

Industry Note

Equity Research

November 27, 2018

Metals & Minerals

Uranium Weekly - Rio Tinto sells Rössing

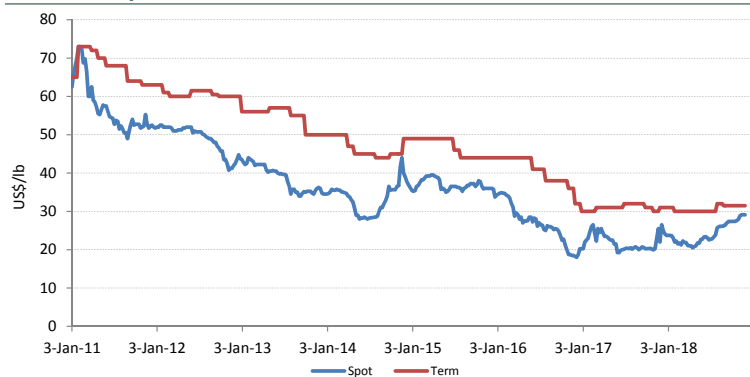
Ux Consulting's (UxC) spot uranium price indicator declined \$0.05/lb this week to \$29.10/lb (-0.2%). November volume in the spot market continued at a much higher-than-average trend with a total of 8.5 million pounds transacted - this compares to the trailing 5-year average of 5.5 million pounds. Total spot market volume to the end of November currently totals 85.8 million pounds. UxC expects that the spot price will continue to move higher over the next several months as more inventory is cleared from the market with producers maintaining supply discipline. Cameco should continue to be a large buyer in the uranium market in 2019.

Rio Tinto announced on November 26 that it entered into a binding agreement with China National Uranium Corporation Limited (CNUC) for the sale of its entire 68.62% share in Rössing Uranium Limited, owners of the Rössing uranium mine in Namibia, for up to \$106.5 million. The purchase price comprises an initial cash payment of \$6.5 million, payable at completion, and a contingent payment of up to \$100 million following completion. The contingent payment is linked to spot uranium prices and Rössing's net income during the next seven years. We estimate that CNUC would pay ~\$2.60/lb of uranium in P&P reserves, assuming the entire \$106.5 million payment is made and excluding unfunded closure costs. Rössing is expected to produce ~5.4 million pounds U3O8 in 2018; the mine life may extend through 2025.

Year-to-date, >67 million pounds has been transacted in the term uranium market under 24 transactions. It appears that term volume should continue to move higher through the end of the year with upwards of six non-U.S. utilities actively seeking term offers for deliveries from 2019 through 2030, in some cases. UxC expects to see upwards pressure on the term price in the near future, however, the November month-end term price remains at \$31.50/lb.

Uranium market to remain in a slight deficit through 2020 - We expect that the spot uranium price will continue trending higher, which should eventually lead to higher term prices. The progress could be slow given a number of factors, including the presence of available inventory, the continued supply of uranium into the market via enrichment underfeeding, and, perhaps most importantly, uncertainty created by the Section 232 investigation in the United States. Our uranium price forecast for 2018/2019/2020/2021 is US\$24.94/lb, US\$32.50/lb, US \$40/lb, and US\$45/lb, respectively.

Exhibit 1. Spot and Term Uranium Prices



Source: UxC; TD Securities estimates

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Exhibit 2. In-situ market valuation for uranium producers/projects

