

Industry Note

Equity Research

June 11, 2019

Metals & Minerals

Uranium Weekly - Germany Facing Calls to Delay Nuclear Phase-Out

The Ux Consulting (UxC) spot uranium price indicator increased 3.1% last week to US\$24.75/lb (+US\$0.75/lb). Spot market activity year-to-date totals 26.5mmlbs and is tracking slightly below activity levels in 2018. The spot market has been very quiet for the past two months and, prior to last week, the weekly spot price had been either flat or lower week-over-week for eight straight weeks.

UxC reported that multiple buyers entered the market early last week and a total of six transactions involving ~900,000 pounds were completed. Year-to-date, 147 transactions (26.5mmlbs) have been reported, which compares to 177 transactions last year (31.2mmlbs). UxC noted that buying interest last week came from multiple sources, including traders, producers, utilities, and financials.

New demand expected in the term market. Year-to-date, term market volume is reported at 39.8mmlbs under 18 transactions. This compares to 2018 volume to the same point of >11mmlbs under 10 transactions. UxC reported that several non-U.S. utilities may enter the term market soon looking for a combination of delivery terms and product types. Three non-U.S. utilities are currently active in the term market.

Germany's government is facing increasing calls from business leaders to delay the country's nuclear phase-out. The U.K.'s London Telegraph reported on June 6 that the chief executive of Volkswagen and the chairman of Continental AG, a leading car parts manufacturer, are among those to speak out in recent weeks. Angela Merkel's government pledged to shut down all of Germany's nuclear reactors by 2022 in the wake of a public outcry following the 2011 Fukushima disaster in Japan. "If climate protection really matters to us, the nuclear power plants need to run longer," Herbert Diess, the VW chief executive, told reporters. "The priorities are the wrong way round: first we need to get out of coal, and then out of nuclear power." Germany currently generates 47% of its energy from renewable sources, 30% from coal, and 13% by nuclear power.

Section 232 Investigation Complete. The U.S. Department of Commerce submitted a report to President Trump with its recommendations with respect to foreign uranium imports on April 14. The President has 90 days (July 13) to decide on a course of action (which could include the restriction of foreign imports).

Spot prices should be supported by a slight deficit through 2020. This should provide support to spot prices and eventually lead to higher term prices, in our view. Our uranium price forecasts for 2019/2020/2021 are US\$30.55/lb, US\$40/lb, and US\$45/lb, respectively.

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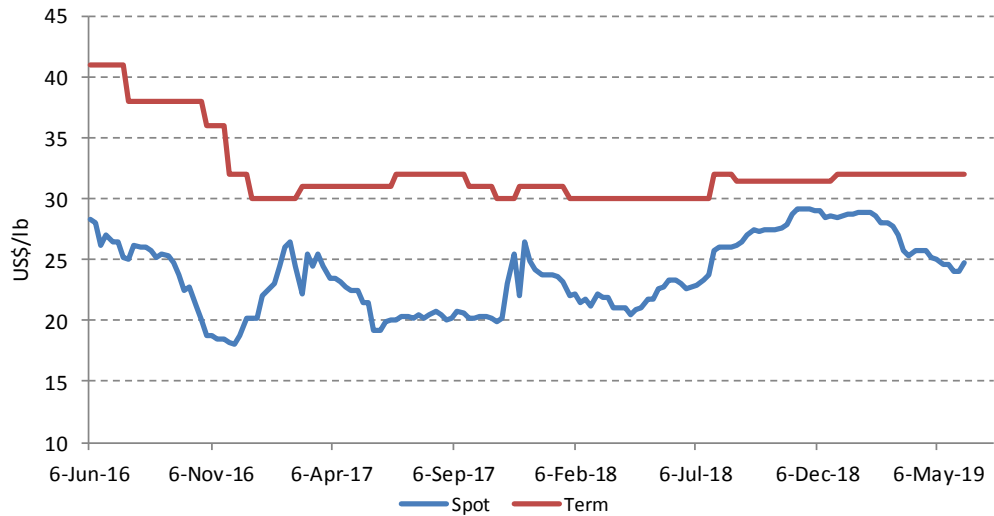
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Exhibit 1. Spot and Term Uranium Prices



