



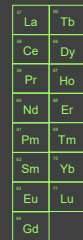
America's Leading Producer of Critical Materials for the Energy Transition



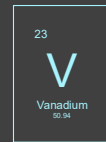
Uranium



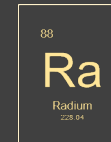
Rare Earths



Vanadium



Medical Isotopes



Recycling



January 2023

Forward Looking Statements & Notice Regarding Technical Disclosure

Certain of the information contained in this presentation constitutes "forward-looking information" (as defined in the Securities Act (Ontario)) and "forward-looking statements" (as defined in the U.S. Private Securities Litigation Reform Act of 1995) that are based on expectations, estimates and projections of management of Energy Fuels Inc. ("Energy Fuels") as of today's date. Such forward-looking information and forward-looking statements include but are not limited to: the business strategy for Energy Fuels; Energy Fuels expectations with regard to current and future uranium, vanadium and rare earth element ("REE") market conditions; the uranium industry's ability to respond to higher demand; the impacts of recent market developments; business plans; outlook; objectives; expectations as to the prices of U₃O₈, V₂O₅, and REE's; expectations as to reserves, resources, results of exploration and related expenses; estimated future production and costs; changes in project parameters; the expected permitting and production time lines; the Company's belief that it has significant production growth potential and unmatched flexibility to scale-up production; the potential for additional business opportunities including vanadium, REE, alternate feed materials, and the cleanup of historic mines on the Navajo Nation and in the Four Corners Region of the U.S.; the potential for optimizing mining and processing; the Company's belief in its readiness to capitalize on improving markets; expectations with regard to the potential for U.S. government support of U.S. uranium miners; global uranium supply risks; expected worldwide uranium supply and demand fundamentals; any expectation that the proposed Uranium Reserve will be implemented and if implemented, the manner in which it will be implemented and the timing of implementation; any expectation that the White Mesa Mill will be successful in producing REE Carbonate on a commercial basis; any expectation that Energy Fuels will be successful in developing U.S. separation, or other value-added U.S. REE production capabilities at the White Mesa Mill, or otherwise; any expectation that the Company, Chemours and Neo will be successful in jointly developing a fully integrated U.S.-European REE supply chain; any expectation that the Company will be successful in fully integrating the U.S REE supply chain in the future; any expectation with respect to the future demand for REEs; any expectation with respect to the quantities of monazite ore to be acquired by Energy Fuels, the quantities of REE Carbonate to be produced by the White Mesa Mill or the quantities of contained TREO in the Mill's REE carbonate; any expectation that the Company's collaboration with Nanoscale Powders will be successful, that the technology will be successfully developed and proven, or that the technology will be economic or perform as expected; and any expectation that the Company will be successful in recovering radioisotopes for use in emerging TAT cancer therapeutics or that the program will be economically viable.

All statements contained herein which are not historical facts are forward-looking statements that involve risks, uncertainties and other factors that could cause actual results to differ materially from those expressed or implied by such forward-looking information and forward-looking statements. Factors that could cause such differences, without limiting the generality of the foregoing include: risks that the synergies and effects on value described herein may not be achieved; risks inherent in exploration, development and production activities; volatility in market prices for uranium, vanadium and REEs; the impact of the sales volume of uranium, vanadium and REEs; the ability to sustain production from mines and the mill; competition; the impact of change in foreign currency exchange; imprecision in mineral resource and reserve estimates; environmental and safety risks including increased regulatory burdens; changes to reclamation requirements; unexpected geological or hydrological conditions; a possible deterioration in political support for nuclear energy; changes in government regulations and policies, including trade laws and policies; demand for nuclear power, vanadium and REEs; replacement of production and failure to obtain necessary permits and approvals from government authorities; weather and other natural phenomena; ability to maintain and further improve positive labor relations; operating performance of the facilities; success of planned development projects; other development and operating risks; the Company not being successful in selling any uranium into the proposed Uranium Reserve at acceptable quantities or prices, or at all; available supplies of monazite sands; the ability of the White Mesa Mill to produce REE Carbonate to meet commercial specifications on a commercial scale at acceptable costs; market factors, including future demand for REEs; the ability of Nanoscale and Energy Fuels to finalize definitive agreements; the ability of Energy Fuels to potentially recover radioisotopes from its existing process streams for use in TAT therapeutics; and the future development of the TAT market. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those anticipated, believed, estimated or expected. Although Energy Fuels believes that the assumptions inherent in the forward-looking statements are reasonable, undue reliance should not be placed on these statements, which only apply as of the date of this presentation. Energy Fuels does not undertake any obligation to publicly update or revise any forward-looking information or forward-looking statements after the date of this presentation to conform such information to actual results or to changes in Energy Fuels' expectations except as otherwise required by applicable legislation.

