

Industry Note

Equity Research

April 29, 2020

Metals & Minerals

Uranium Weekly: Market Adjusting to Supply Curtailments

NFWG Releases Report; US Utility Policy Uncertainty Cleared

Ux Consulting's (UxC) weekly price indicator rose to US\$32.75/lb (+US\$0.75/lb) this week, as reported on the evening of Monday, April 27. The daily spot price as of April 28 was US\$33.42/lb. The spot price has now increased ~35% year-to-date and is at its highest point since February 2016.

The April month-end term price is increased to US\$33.00/lb (+\$2/lb), but is still at a discount to the daily spot price. We note that Ux is currently indicating that the three-year forward price is US\$36.50/lb and the five-year forward price is US\$39.75/lb (Exhibit 8). UxC noted that while it has increased its term price indicator, there are currently no active formal requests for long term delivery. We understand that off-market discussions regarding longer term deliveries are continuing - utilities may be reluctant to make public RFPs given the dynamic price environment.

Spot market seeing record activity. UxC reported April spot market volume at 15.1mmlbs U3O8e under 84 transactions. Total demand year-to-date is now at 34.2mmlbs U3O8e and total transactions are at 207. Spot volume year-to-date is well above the five-year average and tracking above the record volumes that were achieved in 2018 (Exhibit 6). We understand that producers have been the most active in the spot market this year (purchasing to meet contractual volumes); to this point, utilities have been limited players in the spot market.

Mid-term market under pressure. We are hearing from various sources that the mid-term uranium market (deliveries in the 1-3 year time frame that is dominated by traders) is under pressure as the supply of available spot material tightens due to production curtailments. As well, Kazatomprom has indicated publicly several times year-to-date that it will not make material available to the spot market in 2020 given that its production is fully committed. Utilities have been using the spot market on a rolling basis to supplement their inventory/purchasing requirements at the expense of the term market. If the mid-term market is under pressure, utilities could be forced back into the term market and the long-awaited contracting cycle could begin.

Over the near term, the upward pressure on the spot uranium price is likely to continue, with increased uncertainty surrounding primary supply given recent production curtailments. We continue to believe that the timing of primary supply restarts will be influenced not only by the relaxation of COVID-19 restrictions, but also by commercial considerations. The catalyst that would lead us to become more positive on the outlook would be the return of utilities to the term contracting market and a continued upward trend in the term price.

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Nuclear Fuel Working Group (NFWG) releases report.

On April 23, the U.S. Nuclear Fuel Working Group (NFWG) released its much-delayed report titled Restoring America's Competitive Nuclear Energy Advantage. The NFWG was tasked by President Trump to develop recommendations to revive and expand the domestic nuclear fuel supply chain as part of his decision on the Section 232 investigation.

The NFWG highlighted the uranium mining and conversions industries as those most vulnerable and needing relief.

That immediate relief would come via the U.S. government establishing a Uranium Reserve that would be filled by the government directly purchasing uranium from domestic producers. President Trump's FY2021 budget request includes \$150mm for this purpose. Over the longer term, the Trump Administration would seek \$1.5bln over the next decade for the purchase of domestic uranium and conversion. The report notes that the reserve would directly support two U.S. uranium mines and the resumption of active U.S. conversion capabilities.

The NFWG report indicates that over time the Uranium Reserve could purchase 17-19mm lbs of U3O8 beginning in 2020, 6,000-7,500 tons of UF6 (starting in 2022), and domestic enrichment services potentially starting in 2023. The report notes that there is no commitment to the Uranium Reserve purchases beyond the request in the 2021 budget.

The NFWG has also instructed the U.S. Department of Energy (DOE) to cease bartering uranium (the DOE was disposing of excess uranium inventories under a bartering scheme to fund the clean-up of contaminated sites). Under the bartering scheme several million pounds of uranium per year was being supplied into the commercial market. The bartering scheme was suspended last year.

