

# Industry Note

Equity Research

June 24, 2020

Metals &amp; Minerals

## Uranium Weekly: Term Interest Showing Flickers of Life

**Ux Consulting's (UxC) weekly price indicator declined slightly again this week to US\$32.80/lb (from US\$32.85/lb), as reported on the evening of Monday, June 22.** UxC is currently estimating that the three-year forward price is US\$36.00/lb and the five-year forward price is US\$38.75/lb; both are unchanged from last week.

**June spot activity picked up last week and ~4.6mmlb has been transacted month-to-date, which is not atypical for this time of the year.** UxC reported that multiple buyer groups were involved last week, including spot purchases by producers, utilities, and intermediaries. Several utilities are active in the spot market or are considering entering the market. Year-to-date, a total of 54.6mmlbs of U3O8e has been transacted in the spot market, with total spot volume at ~85% of total spot market volume for all of 2019.

**The term market remains quiet, but UxC noted that a number of utilities (and most notably U.S. utilities) are showing increasing interest in the term market.** The increased interest by U.S. utilities appears to be the result of some concern that the Russian Suspension Agreement (RSA), which caps Russian participation in the U.S. nuclear fuel market at 20%, could be extended beyond its expiry at the end of 2020, but with a lower quota level.

**We continue to believe that the timing of primary production restarting at Cigar Lake and well field development resuming in Kazakhstan will be influenced not only by the relaxation of COVID-19 restrictions, but also by commercial considerations (e.g. higher long-term contractual pricing).** A faster-than-expected return to production would likely reverse the current rally quickly; however, we believe that producer supply discipline, combined with utilities becoming more concerned about security of supply, should continue to support a rising price trend. The catalyst that could support the next up-leg in the spot (and term) price would be the return of utilities to the term contract market, in our view.

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## Industry News

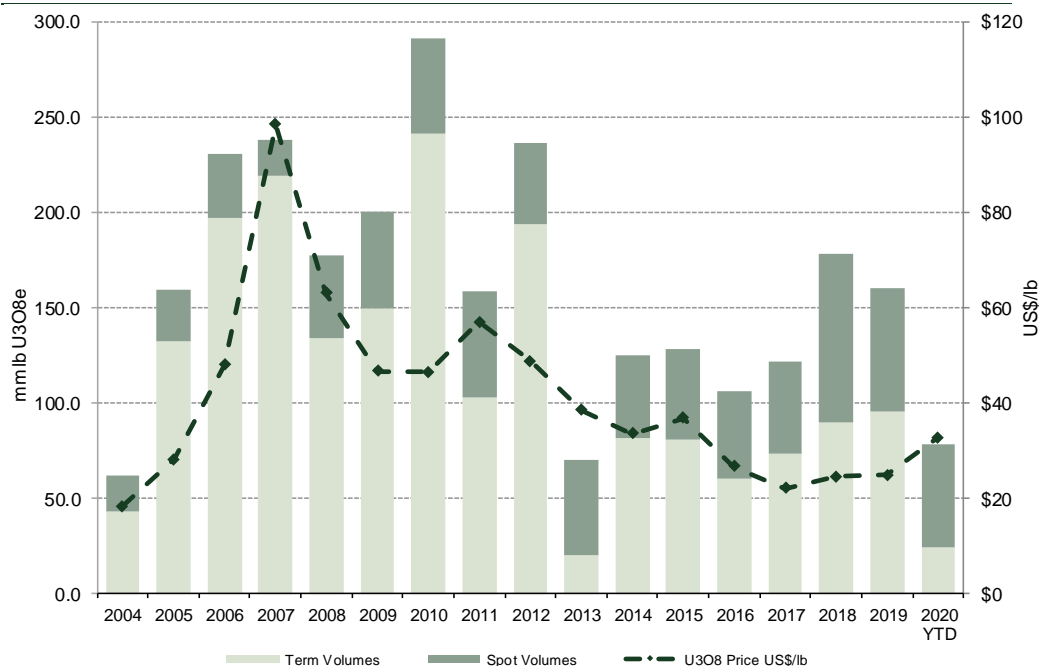
### Poland's climate minister sees construction on nation's first reactor starting in 2026 (Source: UxC)

- Poland's Climate Minister Michal Kurtyka stated on June 17 that he expects the country to commence construction on its first commercial reactor in 2026, with commercial startup targeted for 2033.
- Poland's current energy policy to 2040 envisions the construction of up to six nuclear reactors to help the country shift its energy resources away from coal-fired power plants.
- Poland has an internal goal of cutting its use of coal from today's 80% of total electricity generation to 32% of generation by 2040.