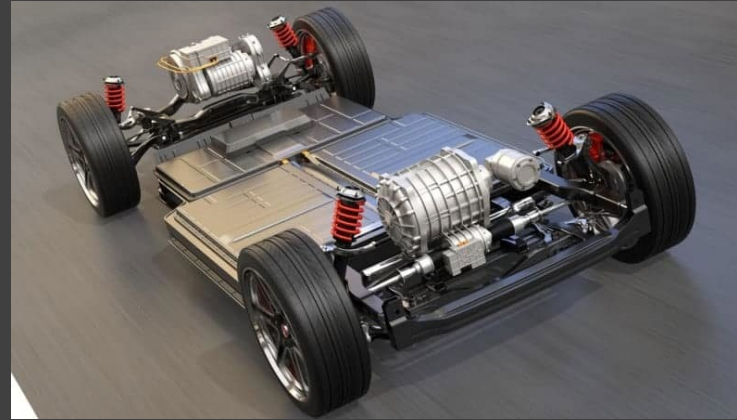
Additional information about the material factors or assumptions on which forward looking information is based or the material risk factors that may affect results is contained under "Risk Factors" in Energy Fuels' annual report on Form 10-K, as amended, for the year ended December 31, 2021. The annual report on Form 10-K, as amended, is available on SEDAR at www.sedar.com and on EDGAR at www.sec.gov.

All technical information including mineral estimates constituting mining operations that are material to our business or financial condition included in this presentation, have been prepared in accordance with both 17 CFR Subpart 220.1300 and 229.601(b)(96) (collectively, "S-K 1300") and Canadian National Instrument 43-101 - *Standards of Disclosure for Mineral Projects* ("NI 43-101") and are supported by pre-feasibility studies and/or initial assessments prepared in accordance with both the requirements of S-K 1300 and NI 43-101. S-K 1300 and NI 43-101 both provide for the disclosure of: (i) "Inferred Mineral Resources," which investors should understand have the lowest level of geological confidence of all mineral resources and thus may not be considered when assessing the economic viability of a mining project and may not be converted to a Mineral Reserve; (ii) "Indicated Mineral Resources," which investors should understand have a lower level of confidence than that of a "Measured Mineral Resource" and thus may be converted only to a "Probable Mineral Reserve"; and (iii) "Measured Mineral Resources," which investors should understand have sufficient geological certainty to be converted to a "Proven Mineral Reserve" or to a "Probable Mineral Reserve." **Investors are cautioned not to assume that all or any part of Measured or Indicated Mineral Resources will ever be converted into Mineral Reserves as defined by S-K 1300 or NI 43-101. Investors are cautioned not to assume that all or any part of an Inferred Mineral Resource exists or is economically or legally mineable, or that an Inferred Mineral Resource will ever be upgraded to a higher category.**

Our Mission

To responsibly produce the
critical materials needed for
the Energy Transition

Our products power tomorrow's energy technologies



High Value Product Line

1

URANIUM – Primary fuel for nuclear energy; provides U.S. with 50% of zero carbon power

UUUU is the largest U.S. uranium producer, with more production facilities, capacity & experience than other US companies

2

RARE EARTHS – Critical elements used in powerful magnets needed for wind, EVs & other tech

UUUU today produces America's most advanced rare earth product, while developing fully integrated U.S.-centric supply chain

3

VANADIUM – Critical element used in high-strength steel & electrolyte in grid-scale batteries

UUUU was largest V producer in 2019; significant inventory & ability to quickly turn on production with improving markets

4

MEDICAL ISOTOPES – Critical for emerging cancer therapies

Developing ability to potentially recover radium from existing U and REE production, needed for emerging treatments & cures

5

RECYCLING – Uranium & vanadium bearing materials

Promoting sustainable sourcing; reducing carbon emissions & saving the world's scarce resources

