Sprott | Equity Research

Energy Transition Metals

Energy Fuels (EFR CN / UUUU US)

Initiation: Uranium producer that is missing link in America's REE strategy

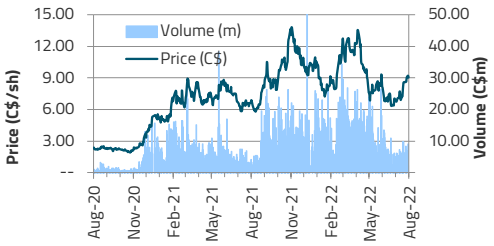
RECOMMENDATION: **BUY** *PRICE TARGET:* **C$15.00/sh** *RISK RATING:* **HIGH**

SHARE DATA	**C$9.21/sh**
Shares (basic, FD)	158 / 161
52-week high/low	13.81 / 5.80
Market cap (C$m)	1451.3
Net cash (debt) (US$m)	73
1.0xNAV7%(US$m)	2,079
1.0xNAV7% FD (C$/sh)	C$16.54
P/NAV (x)	0.43x
Average daily value (C$m, 3M)	6.16

FINANCIALS	**FY25E**	**FY26E**	**FY27E**
TREO produced in MREC (kt)	3.4	6.8	10.1
TREO in oxides (kt)	-	-	9.5
MREC Revenue (US$m)	112	225	331
Separation revenue (US$m)	-	-	83
Revenue (US$m)	**135**	**247**	**479**
Mine EBITDA - 60% attr (US$m)	4.3	48.5	90.1
Downstream EBITDA (US$m)	-	-	91.9
EBITDA (US$m)	**(12.0)**	**29.5**	**168.0**
EBITDA margin (%)	*-9%*	*12%*	*35%*
EV/EBITDA (x)	(112.1)	48.1x	8.5x
Income (US$m)	(21.6)	10.9	123.9
EPS (C$/sh)	(0.11)	0.06	0.64
PER (x)	(82.3)	162.6x	14.4x
CFPS (C$/sh)	(0.11)	0.08	0.56
P/CF (x)	(92.1)	64.5x	9.2x

NAV over time	**FY22E**	**FY23E**	**FY24E**
1xNAV7 FD (C$/sh)	16.54	16.58	17.58
ROI to 1xNAV (% pa)	80%	34%	24%

SOTP 1xNAV7% US$150/kg NdPr	**US$m**	**C$/sh**
Crack and Leach	787	6.26
Separation	739	5.88
Brazil REE project	28	0.22
Uranium	520	4.14
Central SG&A & fin costs 4Q21	(147)	(1.17)
Net cash + options + inventory	151	1.20
TOTAL	**2,079**	**16.54**



Source: SCPe, Factset market data

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US uranium producer expanding into rare earths processing

Energy Fuels is a Denver-based uranium company expanding into rare earths processing. The company's key asset is the White Mesa uranium-vanadium mill (700k short tons pa) in Utah, which is uniquely suited to adding rare earths processing capacity thanks to its existing capacity to process uranium and dispose of thorium, enabling the processing of high radionuclide monazite rare earth concentrates. Offtake with integrated titanium producer Chemours, and a strategic alliance with developer IperionX, provides a baseload of US-sourced monazite feed which Energy Fuels is looking to build on up to 15ktpa of rare earth midstream production before moving downstream to rare earth separation.

White Mesa solves the missing link in America's rare earths strategy

While America has rare earths mine production from the Mountain Pass Mine in California, and EV and wind turbine production downstream, it is the midstream stages of hydrometallurgy, separation and magnets where the supply chain is dependent on China. It is here that Energy Fuels strengths of radionuclide treatment/disposal, hydrometallurgy and solvent extraction (SX) separation are all directly transferrable (with iteration) from uranium/vanadium to rare earths. We think that White Mesa, with its capabilities to produce rare earths, uranium and vanadium, will become a key facility in America's critical materials efforts.

Blue chip partners including Neo and Chemours onside

Energy Fuels has attracted large credible partners for its rare earths initiative. Delaware-based Chemours, one of the largest US producers of titanium products, agreed to provide monazite feed and Neo Performance Materials, a Toronto-based global downstream rare earth product producer signed an agreement to receive rare earth carbonate from White Mesa for separation at its facilities in Europe. We think involvement of technically sophisticated majors is a significant endorsement for Energy Fuels and its potential in rare earths.

Uranium provides complementary revenue stream

Energy Fuels retains a 105Mlb uranium resource base with a 77Mlb conventional resource base (including 18Mlbs at 0.12% U3O8 of reserves) plus a 28Mlb ISR resource base in Wyoming and Texas. White Mesa is licensed for production of up to 8Mlbs per year. Energy Fuels recently signed contracts with three major US nuclear utilities to supply a minimum of 3.0Mlbs (up to 4.2Mlbs) from 2023-2030 highlighting its trusted position in the industry.

Initiate with Buy rating and C$15.00/sh 1.0xNAV$_{7\%}$ price target

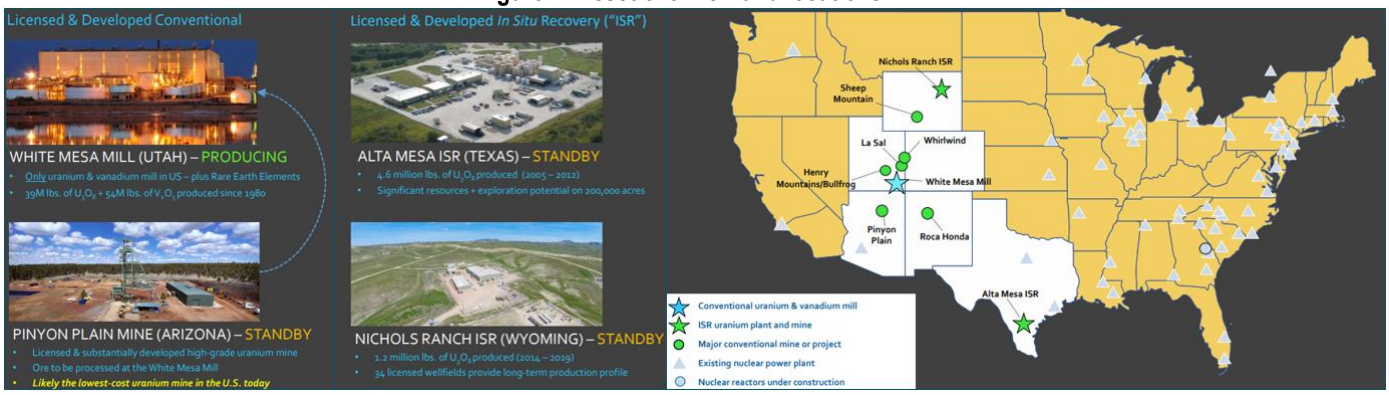
We value Energy Fuels using a SOTP valuation. We value the rare earths cracking and leaching and separation using a DCF using a 7% discount rate generates an NPV of US$1.5bn for rare earths. Adding in the Brazil Rare Earths project and the US uranium at US$50m and US$5/lb (US$520m total) and balance sheet, we generate a US$2.1bn NAV and C$15.17/sh FD/FF NAVPS estimate with ~75% of estimated NAV from rare earths and ~25% from uranium.

Strategic White Mesa Mill is key to America's energy transition

Overview of company

Energy Fuels is a Denver headquartered uranium and rare earths producer whose key facility is the White Mesa Uranium Mill in Blanding, San Juan County, Utah, USA. The mill has produced uranium and vanadium since 1980 with licensed capacity of 2ktpd (~700ktpa) of ore or up to 8Mlbs per year of U_3O_8. Due to its solution chemistry knowledge and ability to sell or dispose of radionuclides, Energy Fuels is a logical midstream processor of monazite and xenotime rare earth concentrates. The company commenced commercial scale rare earth cracking and leaching of third party monazite concentrates in 2020 with current volumes of ~1,000tpa with a target potential to expand to volumes of 30ktpa of monazite (~15ktpa of contained rare earths, ~35% of MP Materials current output) and expand into rare earth separation, which results in significantly higher value capture. The uranium portfolio includes the Nichols Ranch ISR uranium asset in Wyoming (licensed for 2.0Mlbs/year), the Alta Mesa ISR uranium asset in Texas (licensed for 1.5Mlbs/year), and hard-rock uranium-vanadium assets in Colorado, Utah, Arizona and New Mexico.

Figure 1: Asset overview and locations



Source: Energy Fuels

Company History

Energy Fuels became a uranium player in 2012 through acquisition of Denison's US uranium portfolio including the White Mesa Mill and a package of surrounding hard rock assets in the SW USA. The mill commenced production in 1980, was refurbished in 2006-2008 (US$31m), and has produced 40Mlbs of uranium and 42Mlbs of vanadium on a campaign basis. Current CEO Mark Chalmers, is an experienced uranium operator whose past roles include EGM of Paladin's Langer Heinrich and Keyelekera mines in Namibia and Malawi, and GM of the Beverley ISR Mine in Australia, joined as President and COO in July 2016 and became CEO in February 2018. In April 2020, Energy Fuels announced entry into rare earths, by November 2020 successfully produced a mixed rare earth carbonate at White Mesa, and entered a 3-year supply agreement with Chemours to process monazite in December 2020 and an agreement with Neo Performance Materials (Neo) to supply mixed rare earth carbonate to Neo's Sillamae separation plant in Estonia to produce separated REE products. Energy Fuels has also been an early mover in the emerging uranium contracting, with three contracts with major utilities for a minimum of 3.0Mlbs and flex up options to 4.2Mlbs total between 2023-2030.

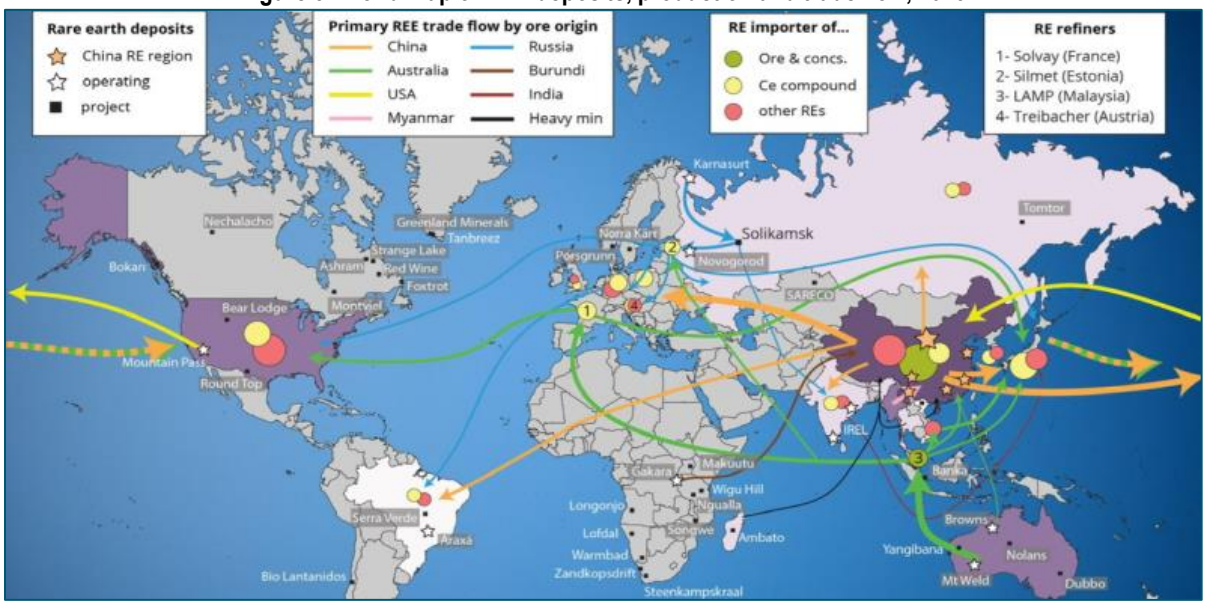
Figure 2: Company history, share price performance and market cap

Source: Bloomberg, annotated by SCPe

The missing link in the US rare earths supply chain:

With uranium, rare earths and vanadium production capabilities, the only uranium mill in the United States, and permits to dispose of radionuclides, Energy Fuels is key to America's ability to supply its own metals for the energy transition. The specific metals here are uranium, the key fuel for civilian nuclear reactors, and rare earth metals neodymium (Nd), praseodymium (Pr), dysprosium (Dy) and terbium (Tb) which are the key constituents of permanent magnets used in electric vehicle motors, wind turbines, and high end electronics. Neodymium and praseodymium are light rare earths, produced from hard rock bastnaesite and hard rock or eroded monazite deposits, with ~70% of global supply produced and refined in China. Dysprosium and terbium are heavy rare earths, produced from ionic clay deposits in China and Myanmar which account for >90% of supply. They add heat and resistance to magnets, enabling strenuous applications such as EVs, wind turbines, and military uses.