### Ghana commits to construct 1 GWe of nuclear capacity by 2030 (Source: UxC)

- Several Ghanaian media outlets reported on June 17 that Ghana has completed Phase 1 of International Atomic Energy Agency (IAEA) requirements that call for the government to develop a national infrastructure for nuclear power insight.
- Two phases remain to be completed to allow the country to achieve its ultimate objective of building and operating its first nuclear power plant.
- Phase 2 will see the development of institutions, building expertise/capabilities, working with relevant stakeholders, developing the necessary regulatory framework, electrical grid studies, as well as procurement site preparation and contracting.
- Finally, Phase 3 will see the construction and eventual commissioning of the country's first nuclear power plant.
- The overall three-phased approach to building the country's first reactor is expected to be completed in 2030.

**Exhibit 1. Term Contracting Volumes Off to a Slow Start in 2020**



Source: UxC

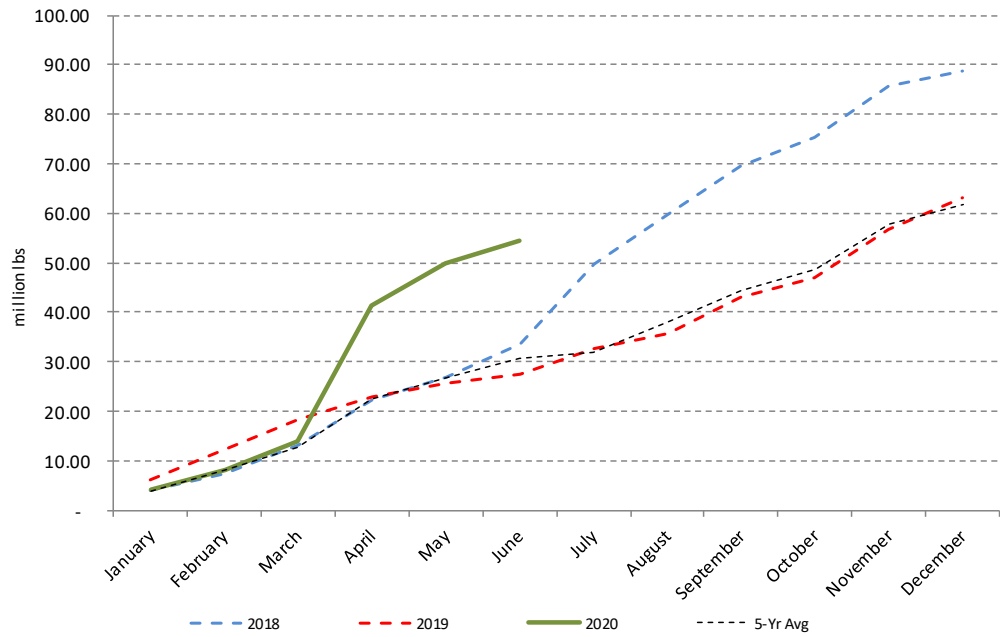


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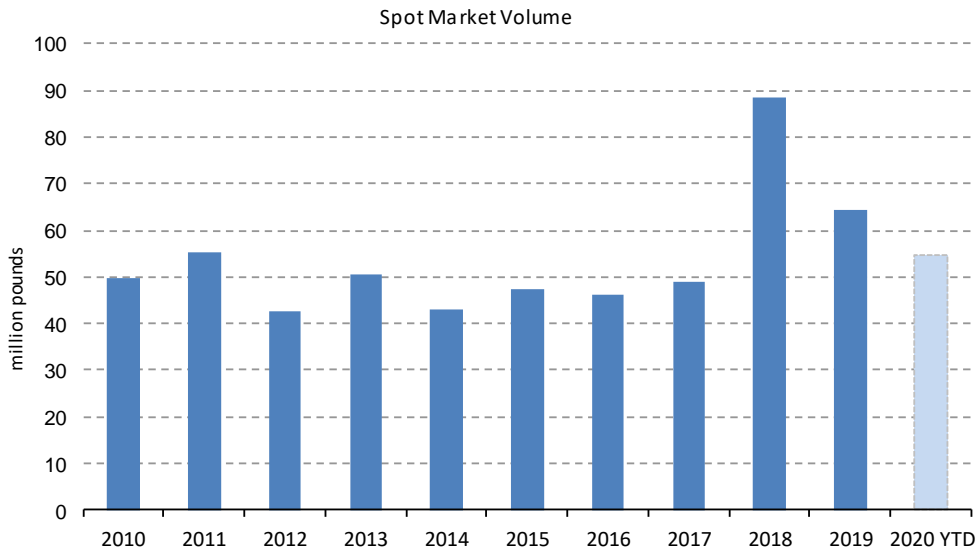
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**Exhibit 2. Historical vs. 2020 Cumulative Monthly Spot Volumes**



Source: UxC

**Exhibit 3. Historical vs. 2020 (YTD) Spot Volumes**



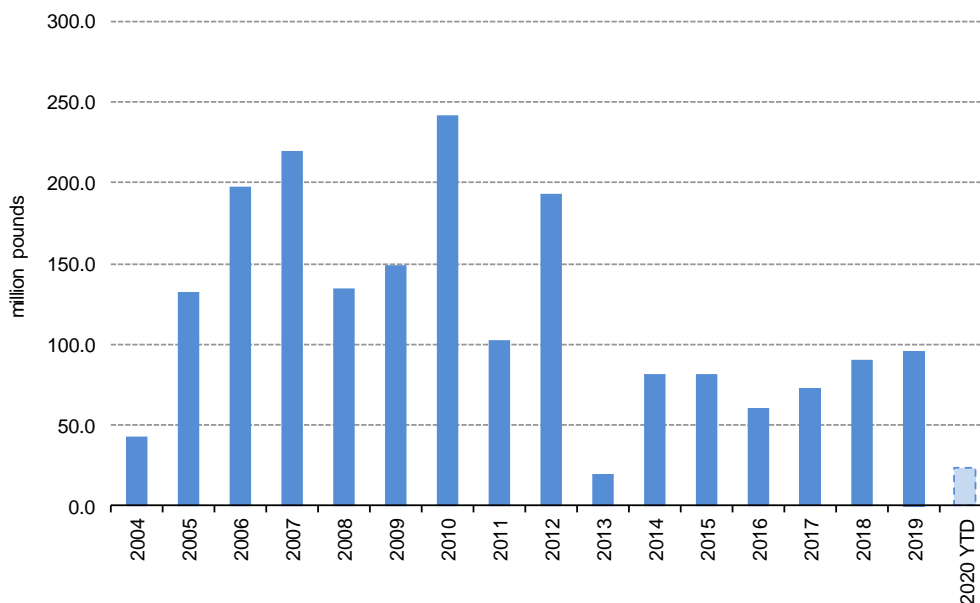
Source: UxC

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**Exhibit 4. Historical vs. 2020 (YTD) Term Volumes**



