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All values in U.S. dollars unless otherwise noted.

For Required Non-U.S. Analyst and Conflicts Disclosures, please see page 25.

## Metal Prospects

### Uranium Market Outlook - First Quarter 2010

#### Demand

- We foresee uranium demand growing by an average of 4.4% per year during the next 20 years, slightly lower than our previous forecast, but weighted to the 2018-2025 timeframe. The increase in demand is driven mostly by China as we expect it will lead the world in new reactor builds over the next two decades.
- Announcements continue to be made by governments and companies around the world regarding potential new nuclear plants. We believe this trend will continue as nuclear power is seen as a clean alternative for baseload generation. In the West, the expansion of existing reactor fleets has been much slower than anticipated due to the global recession coupled with permitting delays and other government-related issues.

#### Supply

- We forecast the supply of uranium to grow by an average of 5% annually until 2015, but falling thereafter as reserves are exhausted. The uranium bull market of 2006 and 2007 stimulated the development of new supply, but we do not think it is enough. **In our opinion, the prevailing uranium price is too low to stimulate sufficient supply to cover future reactor requirements.**
- We have made two significant changes to our supply forecast: (1) we have reduced the forecast output of new Kazakh mines due to technical problems that we believe will persist; and, (2) we have moved the start year for Cigar Lake to 2013, one year later than we had previously forecast.

#### Market Balance

- We are forecasting deficits for every year from 2010, onward. Much of the demand we are forecasting has discretionary timing and, therefore, the market price will likely not directly reflect our view as purchases can be deferred (but not indefinitely).
- We believe there is not enough uranium production, either current or planned, to satisfy reactor needs, initial core requirements and inventories for new reactors. A sustainably higher price should help resolve this gap.
- Since the bull market for uranium in 2006-2007, we have seen a very strong supply response, in particular from Africa and Kazakhstan. Coincident to this, we have seen a substantial number of new reactor builds started globally. However, the uranium demand from these new reactors has not yet impacted the market which has resulted in a spot market that is oversupplied which has led to a low price.

#### Price Forecasts

- **We have made no changes to our uranium price forecast.**

	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	Long-Term
New	\$48	\$99	\$63	\$46	\$50	\$60	\$75	\$80	\$80	\$80	\$70	\$70	\$60	\$60	\$55
Previous	\$48	\$99	\$63	\$46	\$50	\$60	\$75	\$80	\$80	\$80	\$70	\$70	\$60	\$60	\$55

#### Risks to Forecast

- Any major problem with a nuclear reactor could quickly curtail new reactor builds and reduce demand.
- Technical or regulatory problems could reduce mine supply.
- Material owned by speculators and investors could temporarily flood the market.

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Exhibit 1. Uranium/Supply Demand Balance (MM lb U<sub>3</sub>O<sub>8</sub> equivalent)

U3O8 Production:		2003A	2004A	2005A	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E	2015E
Western World	Existing	66.04	75.68	77.73	69.38	67.94	71.09	73.76	77.59	77.84	76.65	79.57	85.87	93.65
	Planned	0.00	0.00	0.00	0.00	0.00	0.00	0.05	2.45	4.18	6.01	18.19	23.82	28.06
	<b>Total</b>	<b>66.04</b>	<b>75.68</b>	<b>77.73</b>	<b>69.38</b>	<b>67.94</b>	<b>71.09</b>	<b>73.81</b>	<b>80.04</b>	<b>82.02</b>	<b>82.65</b>	<b>97.77</b>	<b>109.69</b>	<b>121.71</b>
% Change Year/Year			14.6%	2.7%	-10.7%	-2.1%	4.6%	3.8%	8.4%	2.5%	0.8%	18.3%	12.2%	11.0%
Former East Block	Existing	25.81	27.18	30.94	32.48	37.02	42.09	50.34	60.87	68.80	73.74	76.14	76.44	78.96
	Planned	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.31	0.94	1.87	3.12	4.93	7.17
	<b>Total</b>	<b>25.81</b>	<b>27.18</b>	<b>30.94</b>	<b>32.48</b>	<b>37.02</b>	<b>42.09</b>	<b>50.42</b>	<b>61.18</b>	<b>69.73</b>	<b>75.61</b>	<b>79.26</b>	<b>81.38</b>	<b>86.13</b>
% Change Year/Year			5.3%	13.8%	5.0%	14.0%	13.7%	19.8%	21.3%	14.0%	8.4%	4.8%	2.7%	5.8%
Total World	Existing	91.86	102.85	108.67	101.87	104.96	113.18	124.11	138.46	146.64	150.38	155.71	162.31	172.61
	Planned	0.00	0.00	0.00	0.00	0.00	0.00	0.13	2.76	5.11	7.88	21.31	28.76	35.22
	<b>Total</b>	<b>91.86</b>	<b>102.85</b>	<b>108.67</b>	<b>101.87</b>	<b>104.96</b>	<b>113.18</b>	<b>124.23</b>	<b>141.23</b>	<b>151.75</b>	<b>158.26</b>	<b>177.03</b>	<b>191.07</b>	<b>207.83</b>
% Change Year/Year			12.0%	5.7%	-6.3%	3.0%	7.8%	9.8%	13.7%	7.5%	4.3%	11.9%	7.9%	8.8%
<b>Former Soviet Union Exports:</b>		<b>2003A</b>	<b>2004A</b>	<b>2005A</b>	<b>2006A</b>	<b>2007A</b>	<b>2008A</b>	<b>2009E</b>	<b>2010E</b>	<b>2011E</b>	<b>2012E</b>	<b>2013E</b>	<b>2014E</b>	<b>2015E</b>
Russian EUP		13.00	12.00	11.00	10.00	9.00	8.00	7.00	6.00	5.00	5.00	5.00	5.00	5.00
Re-enriched Tails		13.00	13.00	13.00	13.00	13.00	10.00	9.00	7.00	4.00	4.00	4.00	4.00	4.00
HEU Feed		-	-	-	-	-	-	8.00	8.00	8.00	8.00	8.00	-	-
HEU Feed II		-	-	-	-	-	-	-	-	-	-	-	-	-
Kazak EUP		2.00	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>		<b>28.00</b>	<b>25.00</b>	<b>24.00</b>	<b>23.00</b>	<b>22.00</b>	<b>18.00</b>	<b>24.00</b>	<b>21.00</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>	<b>9.00</b>	<b>9.00</b>
<b>HEU Feed:</b>		<b>2003A</b>	<b>2004A</b>	<b>2005A</b>	<b>2006A</b>	<b>2007A</b>	<b>2008A</b>	<b>2009E</b>	<b>2010E</b>	<b>2011E</b>	<b>2012E</b>	<b>2013E</b>	<b>2014E</b>	<b>2015E</b>
GNSS (U.S. Quota)		4.80	5.60	6.40	6.80	7.20	7.60	-	-	-	-	-	-	-
Cameco/Cogema/Nukem		7.20	8.40	9.60	10.20	10.80	11.40	12.00	12.00	12.00	12.00	12.00	-	-
<b>Total</b>		<b>12.00</b>	<b>14.00</b>	<b>16.00</b>	<b>17.00</b>	<b>18.00</b>	<b>19.00</b>	<b>12.00</b>	<b>12.00</b>	<b>12.00</b>	<b>12.00</b>	<b>12.00</b>	<b>-</b>	<b>-</b>
<b>Other:</b>		<b>2003A</b>	<b>2004A</b>	<b>2005A</b>	<b>2006A</b>	<b>2007A</b>	<b>2008A</b>	<b>2009E</b>	<b>2010E</b>	<b>2011E</b>	<b>2012E</b>	<b>2013E</b>	<b>2014E</b>	<b>2015E</b>
USEC Sales		9.50	8.00	7.00	6.00	3.00	1.00	1.00	1.00	1.00	0.50	-	-	-
U.S. Government Stockpile Sales		-	-	2.35	2.86	0.52	-	0.82	4.66	6.20	4.89	6.12	5.00	5.00
TVA		-	-	1.40	1.40	1.40	2.38	2.60	-	-	-	-	-	-
DOE HEU		-	-	-	-	-	-	-	-	-	-	-	-	-
MOX & Reprocessed U		6.00	7.50	8.50	8.50	6.70	6.50	7.60	7.50	6.70	7.00	7.00	7.00	7.00
<b>Total</b>		<b>15.50</b>	<b>15.50</b>	<b>19.25</b>	<b>18.76</b>	<b>11.62</b>	<b>9.88</b>	<b>12.02</b>	<b>13.16</b>	<b>13.90</b>	<b>12.39</b>	<b>13.12</b>	<b>12.00</b>	<b>12.00</b>
<b>Supply:</b>		<b>2003A</b>	<b>2004A</b>	<b>2005A</b>	<b>2006A</b>	<b>2007A</b>	<b>2008A</b>	<b>2009E</b>	<b>2010E</b>	<b>2011E</b>	<b>2012E</b>	<b>2013E</b>	<b>2014E</b>	<b>2015E</b>
<b>Total U3O8 Supply</b>		<b>147.36</b>	<b>157.35</b>	<b>167.92</b>	<b>160.63</b>	<b>156.58</b>	<b>160.06</b>	<b>172.25</b>	<b>187.38</b>	<b>194.65</b>	<b>199.65</b>	<b>219.15</b>	<b>212.07</b>	<b>228.83</b>
% Change Year/Year			6.8%	6.7%	-4.3%	-2.5%	2.2%	7.6%	8.8%	3.9%	2.6%	9.8%	-3.2%	7.9%
<b>Demand:</b>		<b>2003A</b>	<b>2004A</b>	<b>2005A</b>	<b>2006A</b>	<b>2007A</b>	<b>2008A</b>	<b>2009E</b>	<b>2010E</b>	<b>2011E</b>	<b>2012E</b>	<b>2013E</b>	<b>2014E</b>	<b>2015E</b>
<b>Reactor &amp; Inventory Requirements</b>		<b>181.33</b>	<b>171.59</b>	<b>167.99</b>	<b>166.86</b>	<b>167.26</b>	<b>169.96</b>	<b>173.15</b>	<b>189.08</b>	<b>197.22</b>	<b>213.34</b>	<b>221.79</b>	<b>224.94</b>	<b>250.43</b>
% Change Year/Year			-5.4%	-2.1%	-0.7%	0.2%	1.6%	1.9%	9.2%	4.3%	8.2%	4.0%	1.4%	11.3%
<b>Market Balance &amp; Price</b>		<b>2003A</b>	<b>2004A</b>	<b>2005A</b>	<b>2006A</b>	<b>2007A</b>	<b>2008A</b>	<b>2009E</b>	<b>2010E</b>	<b>2011E</b>	<b>2012E</b>	<b>2013E</b>	<b>2014E</b>	<b>2015E</b>
<b>Implied Market Surplus/Deficit:</b>		<b>-33.97</b>	<b>-14.24</b>	<b>-0.07</b>	<b>-6.23</b>	<b>-10.68</b>	<b>-9.91</b>	<b>-0.89</b>	<b>-1.70</b>	<b>-2.56</b>	<b>-13.69</b>	<b>-2.64</b>	<b>-12.87</b>	<b>-21.60</b>
Average Spot Price US\$/lb U3O8		\$11.38	\$18.32	\$28.14	\$47.91	\$98.68	\$63.02	\$46.44	\$50.00	\$60.00	\$75.00	\$80.00	\$80.00	\$80.00
Average Term Price US\$/lb U3O8		\$12.10	\$20.33	\$30.73	\$49.92	\$90.83	\$84.13	\$66.00	\$60.00	\$65.00	\$75.00	\$80.00	\$80.00	\$80.00

