In-house production key to making Energy Fuels the world's lowest cost producer of rare earth metals

written by Jack Lifton | May 30, 2022

Energy Fuels takes giant step towards complete, in-house, vertical integration in the production of rare earth permanent magnet alloys

Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR) has just this week announced that it will buy, subject to due diligence, a huge Brazilian deposit of heavy mineral sands, which it will mine to produce a concentrated mineral mix that will contain zircon, ilmenite (titanium), and monazite. This concentrate is expected to be sold to partner companies, which will extract the zircon and ilmenite as payables, and the residual monazite, a waste product in zircon/ilmenite processing, will be conveyed at a nominal cost (as part of the arrangement to supply the heavy mineral sands to partners) to Energy Fuels' White Mesa, Utah, where the monazite will be cracked and leached to extract a clean rare earth content as a mixed carbonate and to extract and sell or legally dispose of its uranium and thorium content.

Energy Fuels is already buying, and processing monazite produced in the above way from the zircon/ilmenite operations of Chemours in Georgia, but the Brazilian purchase will allow Energy Fuels to diversify and lower its cost of monazite concentrates.

The in-house production of monazite rich heavy mineral sands by Energy Fuels will be the foundation of its program for the vertically integrated (in-house) production of rare earth metals and alloys from (in-house) separated and purified individual and blended rare earth salts.

Energy Fuels operates the only operating uranium processing “mill” in the United States and the only facility in the United States in the U.S. capable of processing monazite for the recovery of uranium for sale to nuclear power plants, and the recovery or legal disposal of the thorium and other radionuclides associated with monazite.

The company has already begun processing purchased monazite into a mixed rare earth carbonate, and currently has the capacity to produce thousands of tons of such mixed rare earth carbonates per year. Energy Fuels’ mixed carbonate is the most advanced rare earth product being produced at a commercial scale in the U.S. today. The company is also making major strides in producing separated and refined individual and blended rare earth products at its mill.

Comparatively, monazite contains up to 50% more of the recoverable core magnet metals, neodymium and praseodymium than the bastnaesite mined at Mountain Pass, California.

Energy Fuels is finalizing a scoping study for a dedicated, rare earths, solvent extraction separation system and is finalizing the commercialization of a new rare earth metals and alloys production process demonstration.

Within 24-36 months Energy Fuels has the potential to be the world’s lowest-cost producer of separated individual rare earths and will therefore the lowest cost producer of rare earth metals and alloys. No government subsidies have been needed. Just managerial knowledge, experience, and skill.

Energy Fuels already is a major domestic supplier of uranium and vanadium In fact, the company announced at its AGM, earlier this week, that it has signed a decade long supply deal with two American utilities to provide them with more than 4,000,000 lbs of uranium. This contract will bring in more than USD$200,000,000 over its life.

Energy Fuels is a producing and growing domestic American critical metals processing hub.

Disclosure: Jack Lifton is a member of the Advisory Board for Energy Fuels Inc., and may hold securities or options in some of the companies mentioned in the above article.

Energy Fuels uranium inventory ready to feed US reserve program

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Well positioned to supply US uranium reserves

While uranium spot prices have improved in 2020 – now at US$30.75 – they are still currently well below previous uranium contract prices. Vanadium prices are also still struggling at US$7.10 for V2O5 and US$30.30 for ferrovanadium (both China prices). This means uranium and vanadium companies with either long-term uranium contracts or strong balance sheets can bide

their time until we get a price recovery for both uranium and vanadium. The U.S. government is shortly expected to appropriate the funds for the US$150 million U.S. uranium reserve program. Once this happens, the expectation is that the U.S. government will be looking to buy uranium from U.S. producers above the current low market uranium spot prices. Because the creation of the uranium reserve has bipartisan support, it should continue regardless of the outcome of the 2020 U.S. election.

Energy Fuels Inc. (NYSE: UUUU | TSX: EFR) is currently one of those lucky few U.S. companies that can bide their time and maintain balance sheet strength awaiting better prices. Energy Fuels is one of only three U.S. uranium miners still in production, and is the largest U.S. uranium producer in the U.S., as well as being a vanadium producer.

Energy Fuels is the leading US uranium producer and owner of the White Mesa Mill in Utah, USA

Source

Energy Fuels' recent Q2 2020 earnings results showed that despite no uranium or vanadium sales in H1 2020, the Company still increased their working capital by 8% QoQ to $38.04 million. At June 30, 2020, the Company had $28.3 million in cash and marketable securities, plus $24.7 million of concentrate inventory. The Company has also recently announced streamlining their management to reduce costs, as well as a renewed focus towards planned future rare earths production.

At the same time Energy Fuels has been actively pursuing their strategy of using their White Mesa Mill to produce rare earths. They have brought in two leading rare earths experts to assist with their development and implementation of commercial and

technical REE strategies. Energy Fuels' President and CEO, Mark S. Chalmers, explained that "Energy Fuels continued to consolidate our position as the clear leader in U.S. uranium production in Q2-2020, and we made significant progress in diversifying into rare earth element production."

For the remainder of 2020 Energy Fuels is aiming for 125-175,000 pounds of uranium company wide production, which should build inventory to about 640-690,000 pounds of uncommitted uranium. Of course the inventory build is with a view to selling at profitable prices to either the US Gov. Reserve or other buyers such as US nuclear utilities. The vanadium inventory is expected to reach ~1.675 million pounds of finished vanadium by end 2020.

In a recent statement, Energy Fuels feels it is striking the right balance between realism and optimism in its current position on uranium: "COVID-related production suspensions at major global uranium mines have created a widening gap between supply and demand and a strong potential for higher prices in the future. This means a higher realizable value for our uranium inventory. There is also good progress being made on uranium in the U.S. government. Our allies in Congress and the Trump Administration are pushing hard to fund $150 million per year to create the U.S. uranium reserve. While progress with the U.S. government can be slow and uneven at times, there is bipartisan support for the creation of the uranium reserve, and we are optimistic this program will be funded and implemented. In addition, the U.S. government and Russia are negotiating an extension of the Russian Suspension Agreement, which is expected to lower imports of Russian uranium into the U.S. over the long-term."

Energy Fuels summary of investment themes

Source

Closing remarks

Usually it is by investing in times of uncertainty that the greatest gains are made. Energy Fuels' long term uranium contracts are now finished, but given that the US continues to use uranium for nuclear energy (~20% of electricity production) and for their nuclear powered US military submarines and carriers, it seems logical that 2021 will be a much better year for the US uranium producers as the US begins to build a substantial uranium reserve. Also, if we enjoy some vanadium price recovery in 2021 that would be the icing on the cake.

Currently Energy Fuels has a market cap of US$217m, but I think 2021 will likely be a much better year for the leading US uranium miners.