

# URANIUM MACRO UPDATE

## 2023 Uranium Outlook

### EVENT

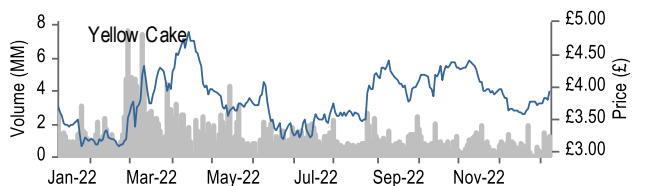
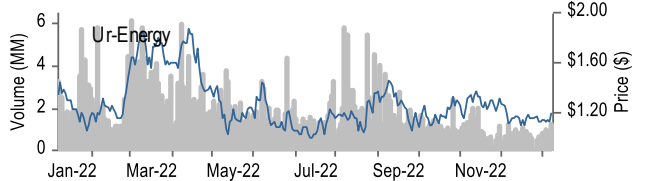
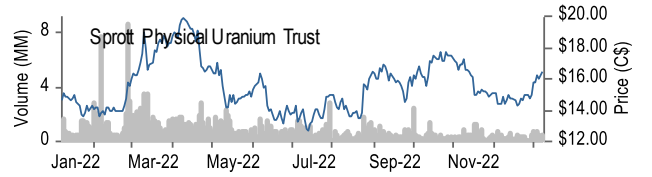
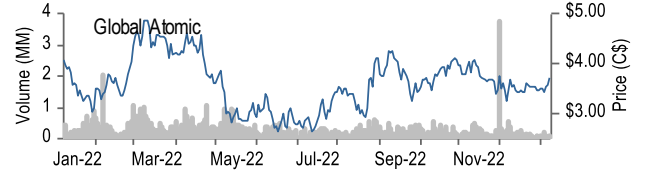
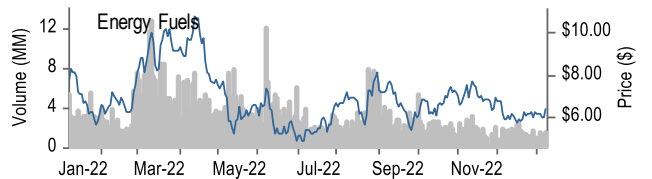
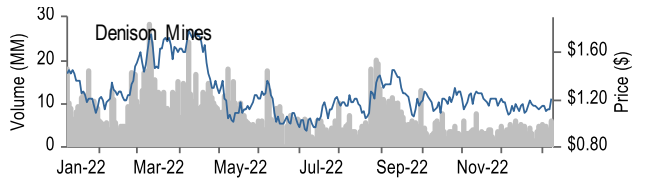
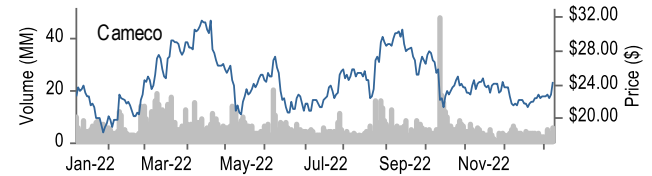
With U.S. conversion capacity set to come back on-line mid-year, in our view, this will create the dynamic of normalizing UF<sub>6</sub> and SWU prices (both of which more than doubled last year) with the more substantial price gains finally cascading down the nuclear fuel cycle to mined uranium oxide (U<sub>3</sub>O<sub>8</sub>).

### BOTTOM LINE

**Positive** – We expect the main uranium theme coming out of 2023 will be the transition from “underfeeding” to “overfeeding” at the enrichment level. By our estimation, this adds the equivalent of ~20 MMLb U<sub>3</sub>O<sub>8</sub> in new demand at a minimum relative to a ~180 MMLb U<sub>3</sub>O<sub>8</sub> steady-state market.

### FOCUS POINTS

- **U<sub>3</sub>O<sub>8</sub> Prices Set to Gain in 2023** – Conversion (UF<sub>6</sub>) was the bottleneck in the nuclear fuel cycle in 2022. With ConverDyn (Illinois) set to restart mid-year, the additional UF<sub>6</sub> supply should then enable western-allied enrichment facilities to overfeed. We have already heard reports of new long-term enrichment contracts being signed by utilities with a higher specified tails assay, supportive of our thesis.
- **Higher Prices May Come Fast** – Against this positive backdrop (underfeeding → overfeeding enabled by new UF<sub>6</sub> supply thereby driving greater U<sub>3</sub>O<sub>8</sub> demand) we note the Sprott Physical Uranium Trust has regained its NAVPU premium. Spot market volumes remain exceedingly thin, and if/when U.U re-enters the market, we expect the U<sub>3</sub>O<sub>8</sub> price action will likely be meaningfully higher and fast.
- **Uranium Equities** – The uranium equities underperformed the U<sub>3</sub>O<sub>8</sub> price by ~35% in the last year. We believe this will revert in 2023, setting up an excellent “catch-up” trade.