The working group also supports the U.S. Department of Commerce (DOC) in extending the Russian Suspension Agreement (RSA) that is expiring at the end of 2020. Under the RSA, there is a quota under which Russia can supply a maximum of 20% of U.S. enriched uranium requirements annually. The DOC has proposed an extension of the quota to 2040. The NFWG suggested the consideration of further lowering the cap on Russian imports.

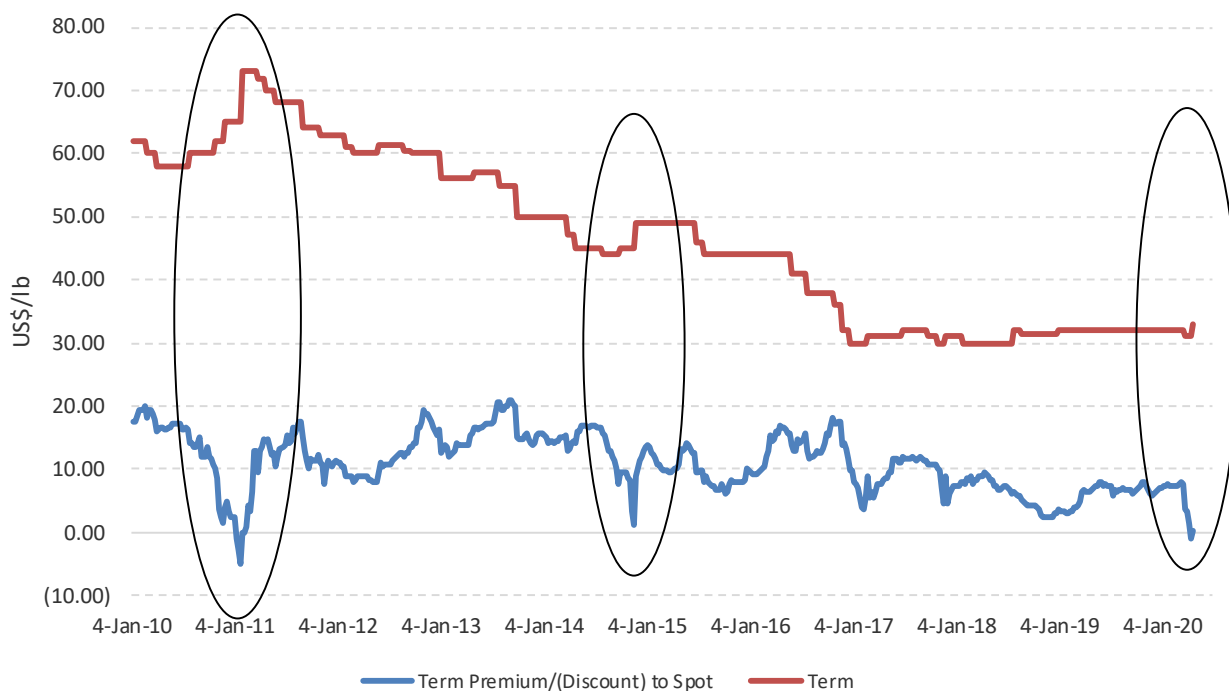
Policy uncertainty has limited U.S. utility uranium contracting. We believe that the Section 232 and NFWG processes over the past two years have, to some extent, created uncertainty among U.S. utilities about the playing field they were facing with respect to purchasing uranium with possibility that tariffs, quotas, and other restriction could potentially be in play. The release of the NFWG report has, in our view, cleared the air and should allow U.S. utilities to resume uranium contracting without concerns about being further limited to whom they can purchase from and at what price. In our view, this should add to the likelihood that a uranium contracting cycle will resume with U.S. utilities potentially leading the way.