Source: World Nuclear Association, Ux Consulting, company reports, RBC Capital Markets estimates

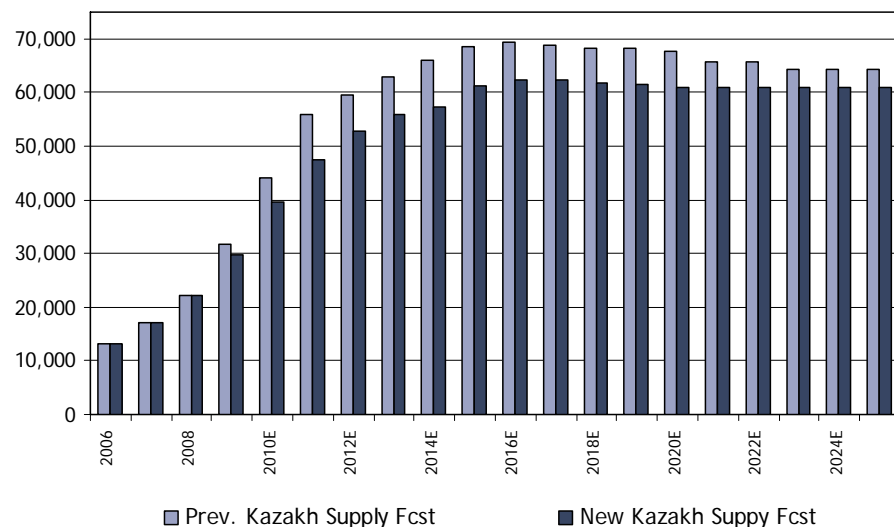
## Kazakhstan - Risk to Production Growth

The most significant change we have made to our production forecast is for Kazakhstan. Kazatomprom, the Kazakh national uranium company, has increased Kazakh uranium production by approximately 250% from 2003 to 2009, catapulting Kazakhstan to the number one position globally – this is a spectacular achievement in our opinion and reflects both the capabilities of Kazatomprom management and the high quality of the country’s ISR deposits.

Looking to the future, Kazatomprom has set the lofty goal of continuing to increase its annual uranium production to at least 65 million pounds by 2020. We do not believe that this goal will be easily achieved, if at all. The ISR uranium mines that have been developed in Kazakhstan have, for the most part been the shallower, less technically challenged ones – the “low hanging fruit”. The next generation of uranium mines have been proving much more challenging, especially the deposits in the Western group (Kharasan 1 and 2, Irkol, Karamurun North and South). Together, these mines account for approximately 20 million pounds of Kazakhstan’s planned annual production. There is little public disclosure regarding the performance of these mines, but we believe the performance of the North Kharasan mine owned by a group including Uranium One (hence the public disclosure) is a good example of the performance problems. While we believe it is too early to conclude that North Kharasan will fail, we believe it is prudent to assume that it will most likely fall short of its production goals and incur substantially higher operating costs doing so. We believe the other properties in this area will be similarly affected.

We have reflected this revised view of the future Kazakh uranium production in our revised forecasts. For 2010 to 2030, we have reduced our Kazakh uranium production forecast by approximately 6 million pounds per year, on average.

Exhibit 2. RBC Kazakh U<sub>3</sub>O<sub>8</sub> Production, New vs. Previous (000 lbs U<sub>3</sub>O<sub>8</sub> per annum)

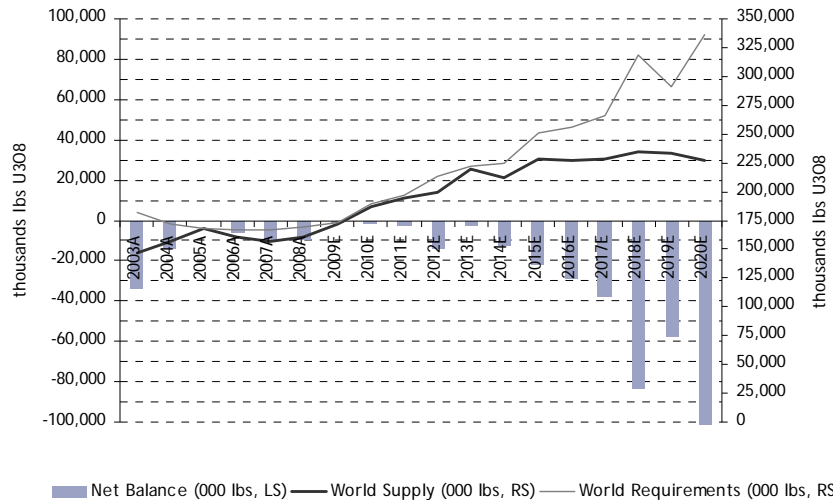


Source: Company reports, RBC Capital Markets Estimates

In addition to the technical issues faced by the challenging projects, we believe the owners of these projects will certainly question the spending of significant new capital to bring on new production, especially given the current uranium price environment. Some of these new development projects have already consumed or exceeded planned capital and the operators are seeking additional funds from joint venture partners which may not be available.