6

FINANCIAL STRENGTH – Significant Cash + Inventory

\$122.3M working capital at 9/30/2022; industry-leading U_3O_8 & V_2O_5 inventory; selling Alta Mesa for \$120M (close by 2/15/2023)

Our Products & Practices Address Key ESG Issues

Uranium

Fuel for zero-carbon baseload nuclear energy

Rare Earths

Critical for many clean energy technologies such as EVs, renewable energy, batteries & national defense

Vanadium

Key for baseload renewable power via “grid-scale” batteries

Medical Isotopes

Addresses emerging cancer treatments now in human trials

Recycling

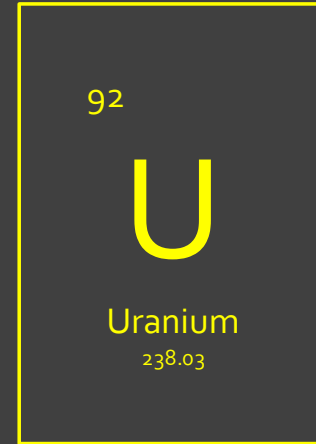
Promote sustainable supply by recycling materials that contain natural uranium

Support for Neighboring Communities:

- Committed local communities & environmental justice via support of the “San Juan County Clean Energy Foundation”
- Significant financial support for Native American STEM education initiatives

[Sustainability Report](#) describes our unwavering commitment to safety, sustainability & environmental protection

Core Business: Uranium



Proven Uranium Production

LEADING U.S. PRODUCTION PORTFOLIO

Licensed & Developed Conventional



WHITE MESA MILL (UTAH) – PRODUCING

- Only uranium & vanadium mill in US – plus REE's & recycling
- 39M lbs. of U_3O_8 + 54M lbs. of V_2O_5 produced since 1980



PINYON PLAIN MINE (ARIZONA) – STANDBY

- Licensed & substantially developed high-grade uranium mine
- Ore to be processed at the White Mesa Mill
- **Likely the lowest-cost uranium mine in the U.S. today**



NICHOLS RANCH ISR (WYOMING) – STANDBY

- 1.2 million lbs. of U_3O_8 produced (2014 – 2019)
- 34 licensed wellfields provide long-term production profile



SHEEP MOUNTAIN (WYOMING) – LICENSED

- Probable Mineral Reserves of 18.3M lbs. of uranium (0.11% U_3O_8 , 7.45M tons)
- Longer-term source of large-scale production

BOOKING NEW URANIUM SALES CONTRACTS

PROVIDING NEW REVENUES & CASHFLOWS FOR 2023 – 2030


- Multiple market tailwinds enabling us to book long-term sales contracts with U.S. utilities at sustainable pricing
 - U.S. government providing support for nuclear energy (bipartisan)
 - Russia's invasion of Ukraine sharpening focus on security of supply
 - Intermediaries buying physical uranium
 - Transportation issues from Russia & Kazakhstan
- Energy Fuels offers buyers a reliable, low-cost source of U.S. uranium production
- Contracts entered to date:
 - Base quantity of 3.0 million pounds of total U_3O_8 deliveries over next 8 years (starting in 2023)¹
 - Up to a total of 4.2 million pounds of deliveries, if all options are exercised
 - Pricing formula maintains exposure to market upside, while limiting downside & adjusting for inflation



Energy Fuels awarded \$18.5 million contract to sell 300,000 lbs. of U.S.-origin uranium to the U.S. government for establishment of strategic Uranium Reserve; Expected to close in Q1-2023