Ticker	27-Nov-18 Share Price (C\$)	EV (US\$mm)	Corporate Resources ¹				Resource Grade (%U3O8)	EV/Res		
			2P (Mlbs)	M+I (Mlbs)	Global Resources (Mlbs)	EV/2P (US\$/lb)		EV/M&I (US\$/lb)	EV/All (US\$/lb)	
Rossing Uranium Ltd.*		106.50	40.60	0.17	40.77	0.04%	2.62	n/a	2.61	
Cameco Corp.	CCO	15.41	4,970.1	458.2	883.5	1,073.4	6.08%	10.85	5.63	4.63
Denison Mines Corp.	DML	0.73	313.3	98.7	144.1	153.3	1.93%	3.18	2.17	2.04
Fission Uranium Corp.	FCU	0.60	206.2	-	87.8	140.6	1.81%	n/a	2.35	1.47
NexGen Energy Ltd.	NXE	2.70	761.7	234.1	256.6	348.3	2.05%	3.25	2.97	2.19
UEX Corp.	UEX	0.17	44.5	-	68.3	84.8	0.41%	n/a	0.65	0.52
Uranium Energy Corp.	UEC	1.75	246.9	-	58.7	104.4	0.08%	n/a	4.20	2.37
Ur-Energy Corp.	URE	0.91	114.8	-	28.5	28.5	0.06%	n/a	4.03	4.03
Median (excluding Rossing)								3.25	2.97	2.19
Average (excluding Rossing)								5.76	3.14	2.46

1: Resources are shown inclusive of reserves; M&I+I includes historical resource estimates.

* Rio Tinto share of reserves/resources; EV based on contingent sales price to CNUC

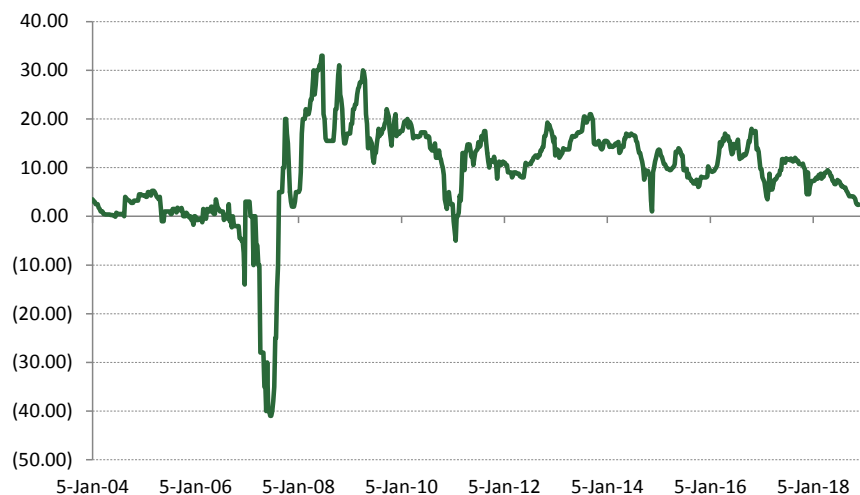
Source: Company reports; Bloomberg; TD estimates

Exhibit 3. TD's Cameco spot market uranium purchase tracker

Est. Week of RFP	Volume (lbs U3O8)	Spot Price (US\$/lb)	
		Start of Week	End of Week
27-Aug	500,000	26.30	26.46
27-Sep-18	1,000,000	27.22	27.38
22-Oct-18	500,000	27.75	27.89
Total	2,000,000		

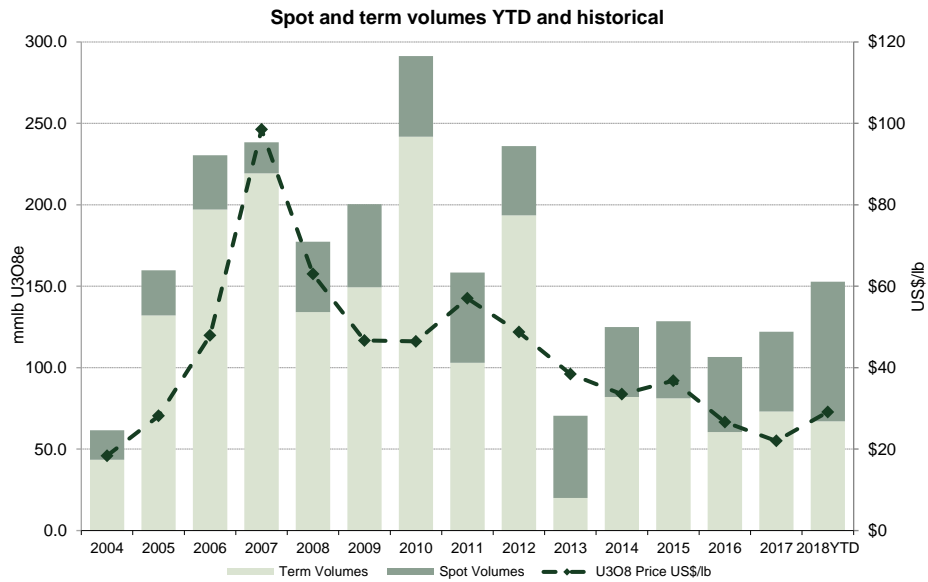
Source: UxC; Cameco; TD Securities estimates