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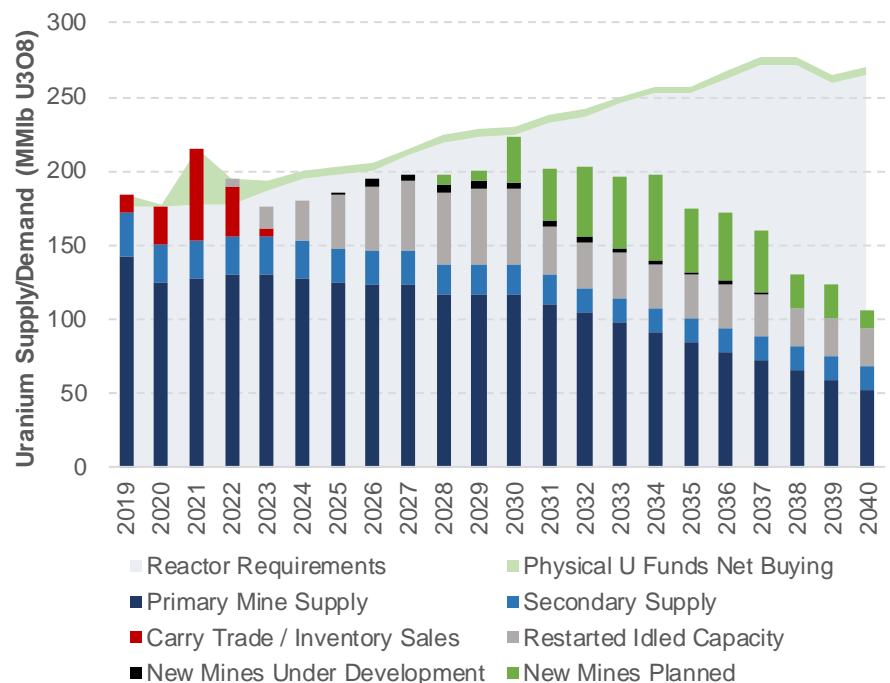
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See disclosure and a description of our recommendation structure at the end of this report.

### 2023 OUTLOOK FOR U PRICE AND URANIUM EQUITIES

In our view, there is a high-conviction bullish set-up for uranium oxide (U<sub>3</sub>O<sub>8</sub> prices) and the related uranium equities going into the middle of this year, and thereafter. With Russia accounting for ~27% and ~40% of uranium conversion and enrichment, prices for uranium higher up in the nuclear fuel cycle (conversion: UF<sub>6</sub> and enrichment: SWU) increased +167% and +127% last year, respectively. While legacy conversion and enrichment contracts are still being honored, western-allied utilities are reportedly not signing any new contracts with Russia. This has created a “race is on” dynamic for western-allied countries (U.S., Canada, Eurozone, Japan, Australia, etc.) to build-out and expand nuclear conversion and enrichment capacity as quickly as possible. To this point, over the last 3-6 months, approximately ~\$1 BB of funding has been pledged by several G7 countries to support this initiative ([10/26/22](#), [01/01/23](#), [01/05/23](#), etc.). The price action last year higher up in the fuel cycle (UF<sub>6</sub> and SWU) is only now beginning to manifest in new long-term enrichment contracts that are being signed with a higher specified tails assay, which is reportedly being increased to 0.30-0.35% in some cases from <0.20% where it has been for the last ~10-years. This fuel cycle dynamic is the often talked about switch from “underfeeding” to “overfeeding” in enrichment and by our estimation equates to a supply reduction of ~20 MMlb U<sub>3</sub>O<sub>8</sub>/year at a minimum, against steady state demand of ~180 MMlb U<sub>3</sub>O<sub>8</sub>/year. In general, enrichment facilities can be “overfed” to produce the same amount or more nuclear fuel, so long as they have sufficient UF<sub>6</sub> feedstock. Conversion is therefore the bottleneck. ConverDyn (a joint-venture between General Atomics and Honeywell) in Illinois is expected to restart in mid-2023, and supply ~20% of global UF<sub>6</sub>, which would then free-up enrichment facilities to overfeed. This sets up the dynamic for UF<sub>6</sub> and SWU prices to normalize (likely come down) this year and for uranium oxide (U<sub>3</sub>O<sub>8</sub>) to move significantly higher.