Figure 3: World map of REE deposits, production and trade flow, 2019

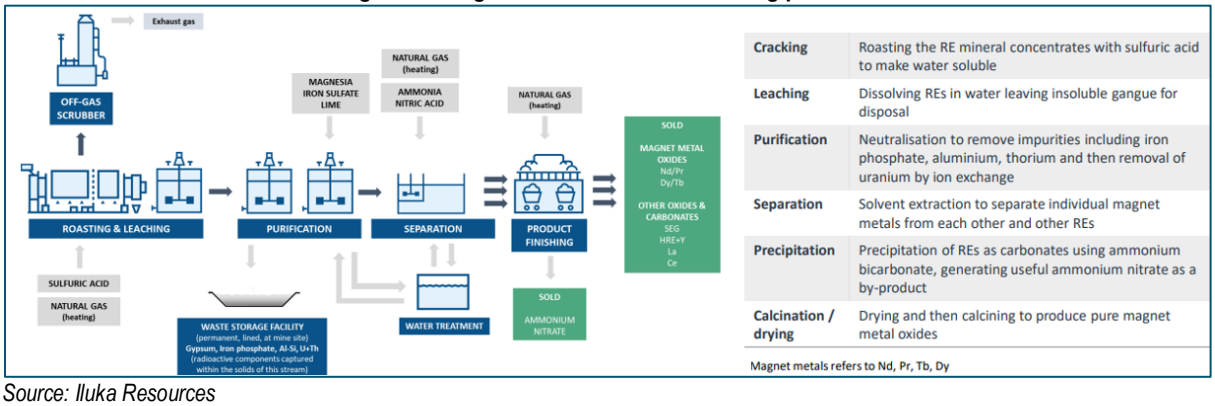


Source: Roskill

Ability to deal with uranium and thorium gives Energy Fuels a unique superpower in US supply chain

In our view, Energy Fuels has two 'superpowers': First, White Mesa is built and licensed to process and dispose of radionuclides. This is key because licensing a new facility today would not be feasible within this cycle in our view. Second, Energy Fuels has experience with the key chemical processes needed to succeed in rare earths. Specifically, White Mesa utilizes a solvent extraction flowsheet to process and purify uranium from solution to produce low impurity U3O8 product. This is the same process used for rare earth separation, albeit rare earth separation is made more complicated by the need to refine multiple rare earths. Not just limited to uranium and rare earths, the White Mesa Mill can also process vanadium. In short, Energy Fuels has the key facilities and skills to produce materials for the 21st century energy supply chain: Hydrometallurgical refining, solvent extraction, and the ability to dispose of by-product radionuclides.

Figure 4: Stages in the rare earths refining process



Source: Iluka Resources

Monazite sands are a plentiful and low capital source of REEs… if you can deal with thorium

The ability to dispose of radionuclides allows Energy Fuels to process monazite concentrates. In our view, monazite sands deposits, especially as a by-product or co-product with economic TiO2 and zircon deposits, are the structurally lowest cost deposits being near surface, free dig (or dredge) and easy to process into a concentrate. In fact, before radionuclide associated risks became better understood in the 1960s, monazite placer deposits were the primary source of rare earth production. Even better, there are already existing surface stockpiles of concentrated material at some mineral sands operations. Further advantages of monazite: i) On average monazite has higher NdPr and heavy rare earth content than bastnaesite; and ii) monazite is a more common hard rock REE ore type, and generally forms simpler deposits to mine.

Figure 5: Example Deposits: Monazite higher NdPr and HREE grades but higher U+Th also

	Monazite	Bastnaesite
Deposit types	Hard rock and weathered sand	Hard rock
Radionuclides	**High (especially thorium)**	**Low**
NdPr assemblage	**~20-25% of rare earths**	**~15-25% of TREO**
Heavy rare earths	**Up to 10%**	**Sub 1%**
Frequency	**Majority of hardock REE projects**	Rare

Ore mineral	Example	TREO Grade (%)	REE assemblage (% of TREO) LREE (%)	NdPr (%)	HREE (%)	Dy (%)	Tb (%)	Deleterious U (ppm)	Th (ppm)
Bastnaesite	Standard US [1]	--	--	16.3%	1.1%	--	--	--	--
Bastnaesite	Mountain Pass, California [2]	6.4%	99.7%	16.4%	0.3%	ND	ND	20	200
Bastnaesite	Nugalla, Tanzania [3]	4.8%	99.5%	21.2%	99.0%	0.1%	0.1%	14	55
Monazite	Standard US [1]	--	--	22.6%	14.4%	--	--	--	--
Monazite	Mt Weld, Western Australia [4]	8.6%	ND	22.8%	ND	0.4%	ND	20	700
Monazite	Nolan's Bore, Western Australia [5]	2.9%	ND	26.4%	ND	ND	ND	190	2,900

(1) Per Energy Fuels May 2022 corporate presentation; (2) Mountain Pass per MP Materials 2021 10-k, REO grades per reserve statement, REO assemblage from resource statement, U and Th per 1992 draft EIR by San Bernardino County Planning Department; (3) Ngualla 2017 Reserves statement; (4) Mt Weld grades from 2018 Reserves update, U and Th ppm from 1992 WA EPA report; (5) Nolan's Bore grades from 2020 MRE, U and Th from 2019 EIS submission to WA EPA

Blue chip partners involved including Neo, Chemours, and Carester

In Chemours and Neo Performance Materials (Neo), Energy Fuels has attracted two 'best in class' partners that specialize in high spec chemical/materials products. Chemours (NYSE:CC, US$5.2bn MCap), a spin-off of DuPont, is a major chemicals company and one of the largest producers of speciality titanium products. From its vertically integrated titanium business, it has monazite concentrate stockpiles that can be processed at White Mesa. Neo (TSX:NEO, ~C$400m MCap) is the largest western-headquartered producer of rare earth products including magnets used in high end motors, powders, and specialty products. In addition, France-based Carester, a leading REE specialist, is engaged to prepare a scoping study on REE separation at White Mesa. Energy Fuels has also signed contracts with three major US nuclear utilities to supply 3.0-4.2Mlbs of uranium from 2023-2030.

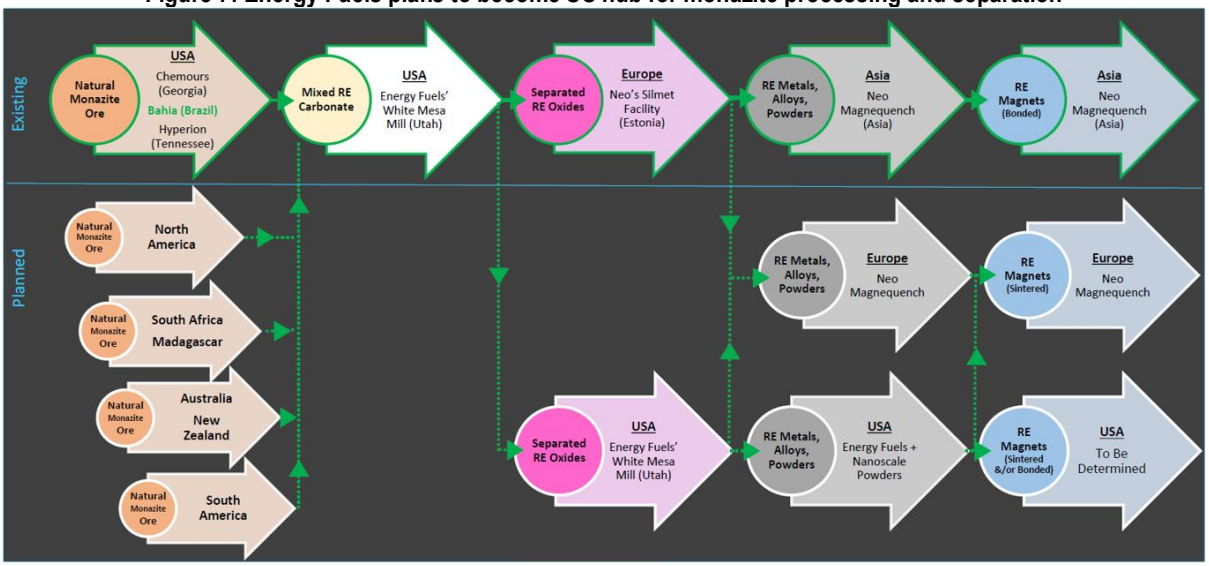
Figure 6: Integrated REE supply chain from Chemours – Energy Fuels – Neo

Source: Neo Performance Materials

Early mover in securing concentrate feed, both third-party and own projects

The agreement with Chemours secures a minimum of 2,500tpa which is a meaningful starting point towards Energy Fuels' initial goal of 15,000tpa of monazite feed. In April 2021, Energy Fuels signed an MoU with ASX-listed IperionX whose Titan mineral sands development project in Tennessee is targeting 4,650tpa of monazite concentrate production as of a June 2022 scoping study. Notable other potential mineral sands monazite sources include Tronox's Namakwa Sands and Rio Tinto's KZN operations in South Africa, Tronox's mineral sands operations in Brazil and Iluka's Concord mineral sands mine in Virginia, and discussions are ongoing with potential suppliers in Australia/NZ, North America and SE Asia. In addition to third party feed, Energy Fuels acquired its first mineral sands project in Bahia, Brazil (the Bahia Project) in May 2022 with intention to drill and define a resource over the next six months. We see significant potential for Energy Fuels to acquire more monazite-rich mineral sands projects in the SE USA and in Brazil as these types of deposits are known to occur but were previously undeveloped as the high thorium content was seen as an obstacle.

Figure 7: Energy Fuels plans to become US hub for monazite processing and separation

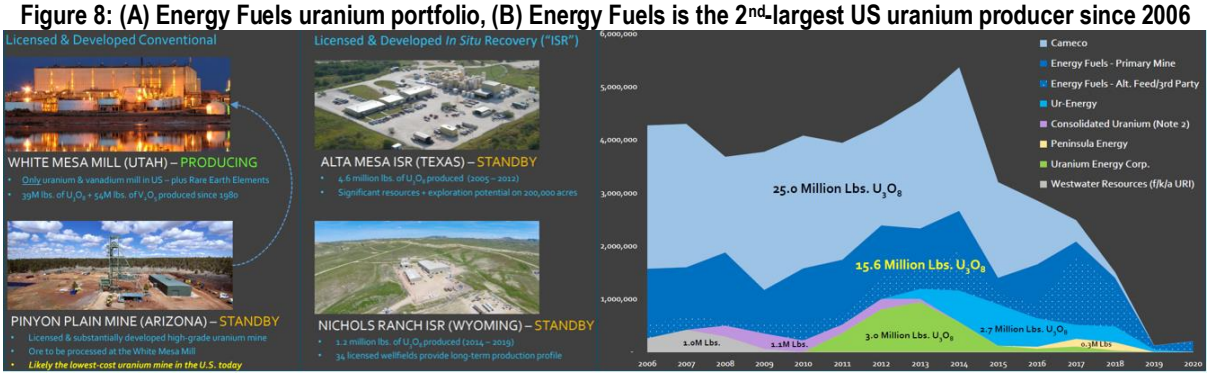


Source: Energy Fuels

Also a major US uranium player with sales contracts, 100Mlb portfolio and only licensed US uranium mill

The second largest US producer since 2006, Energy Fuels' reputation as a reliable supplier is highlighted by three supply contracts with major US nuclear utilities signed in 2022 for 3.0-4.2Mlbs from 2023-2030 and recent bid submission to sell existing uranium inventory to the US Dept. of Energy. Its asset portfolio includes 77Mlbs of reserves and resources in its hard rock portfolio in Colorado, New Mexico and Arizona within truck-able distance of the centrally located White Mesa Mill (licenced for 700k tons per year or up to 8Mlbs), plus a 28Mlb ISR resource base in Wyoming and Texas, licenced for 2.0Mlbs and 1.5Mlbs per year, respectively. In addition to uranium, the mill can also process and recover vanadium, with 1.9Mlbs produced from tailings solutions and 1.4Mlbs in inventory (~US$15m market value). This means White Mesa can recover key inputs into wind and nuclear power generation, EVs, and grid storage (vanadium redox batteries).

Figure 8: (A) Energy Fuels uranium portfolio, (B) Energy Fuels is the 2nd-largest US uranium producer since 2006



Source: Energy Fuels

Valuation

What we model: We model cracking and leaching ramping to 15,000 metric tonnes per annum (tpa) from 2025 and 30,000tpa from 2030 with the addition of separation from 2027. To get there we model US$150m of capex for cracking and leaching and US$200m for separation with capacity expansion in 2029 to reach new nameplate in 2030. At steady state, we estimate US$105m per year of FCF from cracking and leaching at 29% EBITDA margin and US$104m from separation at 23% EBITDA margin (without netting out intra-company transfer pricing). Combining cracking and leaching and separation at a corporate level results in healthy 40% EBITDA margins and metrics that we think could support a US$2.0-2.5bn valuation at steady state, including up to ~US$270m/year EBITDA, US$205m FCF/year, and ~US$0.95/sh EPS (with 161m FD shares o/s, 197m shares including SCPe funding assumptions). For our modelled base case, we include uranium sales in line with currently announced sales contracts, with a minimum of 3Mlbs over 2023-2030 (375klbs/year) at SCPe US$19/lb margins. We model an expanded uranium production scenario (see page 17) but do not include it in our base case financials at this time.