In January 2010, the Kazakh Minister of Energy and Mineral Resources, Sauat Mynbayev, stated that Kazakhstan will review its uranium production plans as it hopes to become a finished fuel producer, not just a uranium producer. We believe his statement: “Already today, we are the world’s biggest producer of natural uranium. But do we really need this status? All this should become clear after this plan is adopted”, in our view hints that Kazakhstan may even reduce its current and/or planned uranium output. We think this new plan may prove very significant for both Kazakhstan and the nuclear industry.

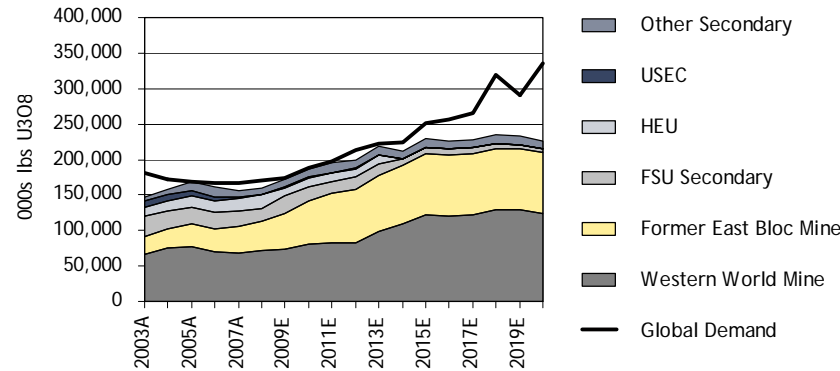
Exhibit 3. Global Uranium Supply/Demand Balance



**We believe that the new supplies needed to fill the growing deficit will require uranium prices higher than \$70/lb in order to provide the incentive to explore for, finance and develop new projects.**

Source: Ux Consulting, World Nuclear Association, RBC Capital Markets estimates

Exhibit 4. Global U<sub>3</sub>O<sub>8</sub> Supply Versus Demand (000 lb)

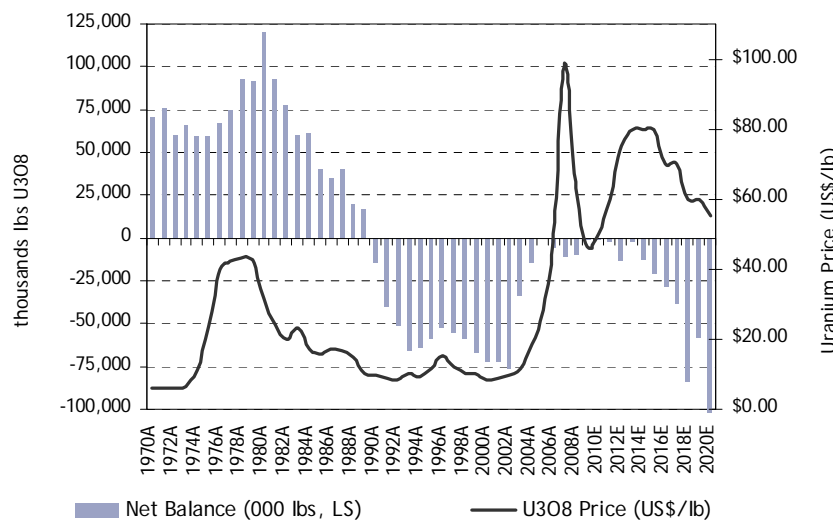


**The supply response to date has been noticeable, but not nearly enough to compensate for the forecast demand growth in the future (mostly beyond 2014).**

We are forecasting significant new supply being added to the market in the coming years. Our supply forecast is risk adjusted such that our forecast for new production is, in some cases, lower than management forecasts.

Source: Ux Consulting, World Nuclear Association, RBC Capital Markets estimates

Exhibit 5. Global U<sub>3</sub>O<sub>8</sub> Supply/Demand Balance and U<sub>3</sub>O<sub>8</sub> Price



**We believe 2007 was the peak year for uranium prices.** Looking to the future, we think the uranium market will require substantial new sources of uranium to fuel the projected growth in the global nuclear reactor fleet. To stimulate this supply, we estimate the uranium price will need to increase to at least \$70/lb.

We believe the current spot price reflects the current spot supply-demand imbalance (excess supplies and weak demand in this case). We do not think that either the term price or the spot price reflect the long-term supply-demand fundamentals.

Source: Ux Consulting, World Nuclear Association, RBC Capital Markets estimates



## Price Forecast Analysis

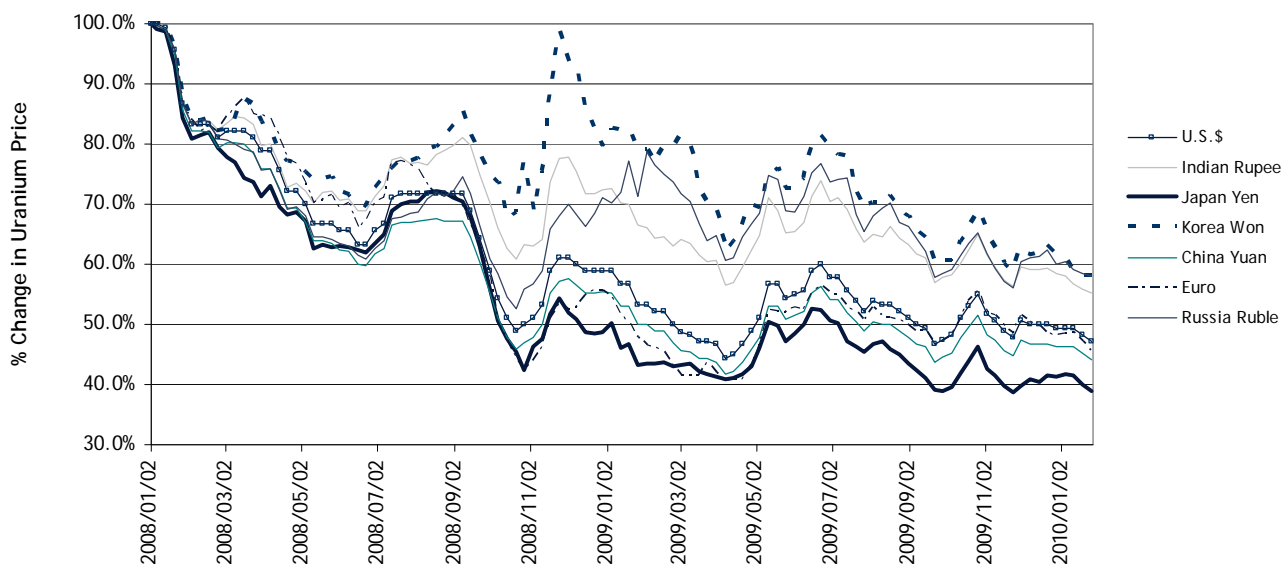
We believe that high uranium prices will persist for many years (relative to historical levels of \$7 per pound to \$15 per pound). In the near-term, we believe the continued supply-demand imbalance in the spot market will keep the spot price below \$55 per pound. We think that the oversupply on the spot market will likely persist through 2010 and that the uranium price will not increase beyond \$60 per pound until 2011. The long-term price indicator has remained relatively robust (currently \$62 per pound U<sub>3</sub>O<sub>8</sub>) when compared to the spot price and we anticipate it will continue to outperform the spot market for the next 24 months. However, we do not think the current term price properly reflects the long-term fundamentals of the uranium industry.