Exhibit 4. Term price premium to spot price (US\$/lb)



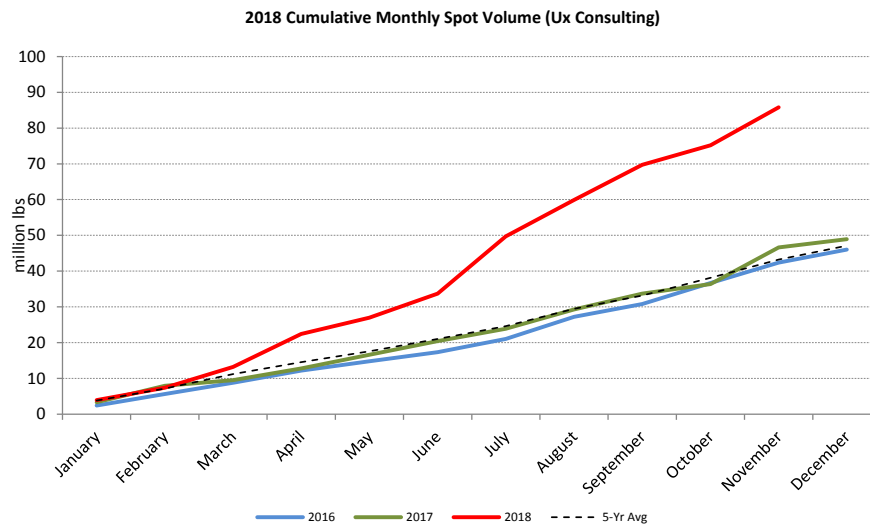
Source: Ux Consulting, TD Securities Inc.

Exhibit 5. Annual spot plus term uranium market volumes



Source: Ux Consulting; TD Securities Inc.

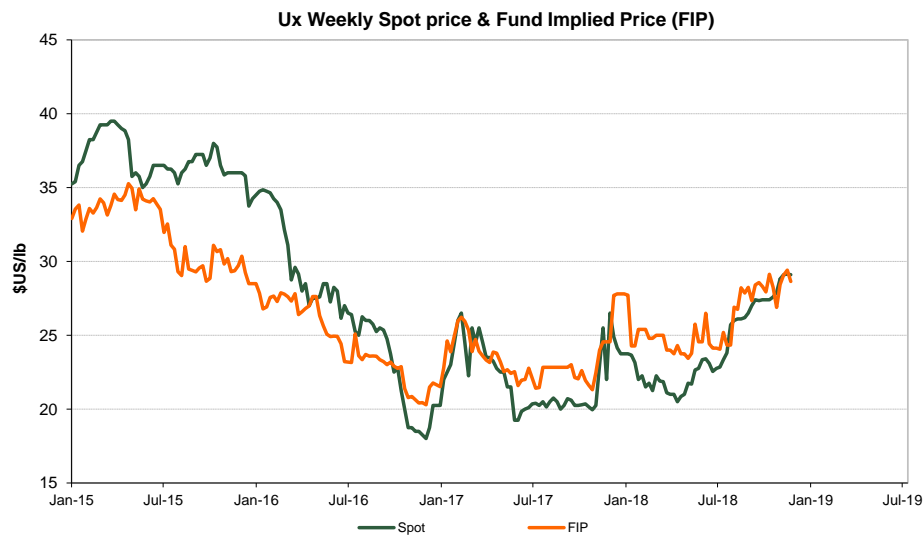
Exhibit 6. Cumulative monthly spot market volume



