

Energy Fuels Achieves Commercial Production of 'On-Spec' Separated Rare Earths at its White Mesa Mill in Utah, While Simultaneously Advancing Uranium Production

written by Raj Shah | June 10, 2024

June 10, 2024 ([Source](#)) – Energy Fuels Inc. (NYSE American: UUUU) (TSX: [EFR](#)) (“**Energy Fuels**” or the “**Company**”), a leading U.S. producer of uranium, rare earth elements (“**REEs**”), and vanadium, is pleased to announce that it has achieved commercial production of separated neodymium-praseodymium (“**NdPr**”) at its White Mesa Mill in Utah (the “**Mill**”). Critically, the NdPr produced by Energy Fuels’ meets the applicable product specifications of REE metal-makers, who specialize in the manufacture of REE-based alloys required for the permanent magnets widely used for electric motors in both battery powered electric vehicles (“**EVs**”) and dual power hybrids. Further, this ‘on-spec’ NdPr is now able to be produced by Energy Fuels at the full design capacity of its new Phase 1 REE separation circuit (850 to 1,000 metric tons (“**tonnes**”) of NdPr per year). The Company expects to have commercial quantities of separated NdPr available for shipment by the end of June 2024. Energy Fuels believes this is the first time in several decades that a U.S. company has produced on-spec separated REE’s from monazite on a commercial scale.

The Company is extracting, refining and separating the NdPr from monazite produced by The Chemours Company (“**Chemours**”) at its

heavy mineral sand (“HMS”) operations in Florida and Georgia. Energy Fuels began piloting REE separations in 2021, and later performed partial REE separations in 2022 and 2023. The Company used this experience, having compiled several years of real-time data, to custom design and construct its new Phase 1 REE separation circuit at the Mill, which is now operating as designed. The Company would also like to highlight both the speed at which the circuit has reached full design capacity, and the fact that it has not experienced complications with start-up, which are so typical with the commissioning of new equipment and processes. Energy Fuels also completed construction of its Phase 1 REE Separation Circuit in Q1-2024 for a total cost of only about \$16 million, which was significantly under the original budget of \$25 million and a further testament to the capabilities of the Mill and the years of solvent extraction (“SX”) experience and technical expertise of Mill personnel. Also of note, the addition of REE separation processes has not hindered the ability or capacity of the Company to produce uranium at the Mill, and preparations are being made to commence a uranium ore and alternate feed uranium-bearing material processing campaign in Q3-2024.

During Q2-2024, the Company expects to produce about 25 to 35 tonnes of on-spec, separated NdPr from the monazite Energy Fuels has in inventory at this time. From the new circuit, Energy Fuels also expects to produce a samarium-plus (“Sm+”), “heavy” REE concentrate, while also recovering the contained uranium from the monazite feed stocks. The Company expects to utilize this Sm+ concentrate to continue pilot-scale dysprosium (“Dy”) and terbium (“Tb”) separation and to design SX circuits at the Mill able to produce these “heavy” REE products in separated individual forms at the specifications required for metal and alloy making. Currently, there is no company in the Western Hemisphere capable of commercially producing separated, on-spec

Dy, Tb, or other “heavy” REE products. NdPr, Dy, and Tb are known as the “magnet” REE’s, as they are key and necessary ingredients in the powerful magnets used in the most efficient EVs, dual power hybrid vehicles, direct-drive wind energy, military and defense technologies, and other clean energy applications.

Following completion of NdPr production at the Mill in Q2-2004, the Company expects to begin processing uranium ore and alternate feed materials from our current stockpiles, resulting in the expected production of 150,000 to 500,000 pounds of U_3O_8 during 2024, with production ramping up further in 2025. As previously announced, Energy Fuels has also acquired, or is in the process of acquiring, several HMS projects to secure monazite, which we believe will be globally cost-competitive, to supply future REE separation at the Mill. This includes the Bahia Project in Brazil that the Company acquired in February 2023, the Donald Project joint venture that the Company announced on June 3, 2024, and the pending acquisition of Base Resources and the Toliara Project in Madagascar, which in aggregate have the potential to make Energy Fuels one of the largest separated REE producers in the world. The Company expects to receive material quantities of monazite from these projects commencing as early as 2026. In the meantime, the Company plans to focus operations on an aggressive campaign of uranium production during the second half of 2024, all of 2025, and thereafter to supply U.S. uranium into the Company’s portfolio of uranium contracts with U.S. nuclear utilities, in addition to additional spot and contract sales into uranium market strength.