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Exhibit 1. Higher Spot Price Puts Upward Pressure on Term Price



Source: UxC; TD Securities estimates

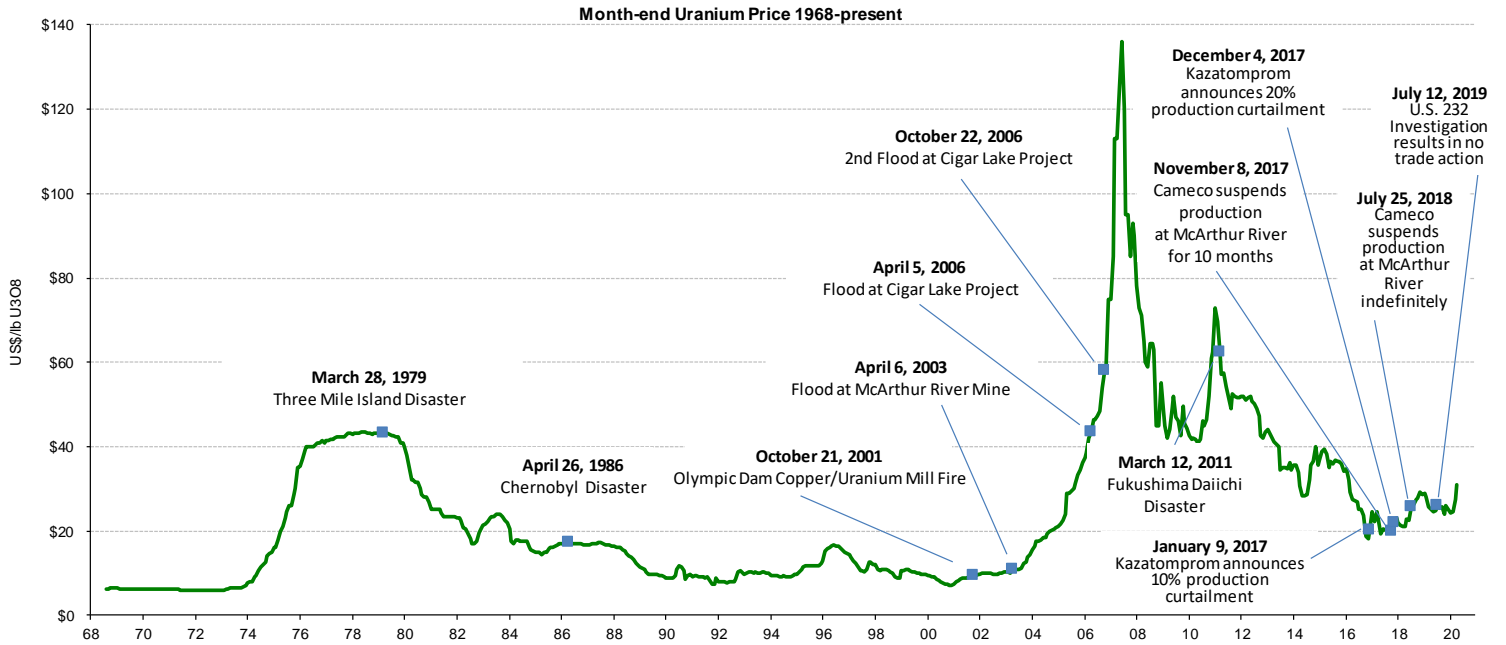
Exhibit 2. Uranium Mine Suspension Tracker

Operation	Company	Location	Annual Production (mm lbs)	Percent of Global Annual Mine Production	Suspension Duration	Potential Lost Production (mm lbs)
Cigar Lake	Cameco/Orano	Canada	18	12.5%	Undetermined	1.5/month
Rossing	CNNC/CGN	Namibia	4	2.8%	21 days	0.25
Husab	CNNC/CGN	Namibia	10	6.9%	21 days	0.6
Ranger (1)	ERA	Australia	3.1	2.2%	n/a	n/a
Kazakh ISR (2)	Kazatomprom	Kazakhstan	59	41.0%	3 months	10.4

Notes:
 (1) ERA has maintained 2020 production guidance at 2.65-3.53 mm lbs U3O8, but travel restriction could impact production