*2018 spot volumes includes the impact of the Yellowcake IPO

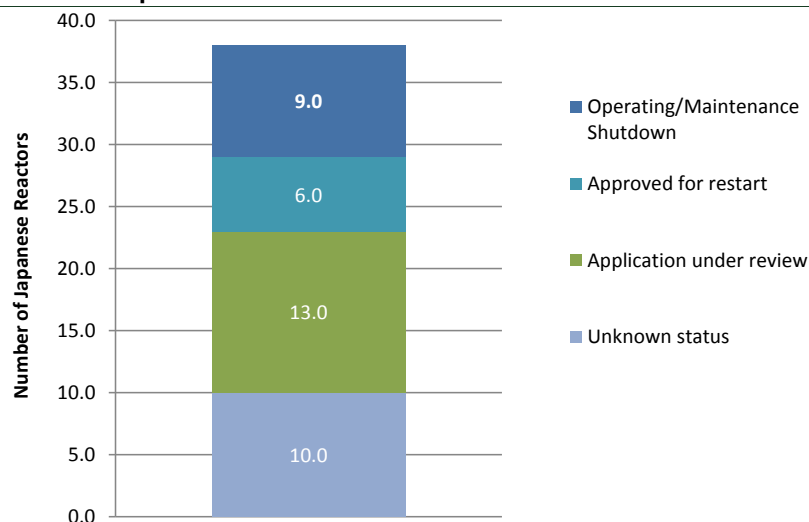
Source: Ux Consulting; TD Securities estimates

Exhibit 7. Fund Implied Uranium Price (FIP) and Spot Uranium Price



Source: Ux Consulting; TD Securities estimates

Exhibit 8. Japanese Reactor Status



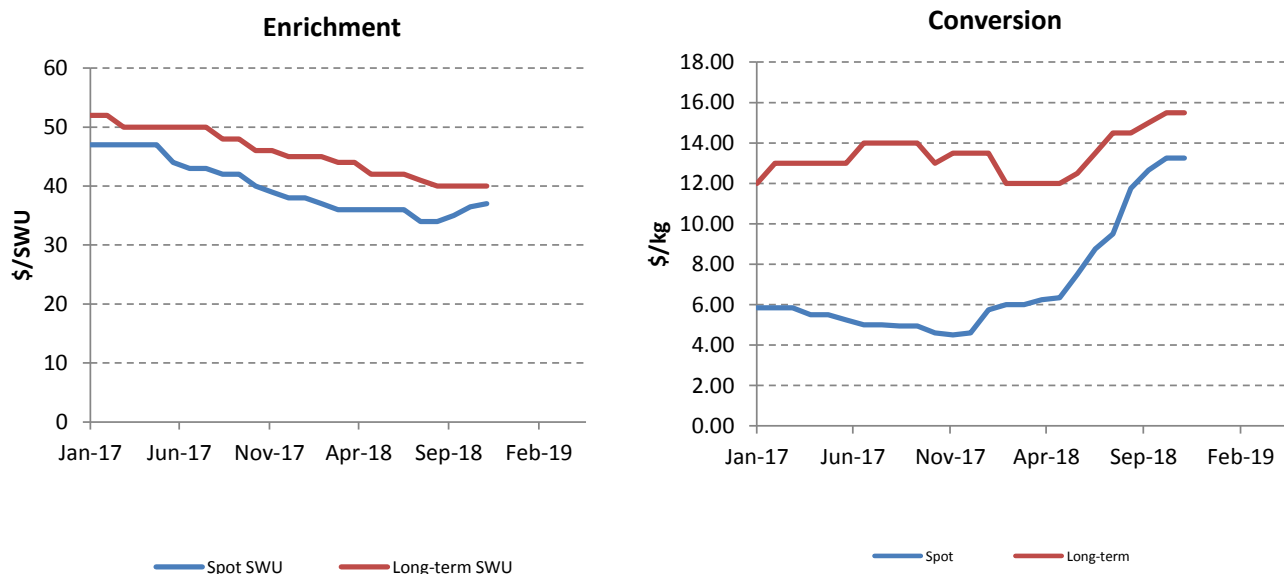
Source: Ux Consulting, Trade Tech, TD Securities Inc.