Source: UxC

Exhibit 2. Fund Implied Price (FIP) and Spot Price



Source: UxC

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

Source: UxC

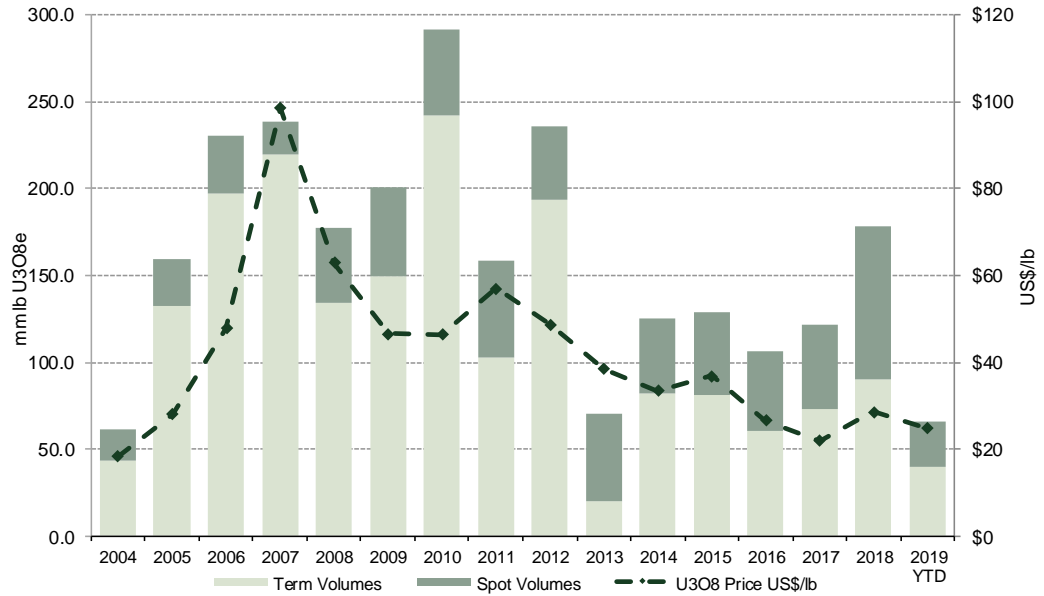
Industry News:**Kazatomprom CEO says uranium prices 'are too low'** (Source: Bloomberg)

- Kazatomprom CEO Galymzhan Pirmatov said of the nuclear demand landscape, "In our models, we don't get excited on the demand side," projecting flat demand in the near-term with the long-term prospects appearing rosier in developing nations.
- Regarding uranium prices, Mr. Pirmatov said, "I do believe prices are too low," noting that the company's output is set to increase 5% to 22,800 tU (~59.3 million pounds U3O8) in 2019 where it is expected to remain through 2020.
- Mr. Pirmatov said the company has yet to decide on production targets regarding the 2021 period.

South Korean government issues new energy strategy committed to nuclear phaseout plans (Source: Ux Weekly)

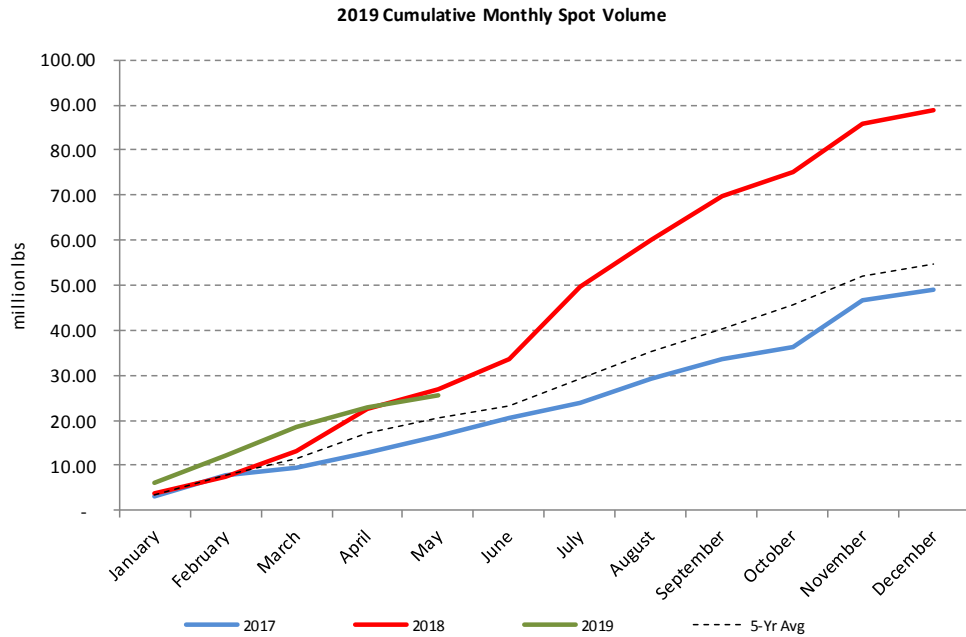
- On June 4, South Korea's Ministry of Trade, Industry and Energy (MOTIE) issued its third long-term energy roadmap to 2040 with specific targets set under five overarching factors: consumption, production, system, industry, and infrastructure.
- Under the roadmap, MOTIE envisions a total decrease in energy consumption by 18.6% to 171.8 million tonnes of oil equivalent (toe) by 2040. The government seeks to boost renewable production to 35% of the total in 2040 from an 8% share today.
- Regarding nuclear, the plan maintains President Moon Jae-In's policy to decommission reactors once they reach 40 years of operation. Furthermore, the country will not build any more reactors beyond the four units currently under construction.