Figure 9: Summary of SCPe Energy Fuels estimates

Year (to 31 Dec)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Concentrate throughput (kt)	0.9	2.3	3.6	6.8	13.6	20.0	20.0	25.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
TREO prodn in mixed REE carbonate (kt)	0.5	1.1	1.8	3.4	6.8	10.1	10.1	12.6	15.1	15.1	15.1	15.1	15.1	15.1	15.1
TREO prodn - separated oxides (kt)	--	--	--	--	--	9.5	9.5	11.9	14.3	14.3	14.3	14.3	14.3	14.3	14.3
Concentrate payability (%)	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
MREC payability (%)	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%
Separated oxide payability (%)	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%
Uranium sales (klbs)	--	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	--	--	--	--	--	--
Uranium COGS ($/lb)	--	27.2	27.9	32.5	40.0	40.0	40.0	40.0	40.0	--	--	--	--	--	--
Revenue (US$m)	13	57	82	135	247	479	479	593	707	685	685	685	685	685	685
EBITDA (US$m)	(40)	(19)	(14)	(12)	29	168	168	216	274	268	268	268	268	268	268
Net income (US$m)	(48)	(23)	(17)	(22)	11	124	124	169	196	176	178	179	181	182	184
EPS (US$/sh)	(0.30)	(0.15)	(0.10)	(0.11)	0.06	0.64	0.64	0.87	1.02	0.91	0.92	0.93	0.94	0.94	0.95
EBITDA margin (%)	*(300%)*	*(34%)*	*(17%)*	*(9%)*	*12%*	*35%*	*35%*	*36%*	*39%*	*39%*	*39%*	*39%*	*39%*	*39%*	*39%*
Cash flow from ops (US$m)	(48)	(12)	(29)	(22)	16	108	159	188	222	216	215	216	218	219	221
Cash flow from investing (US$m)	(17)	(75)	(88)	(13)	(113)	(116)	(16)	(154)	(54)	(16)	(16)	(16)	(16)	(16)	(16)
FCF (US$m)	(58)	(87)	(117)	(35)	(97)	(8)	143	35	168	200	199	200	202	203	205
FCFPS (US$/sh)	(0.37)	(0.55)	(0.60)	(0.18)	(0.50)	(0.04)	0.74	0.18	0.87	1.03	1.03	1.04	1.04	1.05	1.06

Source: SCPe; metric units unless otherwise noted; USD unless otherwise noted

Valuation build-up: We value Energy Fuels on a sum-of-the-parts basis. We value the Rare Earths business on a DCF methodology with a discount rate of 7% and modelling at spot prices through 2023 and US$150/kg NdPr, US$500/kg Dy and US$2,200/kg Tb flat forward from 2024; this is 15-25% below industry specialist forecaster Adamas Intelligence's base case estimates for the 2022-2032 period. This generates an NPV of US$787m for cracking and leaching (hydromet) and US$739m for separation.

Figure 10: SCPe SOTP valuation

Group-level SOTP valuation	US$m	O/ship	NAVx	C$/sh
White Mesa REE Hydromet NPV 7% 3Q22	787	100%	1.00x	6.26
White Mesa REE Separation NPV7% 3Q22	739	100%	1.00x	5.88
Brazil REE + exploration	28	100%	1.00x	0.22
Uranium portfolio @ US$5/lb	520	100%	1.00x	4.14
Central SG&A & fin costs 3Q22	(147)	-	1.00x	(1.17)
Cash and securities 2Q22	73	-	1.00x	0.58
Physical inventories - U3O8 and V2O5, plus contracts	79	-	1.00x	0.63
Debt 2Q22	(0)	-	1.00x	(0.00)
1xNAV7% spot fully diluted, pre-funded	**2,079**	**-**	**-**	**16.54**
Assumed equity raised	250		1.00x	1.27
1xNAV7% spot fully funded	**2,329**	**-**	**-**	**15.17**

Commodity price	2022	2023	2024	2025	2026
NdPr price (US$/kg)	138	143	150	150	150
U3O8 price (US$/lb)	51	60	60	60	60
Share data					
Basic shares (m): 157.6		FD + options (m):	161.5	FD/FF	197.1

We add US$5/lb for the uranium portfolio, in line with US uranium developer peer averages, and US$27.5m for Energy Fuels' Bahia REE project. We include 2Q22 cash of US$105m, less US$27.5m for the Bahia project purchase price, plus US$3m from ITM options. We add US$41m spot value for current uranium and vanadium inventory: 0.69Mlbs of U3O8 (US$33m market value at spot US$47.75/lb) and 1.05Mlbs of V2O5 (US$8m at spot US$7.40/lb). We include the uranium sales contracts at US$39m (we estimate an $NPV_{7\%\text{-}60/lb}$ of US$52m NPV, which we pro-rata to US$39m to avoid double counting existing uranium inventory which we already include in NAV). Finally, we subtract US$147m for SG&A at a 7% discount rate. This generates a FD NAV of US$2.12bn or C$16.86/sh. Adding in our funding assumptions (incl SCPe US$250m of equity), we generate a fully diluted and funded NAV of US$2.33bn or C$15.17/sh.

Initiate with BUY Rating and C$15.00/sh price target based on 1x $NAV_{7\%}$

We think Energy Fuels is a special opportunity, offering comprehensive but capital efficient exposure to the energy transition thesis through uranium (nuclear power generation), rare earths (EVs, wind energy and high efficiency pumps and motors) and vanadium (grid storage). Moreover, we think it addresses a specific weakness in the western supply chain, namely, the lack of permitted refining capacity in the United States and the ability to process material containing radionuclides. Comparing Energy Fuels to rare earths peers, MP Materials and Lynas Rare Earths, we think there is room for growth, as our US$2.3bn fully funded NAV estimate would put Energy Fuels in line with peer valuations on a per tonne of production basis, with the opportunity to progress further downstream than Lynas and MP's current operations. Moreover, our target price implies steady state multiples of ~6x EBITDA, 12x P/E and a 10% FCF yield which we believe reasonable. Finally, while the rare earths business offers the most upside, downside protection is underpinned by the uranium assets and physical inventory: Our US$5/lb in-situ valuation on Energy Fuel's uranium assets are at a discount to the peer average, while in-situ uranium assets, plus cash, uranium/inventory and existing contracts generate ~US$670m of NAV, or ~65% of Energy Fuel's current EV.

Figure 11: (A) US Uranium Comps; (B) Benchmarking Energy Fuels to MP and Lynas

Company	Ticker	Market Cap	EV	EV/M&I	EV/Resource	M&I	Total
		(US$m)	(US$m)	(US$/lb)	(US$/lb)	(Mlbs)	(Mlbs)
UEC	UEC-US	1,177	1,154	9.92	7.72	116	150
Encore	EU-CA	350	322	3.57	3.22	90	100
UR Energy	URE-CA	253	222	10.69	8.11	21	27
Peninsula	PEN-AU	143	132	2.47	2.47	54	54
Peer average				**6.66**	**5.38**		
Energy Fuels		**1,057**	**952**	**20.00**	**9.15**	**48**	**104**

Source: Factset, Bloomberg, SCPe

Company	Ticker	Market Cap	EV	EV/prod	Production	REO product
		(US$m)	(US$m)	(US$k/t)	(kt TREO)	(stage)
MP Materials	MP-US	6,708	7,020	175	40.00	Concentrate
Lynas	LYC-AU	6,230	5,775	231	25.00	MREC
Peer average				**203**	**32.50**	
Energy Fuels		**1,057**	**1,451**	**106**	**13.68**	**MREC**

Source: Factset, Bloomberg, SCPe

Note Energy fuels EV amended to include capex and working cap to steady state production

Catalysts

- 2022: Guidance: 300-450t REO production, 100-120klbs of U3O8
- 1H23: MRE and PEA on Bahia Rare Earths
- 2023-2024: Secure commercial scale monazite supply, develop batch scale REE separation using solvent extraction (SX) with Carester

Ticker:	EFR CN / UUUU US	**Price / mkt cap:**	C$9.21/sh, C$1451m	**Market P/NAV:**	0.43x	**Assets:**	White Mesa
Author:	J Chan / E Magdzinski	**Rec / PT:**	BUY / C$15.00	**1xNAV FD:**	C$16.54/sh	**Country:**	Utah, USA

Group-level SOTP valuation	2Q22	**3Q22**			
		US$m	**O/ship**	**NAVx**	**C$/sh**
White Mesa REE Hydromet NPV 7% 3Q22		**787**	100%	1.00x	6.26
White Mesa REE Separation NPV7% 3Q22		739	100%	1.00x	5.88
Brazil REE + exploration		28	100%	1.00x	0.22
Uranium portfolio @ US$5/lb		520	100%	1.00x	4.14
Central SG&A & fin costs 3Q22		(147)	-	1.00x	(1.17)
Cash and securities 2Q22		73	-	1.00x	0.58
Physical inventories - U3O8 and V2O5, plus contracts		79	-	1.00x	0.63
Debt 2Q22		(0)	-	1.00x	(0.00)
1xNAV7% spot fully diluted, pre-funded		**2,079**			**16.54**
Assumed equity raised		250		1.00x	1.27
1xNAV7% spot fully funded		**2,329**			**15.17**

1x fully funded NAVPS sensitivity to NdPr price and discount / NAV multiple

Valuation (C$/sh)	$130/kg	$140/kg	$150/kg	$160/kg	$170/kg
9% discount	10.84	11.62	12.40	13.19	13.97
8% discount	11.88	12.77	13.66	14.55	15.44
7% discount	13.14	14.16	**15.18**	16.20	17.21
6% discount	14.68	15.85	17.02	18.20	19.37
5% discount	16.57	17.93	19.29	20.65	22.01
WM REE Crack / Leach NPV7% (US$m)	$130/kg	$140/kg	$150/kg	$160/kg	$170/kg
9% discount	444	508	571	634	697
8% discount	527	598	669	740	811
7% discount	625	707	**787**	868	948
6% discount	745	838	930	1,022	1,114
5% discount	890	997	1,103	1,209	1,315
WM REE Separation NPV7% (US$m)	$130/kg	$140/kg	$150/kg	$160/kg	$170/kg
9% discount	433	484	535	586	637
8% discount	511	569	627	685	743
7% discount	606	672	**739**	805	871
6% discount	721	798	874	950	1,027
5% discount	862	951	1,039	1,128	1,217

Valuation over time	**Today**	**Dec '22**	**Dec '23**	**Dec '24**	**Dec '25**
REE Crack and Leach (US$m)	787.4	812.3	946.4	1,097.9	1,178.9
REE Separation (US$m)	738.7	758.3	811.3	868.1	928.9
Uranium in-situ valuation + Brazil REE	626.8	547.9	547.9	547.9	547.9
Cntrl G&A & fin costs (US$m)	(146.6)	(133.0)	(115.6)	(79.1)	(49.3)
Net cash at 1Q (C$m)	72.4	48.3	211.0	94.3	59.7
1xNAV (US$m)	2,079	2,034	2,401	2,529	2,666
P/NAV (x):	0.56x	0.56x	0.52x	0.55x	0.52x
1xNAV share px FD (C$/sh)	16.54	16.58	17.58	16.81	17.72
ROI to equity holder (% pa)	*80%*	*34%*	*24%*	*16%*	*14%*

Sources and uses of cash

SCPe MREC capex (US$150m)	US$150m	SCPe current cash + options	US$152m
SCPe separation capex	US$200m	Debt package	US$250m
SCPe G&A + working cap pre-positive FCF	US$110m	Equity Raised	US$250m
Contingency	US$191m		
Total uses	US$652m	Total proceeds	US$652m

Production (100%)	**Dec '24**	**Dec '25**	**Dec '26**	**Dec '27**	**Dec '28**
Crack/leach throughput (k metric tonnes)	3.6	6.8	13.6	20.0	20.0
Production (kt REE in MREC)	1.8	3.4	6.8	10.1	10.1
NdPr in MREC (kt)	0.4	0.8	1.6	2.3	2.3
DyTb in MREC (t)	26	48	96	141	141
MREC revenue (US$/kg REE)	32.9	32.9	32.9	32.9	32.9
MREC cash cost (US$/kg REE)	30.9	31.6	25.8	23.9	23.9
MREC AISC (US$/REE)	35.3	34.0	26.9	24.7	24.7
Separation TREO produced	--	--	--	9.5	9.5
NdPr produced (kt)	--	--	--	2.2	2.2
DyTb produced (t)	--	--	--	134	134
REE Separation revenue (US$/kg REE)	--	--	--	43.3	43.4
REE Separation cash cost (US$/kg REE)	--	--	--	33.7	33.7
REE Separation AISC (US$/REE)	--	--	--	34.5	34.6
Capex (US$m)	(10)	(75)	(88)	(13)	(113)

