chinese supply chain for these critical minerals, essential for numerous electronic devices and the clean energy transition.

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

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## About Ucore Rare Metals Inc.

Ucore is focused on rare- and critical-metal resources, extraction, beneficiation, and separation technologies with the potential for production, growth, and scalability. Ucore's vision and plan is to become a leading advanced technology company, providing best-in-class metal separation products and services to the mining and mineral extraction industry.

Through strategic partnerships, this plan includes disrupting the People's Republic of China's control of the North American REE supply chain through the near-term development of a heavy and light rare-earth processing facility in the U.S. State of Louisiana, subsequent Strategic Metal Complexes in Canada and Alaska and the longer-term development of Ucore's 100% controlled Bokan-Dotson Ridge Rare Heavy REE Project on Prince of Wales Island in Southeast Alaska, USA.

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*in the Company.*

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# **The Critical Minerals Institute's Jack Lifton on Vital Metals, the SRC and Ionic Clays and Rare Earths**

written by InvestorNews | December 21, 2023

In this InvestorIntel interview, Tracy Weslosky talks with Critical Minerals Institute's (CMI) Co-Chairman Jack Lifton attempts to explain what Vital Metals Limited's recent announcement about "pausing all construction-related activities at the Saskatoon processing facility" means. Clarifying and reinforcing what the Saskatoon Research Council (SRC) has stated online, we would like to redirect our audience to the SRC website where they state: "SRC wants to clarify that its Rare Earth Processing Facility currently under construction is on schedule and on budget and will be fully operational by the end of 2024."

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## **Pat Ryan of Ucore Rare Metals**

# Discusses Rare Earths Processing and Innovation in North America

written by InvestorNews | December 21, 2023

In this InvestorIntel interview during PDAC 2023, Byron W King talks to [Ucore Rare Metals Inc.](#)'s (TSXV: UCU | OTCQX: UURAF) CEO and Chairman Pat Ryan about an update on Ucore's RapidSX™ Demonstration Plant for the separation of heavy and light rare earth elements. With a focus on high-margin midstream processing, Pat discusses Ucore's RapidSX™ technology platform that can process rare earths and produce output that is 3-5 times greater than conventional solvent extraction in addition to reducing the CAPEX and OPEX.

As Ucore is focused on critical metal separation and refining in North America, particularly for heavy rare earths, Pat provides an update as Ucore shifts from its commercial demo plant in Kingston, Ontario to a planned Strategic Metals Complex in the state of Louisiana after receiving a \$15 million incentive package from Louisiana Economic Development. He mentions the new Louisiana facility is targeted for operations by the end of 2024.

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

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## About Ucore Rare Metals Inc.

Ucore is focused on rare- and critical-metal resources, extraction, beneficiation, and separation technologies with the potential for production, growth, and scalability. Ucore has an

effective 100% ownership stake in the Bokan-Dotson Ridge Rare Earth Element Project in Southeast Alaska, USA. Ucore's vision and plan is to become a leading advanced technology company, providing best-in-class metal separation products and services to the mining and mineral extraction industry.

Through strategic partnerships, this plan includes disrupting the People's Republic of China's control of the North American REE supply chain through the near-term development of a heavy and light rare-earth processing facility in the US State of Louisiana, subsequent SMCs in Alaska and Canada and the longer-term development of Ucore's heavy-rare-earth-element mineral-resource property at Bokan Mountain on Prince of Wales Island, Alaska.

To learn more about Ucore Rare Metals 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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# **Can Americans learn to love mining critical minerals to get them to the green transformation?**

written by Melissa (Mel) Sanderson | December 21, 2023

Democratic Senator Joe Manchin from West Virginia is, let's face it, controversial. His stances on key issues frequently run counter to the majority of his party, and he has blocked key Democratic goals, most notably to abolish the filibuster, which

would have enhanced the Democrats ability to pass legislation through the Senate. This hasn't endeared him to most Democratic voters nor to the Party leadership – but he doesn't seem to care. Joe knows how the game is played.

Most recently, for instance, he dickered hard on a deal to advance a key personal objective. President Biden and the Democrats desperately needed to pass the [Inflation Reduction Act](#) which, name notwithstanding, actually has a lot to do with supporting research around rare earths processing, among other things. In exchange for voting “aye” and effectively passing the legislation, Joe negotiated a back-door deal exchanging his vote for support for a Bill he has drafted going much further much faster than the Democrats are comfortable with going for the extractive industries writ large.