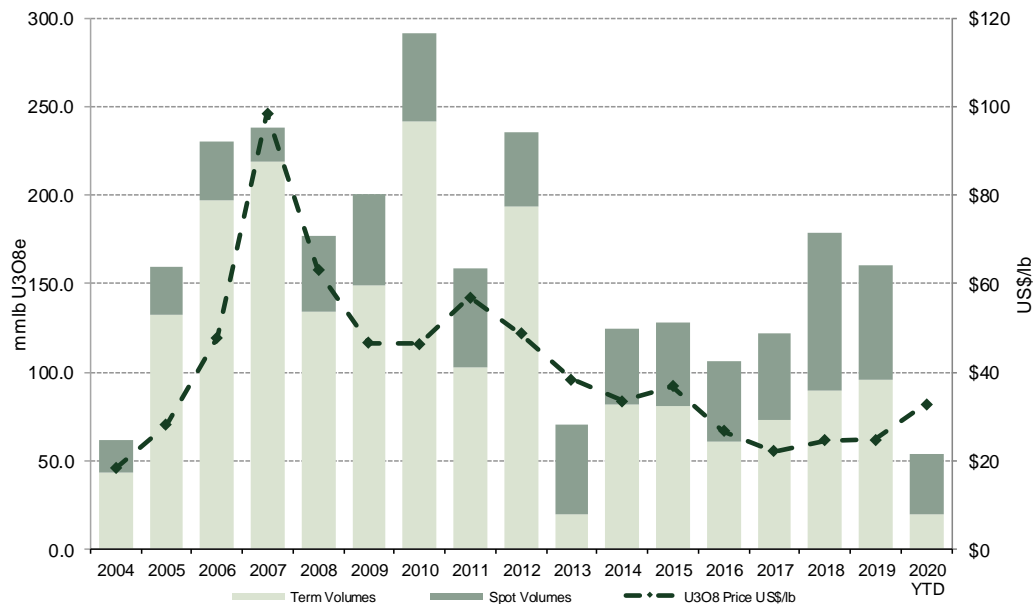
Source: Company reports; UxC; TD Securities estimates

Exhibit 3. Historical Spot Price and Market Impacting Events (US\$/lb)



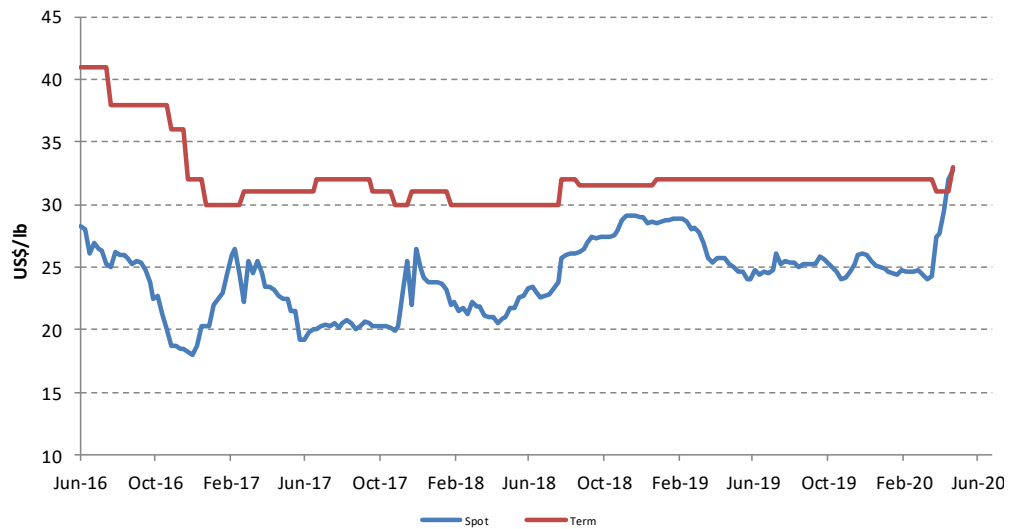
Source: UxC, Companies, TD Securities Inc.

