Neo Performance Materials and Energy Fuels Announce Joint Launch of U.S.-European Rare Earth Production Initiative

written by Raj Shah | March 2, 2021

March 1, 2021 (Source) – *Separated Rare Earth Products Produced in Europe from U.S.-Sourced Feedstock is Expected to Strengthen and Diversify U.S. and European Rare Earth Supply Chains*

Neo Performance Materials (TSX: NEO) ("**Neo**") and Energy Fuels Inc. (NYSE American: UUUU) (TSX: EFR) (**"Energy Fuels"**) are pleased to announce a new rare earth production initiative spanning European and North American critical material supply chains. The initiative will produce value-added rare earth products from natural monazite sands, a byproduct of heavy mineral sands mined in the southeastern United States. Energy Fuels will process the monazite sands into a mixed rare earth carbonate ("**RE Carbonate**") in Utah for use as feed material for Neo's value-added separated rare earth production plant in Europe. Energy Fuels is also continuing to evaluate developing additional value-added U.S rare earth production capabilities in Utah in the future.

Under an agreement in principle signed today by the companies' respective affiliates, subject to completion of definitive agreements, Colorado-based Energy Fuels will process natural monazite sands into an RE Carbonate beginning in March or April 2021 and ship a portion of that production to Neo's rare earth separations facility in Sillamäe, Estonia ("**Silmet**"). Neo will then process the RE Carbonate into separated rare earth materials for use in rare earth permanent magnets and other rare

earth-based advanced materials. Because of increasing demand for value-added rare earth materials in European manufacturing, Toronto-based Neo seeks to expand and diversify its current supplies of rare earth feedstock at Silmet, which is the only operational rare earth separations facility in Europe. Silmet has been separating rare earths into commercial value-added products for more than 50 years.

In addition to supplying RE Carbonate to Neo, Energy Fuels is also evaluating the potential to develop U.S. separation capabilities at its White Mesa Mill, or nearby, as it works to increase its monazite sand ore supplies, thereby fully integrating a U.S. rare earth supply chain in the coming years, in addition to supplying RE Carbonate to European markets.

Typical monazite ore has a higher value than other rare earth bearing ores, as it contains 50% – 60%+ total rare earth content, plus 0.20% – 0.30% recoverable natural uranium, which is the typical grade of uranium found in uranium mines that have historically fed the White Mesa Mill. This means that, in addition to extracting the high concentrations of rare earths from the monazite ore, the White Mesa Mill will also extract the naturally occurring uranium in this ore, which Energy Fuels will sell to power clean, carbon-free nuclear energy.

Energy Fuels will produce its RE Carbonate from natural monazite sands supplied by U.S.-based Chemours Company ("**Chemours**") under a sales agreement between Energy Fuels and Chemours that was announced on December 14, 2020. Chemours will supply Energy Fuels with a minimum quantity of 2,500 tons per annum of natural monazite ore produced in the state of Georgia, and elsewhere in the southeast U.S. Upon completion of the current commercial-scale pilot program at the White Mesa Mill, Neo's Silmet facility expects to purchase and process a minimum of 840 metric tonnes of total rare earth oxides ("**TREO**") per year from Energy

Fuels, which is in addition to Silmet's current production. This would represent approximately 80% of Energy Fuels production from current Chemours supplies.

Significant quantities of natural monazite ore are produced around the world as a byproduct of zircon and titanium production from heavy mineral sand operations, including large resources in the U.S., Australia, India, South Africa, and other nations. Energy Fuels is seeking to secure additional quantities of monazite ores that it can use to further this program and has a goal of processing 15,000 tons or more per year in the future. For perspective, 15,000 tons of monazite per annum would represent approximately 2% of the White Mesa Mill's existing throughput capacity and less than 1% of its existing tailings capacity but contain rare earths equal to roughly 50% of total current U.S. demand.

Neo and Energy Fuels have been working in a technical collaboration since April 2020 to establish a monazite processing and RE Carbonate production capacity at Energy Fuels' White Mesa Mill plant. As previously announced, Energy Fuels successfully produced RE Carbonate at the White Mesa Mill in October 2020 from monazite sands. Neo's Silmet facility in Estonia has successfully processed trial quantities of Energy Fuels' RE Carbonate. When ramped up to commercial scale, this new rare earth supply chain is expected to constitute the first time in over twenty years that monazite ore from the U.S. will be used as a feedstock to manufacture separated rare earth materials outside of China.

"Producing value-added rare earth materials from monazite resources is a massive step forward for our industry and for consumers of rare earths," said Constantine Karayannopoulos, Neo's Chief Executive Officer. "Monazite is an excellent and rich source of rare earths, particularly the magnetic rare

earths that are highly sought for new electrification applications. Yet, monazites derived from heavy mineral sands have historically not been favored due to the naturally occurring radioactive elements they normally contain. Energy Fuels provides the missing link in solving this challenge. They extract valuable uranium from monazite and put it to good use while also recovering monazite's rare earth content. And, given the relatively significant monazite resources around the world, we expect this collaboration will help Neo expand our production of separated rare earth products in Europe and improve resiliency of European manufacturing. That is particularly timely given increasing demand for rare earth materials across the continent and given the EU's vehicle electrification initiatives, which will require greater supplies of rare earths."