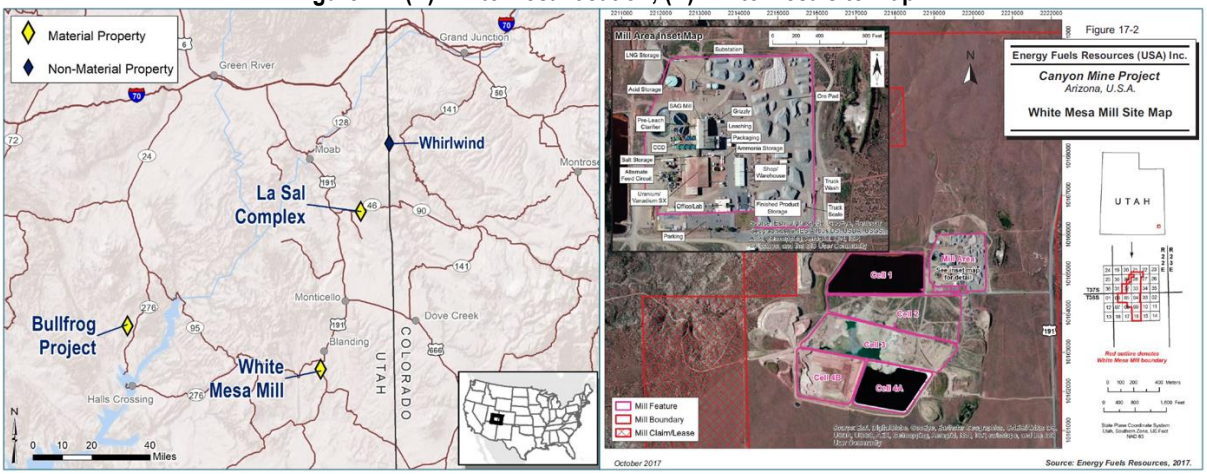
Source: SCP estimates

Resource / Reserve	**Mlbs U3O8**	**% U3O8**	**EV/lb U3O8**	**Mlbs Cu**	**Mlbs V2O5**
Measured, ind. & inf.	105	0.17%	9.9	11	18
Commodity price	**2022**	**2023**	**2024**	**2025**	**2026**
NdPr price (US$/kg)	138	143	150	150	150
U3O8 price (US$/lb)	51	60	60	60	60
Share data					
Basic shares (m): 157.6		FD + options (m):	161.5	FD/FF	197.1
Ratio analysis	**2022**	**2023**	**2024**	**2025**	**2026**
FD shares out (m)	158	158	193	193	193
EPS (US$/sh)	(0.33)	(0.15)	(0.09)	(0.11)	0.06
CFPS before w/c (US$/sh)	(0.30)	(0.08)	(0.15)	(0.11)	0.08
FCFPS pre growth (US$/sh)	(0.37)	(0.55)	(0.38)	0.08	(0.50)
FCF/sh (US$/sh)	(0.37)	(0.55)	(0.60)	(0.18)	(0.50)
FCF yield pre growth (US$/sh)	(4%)	(6%)	(4%)	1%	(5%)
FCF yield (%)	(4%)	(6%)	(7%)	(2%)	(5%)
EBITDA margin (%)	(300%)	(34%)	(17%)	(9%)	12%
FCF margin (%)	(433%)	(153%)	(142%)	(26%)	(39%)
ROA (%)	(18%)	(5%)	(3%)	(3%)	1%
ROE (%)	(19%)	(5%)	(4%)	(5%)	2%
ROCE (%)	(18%)	(5%)	(3%)	(3%)	3%
PER (x)	(28x)	(62x)	(95x)	(82x)	163x
P/CF (x)	(27x)	(58x)	(113x)	(92x)	65x
EV/EBITDA (x)	(29x)	(50x)	(92x)	(112x)	48x
Income statement	**2022**	**2023**	**2024**	**2025**	**2026**
Revenue (US$m)	13	57	82	135	247
COGS (US$m)	(13)	(41)	(67)	(122)	(193)
Gross profit (US$m)	**0**	**16**	**16**	**13**	**54**
Expenses (US$m)	--	(42)	(26)	(37)	(43)
Impairment & other (US$m)	(5)	--	--	--	--
Net finance costs (US$m)	--	--	2	(3)	(7)
Tax (US$m)	--	--	--	--	(1)
Minority interest (US$m)	--	--	--	--	--
Net income attr. (US$m)	**(4)**	**(27)**	**(9)**	**(27)**	**3**
EBITDA (US$m)	*(40)*	*(19)*	*(14)*	*(12)*	*29*
Cash flow	**2022**	**2023**	**2024**	**2025**	**2026**
Profit/(loss) after tax (US$m)	(48)	(23)	(17)	(22)	11
Add non-cash items (US$m)	3	4	5	7	11
Less wkg cap / other (US$m)	(3)	7	(16)	(7)	(6)
Cash flow ops (US$m)	**(48)**	**(12)**	**(29)**	**(22)**	**16**
PP&E (US$m)	(10)	(75)	(88)	(13)	(113)
Other (US$m)	(7)	--	--	--	--
Cash flow inv. (US$m)	**(17)**	**(75)**	**(88)**	**(13)**	**(113)**
Debt draw (repayment) (US$m)	--	--	100	100	50
Equity issuance (US$m)	--	250	--	--	--
Other (US$m)	--	--	--	--	--
Cash flow fin. (US$m)	**--**	**250**	**100**	**100**	**50**
Net change post forex (US$m)	(64)	163	(17)	65	(47)
FCF (US$m)	*(58)*	*(87)*	*(117)*	*(35)*	*(97)*
Balance sheet	**2022**	**2023**	**2024**	**2025**	**2026**
Cash (US$m)	69	231	215	280	233
Accounts receivable (US$m)	4	4	20	22	31
Inventories (US$m)	34	27	29	41	47
PPE & exploration (US$m)	157	229	312	318	421
Other (US$m)	4	4	4	4	4
Total assets (US$m)	**268**	**494**	**580**	**665**	**735**
Debt (US$m)	--	--	100	200	250
Other liabilities (US$m)	20	20	22	29	38
Shareholders equity (US$m)	686	936	936	936	936
Retained earnings (US$m)	(442)	(465)	(482)	(504)	(493)
Minority int. & other (US$m)	4	4	4	4	4
Liabilities+equity (US$m)	**268**	**494**	**580**	**665**	**735**
Net cash (US$m)	*48*	*211*	*94*	*60*	*(38)*
Net debt to NTM EBITDA (x)	*2.5x*	*14.7x*	*7.9x*	*(2.0x)*	*0.2x*

White Mesa Processing Plant, Utah (100% Energy Fuels)

The White Mesa Mill is located on 4,816 acres (~19.5km^2) of private land in San Juan County, south east Utah, six miles south of Blanding and within trucking distance of Energy Fuel's conventional uranium vanadium hard rock properties in UT, CO, AZ and NM. The property is accessible via 0.5 miles of private road off of US Highway 191. The mill is licensed to process 2,000 short tons (1,814 metric tonnes) per day or 700k short tons per year (635k metric tonnes) and is the only licensed and operational conventional uranium mill in the United States. Water is supplied via pipeline from the Recapture Reservoir which supplies up to 1,000 acre feet (1.23 million cubic metres) of water per year, supplanted by three deep water supply wells. Power is supplied by Rocky Mountain Power; otherwise the site is capable of functioning independently of off-site support. The mill occupies 50 acres (0.2km^2) and the tailings storage cells occupy 250 acres (~1km^2) with permitting for additional tailings underway.

Figure 12: (A) White Mesa location; (B) White Mesa site map



Source: Energy Fuels

History: Mill construction commenced in June 1979 and operations commenced in June 1980. The operation was owned and operated by Energy Fuels Nuclear ("EFN", not related to the current Energy Fuels company) until 1984, Union Carbide (1984-1994), EFN (1994-1997), Denison (1997-2012) and was acquired from Denison by Energy Fuels in 2012. Denison completed a mill refurbishment from 2006-2008 including purchase of mobile equipment, restoration of the vanadium circuit, replacement of pumps and drives, modernization of instrumentation and controls, and relining tailings Cell A.

Processing

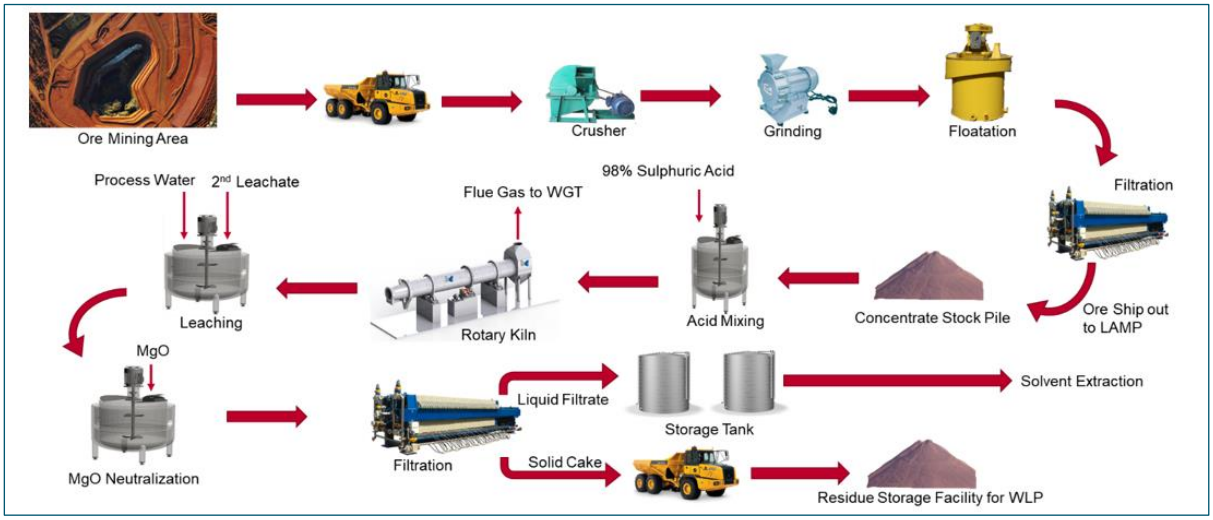
Flowsheet: Includes crush (20-in grizzly crusher), grind (SAG mill, P80 28-mesh), followed by atmospheric hot temperature sulphuric acid leach, counter current decantation (solid-liquid separation), clarification, solvent extraction and precipitation of uranium followed by drying. This is a conventional hard rock uranium milling circuit configuration. In addition, there is a separate vanadium by-product recovery circuit. Uranium recoveries are ~95%. Onsite infrastructure also includes an ore stockpile with up to 450kst of mineralisation and 3.5Mst of solid tailings capacity. Tailings: Two active cells and one or more evaporation pond(s) are in use during normal operations. Water is pumped from the tailings cell to the evaporation pond and the tailings solids are allowed to dry. Once tailings cells reach capacity, an interim cover is placed over the tailings and new cells are excavated.

Figure 13: (A) White Mesa site, (B) Crack and leach circuit; (C) Concentrate bagged for shipment to Estonia

Source: Energy Fuels

Rare earths cracking and leaching: The cracking and leaching stage solubilizes rare earths to enable chemical extraction of impurities (including cerium in current market conditions) to produce an enhanced value mixed rare earth carbonate. This increases payability on contained rare earth content from ~30-40% for an ore concentrate to ~60-70% for a cerium depleted mixed rare earth carbonate (MREC). The essential stages are acid leaching (sulphuric or HCl are most common due to cost, sulphuric is lowest cost but HCl may achieve better recoveries), impurity removal, neutralization and filtration. Some rare earth minerals require more aggressive conditions such as a roaster or acid bake to remove acid-consuming carbonate minerals but we think this is unlikely to be required for Energy Fuels as its feed consists of weathered sand monazite deposits (as opposed to a carbonatite intrusion like Lynas Rare Earths' Mt Weld deposit. In Figure 14 we show Lynas' Advanced Material Plant flowsheet; note we don't think the rotary kiln (acid bake) stage is required for Energy Fuels.

Figure 14: Cracking and leaching process overview – Lynas Advanced Material Plant



Source: Lynas Rare Earths

Rare earth separation: From a mixed rare earth carbonate, rare earths are re-solubilized, impurities (e.g. Fe, Al, Th, P) are removed first, and then individual rare earths are precipitated. The conventional precipitation method is solvent extraction (currently the most common process) or ion exchange. Energy Fuels has expressed plans to progress to commercial scale rare earth separation with lab scale pilot separation commenced at site. We view this as logical given Energy Fuels organizational experience with solvent extraction, the fact that White Mesa is already involved in cracking and leaching, and the advantages of a permitted facility that is able to dispose of waste streams.

Figure 15: Rare Earths solvent extraction at… (A) Laboratory scale at White Mesa; (B) Neo's Sillamae facility; (C) Saskatchewan Research Council's Rare Earths Processing Facility in Saskatoon

Source: Energy Fuels, the Ecologist, SRC

Ore sourcing

Monazite placer deposits were the main source of mined rare earths until the 1960s when concerns over thorium radionuclides led to its replacement by bastnaesite deposits. The major monazite placer mining supply sources at that time were Brazil, Southern India, Australia and South Africa. Due to its density (4.6-5.7t/m^3), monazite is often found in mineral sand deposits of which Australia, South Africa and the south eastern USA are notable supply sources. Of the major mineral sands miners, Iluka have chosen to build their own monazite refinery at Eneabba, Western Australia, Chemours have agreed to partner with Energy Fuels. Rio Tinto, and Tronox are a potential

source of supply, and there are other important producers in East Africa (Base Resources in Kenya and Kenmare in Mozambique) and Sierra Rutile in Sierra Leone.