Exhibit 4. Term Contracting Volumes Still Low



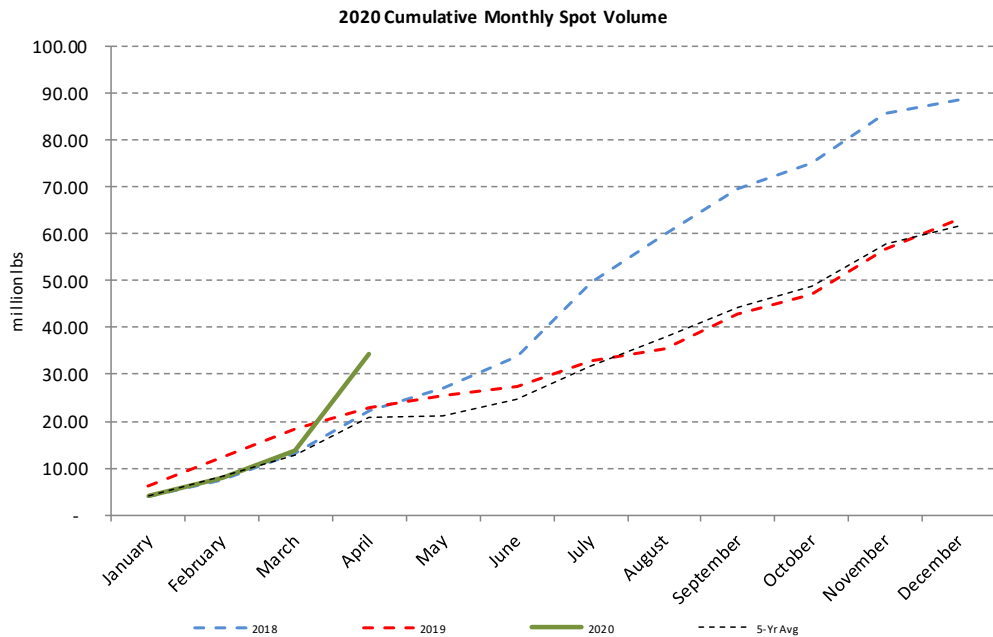
Source: UxC; TD Securities Inc.

Exhibit 5. Spot and Term Uranium Prices (US\$/lb)



Source: UxC

Exhibit 6. Cumulative Monthly Spot Market Volume



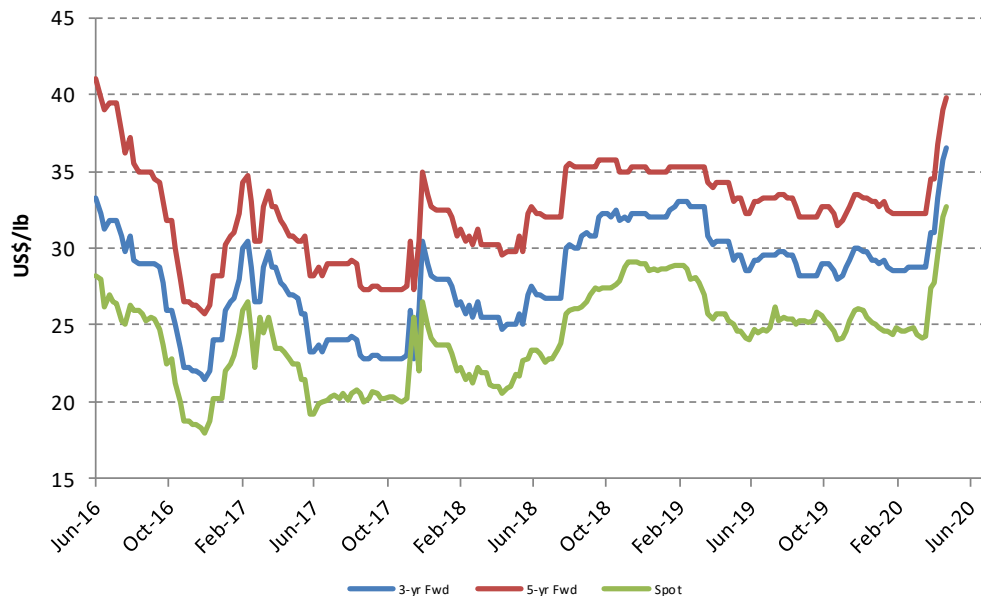
Source: UxC

Exhibit 7. Uranium Term Price Premium to Spot (US\$/lb)