**Based on our revised forecast, we believe the uranium market will be in deficit from 2010 onward (growing from 2010 to 2020).**

## Currencies - A Pronounced Difference

Uranium is priced in U.S. dollars but consumed globally. In January 2008, the spot price of U<sub>3</sub>O<sub>8</sub> as quoted by Ux Consulting was \$90 per pound, 61 Euros, 3,550 Indian Rupees, 9,900 Japanese Yen, 84,325 Korean Won, 656 Chinese Yuan and 2,205 Russian Rubles. Today, the spot price is down 53% in U.S. dollar terms, 61% in Yen and only 42% in Russian Rubles. Clearly, Japanese utilities are benefiting from a stronger currency relative to their global utility peers.

Exhibit 6. Uranium Price in Various Currencies (January 2008 to January 2010)



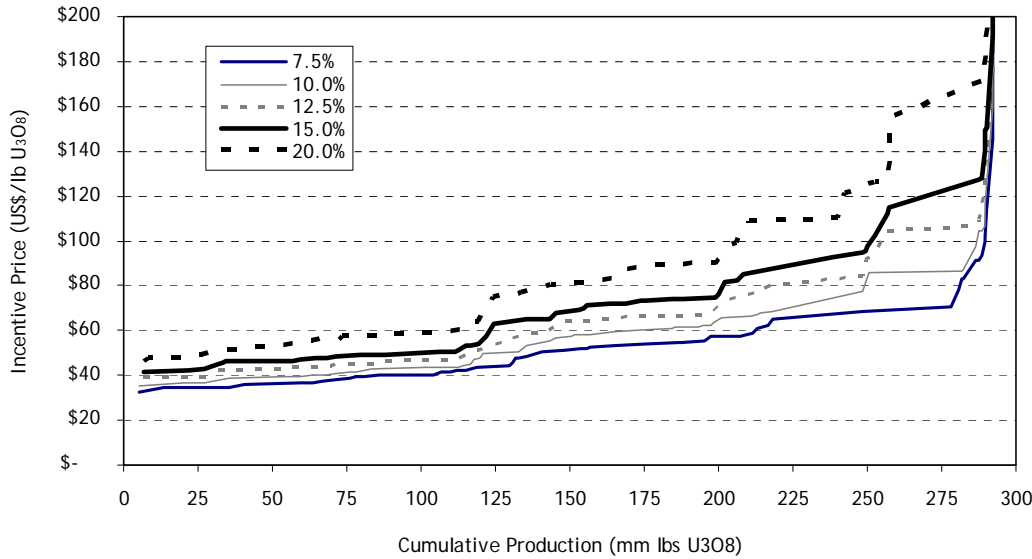
Source: Ux Consulting, Bloomberg, RBC Capital Markets Estimates

We find this pattern very interesting when contrasted with other U.S. dollar denominated metals which have performed much better (e.g. over the same period other metals’ performance was: copper +10%, aluminum -7%, nickel -31% and zinc -3%). We think that the relative weakness of uranium in light of a soft U.S. dollar highlights the very weak uranium spot market that has prevailed over the past two years.

## Incentive Pricing for Uranium Supplies

We have created incentive cost curves to illustrate what uranium prices are required to provide mine developers with the incentive to build using various rates of return. Each curve on the graph in Exhibit 7 represents a required rate of return. The new projects that are proposed for near-term to mid-term development require \$60 to \$80 per pound depending on the rate of return required. We think mining companies will look toward the higher rates of return (12.5% to 20%) to account for the risks associated with the development of uranium mines (see next section).

Exhibit 7. Uranium Incentive Pricing "Cost Curves"



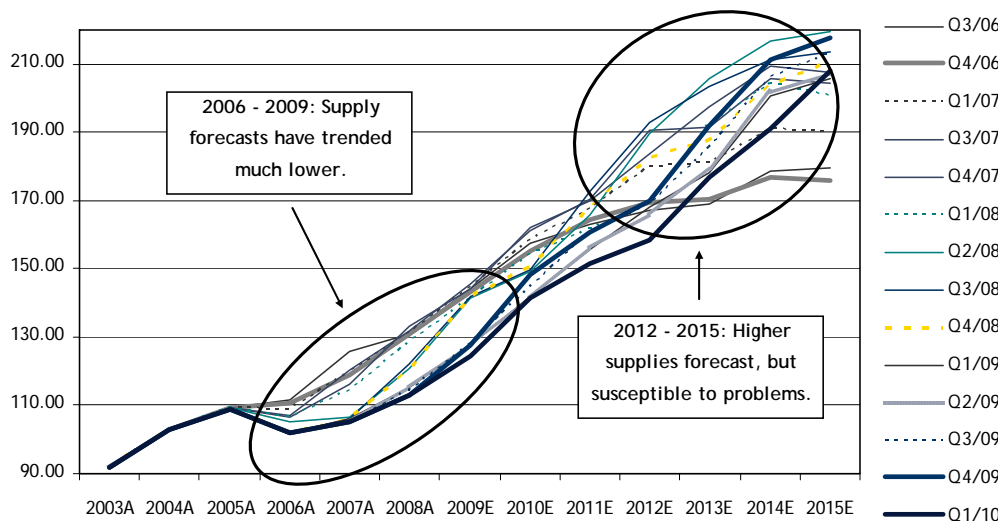
Source: Company reports, Ux Consulting, RBC Capital Markets estimates

## Uranium Supply Forecasts - Poor Execution Creating Problems

Looking back at our supply forecasts from mid-2006 to present, we have observed a very clear pattern: **The expected supply from 2006 through 2009 has dropped dramatically.** Looking at our current forecast compared to the third quarter of 2006, we see supply reductions of 10 million, 21 million, 20 million, 21 million and 21 million pounds for 2006 through 2010, respectively. **Most of these shortfalls have been driven by either problems with existing operations or delays in new mine production, with an emphasis on the latter.**

Looking to the future, the pattern is reversed; our supply forecast for 2012 to 2015 is much higher today than it was in 2006. Most of the increase in forecast supply is due to new or expanded projects, in particular Kazakh projects. However, we think caution is warranted. **We do not see any reason why the problems that plagued new supply between 2006 and 2009 should disappear completely; rather, we think there is a good chance that future supply forecasts will again disappoint. We think this fact needs to be reflected in the current uranium price and, in our view, it is not.** Our current 2015 forecast is 12 million pounds lower than our peak 2015 forecast (from Q2/08).

Exhibit 8. RBC Capital Markets Uranium Supply Forecasts (Q3/06 to Q4/09, in millions pounds U<sub>3</sub>O<sub>8</sub>)



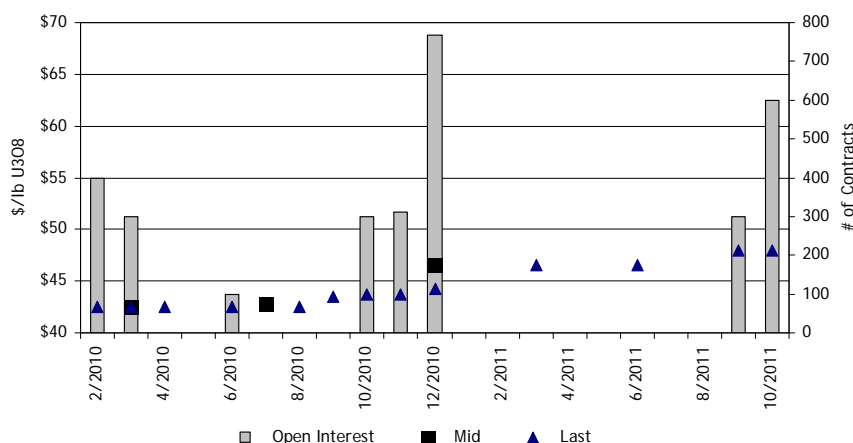
Source: Company reports, RBC Capital Markets estimates

## The Role of the NYMEX Futures

Uranium futures began trading on the NYMEX in May 2007. Volumes have been quite low, but this is to be expected from a newly launched futures contract. There are certain attributes of the uranium market that we think make uranium futures quite different from other commodity futures:

- **Uranium futures cannot be settled with physical delivery** (this is not unique to uranium).
- The uranium future is settled based on the Ux Consulting spot price at the end of the month. This is quite different from other commodities that trade on a daily basis. **In general terms, futures prices are expected to converge with the spot price on the day of settlement; we do not believe this will always be the case with the uranium futures.**
- **The market participants for the futures market and the spot market will likely be very different.** We estimate that the spot market comprises fewer than 150 participants globally. The futures market is more or less open to anyone who can afford it (with a single contract of 250 pounds U<sub>3</sub>O<sub>8</sub> trading for less than \$15,000). Therefore, we believe there will be two different groups of buyers and sellers with different motivations: the spot market participants will transact in physical material, while those trading futures will settle in cash.