MARK S. CHALMERS, PRESIDENT AND CEO OF ENERGY FUELS STATED:

“We have achieved a significant milestone for the Energy Fuels, for Utah, and for the United States: the commercial production

of separated rare earths that meet applicable product specifications, while simultaneously ramping up domestic uranium production aggressively. I wish to congratulate the entire team at the White Mesa Mill for bringing commercial rare earth separation capabilities and expertise back to the United States, and for achieving this major accomplishment ahead of schedule and under budget. With this announcement, Energy Fuels can confirm the return of separated rare earth production from monazite back to the United States after a multi-decade absence, in addition to the return of technological know-how and expertise in this extremely important field that is critical to national and economic security.

“Due to the overwhelming success of Energy Fuels’ Phase 1 REE separation project, Energy Fuels can now continue to advance its rare earth initiatives with an extremely high degree of confidence. This includes a potential expansion of standalone rare earth separation capabilities at the Mill to 4,000 to 6,000 tonnes of NdPr per year, along with 150 to 225 tonnes of Dy, and 50 to 75 tonnes of Tb, through development of our planned Phase 2 and Phase 3 REE separation circuits. While our recently commissioned Phase 1 Separation circuit is globally significant and would rank the Company as one of the leading producers of separated REEs in the world outside of China, our planned Phase 2 and Phase 3 Separation Circuits would truly be world-class. In addition, we are building a world-class portfolio of heavy mineral sand assets to control our supply of low-cost monazite. We are also ramping-up pilot testing on ‘heavy’ rare earth separation, with a focus on Dy and Tb. Due to knowledge gained from NdPr, we are confident we will be able to produce on-spec Dy, Tb, and any other separated rare earth products and to design, engineer, permit, construct and commission our Phase 2 and Phase 3 REE separation circuits within budget and time-frame expectations. Our capital investments in the planned Phase 2 and

Phase 3 REE separation circuits will be conditional on receipt of suitable customer and/or government backing in the form of supply agreements, offtake agreements and/or financial support. We believe we are in an enviable position to secure this support, based on our proven rare earth processing, refining and separation capabilities and the world-class monazite supply chain we have secured and are securing. I am very pleased that all things are coming together and that we are emerging as a leading U.S. rare earth producer, *in addition to* advancing our position as a U.S-leading producer of uranium and vanadium.

“Once we conclude this run of separated NdPr, we plan to focus on the processing of our substantial stockpiled uranium ore and alternate feed material inventories at the Mill and the continued ramp-up of our uranium mining, production and sales. At the same time, we plan to design and permit a world-class expansion of REE separation at the Mill – which is only about four to six times greater than what we have already achieved. Importantly, we will also continue to market our REE products to customers and evaluate government funding collaborations.”

ABOUT ENERGY FUELS

Energy Fuels is a leading US-based uranium and critical minerals company. The Company, as a leading producer of uranium in the United States, 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 REE materials, including mixed REE carbonate in 2021, and commenced production of commercial quantities of separated REEs in 2024. 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, and 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 and entered into a joint venture agreement to develop the Donald Project in Australia, each of 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 in production, 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." Energy Fuels' website is www.energyfuels.com.