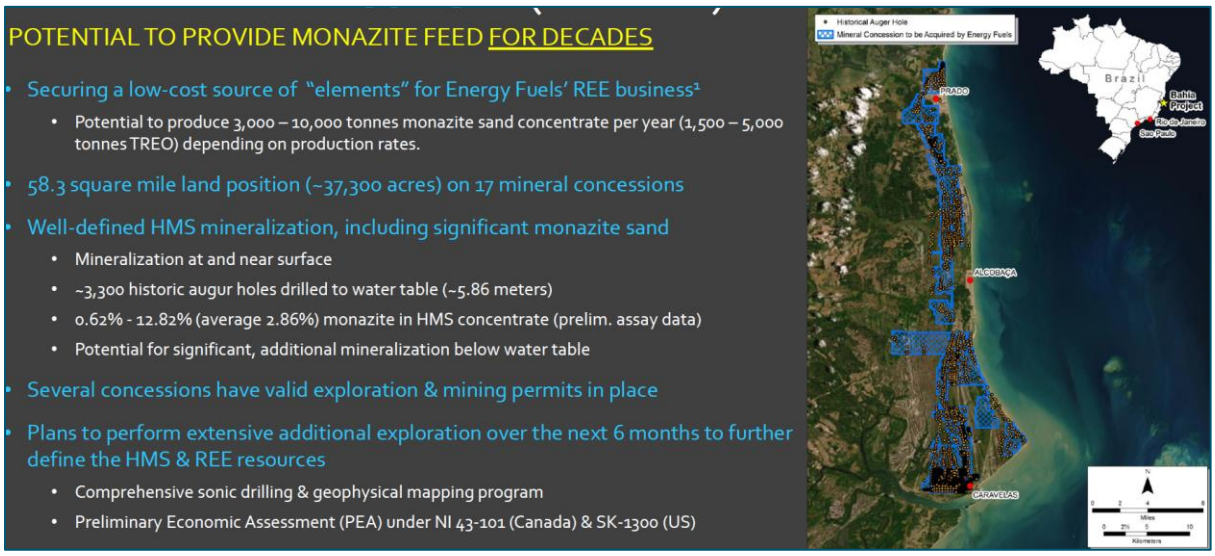
Figure 16: Global map of titanium deposits – sedimentary deposits of interest for monazite by-product

Source: United States Geological Survey

Bahia Project: Energy Fuels' first monazite sands project

In May 2022, Energy Fuels entered binding agreements to acquire the Bahia Project, a well-known and augur drilled mineral sands (monazite, rutile, ilmenite and zircon) deposit, located in Bahia, eastern Brazil. The purchase consideration is US$27.5m including US$21.9m on closing. The deposit has been drilled with over 3,300 augur drill holes, but only averaging 5.86m deep, to the average depth of the water table. Energy Fuels plans to drill out the deposit targeting an MRE and PEA in 1H23. The target is an asset that can generate 3-10ktpa of monazite concentrate, with potential for by-product TiO2 and zircon revenue streams.

Figure 17: Bahia Project Overview



Source: Energy Fuels

Economics

We model four variables that drive the scenario analysis. Our costs and capex are benchmarked against Iluka's refinery economics with more conservative capital intensity (despite an already operating uranium plant and tailings facility) and similar operating costs.

Throughput: We model ramp up to 20k metric tonnes pa by 2027 (phase I), with an expansion to 30ktpa in 2029-2030.

Op costs we derive from Iluka's guidance on its monazite refinery – A$80m/year fixed costs (~US$60m); A$3.2/kg crack and leach (~US$2.4/kg); A$2.8/kg separation (~US$2.1/kg). We model US$40m fixed costs at 20ktpa, increasing to US$50m at 30ktpa. For variable costs we model US$2.5/kg crack and leach costs and US$2.5/kg separation costs, similar to, but more conservative than, Iluka's published operating cost estimates.

Payability: We model 35% payability on concentrate sourcing costs, in line with 30-40% industry standard. We model 66% payable on mixed rare earth carbonate and 95% payability on separated rare earth oxides.

Capex: For base case we model US$150m for cracking and leaching, with a US$75m expansion in 2029-2030 to enable 30ktpa. For separation we model US$200m of initial capex, with a US$100m expansion in 2029. Given the existing facilities in place, we think our capex estimates, which are higher than Iluka's on a capital intensity per tonne of throughput, are conservative and quite achievable.

Cracking and leaching: At 30ktpa throughput we estimate production of ~15.0ktpa of REO in a mixed rare earth carbonate. At 66% assumed payability this generates US$33/kg of revenue with US$23/kg of operating costs. The key operating costs are US$40-50m assumed fixed facility/staff/G&A costs, and US$2.5/kg operating costs, mostly reagents. Our estimates drive a 29% EBITDA margin at steady state, ~US$105m annual FCF at steady state with a five-year payback period, $NPV_{7\%}$ of US$787m and 27% IRR.

Figure 18 Economic summary: Cracking and Leaching

Year (to 31 Dec)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Material processed (kt)	0.9	2.3	3.6	6.8	13.6	20.0	20.0	25.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	**902.2**
Concentrate grade (% TREO)	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	**53%**
TREO produced (t)	**456**	**1,140**	**1,825**	**3,421**	**6,842**	**10,056**	**10,056**	**12,570**	**15,084**	**15,084**	**15,084**	**15,084**	**15,084**	**15,084**	**15,084**	**453,636**
Nd_2O_3 (t)	82	205	328	616	1,232	1,810	1,810	2,263	2,715	2,715	2,715	2,715	2,715	2,715	2,715	**81,654**
Pr_6O_{11}(t)	23	57	91	171	342	503	503	629	754	754	754	754	754	754	754	**22,682**
Dy_2O_3 (t)	5	11	18	34	68	101	101	126	151	151	151	151	151	151	151	**4,536**
Tb_4O_7 (t)	2	5	7	14	27	40	40	50	60	60	60	60	60	60	60	**1,815**
Revenue ($/kg)	29	30	33	33	33	33	33	33	33	33	33	33	33	33	33	**33**
Cash cost ($/kg)	29	27	31	32	26	24	24	24	23	23	23	23	23	23	23	**23**
Capex	10	75	83	8	8	8	8	46	46	8	8	8	8	8	8	**524**
Revenue (US$m)	13	34	60	112	225	331	331	413	496	496	496	496	496	496	496	**14,909**
Op Costs (US$m)	(13)	(31)	(56)	(108)	(176)	(240)	(240)	(301)	(351)	(351)	(351)	(351)	(351)	(351)	(351)	**(10,635)**
EBITDA	0	3	4	4	49	90	90	113	145	145	145	145	145	145	145	**4,274**
EBITDA margin (%)	1%	10%	6%	4%	22%	27%	27%	27%	29%	29%	29%	29%	29%	29%	29%	**29%**
FCF (US$m)	**(10)**	**(72)**	**(80)**	**(4)**	**30**	**63**	**63**	**43**	**68**	**105**	**105**	**105**	**105**	**105**	**105**	**2,818**

Source: SCPe

The key sensitivities are to concentrate payability (i.e. the cost of concentrate). The standard range is 30-40% of payable value and our base case is 35%. At 40% payability, we estimate a 27% IRR and 23% EBITDA margin, indicating an attractive and viable project even assuming the upper end of monazite sourcing costs. The other key sensitivities are MREC payability (i.e. revenue payability) and prices. Operating costs have a larger impact than capex, but neither are as significant as ore sourcing costs.

Figure 19 NPV sensitivity summary: Cracking and leaching

Crack and leach NPV7% (US$m)	Prices : -20.0%	-10.0%	flat	+10.0%	+20.0%
DR: 5.0%	699	902	1,103	1,303	1,504
DR: 6.0%	579	755	930	1,104	1,278
DR: 7.0%	479	634	**787**	940	1,093
DR: 8.0%	397	534	669	804	939
DR: 10.0%	272	381	488	595	702

Crack and leach NPV7% (US$m)	Recovery: 90%	92.5%	95%	96%	97%
Processing: US$1.5/kg	820	862	901	920	937
Processing: US$2.0/kg	766	806	844	863	879
Processing: US$2.5/kg	711	751	**787**	805	820
Processing: US$3.0/kg	657	695	730	747	762
Processing: US$2.5/kg	711	751	787	805	820

Crack and leach NPV7% (US$m)	Conc payable: 30.0%	32.5%	35.0%	37.5%	40.0%
MREC Payability: 62.0%	844	702	559	416	272
MREC Payability: 64.0%	957	816	673	530	387
MREC Payability: 66.0%	1,070	929	**787**	645	502
MREC Payability: 68.0%	1,184	1,042	901	759	616
MREC Payability: 70.0%	1,297	1,155	1,014	872	730

Crack and leach NPV7% (US$m)	Opex : -20.0%	-10.0%	flat	+10.0%	+20.0%
Capex : -20.0%	981	909	838	765	692
Capex : -10.0%	956	884	812	740	666
flat	931	859	**787**	715	641
Capex: +10.0%	906	834	762	689	616
Capex: +20.0%	881	809	737	664	591

Source: SCP; all NPVs shown at 7% discount rate, US$150/kg NdPr, US$500/kg Dy, US$2,100/t Tb and US$2/kg weighted average price for other REO

Separation: Below we present our estimates for rare earth separation of LREEs (including Nd and Pr), while we assume HREEs are not separated and are sold in a mixed rare earth carbonate. We assume separation commences in 2027 with US$200m of initial capex split between 2026 and 2027 and US$100m for expansion in 2029. We model US$2.5/kg separation costs plus US$10m fixed costs, which are slightly higher than Iluka's opex estimates for its separation unit. We assume 95% payability on separated oxides, 95% separation recovery from MREC, and 66% payability on heavy rare earths. Between cracking and leaching and separation, this assumes a 90% overall recovery from concentrate to separated oxides, in line with Iluka. Our estimates drive a 23% EBITDA margin at steady state, ~US$104m annual FCF at steady state with a four-year payback period, $NPV_{7\%}$ of US$776m and 39% IRR for the separation unit. We think our 95% pay-ability assumption is appropriately conservative as a high purity separated oxide product should by definition achieve the benchmark price (i.e. 100% payability of Chinese separated oxide prices), or even a premium for US-origin.

Figure 20: Economic summary: Separation

Year (to 31 Dec)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
TREO produced - separated oxides	--	--	--	--	--	9,540	9,540	11,925	14,310	14,310	14,310	14,310	14,310	14,310	14,310	417,375
Nd_2O_3 (t)	--	--	--	--	--	1,717	1,717	2,147	2,576	2,576	2,576	2,576	2,576	2,576	2,576	**75,128**
Pr_6O_{11}(t)	--	--	--	--	--	477	477	596	716	716	716	716	716	716	716	**20,869**
Dy_2O_3 (t)	--	--	--	--	--	95	95	119	143	143	143	143	143	143	143	**4,174**
Tb_4O_7 (t)	--	--	--	--	--	38	38	48	57	57	57	57	57	57	57	**1,670**
Revenue ($/kg)	--	--	--	--	--	43	43	43	43	43	43	43	43	43	43	**43**
Cash cost ($/kg)	--	--	--	--	--	34	34	34	33	33	33	33	33	33	33	**33**
Capex	--	--	--	--	100	108	8	108	8	8	8	8	8	8	8	**565**
Revenue (US$m)	--	--	--	--	--	413	414	517	621	621	621	621	621	621	621	**18,111**
Op Costs (US$m)	--	--	--	--	--	(321)	(322)	(400)	(478)	(478)	(478)	(478)	(478)	(478)	(478)	**(13,943)**
EBITDA	--	--	--	--	--	92	92	118	143	143	143	143	143	143	143	**4,168**
EBITDA margin (%)	--	--	--	--	--	22%	22%	23%	23%	23%	23%	23%	23%	23%	23%	**23%**
FCF (US$m)	--	--	--	--	(100)	(36)	64	(16)	104	104	104	104	104	104	104	2,708

Source: SCPe; pressented on a standalone basis - i.e. crack and leach sale price (66% payablility) treated as an operating cost for the separation unit

On a standalone basis the biggest sensitivities are purchase and sales payabilities, although in this case the MREC payability is an inter-company transfer as the cracking and leaching is in-house. Prices are the other key sensitivity. Opex and capex have similar economic impact but neither is as key a driver as payabilities.