Exhibit 9. Uranium Futures Prices



**In May 2007, uranium futures began trading on NYMEX.** To date, the volumes have been relatively small compared to the spot market and the bid-ask spreads quite large.

Given that the futures market for uranium is still very young, we are not convinced that it provides an accurate measure of future spot prices.

We believe that the futures contracts will provide some utility to those wanting to financially hedge uranium exposure; however, since the futures do not provide for physical delivery, we think they will be of limited use to utilities.

Note: Forward curve as of October 13, 2009  
Source: Bloomberg

## The Evolving Spot Market

Over the past couple of years we have witnessed an evolution in the spot market for uranium. Three companies have begun publicly posting bids and offers for spot material (often for many months to years forward). In our view, these companies' work has become the most important mechanism by which the spot price indicator is set (by both Ux and TradeTech)<sup>1</sup>. We think the evidence for this is well illustrated by Ux Consulting's recent addition of a Broker Average Price quote provided daily and high correlation between the BAP.

While we think it would be impossible for these companies to reflect the full activity of the spot market, we believe that market is "tight" enough that a proper sample of bids and offers will provide very accurate insight into the other, unseen activity.

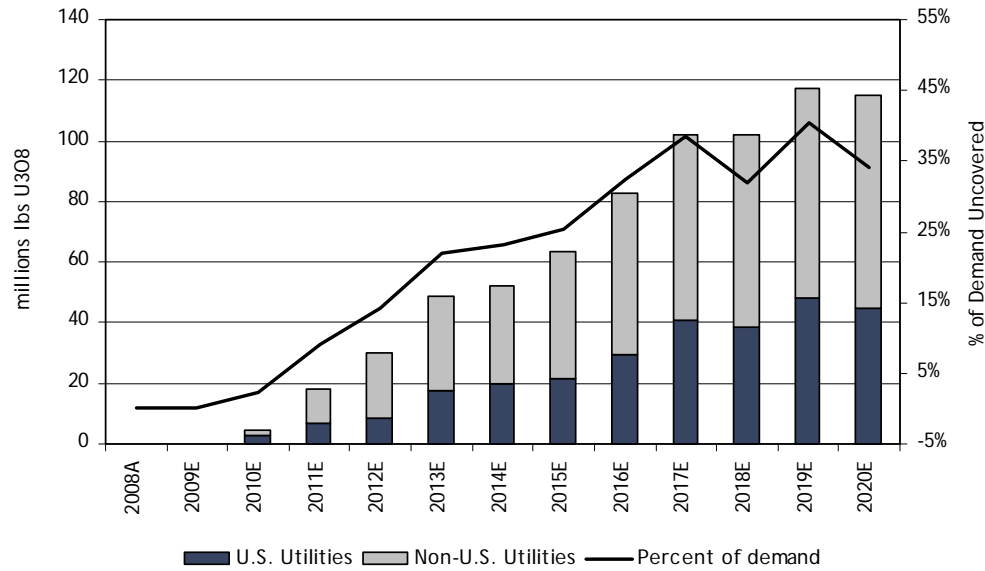
We applaud the efforts of these companies as they have finally brought some transparency to a previously opaque business. Looking to the future, we can only hope that this trend continues and brings forth more information regarding both the spot and term markets.

<sup>1</sup> We are not implying that Ux and TradeTech use these companies' data exclusively to set their indicator prices, rather we think there is a causal relationship between the daily prices and those that are reported on Fridays by TradeTech and on Mondays by Ux.



## Long-Term Contracting

Exhibit 10. Estimated Uncovered Uranium Requirements (2008A-2020E)



NB. The uncovered demand is only for existing reactors and does not include new builds  
 Source: Ux Consulting, RBC Capital Markets estimates

The contract market has begun to shift back toward more of a balance between base escalated and market-related terms. For market-related contracts, ceilings and floors are being used more extensively than they were over the past few years.

We believe that most major uranium producers have sold the vast majority of their production through to at least 2016. Yet, there remains a substantial portion of future demand uncovered (35% to 40%) in that time frame. Some of the newer entrants to the producer category like Paladin, Denison and Uranium One likely have material available for contracting on those years, but according to our estimates they will not have enough to satisfy the level of forecast demand.

**We think that in late-2011 to early-2012, utility requests for contracted material in 2016 and beyond will be met with fewer and fewer offers and then perhaps none. We believe it is this event that will provide a significant stimulus to both the spot and term prices and bring them to a level that is sufficient to incentivize new exploration, development and, eventually, production** (whether a four year head start is sufficient is questionable). Our uranium price forecast incorporates this timing.

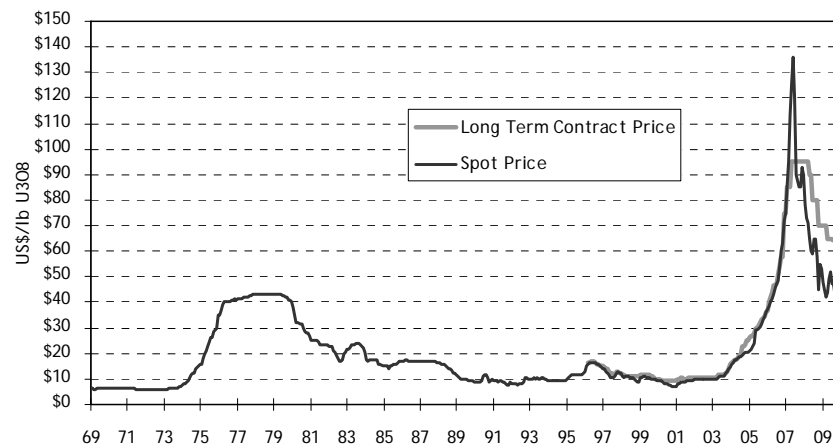
Exhibit 11. RBC Capital Markets Uranium Price Forecast (US\$/lb U<sub>3</sub>O<sub>8</sub>)

	Current	Previous	Change	LT Price
2006A	\$47.91	\$47.91	-	
2007A	\$98.68	\$98.68	-	\$90.83
2008A	\$63.02	\$63.02	-	\$84.13
2009E	\$46.44	\$46.44	-	\$66.00
2010E	\$50.00	\$50.00	-	\$60.00
2011E	\$60.00	\$60.00	-	\$65.00
2012E	\$75.00	\$75.00	-	\$75.00
2013E	\$80.00	\$80.00	-	\$80.00
2014E	\$80.00	\$80.00	-	\$80.00
2015E	\$80.00	\$80.00	-	\$80.00
2016E	\$70.00	\$70.00	-	\$70.00
2017E	\$70.00	\$70.00	-	\$70.00
2018E	\$60.00	\$60.00	-	\$60.00
2019E	\$60.00	\$60.00	-	\$60.00
Long-Term	\$55.00	\$55.00	-	\$55.00