Source: UxC

**Exhibit 5. 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

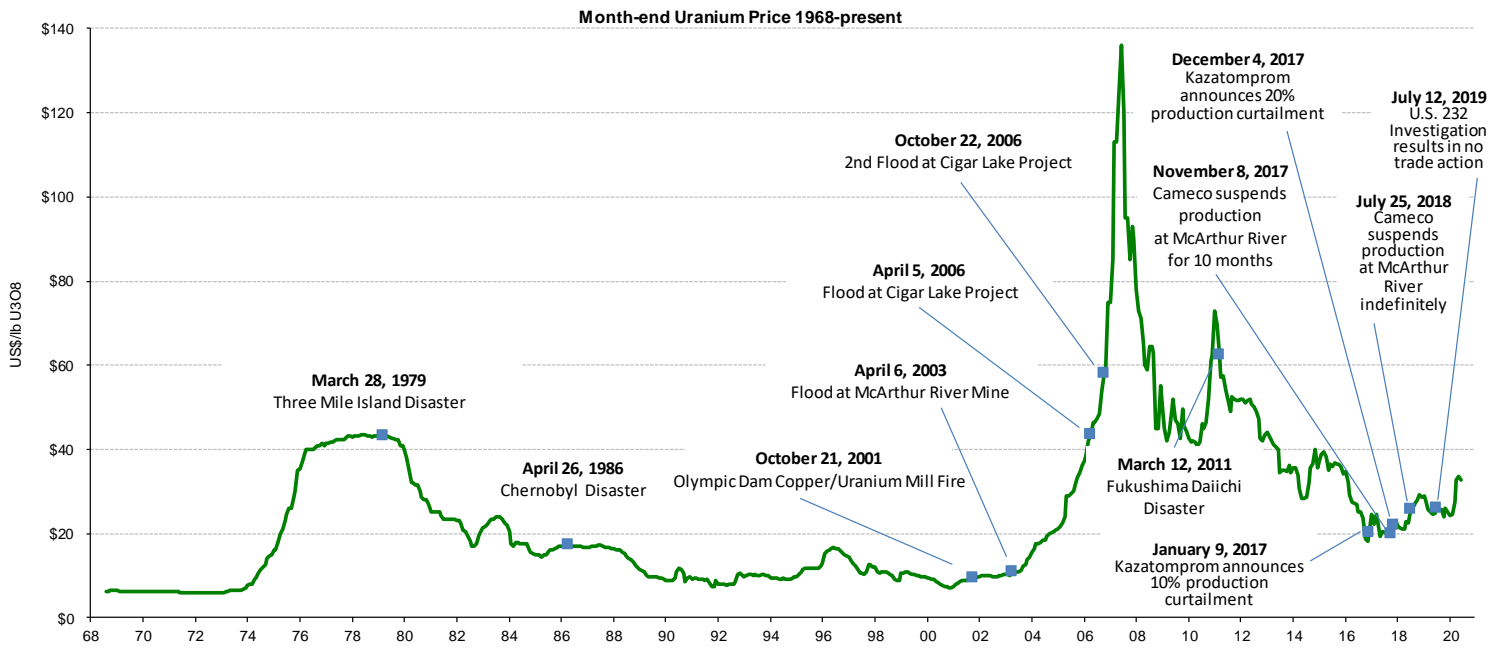
Source: Company reports, UxC, TD Securities Inc. estimates

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**Exhibit 6. Historical Spot Price and Market-affecting Events (US\$/lb)**



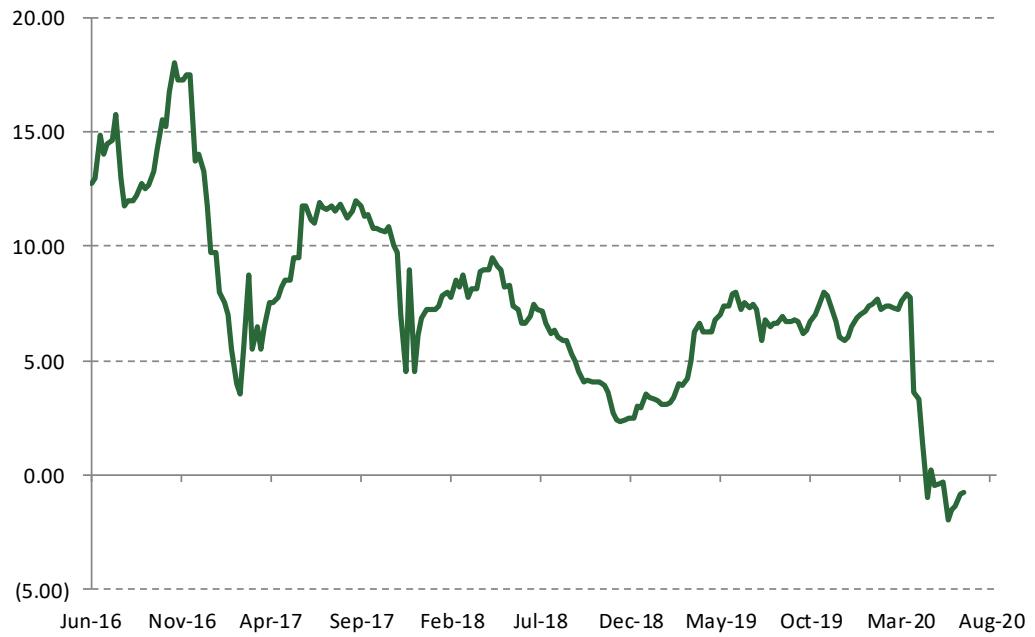
Source: UxC, companies, TD Securities Inc.