Exhibit 4. Annual Spot Plus Term Uranium Market Volumes



Source: UxC

Exhibit 5. Cumulative Monthly Spot Market Volume



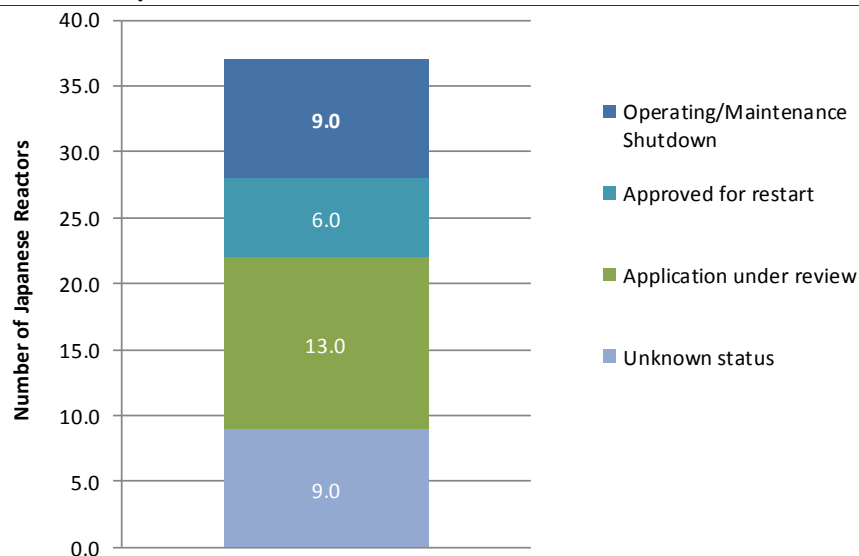
Source: UxC

Exhibit 6. Uranium Term Price Premium to Spot (US\$/lb)