**We have made no changes to our uranium price forecasts.**

Source: Ux Consulting, RBC Capital Markets estimates

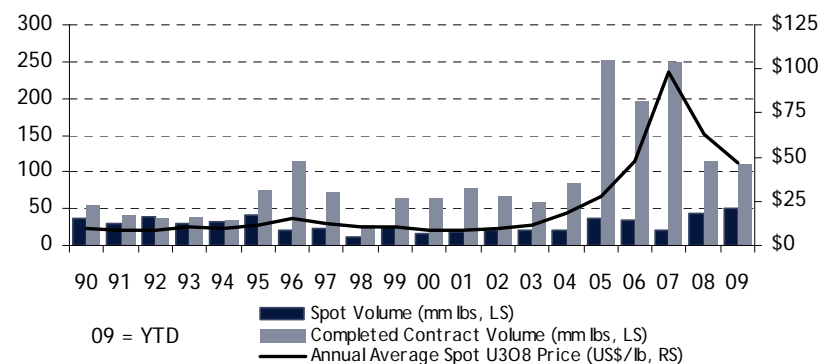
Exhibit 12. Spot Versus Term Contract Uranium Prices



**The term price has come down from its peak of \$95/lb but has remained fairly robust relative to the spot price.**

Source: Ux Consulting, RBC Capital Markets estimates

Exhibit 13. Annual Volumes and U<sub>3</sub>O<sub>8</sub> Prices



Record spot volumes were set in 2009 with slightly more than half of the purchase volumes made by utilities. We believe spot needs will not be significant in 2010 as most utilities have their needs very well covered.

Source: Ux Consulting, RBC Capital Markets estimates



## Uranium Supply

Exhibit 14. Uranium Supply 2004A to 2015E (000 lb U<sub>3</sub>O<sub>8</sub>)

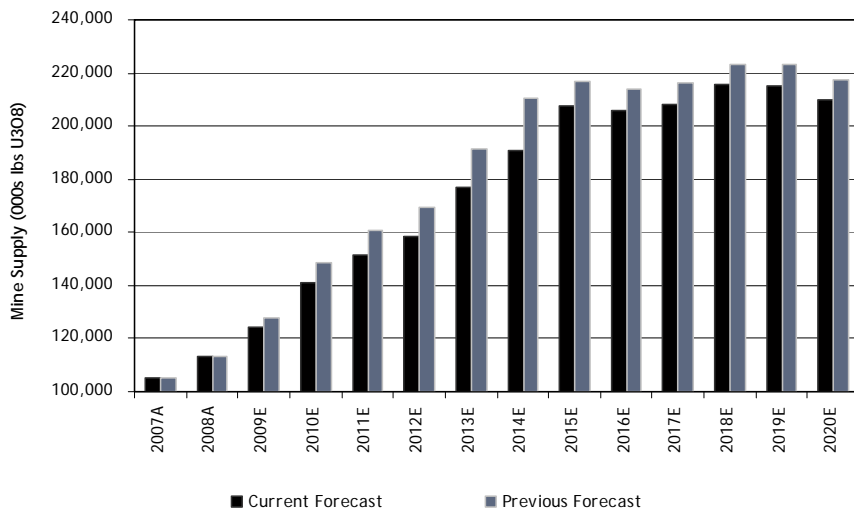
Year	2004A	2005A	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E	2015E
Africa	18,400	18,434	18,291	16,258	19,766	21,536	27,699	29,345	30,093	40,525	44,605	47,493
Australia	23,327	24,675	19,702	21,229	21,872	22,052	21,457	22,081	23,110	25,488	28,780	28,626
Canada	30,152	30,230	25,640	24,345	23,845	24,579	23,967	22,367	21,567	23,467	27,767	36,776
Kazakhstan	8,632	11,381	13,225	17,260	22,148	29,828	39,690	47,587	52,815	55,815	57,283	61,254
Russia	8,012	8,457	8,294	8,778	9,100	9,490	10,140	10,790	11,440	12,090	12,740	13,520
Ukraine	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
USA	2,140	2,686	4,412	4,485	3,891	3,824	5,001	6,230	5,881	6,288	6,538	6,813
Uzbekistan	5,330	5,980	5,876	6,032	6,000	6,250	6,500	6,500	6,500	6,500	6,500	6,500
Other	4,757	4,728	4,326	4,472	4,458	4,574	4,674	4,754	4,754	4,754	4,754	4,754
<b>Total Mine Supply</b>	<b>102,850</b>	<b>108,671</b>	<b>101,865</b>	<b>104,959</b>	<b>113,179</b>	<b>124,234</b>	<b>141,227</b>	<b>151,754</b>	<b>158,260</b>	<b>177,026</b>	<b>191,066</b>	<b>207,834</b>
<i>y/y Change</i>	<i>12.0%</i>	<i>5.7%</i>	<i>-6.3%</i>	<i>3.0%</i>	<i>7.8%</i>	<i>9.8%</i>	<i>13.7%</i>	<i>7.5%</i>	<i>4.3%</i>	<i>11.9%</i>	<i>7.9%</i>	<i>8.8%</i>
Year	2004A	2005A	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E	2015E
<b>Non-Mine Supply</b>												
<b>Former Soviet Union Supplies</b>												
Russian Govt Stockpiles	12,000	11,000	10,000	9,000	8,000	7,000	6,000	5,000	5,000	5,000	5,000	5,000
Re-Enriched Tails	13,000	13,000	13,000	13,000	10,000	9,000	7,000	4,000	4,000	4,000	4,000	4,000
HEU Feed	0	0	0	0	0	8,000	8,000	8,000	8,000	8,000	0	0
HEU II	0	0	0	0	0	0	0	0	0	0	0	0
Kazak EUP	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total FSU</b>	<b>25,000</b>	<b>24,000</b>	<b>23,000</b>	<b>22,000</b>	<b>18,000</b>	<b>24,000</b>	<b>21,000</b>	<b>17,000</b>	<b>17,000</b>	<b>17,000</b>	<b>9,000</b>	<b>9,000</b>
<b>HEU Feed (to West)</b>												
Cameco/Cogema/Nukem/GNSS	14,000	16,000	17,000	18,000	19,000	12,000	12,000	12,000	12,000	12,000	0	0
USEC Sales	8,000	7,000	6,000	3,000	1,000	1,000	1,000	1,000	500	0	0	0
<b>Other</b>												
U.S. Government Stocks	0	2,350	2,860	520	0	820	4,655	6,200	4,890	6,120	5,000	5,000
TVA	0	1,400	1,400	1,400	2,380	2,600	0	0	0	0	0	0
US HEU Blend-down (Non-TVA)	0	0	0	0	0	0	0	0	0	0	0	0
MOX + RepU	7,500	8,500	8,500	6,700	6,500	7,600	7,500	6,700	7,000	7,000	7,000	7,000
<b>Total Other</b>	<b>7,500</b>	<b>12,250</b>	<b>12,760</b>	<b>8,620</b>	<b>8,880</b>	<b>11,020</b>	<b>12,155</b>	<b>12,900</b>	<b>11,890</b>	<b>13,120</b>	<b>12,000</b>	<b>12,000</b>
<b>Total Non-Mine Supply</b>	<b>54,500</b>	<b>59,250</b>	<b>58,760</b>	<b>51,620</b>	<b>46,880</b>	<b>48,020</b>	<b>46,155</b>	<b>42,900</b>	<b>41,390</b>	<b>42,120</b>	<b>21,000</b>	<b>21,000</b>
<i>Secondary Supply as % of Total</i>					29%	28%	25%	22%	21%	19%	10%	9%
<b>TOTAL URANIUM SUPPLY</b>	<b>157,350</b>	<b>167,921</b>	<b>160,625</b>	<b>156,579</b>	<b>160,059</b>	<b>172,254</b>	<b>187,382</b>	<b>194,654</b>	<b>199,650</b>	<b>219,146</b>	<b>212,066</b>	<b>228,834</b>
<i>y/y Change</i>	<i>6.8%</i>	<i>6.7%</i>	<i>-4.3%</i>	<i>-2.5%</i>	<i>2.2%</i>	<i>7.6%</i>	<i>8.8%</i>	<i>3.9%</i>	<i>2.6%</i>	<i>9.8%</i>	<i>-3.2%</i>	<i>7.9%</i>

Source: World Nuclear Association, Ux Consulting, company reports, RBC Capital Markets estimates

## Supply - General Comments

**We have made two significant changes to our supply forecast:** (1) we have reduced the forecast output of new Kazakh mines due to technical problems that we believe will persist; and, (2) we have moved the start year for Cigar Lake to 2013, one year later than we had previously forecast.