**Exhibit 7. Spot and Term Uranium Prices (US\$/lb)**



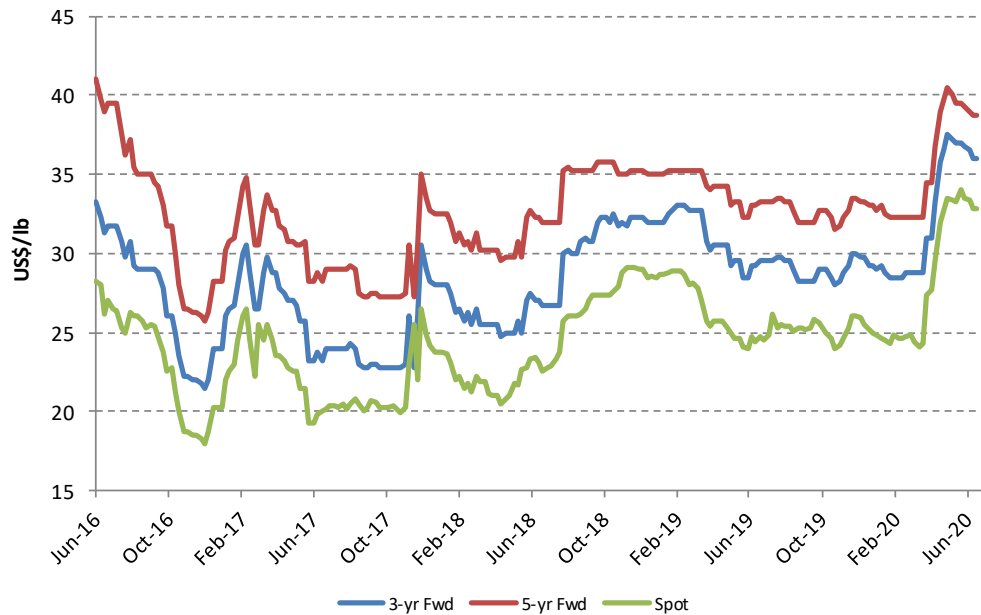
Source: UxC

**Exhibit 8. Uranium Term Price Premium to Spot (US\$/lb)**



Source: UxC

**Exhibit 9. Uranium Prices — Spot, 3-year Forward and 5-year Forward**



Source: UxC

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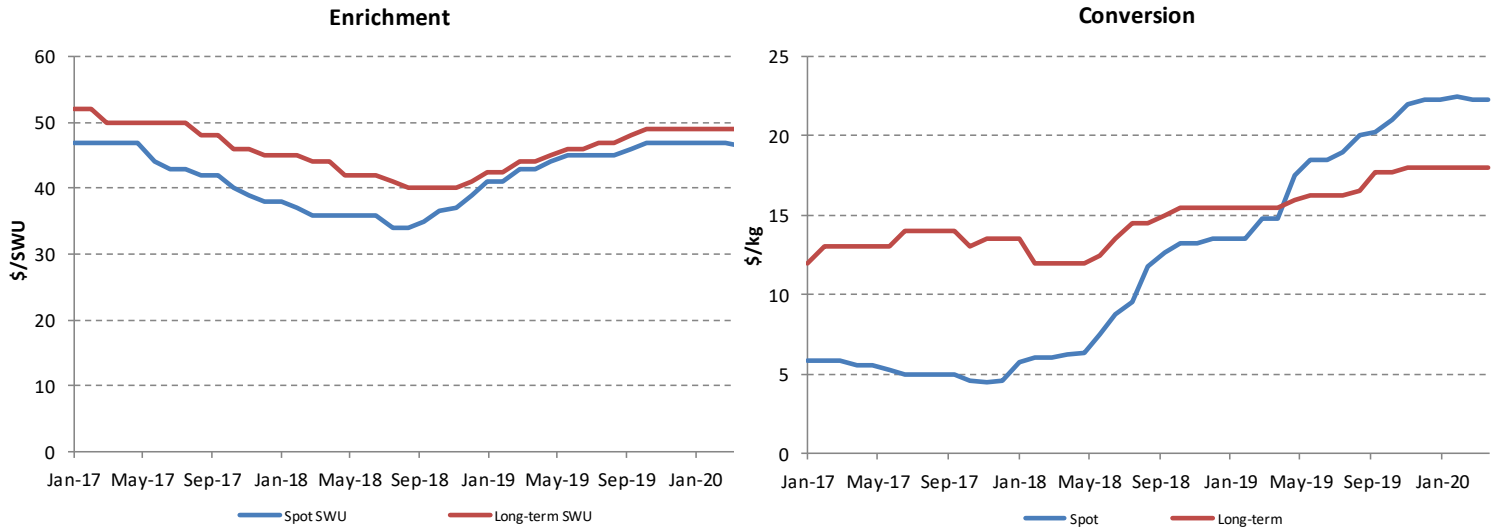
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**Exhibit 10. Fund Implied Price (FIP) and Spot Price**