Known as the ‘[Energy Independence And Security Act of 2022](#),’ the EISA Bill attempts to make some common sense changes to the existing regulatory regime around permitting new mines in the US. Currently, it takes an average of 10 years to complete the permitting process and that's IF there is no significant social opposition or environmental complications. It can take longer and of course permits can be refused as well. More frequently, however, government agencies prefer stalling an application until prevailing contrary winds dissipate or the company withdraws the request. It's important to note, however, that COVID has certainly contributed to the lag time on US permitting. Many agencies, including Environmental Protection, Forestry and Fish and Game, all key players in the regulatory framework, had previously suffered serious staffing reductions, either due to budget cuts or employee burnout – and then there was the shutdown. So even with the best of intentions, it's hard to catch up.

EISA attempts to shorten that permitting wait time to two years.

It does this mainly by instructing the plethora of Federal agencies to work together and simultaneously (versus the current sequential process) and on one submission (versus currently requiring companies to present unique requests to individual Agencies). It also sets a series of response deadlines for Agencies to revert to companies with questions or requests for additional information – and most of those deadlines are 180 days. It also gives Governors the power to further streamline the process by identifying a project as essential, while encouraging Federal Agencies to more closely cooperate with their State counterparts.

Sounds pretty pragmatic and common sensical, right? Maybe not so much.

At the very end of the Bill, Manchin has language in which Congress essentially mandates approval of the Mountain Valley Pipeline within 30 days of passage of the legislation. This timebomb risks derailing the entire Bill – but it also likely is the reason for the Bill itself. Manchin has been a long-time supporter of the pipeline and some of his biggest and most reliable contributors are financial backers of the project. But this pipeline is immensely unpopular with a variety of NGOs who had already mobilized against it and therefore a tidal wave of opposition hit the Democrats, derailing Manchin's strategy to attach his Bill to the Continuing Resolution to fund US government operations.

A steady drumbeat of misinformation has begun, playing on Americans' collective dislike of mining in general and new mines in particular. Although the Bill specifically mentions retaining prevailing environmental standards and regulations, NGOs are alleging the Bill will "gut" hard-won environmental legislation. Especially in the runup to what promises to be hotly contested mid-term elections, and with control of the Senate hanging in

the balance (and possibly the Hill as well, if things go badly for the Dems), it's unlikely that the Bill even will be put forth for a hearing until after November 8.

The real question, however, isn't whether Joe Manchin will find a way to get this job done – I think he will, he's too able a trench warrior to fail.

The real question is whether Americans are capable of understanding that without new mining of rare earths and critical minerals (including copper) in the US, it will be virtually impossible to realize either the [Green Economic transformation](#) or national security imperatives. Everyone wants to [bash China](#) but no one wants to admit that modern mining isn't your granddad's mine. Americans (collectively) don't want to admit that, thanks to new technologies, strong environmental legislation and intense social media scrutiny, US mines are among the cleanest and safest in the world.

NIMBY huh? Well, Hurricane Ian is yet another reminder that if humans don't change their ways and truly transform our economies, we might have a lot more to worry about than whether a new rare earth, lithium or copper mine is getting permitted in America.

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## **Ucore targets to fill the processing gap in a Western**

# rare earths supply chain by 2024

written by InvestorNews | December 21, 2023

As most investors familiar with the critical materials sector know, China currently dominates the space, especially in downstream critical materials 'processing'. This leaves the Western world very vulnerable to supply chain interruptions that can threaten the supply of end-user products such as electrical and electronic components, electric vehicles, wind turbines, solar panels, and/or military systems.

Today's company, [Ucore Rare Metals Inc.](#) (TSXV: UCU | OTCQX: UURAF) (Ucore), is working to bridge that gap, domestically, and become a USA 'processor' first of the rare earths, and ultimately of other key critical materials. They also plan to be a vertically integrated individual, separated, heavy rare earths producer.

Ucore is focused on initially developing an Alaska-based Strategic Metals Complex (SMC) rare earths' central processing facility with commissioning targeted for 2024. After that Ucore plans to develop its own magnet rare earths' deposit located on Bokan Mountain on Prince of Wales Island, Alaska. The ultimate plan for Ucore is to have their Bokan-Dotson Ridge REE Project – containing the heavy rare earths' Dysprosium (Dy), Terbium (Tb) & Yttrium (Y) – feed their first, Alaska located, SMC processing facility. The underlying technology for this and other planned SMCs is the RapidSX™ REE separation technology platform, which will be operated by Ucore's wholly owned subsidiary, Innovation Metals Corp. (IMC).