Source: UxC

Exhibit 8. Uranium Prices – Spot, 3yr Fwd and 5yr Fwd



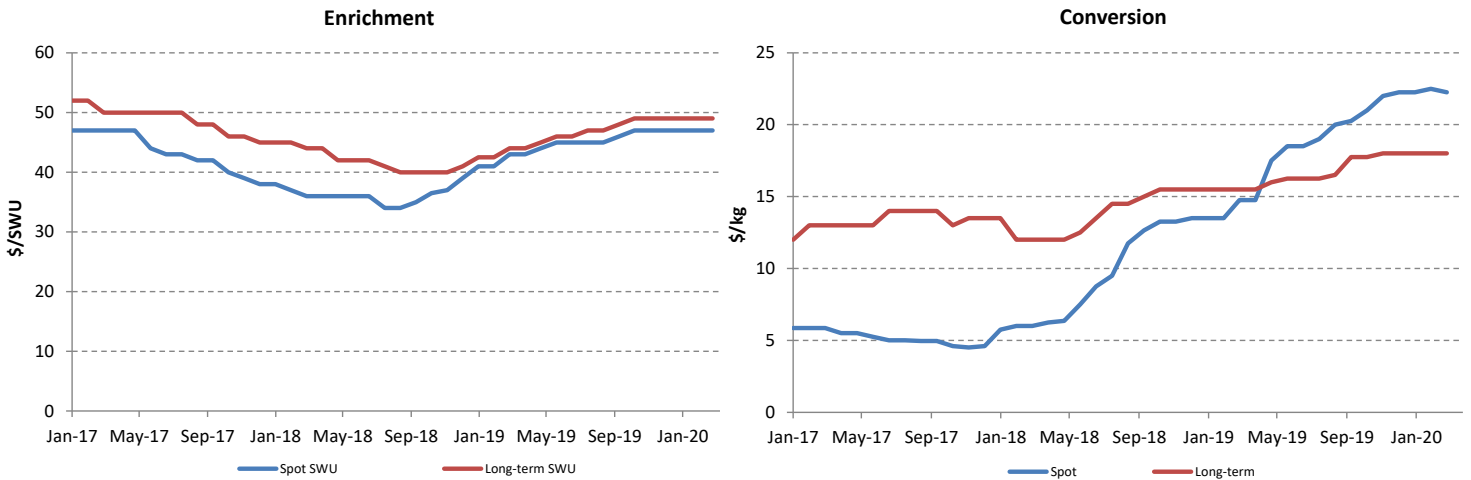
Source: UxC

Exhibit 9. Fund Implied Price (FIP) and Spot Price



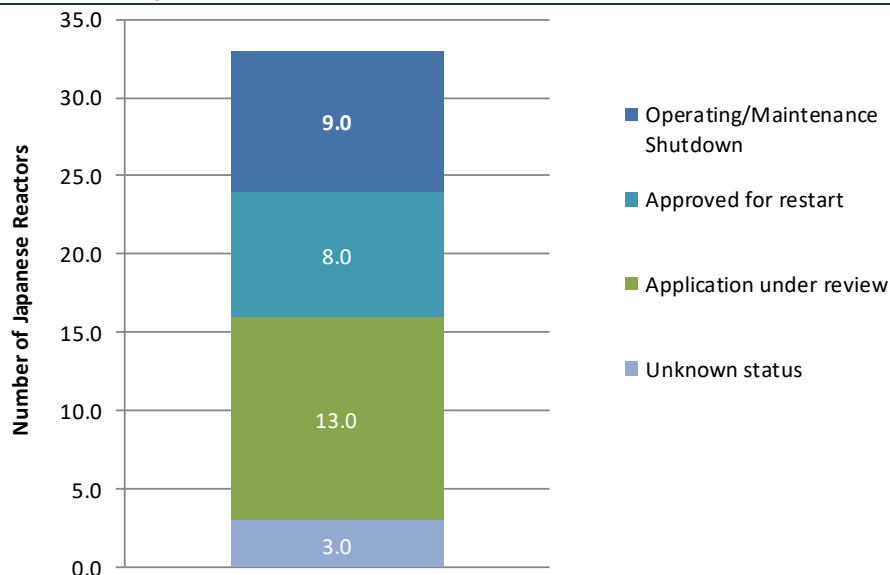
Source: UxC

Exhibit 10. Monthly SWU and Conversion Pricing



Source: UxC

Exhibit 11. Japanese Reactor Status



Source: UxC, Bloomberg, World Nuclear Association

Exhibit 12. TD Securities Uranium Supply/Demand Model

	2012	2013	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E
Mine Supply - Western World (mm lbs U3O8)													
Total Mine Supply - Western World	90	93	85	106	104	100	83	85	80	82	82	86	88
Net Eastern Mine Supply (lbs U3O8)	59	60	60	57	62	54	54	55	44	55	60	60	66
Total World Mine Supply (mmlb U3O8)	150	153	145	163	166	154	138	140	124	137	142	146	154
YoY % change	5.9%	2.4%	-5.3%	12.2%	2.1%	-7.6%	-10.2%	1.7%	-11.6%	10.4%	3.8%	2.6%	5.9%
Secondary Supply													
Global underfeeding and tails re-enrichment*	5	15	20	20	18	19	18	18	16	16	15	15	14
Mixed Oxide Fuel (MOX)*	10	8	8	4	5	5	5	6	6	6	6	6	7
US government sales (DOE Proposed)*	5	8	8	7	4	3	2	2	1	0	0	0	0
Additional Russian secondary supply*	24	24	5	2	2	0	0	0	0	0	0	0	0
Other			0	0	0	0	0	0	0	0	0	0	0
Total Secondary Supply (mmlb)	43	55	41	34	29	27	24	26	24	22	21	21	21