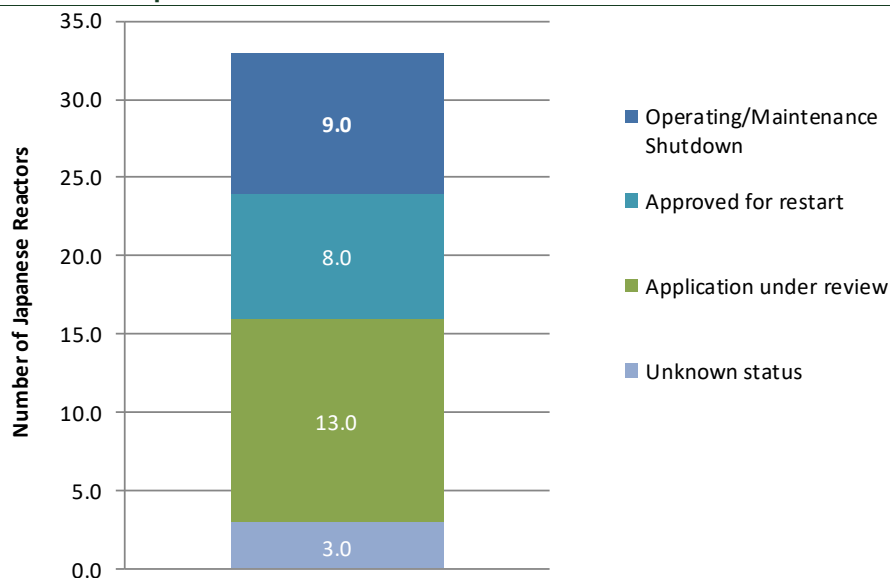
Source: UxC

**Exhibit 11. Monthly SWU and Conversion Pricing**



Source: UxC

**Exhibit 12. Japanese Reactor Status**



Source: UxC, Bloomberg, World Nuclear Association

**Exhibit 13. TD Securities Uranium Supply/Demand Model**

	2012	2013	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E
<b>Mine Supply - Western World (mm lbs U3O8)</b>													
Total Mine Supply - Western World	90	93	85	106	104	100	83	85	74	82	82	86	88
Net Eastern Mine Supply (lbs U3O8)	59	60	60	57	62	54	54	55	44	49	60	60	66
<b>Total World Mine Supply (mmlb U3O8)</b>	<b>150</b>	<b>153</b>	<b>145</b>	<b>163</b>	<b>166</b>	<b>154</b>	<b>138</b>	<b>140</b>	<b>118</b>	<b>131</b>	<b>142</b>	<b>146</b>	<b>154</b>
YoY % change	5.9%	2.4%	-5.3%	12.2%	2.1%	-7.6%	-10.2%	1.7%	-15.9%	10.9%	8.6%	2.6%	5.9%
<b>Secondary Supply</b>													
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	0
<b>Total Secondary Supply (mmlb)</b>	<b>43</b>	<b>55</b>	<b>41</b>	<b>34</b>	<b>29</b>	<b>27</b>	<b>24</b>	<b>26</b>	<b>24</b>	<b>22</b>	<b>21</b>	<b>21</b>	<b>21</b>
Secondary supply as % of global reactor demand	28%	32%	26%	21%	17%	16%	14%	15%	13%	12%	12%	12%	11%
<b>Mobilization of Commercial Inventory</b>			4	8	7	7	7	7	7	7	7	7	7