**Exhibit 1. Updated Uranium Oxide (U3O8) Supply-Demand Forecast**

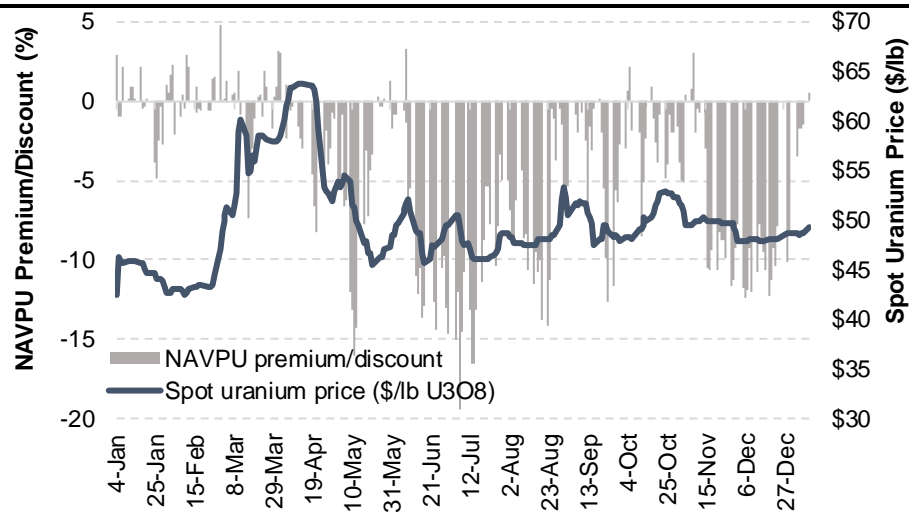


Source: Cantor Fitzgerald

### HIGHER U3O8 PRICES MAY COME FAST

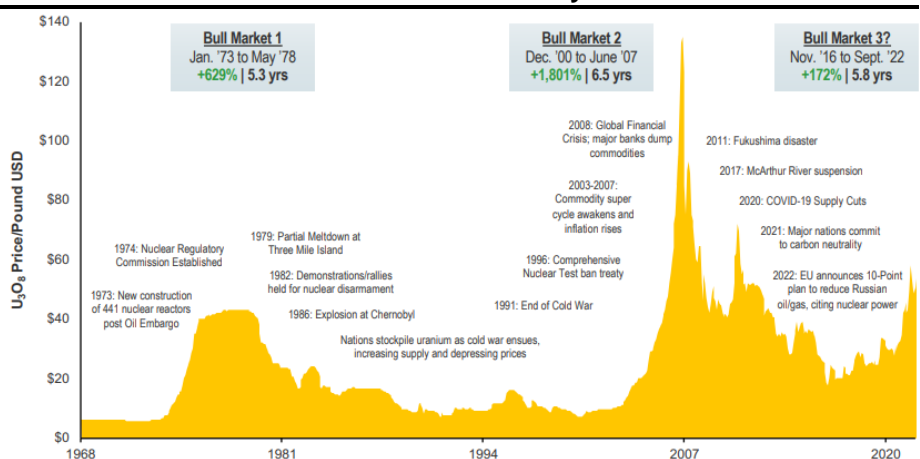
Against this positive backdrop (the transition from underfeeding to overfeeding enabled by increased UF<sub>6</sub> supply and by extension, driving greater U<sub>3</sub>O<sub>8</sub> demand) we note the Sprott Physical Uranium Trust has regained its premium to NAVPU as of the market close last Friday (01/06/23). In terms of “available for sale” material, the spot market remains extremely thin. Sprott estimates that it has already “cleared out” almost all of the secondary U<sub>3</sub>O<sub>8</sub> supply that was available. The takeaway here, is that if U.U can manage to hold its NAVPU premium and raise capital via its registered offerings, spot uranium prices would likely rise very rapidly, and to a meaningfully higher level, as there is a shortage of physical material in the market.

**Exhibit 2. U3O8 Price vs. U.U NAVPU Premium/Discount**



Source: FactSet, Cantor Fitzgerald

**Exhibit 3. New Uranium Bull Market Underway**



Source: TradeTech LLC, Sprott Physical Uranium Trust

### IMPACT TO THE URANIUM EQUITIES

The uranium equities underperformed the spot U<sub>3</sub>O<sub>8</sub> price by ~35% in the last year. We believe this will revert in 2023, setting up an excellent “catch-up” trade in owning select uranium equities. As most of the developed world shifts away

from Russian energy, including crude oil, natural gas, and thermal coal, electricity prices will remain elevated. In our view, expanding nuclear power output remains the most attractive option/alternative available to most developed countries, with the added benefit of it being non-carbon generating. Against this backdrop, securing uranium feedstock from countries allied with the West and Europe is growing increasingly more important by the day. Select uranium equities that are capable of either expanding production or developing new mines, are perfectly positioned to capitalize on this emerging uranium macro theme (both expanding nuclear power output globally and pivoting away from Russian energy). We are maintaining our short-term (12-month) spot price forecast of \$75/lb U<sub>3</sub>O<sub>8</sub> and our long-term price deck of \$85/lb U<sub>3</sub>O<sub>8</sub>.