**Looking forward, most of the growth in supply comes from companies that are new producers (e.g., Uranium One, Paladin, etc.) and/or countries that are increasing their supply contribution significantly (i.e. Namibia, Niger and Kazakhstan).** While we are confident that most of the forecast production will come to fruition, we must caution that if production milestones are delayed, the market reaction could be strong and result in uranium prices that are higher than we anticipate.

Exhibit 15. Uranium Mine Supply 2007A to 2020E - New vs. Q4/09 Forecast (000 lb U<sub>3</sub>O<sub>8</sub>)

Source: World Nuclear Association, Ux Consulting, company reports, RBC Capital Markets estimates

## U.S. DOE Excess-Inventory Sales

On December 16, 2008, the U.S. Department of Energy (DOE) released its Excess Uranium Inventory Management Plan that provided details regarding the U.S. government's plans to dispose of its excess uranium inventories.

The inventories, totaling 153 million pounds, were built up over decades primarily through enrichment activities, weapons programs and the U.S.-Russian HEU (highly enriched uranium) program. The uranium is in various forms, some of which are readily saleable, whereas others will require substantial processing to bring to commercial reactor standards.

The DOE plan calls for the selling of uranium into the U.S. market over a period of at least 25 years and not exceeding 10% of U.S. demand, except in the case of special needs such as initial cores. We believe this new plan is very much in line with previously announced plans (e.g. August 2006).

It is important to note that the government said that the disposition will be carried out in a "manner that minimizes any material adverse impacts on domestic uranium mining." We interpret that to mean **the government will look to sell the uranium in such a way that it does not have an overwhelming negative effect on the prevailing uranium price, thereby hurting domestic uranium producers.** We have adjusted our uranium supply/demand model to account for the DOE's schedule.

The DOE recently began a barter agreement with the United States Enrichment Corporation (USEC) whereby the DOE will transfer uranium to USEC in return for environmental cleanup work at the Portsmouth Gaseous Diffusion Plant in Ohio. The first of these transfers is for Q4/09 through 2010 for a total of approximately three million pounds. While the DOE requires Secretarial Determination for future transfers, we expect this will occur from 2011 through 2013.

## DOE Uranium Sources

There are five basic types/forms of uranium that are part of the DOE's plan and for each one there are potential limits on how quickly and at what cost it can be brought to the market.

### Unallocated U.S. Highly Enriched Uranium: 32.5 million pounds U<sub>3</sub>O<sub>8</sub>

This highly enriched material (greater than 20% U<sup>235</sup>) is not allocated for any specific purpose and is expected to be sold gradually over many years as weapons are dismantled and the material is rejected by U.S. naval reactors.

### U.S.-Origin NU as UF<sub>6</sub>: 13.4 million pounds U<sub>3</sub>O<sub>8</sub>

The DOE has an inventory of natural uranium (0.71% U<sup>235</sup>) in UF<sub>6</sub> form (NU uranium hexafluoride is uranium that has been converted and is the feedstock for enrichment plants). This inventory was built during historical DOE enrichment activities and cannot be sold until March 2009. After that time, we think this material will be sold and it is likely in commercial form.

## Russian-Origin NU as UF<sub>6</sub>: 32.3 million pounds U<sub>3</sub>O<sub>8</sub>

This material was accumulated by the DOE as part of the U.S.-Russia HEU deal signed in 1999. The material is under a moratorium until March 2009 and it meets commercial specifications. The DOE is considering a variety of options for this material, including enriching it to low enriched uranium (LEU) levels to reduce storage costs and maintaining it as a strategic fuel inventory.

## Off-Spec Non-UF<sub>6</sub>: 7.5 million pounds U<sub>3</sub>O<sub>8</sub>

This material comprises various forms for which there is no identified path to the end market. Therefore, we believe it will not be made available to U.S. utilities for many years.

## Depleted Uranium from Historical Enrichment Activities: 67.5 million pounds U<sub>3</sub>O<sub>8</sub>

The largest single component of the inventory is in depleted uranium (DU) that was a waste product of historical DOE enrichment activities. The 67.5 million pounds represents the portion of the DOE's DU that has U<sup>235</sup> assays between 0.35% and 0.711%.

DU requires significant enrichment to bring it to LEU levels. We think that this material will be reprocessed, but at rates that are determined by both enrichment availability and the relative economics of uranium prices and enrichment prices.

Regardless of the economics and enrichment availability, the reprocessed DU would fall under the 10% cap as discussed above.

## Primary Mine Supply

Exhibit 16. Changes in Uranium Mine Production 2008A to 2020E (2007 base year; 000 lb U<sub>3</sub>O<sub>8</sub>)

Year	2008A	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
<b>Africa</b>													
Niger	(314)	(203)	(203)	(203)	(203)	(203)	(203)	(203)	(203)	(203)	(203)	(203)	(203)
Langer Heinrich	2,262	2,738	3,892	5,021	5,080	5,080	5,080	5,080	5,080	5,080	5,080	5,080	5,080
Kayelekera	-	529	3,517	3,517	3,517	3,517	3,517	2,909	2,301	2,301	2,301	2,301	2,301
Rossing	1,287	2,087	2,087	2,087	2,087	2,087	2,087	2,087	2,087	2,087	2,087	2,087	2,087
Dominion	193	-	-	-	-	-	-	-	-	-	-	-	-
Vaal Reefs	80	80	80	180	280	530	610	610	610	610	610	610	610
Azekik (Niger - Chinese owned)	-	-	-	-	-	500	1,500	2,000	2,000	2,000	2,000	2,000	2,000
Ezulwini	-	47	845	730	656	646	915	1,234	1,372	1,444	1,380	1,391	1,372
Imouraren, Niger (AREVA)	-	-	-	-	-	2,600	5,200	7,800	7,800	7,800	9,500	9,500	9,500
Buffelsfontien	-	-	973	1,255	1,418	1,239	1,246	1,322	1,444	1,347	1,313	1,293	1,270
Rossing Additions	-	-	-	-	-	-	-	-	-	-	-	-	-
Trekoppkje	-	47	845	730	656	646	915	1,234	1,372	1,444	1,380	1,391	1,372
Randfontein	-	-	-	-	500	750	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rossing South	-	-	-	-	-	13,791	13,791	13,791	13,791	13,791	13,791	13,791	13,791
<b>Total Africa</b>	<b>3,508</b>	<b>5,325</b>	<b>12,036</b>	<b>13,316</b>	<b>13,992</b>	<b>31,184</b>	<b>35,657</b>	<b>38,864</b>	<b>38,654</b>	<b>38,702</b>	<b>40,240</b>	<b>40,242</b>	<b>40,180</b>
<b>Australia</b>													
Ranger	(274)	(345)	(1,140)	(1,316)	(1,316)	(1,316)	597	597	597	597	597	597	(3,995)
Olympic Dam	1,113	1,217	1,317	1,317	1,317	2,235	2,235	1,817	1,817	1,817	1,817	1,817	1,817
Beverley	(196)	(49)	51	151	251	351	351	351	351	351	351	351	351
Honeymoon	-	-	-	451	880	880	880	880	-	-	-	-	-
Olympic Dam (Expansion)	-	-	-	-	-	-	-	-	-	1,300	1,300	1,300	1,300
Jabiluka	-	-	-	-	-	-	-	-	-	-	-	-	-
Valhalla/Skal	-	-	-	-	-	1,718	3,976	4,504	4,493	4,493	4,493	4,493	4,493
Yeelirrie (BHPB)	-	-	-	-	-	-	-	-	2,500	5,000	5,000	5,000	5,000
Four Mile	-	-	-	500	1,500	2,500	3,000	3,000	3,000	3,000	3,000	3,000	3,000
<b>Total Australia</b>	<b>643</b>	<b>823</b>	<b>228</b>	<b>1,102</b>	<b>2,631</b>	<b>6,368</b>	<b>11,039</b>	<b>11,149</b>	<b>12,757</b>	<b>16,557</b>	<b>16,557</b>	<b>16,557</b>	<b>11,965</b>
<b>Canada</b>													
McArthur River	(1,572)	52	52	52	52	52	52	52	52	52	52	52	52
Cigar Lake	-	-	-	-	-	3,000	9,000	18,009	18,009	18,009	18,009	18,009	18,009
McClellan Lake	1,685	596	(17)	(1,617)	(1,617)	(1,617)	(1,617)	(1,617)	(1,617)	(1,617)	(1,617)	(1,617)	(1,617)
Rabbit Lake	(613)	(413)	(413)	(413)	(1,213)	(2,313)	(4,013)	(4,013)	(4,013)	(4,013)	(4,013)	(4,013)	(4,013)
Midwest (McClean)	-	-	-	-	-	-	-	-	-	-	8,000	8,000	8,000
<b>Total Canada</b>	<b>(500)</b>	<b>234</b>	<b>(378)</b>	<b>(1,978)</b>	<b>(2,778)</b>	<b>(878)</b>	<b>3,422</b>	<b>12,431</b>	<b>12,431</b>	<b>12,431</b>	<b>20,431</b>	<b>20,431</b>	<b>20,431</b>