<b>Total Supply</b>	<b>193</b>	<b>208</b>	<b>190</b>	<b>205</b>	<b>202</b>	<b>187</b>	<b>169</b>	<b>173</b>	<b>149</b>	<b>160</b>	<b>170</b>	<b>174</b>	<b>183</b>
<b>Total World Demand</b>													
Total World Nuclear Generating Capacity (MWe) *				345,377	351,271	358,819	368,571	372,978	374,420	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	177	181	182	184	186
First Core Requirement (2 year lead)				-	-	-	-	-	-	-	-	-	-
<b>Total World Demand (mmlbs U3O8)</b>	<b>155</b>	<b>170</b>	<b>155</b>	<b>160</b>	<b>167</b>	<b>169</b>	<b>174</b>	<b>176</b>	<b>177</b>	<b>181</b>	<b>182</b>	<b>184</b>	<b>186</b>
YoY % change	0.0%	9.7%	-8.8%	3.4%	3.9%	1.7%	2.7%	1.2%	0.4%	2.7%	0.2%	1.0%	1.5%
<b>Supply / Demand Balance (mmlb)</b>	<b>38</b>	<b>38</b>	<b>35</b>	<b>44</b>	<b>35</b>	<b>18</b>	<b>-5</b>	<b>-3</b>	<b>-28</b>	<b>-22</b>	<b>-11</b>	<b>-10</b>	<b>-4</b>
<b>Spot Uranium Price (US\$/lb U3O8)</b>	<b>\$48.73</b>	<b>\$38.57</b>	<b>\$33.60</b>	<b>\$36.89</b>	<b>\$26.57</b>	<b>\$22.12</b>	<b>\$24.82</b>	<b>\$25.94</b>	<b>\$31.19</b>	<b>\$36.00</b>	<b>\$37.50</b>	<b>\$40.00</b>	<b>\$40.00</b>

\* 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, World Nuclear Association, TD Securities Inc.



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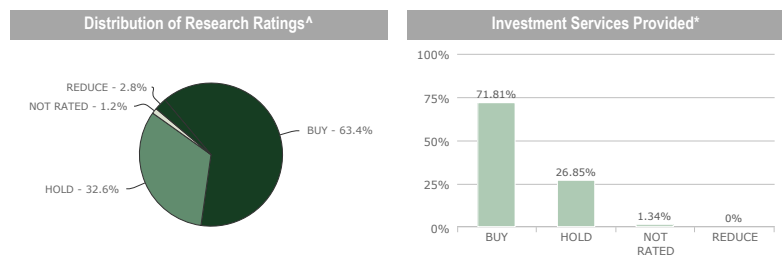
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