Market Position – Uranium

NORTH AMERICAN SPACE AS OF January 9, 2023¹

| COMPANY | MARKET CAP (US\$M) | WORKING CAPITAL (US\$M) | TOTAL DEBT (US\$M) | URANIUM INVENTORY (M LBS.) | URANIUM | RARE EARTHS | VANADIUM | MEDICAL ISOTOPES | RECYCLING |
|--|-----------------------|-------------------------------|-----------------------|----------------------------------|---------|-------------|----------|---------------------|-----------|
| Cameco | \$10,852 | \$1,333 | (\$740) | 8.2 | ✓ | ✗ | ✗ | ✗ | ✗ |
| NexGen Energy | \$2,192 | \$98 ² | (\$55) ² | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| Uranium Energy Corp | \$1,450 | \$94 ⁴ | \$0 | 1.8 ⁴ | ✓ | ✗ | ✗ | ✗ | ✗ |
| Denison Mines | \$1,069 | \$38 ² | \$0 | 2.5 | ✓ | ✗ | ✗ | ✗ | ✗ |
|  EF ENERGY FUELS | \$1,042 | \$122⁵ | \$0 | 0.76 | ✓ | ✓ | ✓ | ✓ | ✓ |
| Fission Uranium | \$432 | \$40 ² | (\$6) | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| Ur-Energy | \$283 | \$43 | (\$12) | 0.32 | ✓ | ✗ | ✗ | ✗ | ✗ |
| Peninsula Energy | \$126 ³ | \$28 | \$0 | 0.30 | ✓ | ✗ | ✗ | ✗ | ✗ |

¹ This chart reflects the most recent publicly available information; Energy Fuels' information is disclosed in its Form 10-Q for the quarter ended September 30, 2022

² Cdn\$ = US\$0.748

³ Au\$ = US\$0.693

⁴ Announced additional purchases of uranium on the open market with deliveries to occur during 2022 - 2026.

⁵ Energy Fuels is selling its Alta Mesa Project for \$120 million to enCore Energy, with closing expected by Feb. 15, 2023. Purchase price to include \$60M cash + \$60M convertible note.

| | |
|----------|----------|
| 57 La | 65 Tb |
| 58 Ce | 66 Dy |
| 59 Pr | 67 Ho |
| 60 Nd | 68 Er |
| 61 Pm | 69 Tm |
| 62 Sm | 70 Yb |
| 63 Eu | 71 Lu |
| 64 Gd | |