Figure 21: NPV sensitivity summary: Separation

Separation NPV7% (US$m)	Prices : -20.0%	-10.0%	flat	+10.0%	+20.0%
DR: 5.0%	727	883	1,039	1,196	1,352
DR: 6.0%	604	739	874	1,009	1,144
DR: 7.0%	504	621	**739**	856	973
DR: 8.0%	422	525	627	730	832
DR: 10.0%	299	378	458	564	643

Separation NPV7% (US$m)	Recovery: 90%	92.5%	95%	96%	97%
Processing: US$1.5/kg	663	772	876	925	968
Processing: US$2.0/kg	616	724	826	874	917
Processing: US$2.5/kg	568	675	**776**	824	866
Processing: US$3.0/kg	521	626	726	773	815
Processing: US$3.5/kg	474	578	676	723	764

Separation NPV7% (US$m)	MREC payable: 62.0%	64.0%	66.0%	68.0%	70.0%
Separated Oxide Payability: 90.0%	880	802	723	643	562
Separated Oxide Payability: 92.5%	909	830	750	668	585
Separated Oxide Payability: 95.0%	939	858	**776**	692	608
Separated Oxide Payability: 97.5%	969	886	802	717	630
Separated Oxide Payability: 100.0%	999	914	828	741	653

Separation NPV7% (US$m)	Opex : -20.0%	-10.0%	flat	+10.0%	+20.0%
Capex : -20.0%	884	856	827	798	770
Capex : -10.0%	859	830	801	773	744
flat	833	804	**776**	747	718
Capex: +10.0%	808	779	750	722	693
Capex: +20.0%	782	753	725	696	667

Source: SCP; all NPVs shown at 7% discount rate, US$150/kg NdPr, US$500/kg Dy, US$2,100/t Tb and US$2/kg weighted average price for other REO

Cost benchmarking: Below we benchmark capex and opex against Iluka's Monazite Refinery FID economic projections. We have conservatively assumed higher capital cost intensity per tonne than Iluka despite the significant infrastructure already in place. Similarly, we have conservatively assumed higher variable processing costs at Energy Fuels than Iluka's estimate. In reality we think Energy Fuels should have material cost savings in Utah vs Iluka in Western Australia, including labour and reagent availability and costs. The benchmarking exercise indicates that monazite refining is an attractive economic prospect at White Mesa, in addition to its strategic benefits for the United States.

Figure 22: SCPe assumptions benchmarked against Iluka monazite refinery FID outcomes

Capex benchmarking	Iluka	SCPe Energy Fuels
Throughput capacity (metric tonnes per year)	55.0	30.0
Total Capex ($m)	A$1,000-1,200m	US$525m
Capital intensity per tonne (US$m/t)	*US$12.7-15.3*	*US$17.5*
... of which cracking and leaching ($m)	A$170-200m	US$225m
... of which separation and finishing ($m)	A$320-390m	US$300m

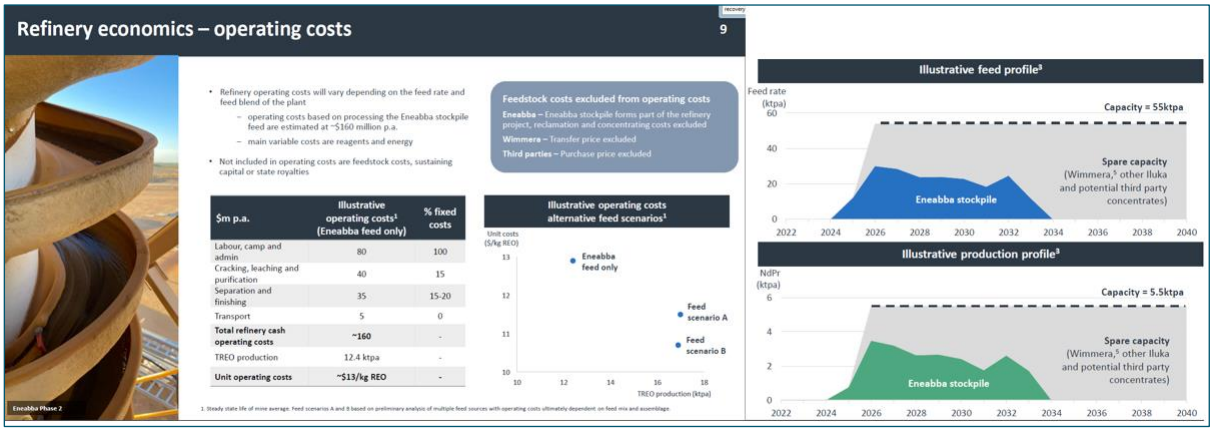
Opex benchmarking	Iluka (A$m)	SCPe White Mesa (US$m)
Labour, camp and admin ($m/year)	80.0	60.0
Cracking and leaching ($m/year)	40.0	37.7
Separation and finishing ($m/year)	35.0	45.8
Transport ($m/year)	5.0	--
Total refinery costs ($m/year)	160.0	143.5
TREO production (ktpa, metric tonnes)	12.4	14.3
Labour, camp and admin ($/kg)	A$6.5	US$4.2
Cracking and leaching op costs ($/kg)	A$2.7	US$2.6
Separation and finishing op costs ($/kg)	A$2.8	US$3.2

Source: Iluka Resources 3 April 2022 Eneabba Rare Earths Refinery - Final Investment Decision presentation, SCPe for Energy Fuels; Iluka facility designed for 55ktpa capacity but production scenario assumes Eneabble feed only with spare capacity for Illuka's WImmera development project and/or third party concentrates; USD/AUD FX @ US$0.70 per A$1.00

Figure 23: Iluka Refinery illustrative capex estimate

Source: Iluka Resources, 3 April 2022 Eneabba Rare Earths Refinery - Final Investment Decision presentation

Figure 24: Iluka Refinery illustrative opex estimate and (B) production scenarios



Source: Iluka Resources 3 April 2022 Eneabba Rare Earths Refinery - Final Investment Decision presentation

Uranium portfolio (100% Energy Fuels with exception of Nichols Ranch)

Energy Fuels has one of the largest uranium portfolios in the United States including the largest conventional SW USA hard rock portfolio, oriented around the White Mesa Mill in Utah, and ISR assets in the US' twin ISR hotbeds of Wyoming and Texas. Much of the portfolio is permitted to commence production, which gives Energy Fuels excellent optionality, and we believe at US$60/lb (our LT price estimate), Energy Fuels could consider restarting production at some of its already permitted assets. Technical reports on all the assets are current (2021), however detailed PFS or DFS studies are not completed, as market conditions did not warrant the expenditure and resulting dilution required. In line with peer averages, we value the portfolio at US$5.00/lb in-situ value, US$524m total, as it is premature to value the assets on a DCF basis at this time.

Figure 25: Uranium reserves and resources

Project	Ownership		Reserves (2P)			M&I			Inferred			Total Contained		
			Tonnes	Grade	Contained	Tonnes	Grade	Contained	Tonnes	Grade	Contained	Tonnes	Grade	Contained
			(kt)	(% U3O8)	(klbs)	(kt)	(% U3O8)	(klbs)	(kt)	(% U3O8)	(klbs)	(kt)	(% U3O8)	(klbs)
Roca Honda	100%	NM	--	--	--	1,676	0.477%	17,622	1,373	0.457%	13,842	3,048	0.468%	31,464
Bullfrog	100%	UT	--	--	--	1,415	0.292%	9,100	372	0.245%	2,010	1,787	0.282%	11,110
Sheep Mountain OP	100%	WY	3,588	0.115%	9,117	3,819	0.114%	9,570	--	--	--	7,407	0.114%	18,687
Sheep Mountain UG	100%	WY	3,173	0.132%	9,248	--	--	--	--	--	--	3,173	0.132%	9,248
La Sal	100%	UT	--	--	--	--	--	--	747	0.260%	4,281	747	0.260%	4,281
Pinyon Plain	100%	AZ	--	--	--	121	0.903%	2,402	15	0.394%	126	135	0.848%	2,528
Total conventional			**6,761**	**0.123%**	**18,365**	**7,031**	**0.250%**	**38,694**	**2,506**	**0.367%**	**20,259**	**16,298**	**0.215%**	**77,318**
Alta Mesa ISR	100%	WY	--	--	--	1,424	0.109%	3,410	6,347	0.120%	16,793	7,771	0.118%	20,203
Nichols Ranch ISR	89%	WY	--	--	--	2,662	0.105%	6,183	557	0.096%	1,176	3,219	0.104%	7,359
Total ISR			**--**	**--**	**--**	**4,086**	**0.106%**	**9,593**	**6,904**	**0.118%**	**17,969**	**10,990**	**0.114%**	**27,562**
Total uranium			**6,761**	**0.123%**	**18,365**	**11,117**	**0.197%**	**48,287**	**9,409**	**0.184%**	**38,228**	**27,287**	**0.174%**	**104,880**
Attributable			**6,761**	**0.123%**	**18,365**	**10,829**	**0.199%**	**47,620**	**9,349**	**0.185%**	**38,101**	**26,940**	**0.175%**	**104,086**

Source: Energy Fuels; R&Rs S-K 1300 and NI 43-101 compliant; as at 31 Dec 2021; reserves reported exclusive of resources

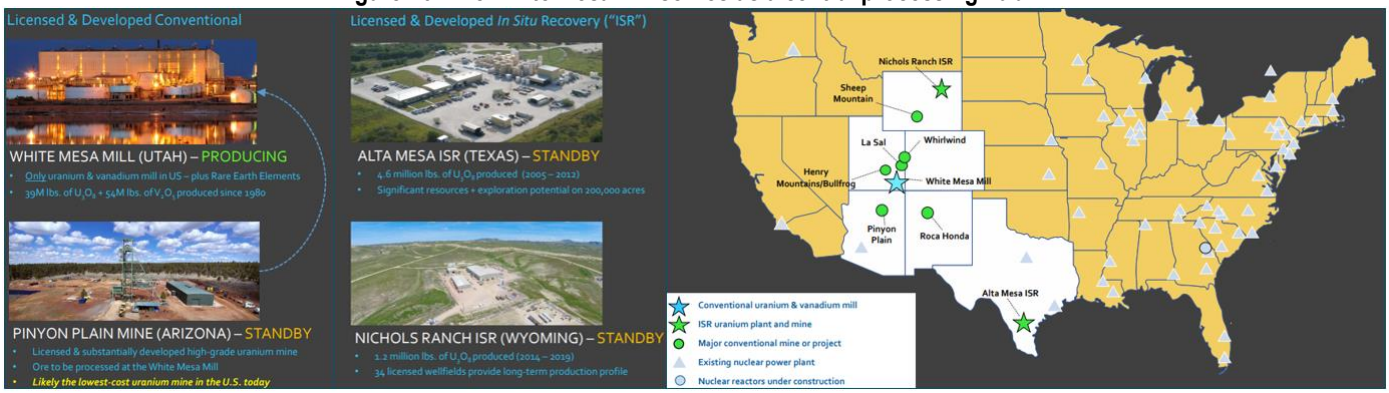
Contracts and production

Energy Fuels has three sales contracts with major US nuclear utilities for a minimum of 3.0Mlbs of U3O8 sales from 2023-2030, with flex up options to up to 4.2Mlbs (375klbs/year with flex options to up to 520klbs/year). Energy Fuels currently has 692klbs of U3O8 in produced inventory, with 300klbs in stockpiled alternate feed materials (yet to be processed) with plans to recover 120klbs in 2022. We assume these contracts are met through a combination of drawing down stockpiles, processing the remaining alternative feed materials, and production from one of the existing permitted operations. We assume US$25/lb operating cost for alternative feed materials and US$40/lb for conventional production, plus US$15m of total mining capex, which generates US$7.6m average annual FCF over the contracts for NPV7% of US$52m at our modelled US$60/lb uranium price.

Western USA conventional hard rock projects

The White Mesa Mill was built to process Colorado Plateau conventional hard rock ore (~0.13% U_3O_8) that was typically mined using conventional underground methods. In the 2000s Denison consolidated a portfolio of SW US uranium assets with the intention of using the mill as a central hub. Of the four conventional assets in the portfolio, La Sal (UT), Pinyon Plain (AZ) and Roca Honda (NM) are permitted for production.

Figure 26: The White Mesa Mill serves as a central processing hub



Source: Energy Fuels

La Sal, UT (100% Energy Fuels)

The La Sal property is located in San Juan County, Utah, 24 miles SE of Moab and 70km from the White Mesa Mill. The area first came into focus for uranium in 1943 as part of the Manhattan Project and exploration delineated more deposits from 1960-1980. The property includes seven sandstone-hosted deposits (Energy Queen, Redd Block, Beaver, La Sal, and Pandora) and the mines were in commercial production from 2009-2012, accessed via the La Sal and Pandora declines, and remain permitted for production. The La Sal and Pandora declines were rehabbed for test mining that took place between April 2018-May 2019. Beaver and Energy Queen are shaft accessed.

Figure 27: R&R and cut-off modifiers

Classification	COG	Tons	U Grade	Contained	V2O5 Grade	V2O5
	(% U3O8)	(short tons)	(% U3O8)	(lbs)	(% V2O5)	(lbs)
Inferred	0.3%	823,000	0.26%	4,281,000	1.08%	17,746,000

Cut-off modifiers	Unit	Quantity
U3O8 price	(US$/lb)	65
Process plant U3O8 recovery	(%)	96%

Cut-off modifiers	Unit	Quantity
Operating costs per ton	(US$/ton)	209
Cut-off grade	(% U3O8)	17.0%

Source: Energy Fuels as at 31 Dec 2021

Pinyon Plain, AZ (100% Energy Fuels)

Pinyon Plain is a fully-permitted uranium-copper breccia pipe deposit in northern Arizona. There is a headframe, hoist and compressor and the shaft was sunk to a depth of 1,452ft (of a total planned 1,470 ft) with three development levels (1,003ft 1,220ft and 1,400ft) started and currently acting as drill bays. The project is fully permitted, in compliance with environmental requirements, and has all infrastructure needed to recommence operations pending appropriate market conditions.