#### Exhibit 4. Uranium Equities Under Coverage, P/NAVPS Valuations

Company	Symbol	Share Price	NAVPS	P/NAVPS
Cameco	CCJ-US/CCO-CN	C\$32.84	C\$21.86	1.50x
Denison Mines	DNN-US/DML-CN	C\$1.63	C\$3.68	0.44x
Energy Fuels	UUUU-US/EFR-CN	\$6.40	-----restricted-----	
Global Atomic	GLO-CN	C\$3.72	C\$5.92	0.63x
Sprott U @ spot	U.U/U.UN-CN	C\$16.54	C\$16.44	1.01x
Sprott U @ \$75/lb	U.U/U.UN-CN	C\$16.54	C\$25.25	0.66x
Ur-Energy	URG-US/URE-CN	\$1.20	\$2.81	0.43x
Yellow Cake @ spot	YCA-LSE	£3.99	£4.22	0.95x
Yellow Cake @ \$75/lb	YCA-LSE	£3.99	£6.40	0.62x

Source: Cantor Fitzgerald

#### Exhibit 5. Ratings, Valuation Methodology, Price Targets

Company	Ticker	Revised		Rating
		Target Multiple	Price Target	
Cameco	CCJ-US/CCO-CN	75/25 blend, 2.0x NAVPS/20.0x 2023E CFPS	\$33.00/C\$41.00	Buy
Denison	DNN-US/DML-CN	1.5x NAVPS	\$4.25/C\$5.25	Buy
Energy Fuels	UUUU-US/EFR-CN	-----restricted-----		
Global Atomic	GLO-CN	1.0x NAVPS	C\$6.00	Buy (S)
Sprott Physical U	U.UN/U.U-CN	1.05x NAVPU	\$20.00/C\$25.00	Buy
Ur-Energy	URG-US/URE-CN	1.5x NAVPS	\$4.00/C\$5.25	Buy
Yellow Cake	YCA-LSE	1.0x NAVPS	£5.75	Buy

Source: Cantor Fitzgerald

## URANIUM EQUITIES UNDER ACTIVE COVERAGE

Our price targets/ratings on the uranium equities under coverage are provided in Exhibit 5 and our most recently published full research reports are linked below:

**Cameco:** Buy rating and \$33.00/C\$41.00/share target price based on a 75/25 blend of 2.0x NAVPS<sub>7.5%</sub> and 20.0x 2023E CFPS (rounded). Our most recent note on Cameco is linked [here](#).

**Denison Mines:** Buy rating and \$4.25/C\$5.25/share target price based on a multiple of 1.5x NAVPS<sub>7.5%</sub> (rounded). Our most recent note on Denison Mines is linked [here](#).

**Energy Fuels:** We are currently research restricted on Energy Fuels.

**Global Atomic:** Speculative Buy rating and C\$6.00/share target price based on a multiple of 1.0x NAVPS<sub>7.5%, 10.0%</sub> (rounded). Our most recent note on Global Atomic is linked [here](#).

**Sprott Physical Uranium Trust:** Buy rating and \$20.00/C\$25.00/unit target price based on a multiple of 1.05x NAVPU. Our most recent note on the Sprott Physical Uranium Trust is linked [here](#).

**Ur-Energy:** Buy rating and \$4.00/C\$5.25/share target price based on a multiple of 1.5x NAVPS<sub>7.5%</sub> (rounded). Our most recent note on Ur-Energy is linked [here](#).

**Yellow Cake:** Buy rating and £5.75/share target price based on a multiple of 1.0x NAVPS (rounded). Our most recent note on Yellow Cake is linked [here](#).

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**BUY (Speculative):** The stock is attractively priced relative to the company’s fundamentals, however investment in the security carries a higher degree of risk.

**HOLD:** The stock is fairly valued, lacks a near term catalyst, or its execution risk is such that we expect it to trade within a narrow range of the current price in the next 6 to 12 months. The longer term fundamental value of the company may be materially higher, but certain milestones/catalysts have yet to be fully realized.

**SELL:** The stock is overpriced relative to the company’s fundamentals, and we expect it to decline from the current price over the next 6 to 12 months.

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**UNDER REVIEW:** We are temporarily placing our recommendation under review until further information is disclosed.

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