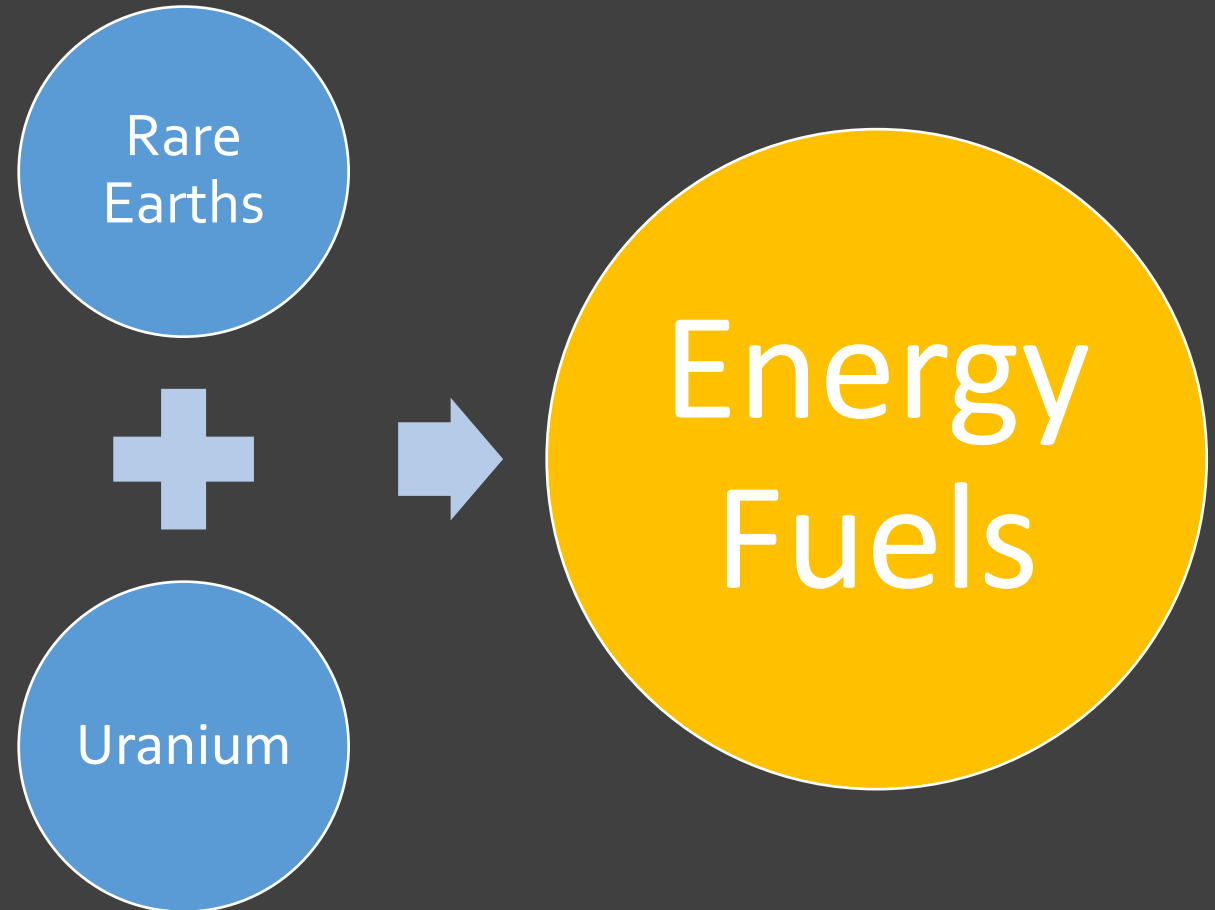
Growth Driver: Rare Earths



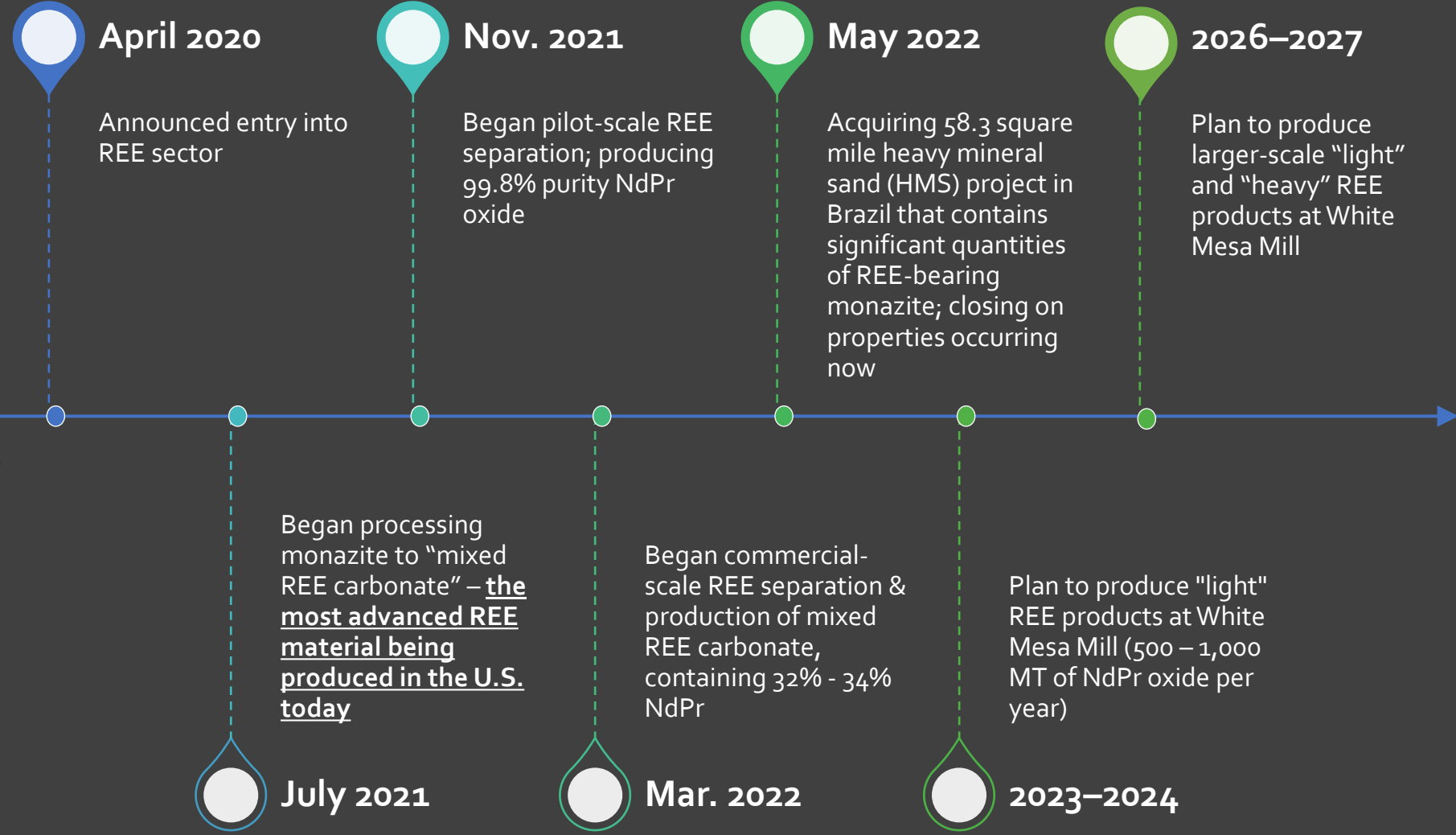
Complimentary Business Opportunities

Energy Fuels could be the “missing link” in U.S. rare earth element (REE) production

- The highest-value REE-bearing minerals are naturally radioactive when they are mined, due to naturally-occurring uranium, thorium & other radioactive elements
- Energy Fuels’ White Mesa Mill is the only existing facility in North America currently processing monazite, recovering uranium, removing other radioactive elements & producing advanced REE products