Cautionary Note Regarding Forward-Looking Statements: This news release contains certain "Forward Looking Information" and "Forward Looking Statements" within the meaning of applicable United States and Canadian securities legislation, which may include, but are not limited to, statements with respect to: any expectation that the Company will maintain its position as a leading U.S.-based uranium and critical minerals company or as the leading producer of uranium in the U.S.; any expectation as to production levels or timing or duration of

production from the Bahia Project, the Donald Project, the Toliara Project or any of the Company's other mines or projects; any expectation as to costs of production at the Bahia Project, the Donald Project, the Toliara Project or any of the Company's other mines or projects, or that the Company will secure monazite at globally competitive costs; any expectation that the Company may be successful in entering the REE metal, alloy, and/or magnet-making space; any expectation that the addition of REE production will not diminish in any way the Company's U.S. leading uranium production capabilities; any expectation that any ore reserves estimated to date will accurately reflect actual reserves or resources; any expectation that the Company will be successful in advancing its REE initiatives or that it will be successful in installing REE production capacity at the Mill and the timing of installation of any such production capacity; any expectation that the Company's REE and other products will and will continue to meet commercial specifications; any expectation as to when the Company will have commercial quantities of separated NdPr available for shipment; any expectation that the Company's planned Phase 2 and Phase 3 separation circuits will be developed and if developed would be world-class; any expectation that the Company's planned Phase 2 and Phase 3 separation circuits if developed, would be developed within budget and time-frame expectations; any expectation as to the success of the Company's permitting programs; any expectation that the Company's proposed acquisition of Base Resources and the Toliara project will be completed or if completed, completed on the terms and time proposed; any expectation that the Company will be able to secure commitments for satisfactory offtake and/or sales agreements for REEs produced from monazite at the Mill; any expectation that Energy Fuels will be successful in obtaining suitable supply agreements, offtake agreements and/or financial support from customers and/or governments, to justify development of the

planned Phase 2 and Phase 3 separation circuits, or at all; any expectation that the Company is emerging as a leading U.S. rare earth producer, in addition to advancing its position as a U.S.-leading producer of uranium and vanadium; any expectation that the Bahia Project and Donald Project will be developed and proceed to production; and any expectation that the Company will be successful in acquiring Base Resources or that the Toliara Project will be developed and proceed to production. Generally, these forward-looking statements can be identified by the use of forward-looking terminology such as "plans," "expects," "does not expect," "is expected," "is likely," "budgets," "scheduled," "estimates," "forecasts," "intends," "anticipates," "does not anticipate," or "believes," or variations of such words and phrases, or state that certain actions, events or results "may," "could," "would," "might" or "will be taken," "occur," "be achieved" or "have the potential to." All statements, other than statements of historical fact, herein are considered to be forward-looking statements. Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements express or implied by the forward-looking statements. Factors that could cause actual results to differ materially from those anticipated in these forward-looking statements include risks associated with: commodity prices and price fluctuations; engineering, construction, processing and mining difficulties, upsets and delays; permitting and licensing requirements and delays; changes to regulatory requirements; legal challenges; the availability of feed sources for the Mill; competition from other producers; public opinion; government and political actions; the failure of the Company to provide or obtain the necessary financing required to develop the Bahia Project, the Donald Project, the Toliara project or any of the Company's other projects or

initiatives; available supplies of monazite; the ability of the Mill to produce rare earth carbonate, rare earth elements or other rare earth element products to meet commercial specifications on a commercial scale at acceptable costs or at all; market factors, including future demand for uranium, rare earth elements and heavy mineral sands; the ability of the Mill to be able to separate radium or other radioisotopes for cancer treatments at reasonable costs or at all; market prices and demand for medical isotopes; and the other factors described under the caption "Risk Factors" in the Company's most recently filed Annual Report on Form 10-K, which is available for review on EDGAR at www.sec.gov/edgar.shtml, on SEDAR at www.sedar.com, and on the Company's website at www.energyfuels.com. Forward-looking statements contained herein are made as of the date of this news release, and the Company disclaims, other than as required by law, any obligation to update any forward-looking statements whether as a result of new information, results, future events, circumstances, or if management's estimates or opinions should change, or otherwise. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, the reader is cautioned not to place undue reliance on forward-looking statements. The Company assumes no obligation to update the information in this communication, except as otherwise required by law.

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