Secondary supply as % of global reactor demand	28%	32%	26%	21%	17%	16%	14%	15%	13%	12%	12%	12%	11%
Mobilization of Commercial Inventory			4	8	7	7	7	7	7	7	7	7	7
Total Supply	193	208	190	205	202	187	169	173	155	166	170	174	183
Total World Demand													
Total World Nuclear Generating Capacity (MWe) *				345,377	351,271	358,819	368,571	372,978	379,182	384,508	385,211	389,242	394,906
Uranium requirements per MWe				464	474	472	472	472	472	472	472	472	472
Uranium demand (mmlb)				160	167	169	174	176	179	181	182	184	186
First Core Requirement (2 year lead)				-	-	-	-	-	-	-	-	-	-
Total World Demand (mmlbs U3O8)	155	170	155	160	167	169	174	176	179	181	182	184	186
YoY % change	0.0%	9.7%	-8.8%	3.4%	3.9%	1.7%	2.7%	1.2%	1.7%	1.4%	0.2%	1.0%	1.5%
Supply / Demand Balance (mmlb)	38	38	35	44	35	18	-5	-3	-24	-16	-11	-10	-4
Spot Uranium Price (US\$/lb U3O8)	\$48.73	\$38.57	\$33.60	\$36.89	\$26.57	\$22.12	\$24.82	\$25.94	\$28.94	\$31.00	\$33.00	\$35.00	\$40.00

* Source: World Nuclear Association - Nuclear Fuel Report 2019-2040 Reference Case

Note - TD LT price assumption starts in 2025; a flat US\$45/lb price is assumed for 2025 and beyond.

Source: UxC, Bloomberg, TD Securities Inc.



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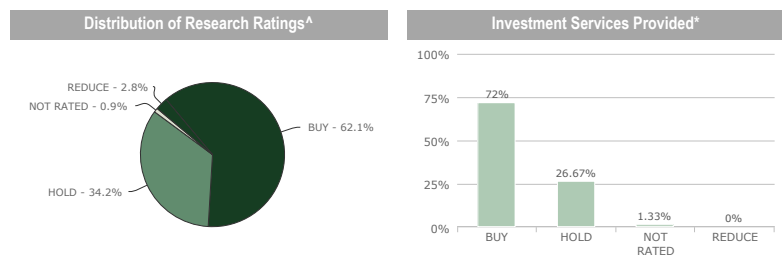
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