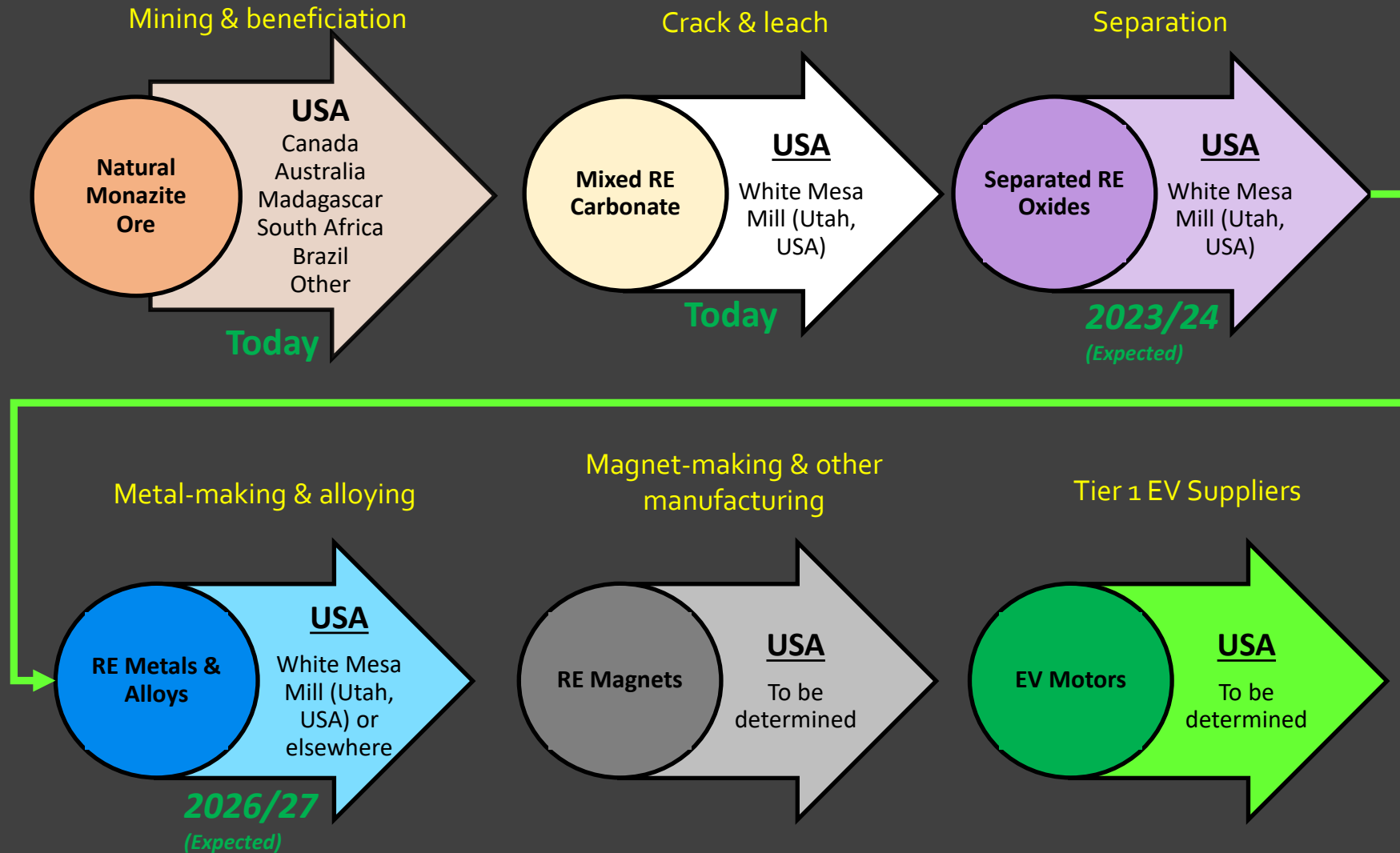


Race To A New Age of Clean Energy



Capital Efficient Rare Earth Supply Chain

CENTERED IN THE U.S.



Energy Fuels' Rare Earth Production

WHITE MESA MILL (UTAH)



1 tonne "supersacks" of high-purity mixed RE carbonate



Energy Fuels' personnel at the White Mesa Mill



Monazite "crack-and-leach" ongoing at Energy Fuels' White Mesa Mill



72-stage pilot-scale solvent extraction (SX) REE separation capable of producing 1-2 kg of NdPr oxide per day

Energy Fuels Has Many Unique Advantages

OFFERING REAL POTENTIAL FOR SHORT-TERM, LOW-COST REE PRODUCTION


1. **Energy Fuels currently has the licenses & capabilities to handle the radionuclides in monazite**
 - We can recover & monetize the uranium (and possibly the thorium & radium) as significant value-adds – these are a problem for others
2. **Monazite has much more value relative to other REE feeds**
 - ~30% higher in NdPr + ~95% higher in “heavy” REEs with higher recoveries of magnetic REEs versus bastnaesite
3. **Monazite is already mined in the U.S. & around the world as a low-cost HMS byproduct**
 - Most mining costs carried by primary zircon & titanium production
4. **Monazite is more straightforward to process than other REE minerals**
 - Chemically easier to recover the REEs from the phosphates in monazite vs the fluoro-carbonates in bastnaesite
5. **Low cost & capital efficient**
 - Using existing licenses & facilities saves considerable time & money
6. **Energy Fuels has used solvent extraction (SX) processing technology for uranium & vanadium recovery for 40+ years**
 - Relatively easy for us to pivot & apply existing SX know-how to REE recovery & separation
7. **Focusing on proven REE separation technologies using SX**
 - We are not attempting to license & deploy new separation technologies
8. **Utah is a relatively low-cost & supportive jurisdiction in which to operate**
 - Compared to other locations where REEs are produced (California, Australia, etc)

The #1 challenge to “unlocking” the value of monazite has been the radionuclides.

Energy Fuels has solved this challenge.

Market Position – Rare Earths

GLOBAL SPACE AS OF January 9, 2022

| | COMPANY | MARKET CAP (US\$MM) | PRIMARY MINERAL | ORE CONCENTRATE "BASKET VALUE" (US\$) ³ | ORE PRODUCTION | | MIXED REE CONCENTRATE PRODUCTION | | REE SEPARATION | |
|------------|---|------------------------|---|---|----------------|--------------|--|--------------|----------------|---------|
| | | | | | CURRENT | PLANNED | CURRENT | PLANNED | CURRENT | PLANNED |
| Producers | Lynas | \$5,350 | Monazite (Australia) | \$17,964 | ✓ | | ✓ | | ✓ | |
| | MP Materials | \$7,950 | Bastnaesite (US-California) | \$7,484 | ✓ | | ✗ | ✓ | ✗ | ✓ |
| | Iluka Resources | \$3,095 ⁵ | Monazite (Australia) | \$18,519 | ✓ | | ✗ | ✓ | ✗ | ✓ |
| |  EF ENERGY FUELS | \$1,042 | Monazite (US-Georgia) | \$20,503 | ✗ | ¹ | ✓ | | ✗ | ✓ |
| | Neo Performance Materials ² | \$343 ⁵ | n/a | n/a | ✗ | ² | ✗ | ² | ✓ | |
| | | | <i>IN SITU ORE VALUE PRE-BENEFICIATION (us\$)⁴</i> | | | | | | | |
| Developers | Texas Mineral Resources | \$127 | Bastnaesite (US-Texas) | \$34 | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ |
| | Rare Element Resources | \$92 | Bastnaesite (US-Wyoming) | \$921 | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ |
| | Ucore Rare Metals | \$26 | Bastnaesite (US-Alaska) | \$333 | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ |

¹ Is currently not a miner; purchasing monazite from HMS operators and processing in Utah; purchasing REE project in Brazil

² Neo purchases mixed REE concentrates (including from Energy Fuels); does not intend to be a miner or produce mixed REE concentrate

³ Ore concentrate value, after beneficiation

⁴ In-situ ore values, before beneficiation

⁵ Cdn\$ = US\$0.748

⁶ AU\$ = US\$0.693

Longer Term Growth: Vanadium & Medical Isotopes

23

V

Vanadium
50.94



88

Ra

Radium
226.03

Strong Position in Vanadium & Medical Isotopes

- Vanadium is used in steel, high-strength alloys, chemicals & grid-scale battery technologies
 - Energy Fuels' White Mesa Mill is a significant U.S. producer of vanadium (V_2O_5) when market conditions warrant
 - Produced 1.9 million pounds of high-purity (99.7%+) V_2O_5 at the White Mesa Mill from tailings solutions
 - Sold about 575,000 lbs. at an average price of \$13.44/lb. during 2022
 - Currently hold ~1 million lbs. in inventory; selectively selling into market strength
 - We can quickly recover another 1.5M to 3.0M+ lbs. of vanadium from mill tailings solutions
- Medical isotopes
 - Several isotopes required for emerging cancer therapies ("targeted alpha therapy") naturally occur in the White Mesa Mill's existing uranium & REE process streams
 - We are evaluating the potential to recover radium to create a U.S. supply chain for this critical element

Financials



Financial Performance

Strong Balance Sheet

- \$122 million of working capital at September 30, 2022
 - \$77.1 million of cash & cash equivalents
 - \$11.6 million of marketable securities
 - \$27.3 million of product inventory (worth \$44.1 million at today's commodity prices)
 - Investments in Consolidated Uranium Inc. (CUR.V) & Virginia Energy Resources (VUI.V)
 - Zero debt
 - Selling Alta Mesa Project for \$120M (\$60M cash + \$60M 2-year convertible note); closing expected on or before 2/15/2023
- Preparing for Growth in Uranium & Rare Earth Businesses
 - Net loss of \$9.3 million during Q3-2022
 - Attributable to increases in development, permitting & land holding costs, along with costs associated with the Company's efforts to enhance business processes & operational readiness for growth in uranium & rare earth businesses

Hidden Assets

\$122M

Working Capital¹

760,000

Lbs. uranium inventory¹

987,000

Lbs. vanadium inventory¹

Inventory worth significantly more than cost at current prices

| | Value on Books (\$/Lb) ¹ | Current Price (\$/Lb) ² | % Up/ (Down) |
|-------------------------------|-------------------------------------|------------------------------------|--------------|
| U ₃ O ₈ | \$23.79 | \$49.00 | +106% |
| V ₂ O ₅ | \$6.09 | \$9.44 | +55% |

¹ As of September 30, 2022, including purchase of 68,500 lbs. of US-origin U₃O₈ in October 2022; not including \$120M from Alta Mesa sale.

² Per TradeTech (uranium) and Fastmarkets (vanadium)

Outlook

2022 Guidance

- 150,000 lbs. of uranium production
- 760,000 – 900,000 lbs. of uranium inventory at year end¹
- Approx. 205 tonnes of mixed REE carbonate production containing approx. 95 tonnes of TREO
 - During Q4-2022, the Company expects to receive approx. 640 tonnes of monazite, which will be processed into mixed REE carbonate in Q4-2022 and Q1-2023
- Uranium sales revenues starting in 2023 from Uranium Reserve (\$18.5M), plus contract sales
- **Multi-year visibility:**
 - New uranium sales contracts with deliveries beginning in 2023
 - Sale of separated NdPr oxide expected in 2024

¹ Subject to potential, currently unplanned sales and/or purchases of uranium



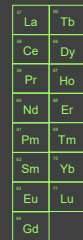
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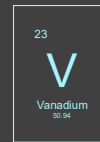
Uranium



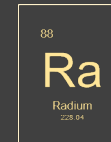
Rare Earths



Vanadium



Medical Isotopes



Recycling



Contact IR: investorinfo@energyfuels.com