Figure 28: R&R and cut-off grade modifiers

Classification	COG	Tons	U Grade	Contained	Cu Grade	Cu Contained
	(% U3O8)	(short tons)	(% U3O8)	(lbs)	(% Cu)	(lbs Cu)
Measured	0.4%	6,000	0.5%	55,000	9.6%	1,155,000
Indicated	0.3-0.4%	127,000	0.9%	2,347,000	4.2%	10,553,000
M&I	**0.3-0.4%**	**133,000**	**0.9%**	**2,402,000**	**4.4%**	**11,708,000**
Inferred	0.3-0.4%	16,300	0.4%	126,000	1.4%	470,000
Total	**0.3-0.4%**	**149,300**	**0.8%**	**2,528,000**	**4.1%**	**12,178,000**

Cut-off modifiers	Unit	Quantity
U3O8 price	(US$/lb)	65
Copper price	(US$/lb)	4.00
Mining cost - Main zone	(US$/ton)	101
Mining cost - Jupiter zone	(US$/ton)	116
Haul cost	(US$/ton)	67
Process + G&A cost	(US$/ton)	192
Royalty cost	(US$/ton)	7

Cut-off modifiers	Unit	Quantity
Total op cost (Main)	(US$/ton)	459
Total op cost (Jupiter)	(US$/ton)	375
Process plant U3O8 recovery	(%)	96%
Cu processing recovery	(%)	90%
Main zone cut-off	(%)	0.4%
Jupiter zone cut-off	(%)	0.3%

Source: Energy Fuels, as at 31 Dec 2021

Roca Honda, NM (100% Energy Fuels)

Roca Honda is a high grade (~0.36% U_3O_8 = ~US$475 per metric tonne of ore at US$60/lb U_3O_8) underground project. The orebody is a flat lying sandstone hosted deposit. Planned mining is room and pillar and drift and fill with cemented backfill, on a minimum mining width of six feet, accessed by two shafts; one of the two shafts is partially developed. The project is currently in the permitting process and a Supplement to the Draft EIS is planned for 2H22/1H23 with the final EIS submission planned for 2023. A 2021 scoping study by SLR envisaged a 1,150stpd (400kstpa) operation, with ore trucked to White Mesa, producing 2.5Mlbs per year at US$39/lb AISC with US$248m of development capital.

Figure 29: R&R and 2021 PEA results

Classification	COG	Tons	U Grade	Contained
	(% U3O8)	(short tons)	(% U3O8)	(lbs)
Measured	0.2%	208,000	0.5%	1,984,000
Indicated	0.2%	337,303	2.3%	15,638,000
M&I	**0.2%**	**545,303**	**1.6%**	**17,622,000**
Inferred	0.2%	1,513,000	0.5%	13,842,000
Total	**0.2%**	**2,058,303**	**0.8%**	**31,464,000**

2021 PEA	Unit	Quantity
U3O8 price	(US$/lb)	65
Mining cost - Main zone	(US$/ton)	111
Haul cost	(US$/ton)	62
Process + G&A cost	(US$/ton)	73
Total op cost	(US$/ton)	245
Royalty cost	(US$/ton)	6
Capex	(US$m)	482

2021 PEA	Unit	Quantity
U3O8 process recovery	(%)	95%
Royalty	(%)	7%
Severence tax on (state leases)	(%)	1.8%
Income tax	(%)	25.7%
Post-tax NPV5%-65/lb	(US$m)	55.9
Post-tax IRR	(%)	7.6%

Source: Energy Fuels, as at 31 Dec 2021

Bullfrog, UT (100% Energy Fuels)

Bullfrog consists of two continuous sandstone-type deposits, Copper Bench and Indian Bench, located in Garfield County, Utah, 117 miles from the White Mesa Mill. The nearby Tony M (an idled mine) and Southwest deposits were sold to TSX-listed Consolidated Uranium in 2021, but would, in our view, likely be processed at White Mesa if developed. Initial baseline studies and mine plans have been completed for permitting purposes but permit applications have not been submitted in light of market conditions.

Figure 30: R&R and cut-off modifiers

Classification	COG	Tons	U Grade	Contained
	(% U3O8)	(short tons)	(% U3O8)	(lbs)
Indicated	0.165%	1,560,000	0.29%	9,100,000
Inferred	0.165%	410,000	0.25%	2,010,000
Total	0.165%	**1,970,000**	0.28%	11,110,000

Cut-off modifiers	Unit	Quantity
U3O8 price	(US$/lb)	65
Process plant U3O8 recovery	(%)	95%
Minimum mining width	(ft)	3.0

Cut-off modifiers	Unit	Quantity
Operating costs per ton	(US$/ton)	204
Cut-off grade	(% U3O8)	16.5%
Cut-off GT	(%-ft)	0.5

Source: Energy Fuels as at 31 Dec 2021; S-K 1300 and NI 43-101 compliant

Economics

For illustrative purposes we model a scenario analysis which assumes three years of initial production from La Sal followed by development of Bullfrog for first production in 2028 at grades 15-25% below resource grade. Our modelled US$165/t operating costs are below the US$205/short ton (US$225/t) cut-off opex costs, however we note that US$40m (US$70/t) of White Mesa plant fixed costs are already modelled in our rare earths scenario, thus we are modelling incremental costs only. This generates a US$206m $NPV_{7\%}$ and 51% IRR. We have not modelled Pinyon Plain (we are less clear on circuit upgrades required for copper processing) or Roca Honda (high capex) at this time. While it is too soon to model with precision and confidence, as Energy Fuels has not undertaken an integrated mining and milling study combining the four projects and White Mesa, our takeaway from the exercise is the uranium portfolio can generate cash flow if mill costs are shared with rare earths, provided that mining costs and mine development costs are low enough, which requires further DD to confirm.

Figure 31: SCPe illustrative uranium restart production scenario

Year (to 31 December)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	LOM
Tonnes mined / processed (kt)	--	--	--	250	590	590	590	590	590	590	590	590	590	590	--	**6,147**
Grade (% U3O8)	--	--	--	0.22%	0.22%	0.22%	0.22%	0.22%	0.22%	0.22%	0.22%	0.22%	0.22%	0.22%	--	**0.22%**
Grade (% V2O5)	--	--	--	0.90%	0.90%	0.90%	--	--	--	--	--	--	--	--	--	**0.90%**
Uranium recovery (%)	--	--	--	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	--	**95%**
Vanadium recovery (%)	--	--	--	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	--	**90%**
U3O8 produced (mlbs)	--	--	--	**1.2**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	--	**28.3**
V2O5 produced (mlbs)	--	--	--	**4.5**	**10.5**	**10.5**	--	--	--	--	--	--	--	--	--	**25.5**
Cost per tonne (US$/t)	--	--	--	172	172	172	163	163	163	163	163	163	163	163	--	165
Cash cost ($/lb co-product)	--	--	--	24	24	24	35	35	35	35	35	35	35	35	--	32
AISC ($/lb)	--	--	--	31	31	31	43	43	43	43	43	43	43	43	--	39
Growth Capex (US$m)	--	--	50	50	--	100	--	--	--	--	--	--	--	--	--	**200**
Sustaining Capex (US$m)	--	--	--	5	12	12	12	12	12	12	12	12	12	37	--	**148**
Revenue (US$m)	--	--	--	109	258	258	163	163	163	163	163	163	163	163	--	**1,929**
Op Costs (US$m)	--	--	--	(51)	(120)	(120)	(104)	(104)	(104)	(104)	(104)	(104)	(104)	(104)	--	**(1,126)**
EBITDA (US$m)	--	--	--	59	138	138	59	59	59	59	59	59	59	59	--	**803**
FCF (US$m)	--	--	**(50)**	**(10)**	**94**	**(6)**	**39**	**39**	**39**	**39**	**39**	**39**	**39**	**14**	--	**311**

Source: SCPe; metric units unless specified; LT prices: US$60/lb U3O8 and US$10/lb V2O5

Sheep Mountain, Wyoming (100% Energy Fuels)

Sheep Mountain includes the proposed Congo open pit and the restart of the existing Sheep UG mine. Permits obtained include an approved Plan of Operations by the BLM in 2017, and state of Wyoming Mine Permit revision, Air Quality, and Water Discharge permits. The 2021 PFS envisaged an 11-year mine life averaging 1.4Mlbs/year (640klbs to 2.0Mlbs) including 760klbs on average from the open pit and 770klbs/year from UG mining with ore processed via heap leach and an SX plant on site. The existing permits enable mining to commence but the SX plant needs to be permitted by the State of Wyoming, and the heap leach is permitted to process 53% of reserves and requires permits for an expansion to accommodate the other 43% of reserves.

Deposit	Probable reserves				Indicated resources			
	COG	Tons	Grade	Contained	COG	Tons	Grade	Contained
	(% U3O8)	(short tons)	(% U3O8)	(lbs)	(% U3O8)	(short tons)	(% U3O8)	(lbs)
Sheep UG	0.45%	3,498,000	0.132%	9,248,000	0.30%	5,546,000	0.118%	13,034,000
Congo OP	0.10%	3,955,000	0.115%	9,117,000	0.10%	6,116,000	0.122%	14,903,000
Total	**0.10-0.45%**	**7,453,000**	**0.123%**	**18,365,000**	**0.10-0.30%**	**11,662,000**	**0.120%**	**27,937,000**

Source: Energy Fuels; As at 31 Dec 2021; S-K 13000 and NI 43-101 compliant; resources include reserves

2021 PFS	Unit	Quantity
U3O8 price	(US$/lb)	65.0
OP mining per ore ton @ 33x strip	(US$/ton)	37.8
UG mining	(US$/ton)	88.1
Process + G&A cost	(US$/ton)	20.1
Total op costs	(US$/ton)	98.4
Royalty + ad valorum + severence tax	(US$/lb)	6.0
Op cost per lb	(US$/lb)	39.9
AISC (US$/lb)	(US$/lb)	41.3

2021 PFS	Unit	Quantity
Uranium recovery	(%)	91.9%
LOM production	(klbs) U3O8	16,875
Production rate	(klbs/year)	1,406.3
Initial capex	(US$m)	112.2
Capex - sustaining / decomissioning	(US$m)	23.7
LOM capex per lb	(US$/lb)	8.1
NPV5% post-tax	(US$m)	120.7
IRR post-tax	(%)	26%

Source: Energy Fuels; As at 31 Dec 2021; S-K 13000 and NI 43-101 compliant; resources include reserves

ISR Portfolio, WY and TX (100% Energy Fuels)

Alta Mesa ISR, TX (100% Energy Fuels)

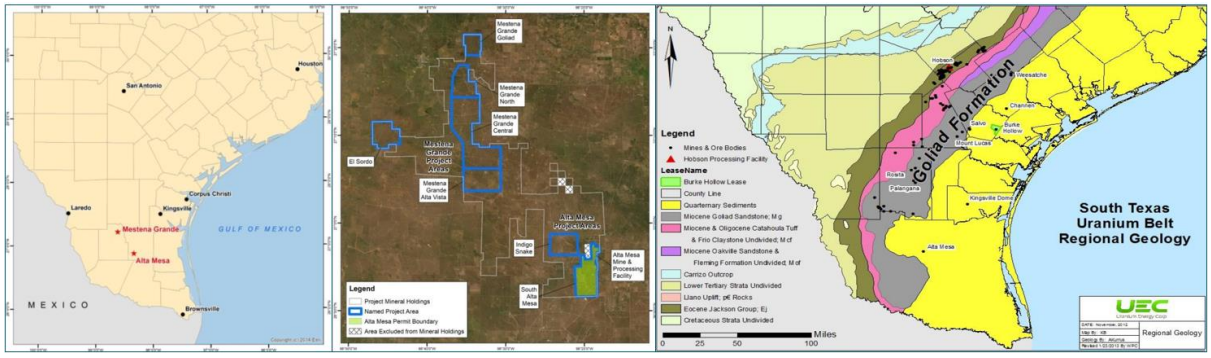
Alta Mesa, located in SE Texas, consists of two ISR properties, Alta Mesa and Mesteña Grande, and a central processing plant. The project produced a total of 4.6Mlbs between 2005 and 2013 from ISR production using alkaline lixiviant. The license area includes 19km^2 of mining leases and 790km^2 of mineral options. The deposits are roll front style deposits, typical for US ISR projects. The project has a total of 21Mlbs at 0.12% U3O8. Alta Mesa and the processing plant are fully permitted but Mesteña Grande requires operating permits. Historical recovery was 81% of pre-mining MRE, ranging from 58-111% in six wellfields.