**Ucore plans to fill the processing gap in creation of a Western rare earths supply chain with their SMC facilities**



Source: [Ucore news January 2022](#)

A key part of getting the Alaskan SMC processing facility up and running is to secure material supply agreements. The facility will have an initial 2,000 tpa total rare earth oxide (TREO) separation and purification capacity, ramping to at least 5,000t/year TREO by 2026.

### **Feedstock agreements are progressing well for Ucore's planned Alaskan SMC processing facility**

[In October 2021](#) Ucore signed a non-binding Memorandum of Understanding (MOU) with [Vital Metals Limited](#) (ASX: VML | OTCQB: VTMXF) for the supply of a mixed rare earth carbonate, beginning H1 2024. The deal is for "Vital to sell to Ucore a minimum of 500t REO (ex-cerium)/year, commencing H1 2024. Vital to expand production to support a minimum of 50% of Ucore's envisioned 5,000t TREO/yr processing capability by 2026."

It also was [announced last week on April 20, 2022](#), that Ucore and Germany's ThyssenKrupp Materials Trading had executed a feedstock supply MOU for the Alaska SMC. Under the MOU "ThyssenKrupp Materials Trading is expected to begin the supply of a minimum of 1,000 tpa of mixed rare earth carbonate to Ucore in 2024 for ten years." The announcement also states that the non-binding MOU allows for increasing quantities in subsequent years and that the two parties will work towards a 10-year binding contract.

The above MOU is a great achievement and positive endorsement for Ucore, as ThyssenKrupp Materials Services is [the biggest mill-independent materials distributor](#) and services provider in the Western world with around 380 locations, in more than 30 countries.

The loud and clear message for investors is that Ucore is putting together a North American individual rare earths supply chain from mixed rare earths carbonate (concentrate) all the way to the final product of separated individual rare earth oxides, used to make rare earth metal alloys (including magnets) such as those required for many critical and green energy products. It will be a key initial step for the USA to gain rare earths processing independence from China, which currently dominates the sector.

### **Ucore is also developing processing technology for other critical metals in Ontario**

As [announced](#) on April 19, 2022 Ucore is improving the management and technical team for their Ontario RapidSX™ Commercialization and Development Facility (CDF). The demonstration plant construction is ongoing and is scheduled for commissioning in mid-2022.

What I find most interesting is that Ucore is also working on nickel laterite ore processing technologies as well as lithium-ion battery recycling, including working with clients such as Li-Cycle Holdings Corp.

Full details on Ucore's 2022 plans can be read [here](#) and include:

- A commercial demonstration plant for their RapidSX™ technology in Ontario.
- Development of the Alaska SMC Project.
- Exploring the potential of developing an SMC in Canada.
- Accelerating the development of the Bokan Project as a vital US supply chain component to provide a long-term secure source of HREEs; the most expensive and scarce inputs of the permanent magnet alloys.

**Ucore's business summary – Includes a target for construction of**

the Alaska SMC by 2023, subject to finance



Source: [Ucore Rare Metals Inc. website – Alaska 2023](#)

### Closing remarks

The Western world needs to develop its own complete end-to-end supply chains for critical strategic metals. In the case of rare earths, Ucore is advancing well and steadily moving towards becoming a U.S. individual separated rare earths producer by 2024, all going to plan. Of course, investors should remember these dates are the best guide from the company only and are subject to variables such as successful funding.

Ucore Rare Metals Inc. trades on a market cap of [C\\$37 million](#). Ucore still has a long way to go with several hurdles and risks ahead, partially explaining the very low market cap. Still, if they succeed the potential reward could be significant.

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# Chinese Dominance of Rare Earths Sets off Alarm Bells in Washington

written by InvestorNews | December 21, 2023

In this episode of InvestorIntel's **Critical Minerals Corner with Jack Lifton**, Jack talks about geopolitical issues with China and how regionalism is going to affect not just the interest and demand for rare earths, but for all critical minerals.

In this InvestorIntel video, which may also be viewed on YouTube ([click here to subscribe to the InvestorIntel Channel](#)), Jack went on to say that the Chinese dominance of the rare earths space has set off alarm bells not just in the US but also in EU and Canada. “I see the security of the supply of critical materials becoming a regional issue in this world,” he added. Jack highlighted that Canada is going ahead faster than the US in the critical materials space by developing several rare earths deposits for production and building the first full-scale rare earths separation plant in Saskatchewan.

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