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Exhibit 9. Monthly SWU and Conversion pricing



Source: Ux Consulting; TD Securities estimates

Exhibit 10. TD Securities uranium supply/demand model

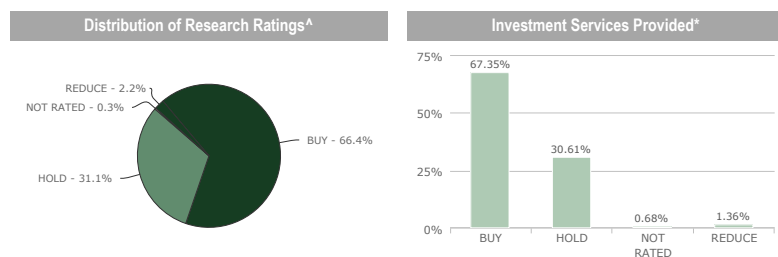
	2011	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E	2023E
Mine Supply - Western World (mm lbs U3O8)													
Total Mine Supply - Western World	86	90	93	85	106	103	103	82	86	90	95	106	108
Net Eastern Mine Supply (lbs U3O8)	55	59	60	60	57	62	54	53	56	56	56	56	57
Total World Mine Supply (mmlb U3O8)	141	150	153	145	163	165	157	136	142	146	151	162	165
YoY % change	0.9%	5.9%	2.4%	-5.3%	12.2%	1.1%	-4.5%	-13.7%	5.0%	2.7%	3.5%	7.1%	1.8%
Secondary Supply													
Global underfeeding and tails re-enrichment*	5	5	15	20	20	18	19	18	16	15	15	15	15
Mixed Oxide Fuel (MOX)*	8	10	8	8	4	4.7	5	5	5	6	6	6	6
US government sales (DOE Proposed)*	5	5	8	8	7.3	4.2	3.1	1.6	0.0	0.0	0.0	0.0	0.0
Additional Russian secondary supply*	24	24	24	5	1.9	1.9	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
Total Secondary Supply (mmlb)	42	43	55	45	42	36	34	31	28	28	28	28	28
Total Supply	183	193	208	190	205	200	191	167	171	175	180	191	194
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
Uranium requirements per MWe					464	474	470	470	470	470	470	470	470
Uranium demand (mmlb)					160	167	169	174	176	179	180	180	181
First Core Requirement (2 year lead)					-	-	-	-	-	-	-	-	-
Total World Demand (mmlbs U3O8)	155	155	170	155	160	167	169	174	176	179	180	180	181
YoY % change	-6.1%	0.0%	9.7%	-8.8%	3.4%	3.9%	1.2%	3.0%	1.4%	1.4%	0.8%	0.3%	0.5%
Supply / Demand Balance (mmlb)	28	38	38	35	44	34	22	-7	-5	-4	0	10	12
Historical Spot Uranium Price (US\$/lb U3O8)	\$57.08	\$48.73	\$38.57	\$33.60	\$36.89	\$26.57	\$22.12	\$24.94	\$32.50	\$40.00	\$45.00	\$45.00	\$55.00

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

Note - TD LT price assumption starts in 2023; a flat US\$55/lb price is assumed for 2023 and beyond.

Source: Ux Consulting, Bloomberg, TD Securities Inc.

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Current as of: November 27, 2018

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