Figure 32: (A) R&R and cut-off modifiers; (B) Project location; (C) Aerial Overview; (D) Regional Geology

		M&I			Inferred			Total		
Deposit	COG	Tons	Grade	Contained	Tons	Grade	Contained	Tons	Grade	Contained
	(% U3O8)	(short tons)	(% U3O8)	(lbs)	(short tons)	(% U3O8)	(lbs)	(short tons)	(% U3O8)	(lbs)
Alta Mesa	0.03%	1,451,000	0.108%	3,123,000	1,263,000	0.126%	3,192,000	2,714,000	0.116%	6,315,000
Mestena Grande	0.0%	119,000	0.121%	287,000	5,733,000	0.119%	13,601,000	5,852,000	0.119%	13,888,000
Total	**0.0%**	**1,570,000**	**0.109%**	**3,410,000**	**6,996,000**	**0.120%**	**16,793,000**	**8,566,000**	**0.118%**	**20,203,000**

Cut-off modifiers	Unit	Quantity
U3O8 price	(US$/lb)	65
Process plant U3O8 recovery	(%)	70-80%
Opex per ton	(US$/ton)	27-30
Cut-off grade	(%)	0.03%

Source: Energy Fuels; As at 31 Dec 2021; S-K 13000 and NI 43-101 compliant



Source: Project maps from Energy Fuels 2021 Technical Report; Regional geology from UEC 2013 Burke Hollow Technical Report

Nichols Ranch ISR, WY (Energy Fuels 100% of plant and 89.2% of contained MRE)

Nichols Ranch is an ISR property located in the Powder River Basin in Wyoming. The project was acquired by Uranerz in 2005 and commenced production in 2014. In 2015 Energy Fuels acquired Uranerz. The elution and precipitation plant was completed in February 2016 and yellowcake slurry was trucked to White Mesa for drying and drumming. The project consists of the Nichols Ranch wellfield, an elution plant and several other undeveloped resource areas and satellite properties. The plant includes recovery, elution and precipitation and filtration but does not have an on-site drying and packing circuit, thus trucking U_3O_8 643 road miles to White Mesa for drying and drumming remains the operating concept. SLR completed a 2021 PEA with an 11-year mine life producing 393klbs at US$25/lb operating costs and US$50/lb AISC (US$45/lb excluding decommissioning costs).

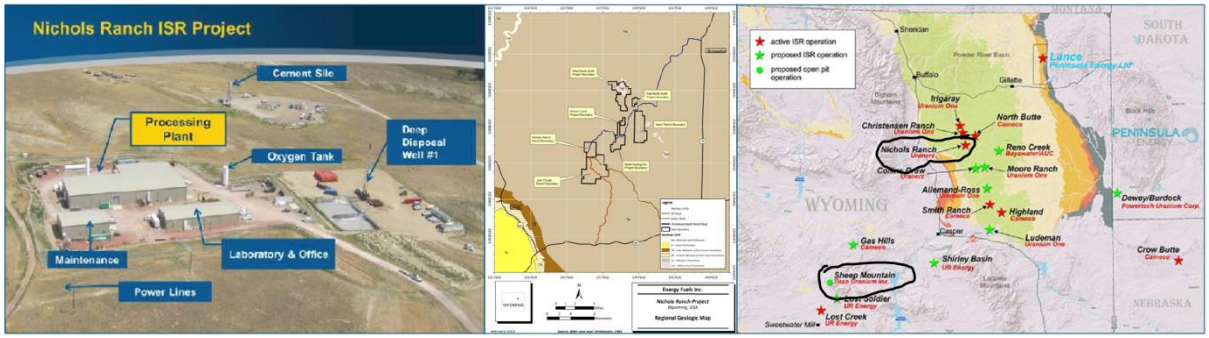
Figure 33: (A) R&R and PEA outcomes; (B) Project aerial; (C) Map; (D) Power River asset map (2015)

Classification	Own	Tons	U Grade	Contained	Recovery
	(%)	(short tons)	(% U3O8)	(lbs)	(%)
Measured	100.0%	11,000	0.19%	41,410	71.0%
Indicated	88.4%	3,283,000	0.11%	6,946,693	60.4%
M&I	**88.5%**	**3,294,000**	**0.11%**	**6,988,103**	**60.4%**
Inferred	93.6%	650,000	0.09%	1,176,200	60.4%
Total	**89.2%**	**3,944,000**	**0.10%**	**8,164,303**	**63.2%**

2021 PEA	Unit	Quantity
U3O8 price	(US$/lb)	65.0
Wellfield	(US$/lb)	2.9
Process + G&A cost	(US$/lb)	16.4
Transport	(US$/lb)	0.4
Total production cost	(US$/lb)	19.7
Royalty + ad valorum + severence tax	(US$/lb)	5.4
Op cost per lb	(US$/lb)	25.1

2021 PEA	Unit	Quantity
LOM production	(klbs) U3O8	4,020
Production rate	(klbs/year)	393.0
Initial capex	(US$m)	--
Capex - sustaining / decomissioning	(US$m)	102.0
LOM capex per lb	(US$/lb)	25.4
AISC (US$/lb)	(US$/lb)	50.4
NPV5%	(US$m)	41.1

Source: Energy Fuels, as at 31 Dec 2021; S-K 1300 and NI 43-101 compliant; EFR owns 100% of Nichols Ranch, Hank and North Rolling pin and 81% in parts of Jane Dough



Source: Energy Fuels; Regional map from Peninsula Energy 2015; note UEC acquired Uranium One assets + Reno Creek, Energy Fuels acquired Nichols Ranch and Sheep Mountain; Encore Energy now owns Dewey/Burdock

Corporate and Financial Summary

Share structure: As at 30 June 2022, Energy Fuels had 157.6m shares outstanding with 0.72m options outstanding at a weighted average exercise price of US$2.79/sh, and 3.2m PSU/RSU and SARs outstanding. We assume a total of US$250m of equity (35.7m shares) to fund the cracking and leaching, and separation circuits. We base our per share valuation on a fully-diluted, fully-funded assumed share count of 197.1m fully diluted, fully funded shares outstanding.

Funding assumptions: As the end of March 2021, Energy Fuels US$86m of cash, US$12m of marketable securities, 0.69Mlbs of U3O8 (US$33m market value at spot US$47.75/lb), and 1.05Mlbs of V2O5 (US$7.5m at spot US$7.40/lb) in inventory, with no debt. Funding for White Mesa REE circuits: We estimate US$350m of capex and US$164m of G&A, working capital and standby costs for a total funding requirement of US$514m. We assume this is financed through US$250m of equity, US$250m of debt at 5%, and US$152m of cash and uranium and vanadium inventory. We have not assumed any government grants though both MP Materials and Lynas Resources have received Government funding to support their REE mid and downstream efforts in the US.

Financials: Combining ~29% cracking and leaching and ~23% separation margins, we forecast steady state EBITDA margins of 39% over our modelled operating horizon. We estimate steady state FCF per year of ~US$200m, which we think could justify a US$1.5-2.0bn valuation, assuming 8-12% FCF yield or 8x EBITDA multiple. Returns on capital are attractive at 20-30% ROCE in the first ten years with greater than 20% ROE.

Figure 34: SCPe cash flow and balance sheet estimates

Year (to 31 Dec)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Revenue (US$m)	13	57	82	135	247	479	479	593	707	685	685	685	685	685	685
EBITDA (US$m)	(40)	(19)	(14)	(12)	29	168	168	216	274	268	268	268	268	268	268
Net income (US$m)	(48)	(23)	(17)	(22)	11	124	124	169	196	176	178	179	181	182	184
EPS (US$/sh)	(0.304)	(0.148)	(0.097)	(0.112)	0.057	0.641	0.642	0.875	1.016	0.912	0.920	0.928	0.936	0.944	0.951
EBITDA margin (%)	*(300%)*	*(34%)*	*(17%)*	*(9%)*	*12%*	*35%*	*35%*	*36%*	*39%*	*39%*	*39%*	*39%*	*39%*	*39%*	*39%*
Cash flow from ops (US$m)	(48)	(12)	(29)	(22)	16	108	159	188	222	216	215	216	218	219	221
Cash flow from investing (US$m)	(17)	(75)	(88)	(13)	(113)	(116)	(16)	(154)	(54)	(16)	(16)	(16)	(16)	(16)	(16)
FCF (US$m)	(58)	(87)	(117)	(35)	(97)	(8)	143	35	168	200	199	200	202	203	205
FCFPS (US$/sh)	(0.365)	(0.554)	(0.604)	(0.179)	(0.503)	(0.043)	0.741	0.180	0.871	1.034	1.028	1.036	1.043	1.051	1.059
Net cash (US$m)	48	211	94	60	(38)	(46)	97	132	300	500	699	899	1,101	1,304	1,509
ND/NTM EBITDA (x)	--	--	--	(2.0)	0.2	0.3	(0.5)	(0.5)	(1.1)	(1.9)	(2.6)	(3.3)	(4.1)	(4.9)	(5.6)
Debt borrowed (repaid) (US$m)	--	--	100	100	50	--	(100)	(100)	(50)	--	--	--	--	--	--
Equity Raised (US$m)	--	250	--	--	--	--	--	--	--	--	--	--	--	--	--
Total assets (US$m)	268	494	580	665	735	859	883	957	1,108	1,283	1,461	1,641	1,821	2,004	2,188
Total liabilities (US$m)	20	20	122	229	288	288	188	93	48	47	47	47	47	47	47
Total equity (US$m)	248	475	458	436	447	571	695	864	1,060	1,237	1,415	1,594	1,775	1,957	2,141
Ending shares out (m)	158	158	193	193	193	193	193	193	193	193	193	193	193	193	193
ROCE (%)	(18%)	(5%)	(3%)	(3%)	3%	19%	19%	21%	22%	19%	16%	14%	13%	12%	11%
ROIC (%)	(24%)	(9%)	(5%)	(5%)	4%	23%	24%	25%	31%	31%	32%	33%	34%	35%	37%
ROE (%)	(19%)	(5%)	(4%)	(5%)	2%	22%	18%	20%	19%	14%	13%	11%	10%	9%	9%
Crack and leach EBITDA (US$m)	0.1	3.3	3.6	4.3	48.5	90.1	90.1	112.7	145.2	145.2	145.2	145.2	145.2	145.2	145.2
Separation EBITDA (US$m)	--	--	--	--	--	91.9	92.1	117.7	143.2	143.2	143.2	143.2	143.2	143.2	143.2

Source: SCPe

Government and stakeholders:

Ownership: Energy Fuels owns 100% of the White Mesa Mill which is the primary focus of our economic analysis. Of the uranium assets, Energy Fuels owns 100% of the major projects with the exception of a 10.8% minority partner in the Nichols Ranch ISR asset.

Tax: The corporate profit tax rate in the USA is 21%. The Utah state corporate tax rate is 4.85% and netting state and federal tax, we use a 25% effective tax rate. Energy Fuels has ~US$320m of net operating losses which we have used in our model to offset taxable income in the early years.

Permitting: Cracking and leaching does not require major permits to be obtained as long as White Mesa complies with its existing regulatory requirements. Separation will require additional permits at the state level but we do not expect this process to be excessively onerous. There is potential to commence separation at a lesser scale (~1,000 tonnes per annum) in the existing mill building, which would not trigger new permitting requirements.

ESG Considerations

We think Energy Fuels should rank high for both mining and non-mining investors for ESG attractiveness. Among the standout features of the company are its active role in treating uranium-bearing mine tailings, generating saleable uranium production for energy generation, while also cleaning up third-party environmental liabilities. Moreover, it's key revenue streams, rare earths, uranium and vanadium are key critical metals to the energy transition away from high carbon-emission energy sources.

Environmental: White Mesa is fully permitted and operates in compliance with all state and federal environmental safety laws. Not only does it operate a safe radionuclide disposal facility, Energy Fuels processes alternative feed, including historic tailings to produce saleable uranium and vanadium, while simultaneously providing environmental benefit. We believe the downstream impact of Energy Fuel's uranium, rare earths and vanadium products are highly beneficial in enabling the substitution of carbon intensive energy generation and transportation.

Social: Energy Fuels is the key driver of the San Juan County Clean Energy Foundation which funds local education, health/wellness, environmental and Tribal/Indigenous initiatives and ongoing funding equals 1% of annual revenues from the White Mesa Mill. While hard to quantify, we believe that Energy Fuel's contribution to a US-centric rare earths and uranium supply chain is of significant social benefit in terms of downstream jobs, and geopolitical independence for the United States and associated friendly countries. Energy Fuels also signed an alliance with RadTran, a Colorado-based technology company, to explore potential to supply medical isotopes for use in the medical diagnostics supply chain.

Governance: The board current consists of ten members, including a non-Executive Chairman (J Birks Bovaird, a former senior member of one of Canada's major accounting firms), CEO Mark Chalmers, and non-executive Directors Benjamin Eshleman III (Texas energy background); Ivy Estabrooke (neuroscience), Barbara Filas (mining and environmental consulting); Bruce Hansen (mining operations); Jacqueline Herrera (specialty chemicals), (Robert Kirkwood (oil and gas); Alex Morrison (mining executive); and Dennis Higgs (mining and finance executive).

Risks

Ore sourcing: As it does not have active mines or advanced-feasibility projects of its own, securing concentrate feed is essential for Energy Fuels' rare earths strategy. Existing mineral sands producers are an opportunity for ore sourcing but there may also be competition for concentrates from planned facilities by Lynas, Iluka, and others.

Permitting: White Mesa is permitted and licenced to produce uranium and a mixed rare earth carbonate from uranium and monazite ores. Additional licensing may be required to permit and construct a rare earth separation facility and or metal and metal alloy facilities.

Prices: Rare earths prices have increased significantly since 2020, reflecting fast increasing demand and supply interruptions due to Covid-19. Due to China's market share, changes in Chinese policy or Western policy towards China could have a significant impact on prices.

Metallurgy: Cracking and leaching is reagent intensive depending on ore / concentrate characteristics (including acid consuming minerals), but product purity is less stringent than rare earth separation. Energy Fuels' experience using solvent extraction for uranium is relevant to REE separation, though REE separation is more complex due to significantly more products.

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TENDER:	0
NOT RATED:	0
TOTAL	52

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