"Together, Energy Fuels, Neo and Chemours have successfully created an integrated rare earth supply chain based in the U.S. and Europe," stated Mark S. Chalmers, President and CEO of Energy Fuels. "Monazite is coveted globally as one of the highest-value rare earth minerals in the world, due to its excellent distribution of neodymium and praseodymium ("**NdPr**"), as well as 'heavy' rare earths. It is already mined here in the U.S. and elsewhere around the world. However, until now, there has been no integrated ability to process monazite in the U.S. or Europe into the rare earth materials needed to supply the rapidly increasing demand for electric vehicles, renewable energy systems, and other clean energy and advanced technologies. Energy Fuels is proud to help solve this challenge for both U.S. and European markets. Under the agreement announced today, we plan to supply all or a portion of our mixed rare earth carbonate to Neo for several years, while also developing our own separation, metals, alloys, and other downstream rare earth capabilities at the White Mesa Mill for

supply into the U.S. as domestic markets grow. We appreciate the ability to be able to work with Mr. Karayannopoulos and the Neo team in reaching this important milestone, and we look forward to continuing our collaborations with Neo for many years to come."

Of the 55% TREO typically found in U.S. monazite sands, NdPr comprises approximately 22% of the TREO. NdPr are among the most valuable of the rare earth elements, as they are the key ingredient in the manufacture of high-strength permanent magnets that are essential to the lightweight and powerful motors required in electric vehicles, permanent magnet wind turbines used for renewable energy generation, and a variety of other modern technologies, including, mobile devices and defense applications.

Additionally, because monazite is typically a byproduct from other mining operations, processing monazite ore for the recovery of rare earths, along with the contained uranium, is expected to be at a relatively low cost, since no new mining needs to be licensed, financed, and developed. Furthermore, Energy Fuels will utilize its existing White Mesa Mill to produce the RE Carbonate, and Silmet will utilize its existing separations facility, thereby avoiding the need to license, finance and develop new facilities with these capabilities. As a result, producing rare earths and uranium from existing mining, processing, and separation facilities is not only expected to be at a relatively low cost, it will result in a much smaller environmental footprint when compared to other projects.

Under the terms of the current agreement, Energy Fuels will supply to Silmet increasing amounts of RE Carbonate for pilot-scale production and full commercial qualification.

Implementation of this initiative is subject to successful pilot-scale operations, execution of definitive agreements, and optimization of the companies' production processes.

ABOUT NEO PERFORMANCE MATERIALS

Neo manufactures the building blocks of many modern technologies that enhance efficiency and sustainability. Neo's advanced industrial materials – magnetic powders and magnets, specialty chemicals, metals, and alloys – are critical to the performance of many everyday products and emerging technologies. Neo's products help to deliver the technologies of tomorrow to consumers today. The business of Neo is organized along three segments: Magnequench, Chemicals & Oxides and Rare Metals. Neo is headquartered in Toronto, Ontario, Canada; with corporate offices in Greenwood Village, Colorado, US; Singapore; and Beijing, China. Neo operates globally with sales and production across 10 countries, being Japan, China, Thailand, Estonia, Singapore, Germany, United Kingdom, Canada, United States, and South Korea. For more information, please visit www.neomaterials.com.

ABOUT ENERGY FUELS

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 expects to commence commercial production of REE carbonate in 2021. 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, 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_8per 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." Energy Fuels' website is www.energyfuels.com.

CAUTIONARY STATEMENTS REGARDING FORWARD LOOKING STATEMENTS

This news release contains "forward-looking information" within the meaning of applicable securities laws in Canada and the United States. Forward-looking information may relate to future events or future performance of Neo or Energy Fuels. All statements in this release, other than statements of historical facts, with respect to Neo's or Energy Fuels' objectives and goals, as well as statements with respect to their beliefs, plans, objectives, expectations, anticipations, estimates, and intentions, are forward-looking information. Specific forward-looking statements in this discussion include, but are not limited to, the following: any expectation that the White Mesa Mill will be successful in producing RE Carbonate on a commercial basis; any expectation that Silmet will be successful in separating the White Mesa Mill's RE Carbonate on a commercial

basis; any expectation that Energy Fuels will be successful in increasing its supplies of monazite sand ore supplies, developing U.S. separation, metals or metal/alloy capabilities at the White Mesa Mill or nearby, or otherwise fully integrating the U.S RE supply chain in the future; any expectations with regard to the future demand for rare earth materials; any expectation with respect to the quantities of monazite ore to be acquired by Energy Fuels, the quantities of RE Carbonate to be produced by the White Mesa Mill or the quantities of contained TREO to be acquired by Silmet for separation; any expectations with regard to the cost of producing and separating RE Carbonate; any expectation with regard to the environmental footprint of the planned activities; and any expectation that Neo and Energy Fuels will be successful in completing definitive agreements and hence proceeding with this project. Often, but not always, forward-looking information can be identified by the use of words such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "continues", "forecasts", "projects", "predicts", "intends", "anticipates" or "believes", or variations of, or the negatives of, such words and phrases, or state that certain actions, events or results "may", "could", "would", "should", "might" or "will" be taken, occur or be achieved. This information involves known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking information. Factors that could cause actual results to differ materially from those anticipated in these forward-looking statements include risks associated with: processing difficulties and upsets; available supplies of monazite sands; the ability of the White Mesa Mill to produce RE Carbonate to meet commercial specifications on a commercial scale at acceptable costs; the ability of Silmet to separate the RE Carbonate to meet commercial specifications on a commercial scale at acceptable costs; market factors, including future

demand for rare earth elements; and the ability of Neo and Energy Fuels to finalize definitive agreements. Forward-looking statements contained herein are made as of the date of this news release, and Neo and Energy Fuels disclaim, 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. Neo and Energy Fuels assume no obligation to update the information in this communication, except as otherwise required by law.