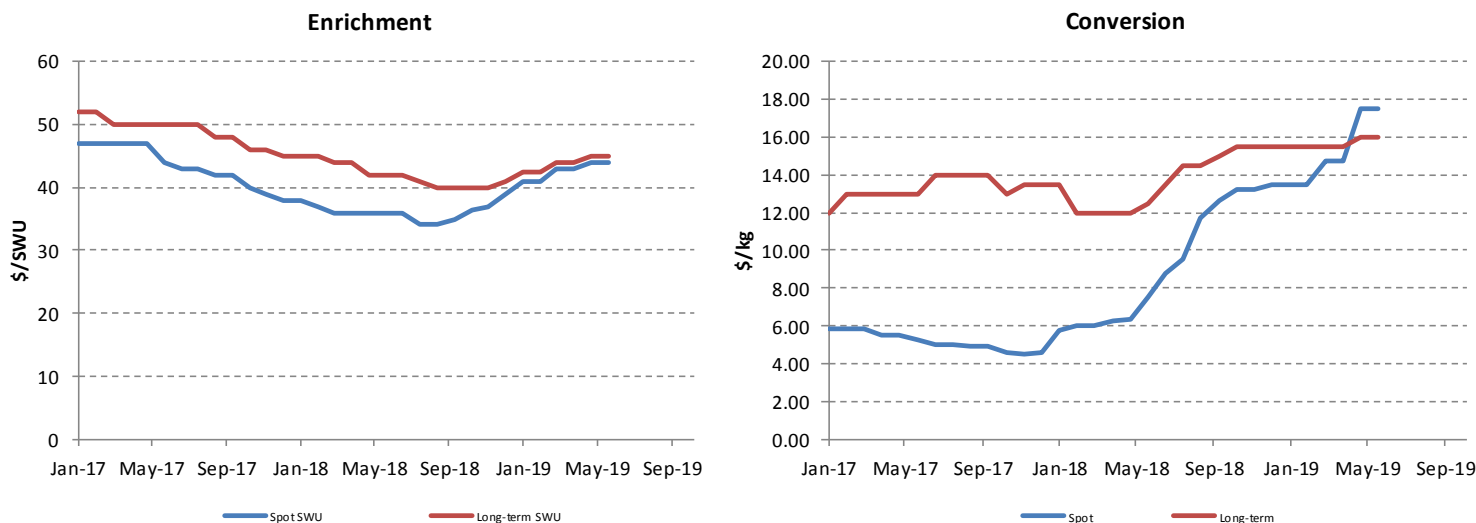
Source: UxC

Exhibit 7. Japanese Reactor Status



Source: UxC, Trade Tech, Bloomberg

Exhibit 8. Monthly SWU and Conversion Pricing



Source: UxC

Exhibit 9. TD Securities Uranium Supply/Demand Model

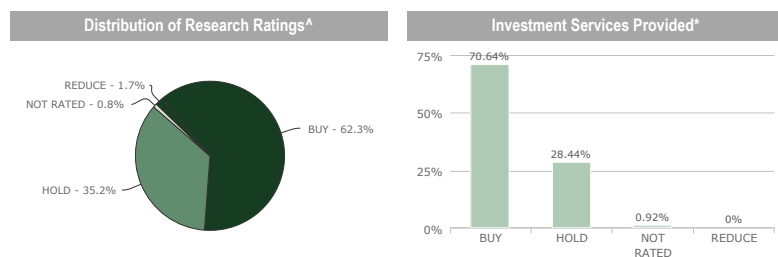
	2012	2013	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E
Mine Supply - Western World (mm lbs U3O8)													
Total Mine Supply - Western World	90	93	85	106	103	103	82	86	90	95	106	108	106
Net Eastern Mine Supply (lbs U3O8)	59	60	60	57	62	54	53	56	56	56	56	57	61
Total World Mine Supply (mmlb U3O8)	150	153	145	163	165	157	136	142	146	151	162	165	167
YoY % change	5.9%	2.4%	-5.3%	12.2%	1.1%	-4.5%	-13.7%	5.0%	2.7%	3.5%	7.1%	1.8%	1.4%
Secondary Supply													
Global underfeeding and tails re-enrichment*	5	15	20	20	18	19	18	16	15	15	15	15	15
Mixed Oxide Fuel (MOX)*	10	8	8	4	4.7	5	5	5	6	6	6	6	6
US government sales (DOE Proposed)*	5	8	8	7.3	4.2	3.1	1.6	0.0	0.0	0.0	0.0	0.0	0.0
Additional Russian secondary supply*	24	24	5	1.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other (commercial inventories)			4	8	7	7	7	7	7	7	7	7	7
Total Secondary Supply (mmlb)	43	55	45	42	36	34	31	28	28	28	28	28	28
Total Supply	193	208	190	205	200	191	167	171	175	180	191	194	196
Total World Demand													
Total World Nuclear Generating Capacity (MWe) *				345,333	351,251	358,799	369,682	374,838	379,949	382,842	383,809	385,821	392,575
Uranium requirements per MWe				464	474	470	470	470	470	470	470	470	470
Uranium demand (mmlb)				160	167	169	174	176	179	180	180	181	185
First Core Requirement (2 year lead)				-	-	-	-	-	-	-	-	-	-
Total World Demand (mmlbs U3O8)	155	170	155	160	167	169	174	176	179	180	180	181	185
YoY % change	0.0%	9.7%	-8.8%	3.4%	3.9%	1.2%	3.0%	1.4%	1.4%	0.8%	0.3%	0.5%	1.8%
Supply / Demand Balance (mmlb)	38	38	35	44	34	22	-7	-5	-4	0	10	12	11
Spot Uranium Price (US\$/lb U3O8)	\$48.73	\$38.57	\$33.60	\$36.89	\$26.57	\$22.12	\$24.82	\$30.55	\$40.00	\$45.00	\$45.00	\$50.00	\$55.00

* Source: World Nuclear Association - Nuclear Fuel Report 2017-2035

Note - TD LT price assumption starts in 2024; a flat US\$55/lb price is assumed for 2024 and beyond.

Source: UxC, Bloomberg, TD Securities Inc.

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Current as of: June 11, 2019

^A Percentage of subject companies under each rating category: BUY (covering ACTION LIST BUY, BUY and SPECULATIVE BUY ratings), HOLD, and REDUCE (covering TENDER and REDUCE ratings).

^{*} Percentage of subject companies within each of the three categories (BUY, HOLD, and REDUCE) for which TD Securities Inc. has provided investment banking services within the last 12 months.

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