Energy Fuels' US-Produced "Heavy" Rare Earth Oxide Successfully Qualified for Use in Permanent Magnets

written by Raj Shah | December 19, 2025

The Company's 99.9% purity dysprosium oxide produced at its White Mesa Mill in Utah passes initial purity and QA/QC processes of major South Korean permanent magnet manufacturer; terbium and potentially samarium oxide production expected in early 2026.

December 19, 2025 (Source) – Energy Fuels Inc. (NYSE: UUUU) (TSX: EFR), a leading U.S. producer of critical materials, including uranium and rare earth elements (REEs), today announced that its high purity dysprosium (Dy) oxide has passed all initial purity and quality assurance and quality control (QA/QC) benchmarks of a major South Korean automotive manufacturer for downstream rare earth permanent magnet (REPM) production.

Dy oxide is a key additive in neodymium-iron-boron (NdFeB) REPMs that improves durability and magnetic performance and is used in REPMs to power electric vehicles (EVs), hybrid EVs, advanced robotics, and other automotive and commercial applications. Dy oxide is also key to the manufacture of REPMs used in several crucial defense systems, including drones, missiles, jet engines, and guidance systems, as well as in control rods for Naval reactors.

Mark S. Chalmers, CEO of Energy Fuels stated: "Production of dysprosium oxide that meets stringent magnet specifications is

yet another key milestone in the Company's critical materials strategy, demonstrating Energy Fuels' unique and rapidly expanding capabilities in the rare earth sector, and in particular our ability to produce high-purity separated 'heavy' rare earth oxides from monazite at our White Mesa Mill in Utah. This achievement is even more notable by the fact our dysprosium oxide was validated by a well-known third-party end-user. I commend our creative and hardworking team at the Mill for this impressive accomplishment."

Today's announcement follows Energy Fuels' September 9, 2025 news that its NdPr oxide, another key ingredient in REPMs, has also been qualified for use in NdFeB magnet applications. As a result, we believe Energy Fuels is the first U.S. company to have both its "light" and "heavy" REEs qualified for use in permanent magnet applications, marking a major milestone in rebuilding the US rare earth supply chain. Production and qualification of Dy oxide is a significant milestone for the United States and Energy Fuels, and critical for U.S. national defense, as the supply of Dy oxide and other "heavy" REE oxides is extremely limited outside of China. In April 2025, China imposed export controls on seven (7) rare earths, including Dy, Tb, and Sm, which remain in place today.

As previously announced, the Company produced its first kilogram of Dy oxide at the White Mesa Mill in August 2025. To date, the Company has produced approximately 29 kgs of high-purity Dy oxide at pilot scale, achieving purities of 99.9% which exceed the automotive specification of 99.5% purity.

Upcoming Terbium (Tb) and Samarium (Sm) Pilot Production:

The Company is also pleased to announce that it plans to begin piloting terbium (Tb) oxide production at the White Mesa Mill next week and expects to have kilogram-scale samples available

for qualification in early 2026. Tb oxide is another essential element that is crucial for high operating temperature REPMs for EVs and many key defense systems.

Following the Tb oxide pilot, Energy Fuels plans to begin piloting gadolinium (Gd) and then samarium (Sm) oxide production. Sm is a key ingredient in samarium-cobalt (SmCo) magnets used in radar, sonar, missile guidance, and jet engines where magnet stability in extreme temperatures is paramount.

Commercial-Scale "Heavy" Rare Earth Production as Soon as Q4-2026:

As a result of the Company's successful ongoing "heavy" REE pilot, Energy Fuels is proceeding with plans for construction of the infrastructure needed to produce Dy, Tb, and potentially Sm oxides at commercial scale at the White Mesa Mill. These "heavy" REE refining circuits are planned to have the annual capacity to produce up to 48 metric tons (tonnes) of Dy oxide and 14 tonnes of Tb oxide, subject to available feed.

About Energy Fuels

Energy Fuels is a leading U.S.-based critical materials company, focused on uranium, REEs, heavy mineral sands, vanadium and medical isotopes. Energy Fuels, which owns and operates several conventional and in-situ recovery uranium projects in the western United States, has been the leading U.S. producer of natural uranium concentrate for the past several years, which is sold to nuclear utilities that process it further for the production of carbon-free nuclear energy. Energy Fuels also owns the White Mesa Mill in Utah, which is the only fully licensed and operating conventional uranium processing facility in the United States. At the Mill, Energy Fuels also produces advanced REE products, vanadium oxide (when market conditions warrant), and is evaluating the potential recovery of certain medical

isotopes from existing uranium process streams needed for emerging Targeted Alpha Therapy cancer treatments. Energy Fuels is also developing three (3) heavy mineral sands projects: the Toliara Project in Madagascar; the Bahia Project in Brazil; and the Donald Project in Australia in which Energy Fuels has the right to earn up to a 49% interest in a joint venture with Astron Corporation Limited. Energy Fuels is based in Lakewood, Colorado, near Denver. The primary trading market for Energy Fuels' common shares is the NYSE American under the trading symbol "UUUU," and its common shares are also listed on the Toronto Stock Exchange under the trading symbol "EFR." For more information on all Energy Fuels does, please visit http://www.energyfuels.com

CAUTIONARY STATEMENT 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's pilot scale production of heavy REEs will continue to be successful; any expectation of the purity of any of the REE or heavy REE oxides to be produced at the Mill; any expectation as to the timing of pilot and/or commercial scale production of REE or heavy REE oxides at the Mill; any expectation that the Company will install and commission commercial Dy, Tb, and potentially other "heavy" REE separation capacity at the White Mesa Mill in 2026, or at all; any expectation that market conditions may support rare earth production; any expectation as to the Company's production capacity or expected timelines to production; any expectation as to estimated recoverable REE oxides; any expectation that any of the Company's development projects will be brought into commercial production; and any expectation that the Company will be successful at recovering certain medical

isotopes from existing uranium process streams needed for emerging Targeted Alpha Therapy cancer treatments. 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 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; competition from other producers; government and political actions or inactions; market factors, including future demand for REEs, titanium and zirconium; 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 Energy Fuels 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. Energy Fuels assumes no obligation to update the information in this communication, except as otherwise required by law.

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