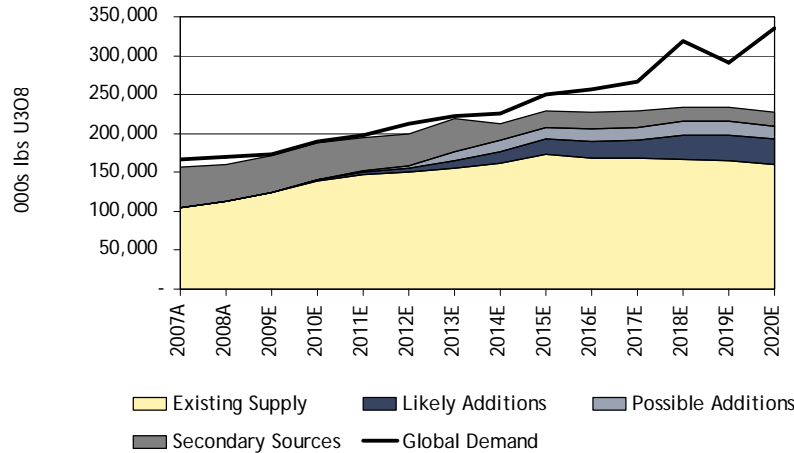
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Exhibit 16, cont'd: Changes in Uranium Mine Production 2008A to 2020E (2007 base year; 000 lb U<sub>3</sub>O<sub>8</sub>)

Year	2008A	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
<b>Kazakhstan</b>													
LLP Kazatomprom	700	1,050	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,050	550	300	(200)
Stepnogorsk	100	100	100	100	100	100	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)	(1,200)
Akdala	66	90	3	3	3	3	3	3	3	3	3	3	3
Inkai	(100)	900	3,233	4,567	4,567	4,567	4,567	4,567	4,567	4,567	4,567	4,567	4,567
N. Kharasan	31	273	438	750	2,125	2,938	3,751	5,001	5,001	5,001	5,001	5,001	5,001
South Inkai	1,075	2,146	4,022	4,993	5,121	5,121	5,121	5,121	5,121	5,124	5,124	5,125	5,125
Muyunkum	1,261	1,935	2,735	3,735	4,735	5,535	5,535	5,535	5,535	5,535	5,535	5,535	5,535
Karatau (Budenovskoye)	971	2,571	3,921	4,071	4,471	4,471	4,471	4,471	4,471	4,471	4,471	4,471	4,471
Central Mynkuduk	940	2,240	3,540	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940
Western Mynkuduk	321	861	1,381	1,901	2,421	2,421	2,421	2,421	2,421	2,421	2,421	2,421	2,421
Irkol	-	780	1,170	1,560	1,560	1,560	1,560	1,560	1,560	1,560	1,560	1,560	1,560
Semisbai	-	130	312	832	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040
Zarechnoye	(478)	(585)	(286)	390	1,050	1,190	1,330	1,820	1,820	1,820	1,820	1,820	1,820
Budenovskoye 1, 3, 4	-	-	-	156	624	1,404	2,704	4,420	5,200	5,200	5,200	5,200	5,200
Kharasan 2	-	78	312	780	1,248	1,716	2,231	2,746	3,089	3,432	3,432	3,432	3,432
<b>Total Kazakhstan</b>	<b>4,888</b>	<b>12,569</b>	<b>22,430</b>	<b>30,327</b>	<b>35,555</b>	<b>38,555</b>	<b>40,023</b>	<b>43,994</b>	<b>45,117</b>	<b>44,964</b>	<b>44,464</b>	<b>44,215</b>	<b>43,715</b>
<b>Czech Republic</b>	<b>(114)</b>	<b>(98)</b>	<b>(98)</b>	<b>(98)</b>	<b>(98)</b>	<b>(98)</b>	<b>(98)</b>	<b>(98)</b>	<b>(798)</b>	<b>(798)</b>	<b>(798)</b>	<b>(798)</b>	<b>(798)</b>
<b>Other</b>	<b>100</b>	<b>200</b>	<b>300</b>	<b>380</b>	<b>380</b>	<b>380</b>	<b>380</b>	<b>380</b>	<b>380</b>	<b>380</b>	<b>380</b>	<b>380</b>	<b>380</b>
<b>Total Other</b>	<b>(14)</b>	<b>102</b>	<b>202</b>	<b>282</b>	<b>282</b>	<b>282</b>	<b>282</b>	<b>282</b>	<b>(418)</b>	<b>(418)</b>	<b>(418)</b>	<b>(418)</b>	<b>(418)</b>
<b>Russia</b>													
Priargunsky	-	-	-	260	520	780	1,040	1,300	1,300	1,300	1,300	1,300	1,300
Dolmatovskoye	130	260	390	520	650	780	910	910	910	910	910	910	910
Khiagda	192	452	972	1,232	1,492	1,752	2,012	2,532	2,532	2,532	2,532	2,532	2,532
<b>Total Russia</b>	<b>322</b>	<b>712</b>	<b>1,362</b>	<b>2,012</b>	<b>2,662</b>	<b>3,312</b>	<b>3,962</b>	<b>4,742</b>	<b>4,742</b>	<b>4,742</b>	<b>4,742</b>	<b>4,742</b>	<b>4,742</b>
<b>United States</b>													
AREVA/Christensen Ranch	-	-	-	-	-	-	-	-	-	-	-	-	-
Cameco USA ISR	(713)	(213)	(513)	(113)	(313)	(313)	(313)	(513)	(1,113)	(1,058)	(2,713)	(2,713)	(2,713)
URI/Kingsville Dome	(86)	(308)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)
URI/Vasquez	(43)	(80)	(80)	(80)	(80)	(80)	(80)	(80)	(80)	(80)	(80)	(80)	(80)
IUC/White Mesa	587	282	1,116	1,338	879	638	638	638	(300)	(300)	(300)	(300)	(300)
Mestena/Alta Mesa	(214)	(217)	83	83	83	83	83	83	(917)	(917)	(917)	(917)	(917)
Churchrock	-	-	-	-	-	-	-	-	-	-	-	-	-
Palangana/Hobson	-	-	-	-	-	-	-	-	-	-	-	-	-
Powder River (UUU)	-	-	-	125	625	1,500	2,000	2,500	2,500	2,500	2,500	2,500	2,500
Great Divide (UUU)	-	-	-	-	-	-	-	150	600	900	1,000	1,000	1,000
Shootaring (UUU)	-	-	-	-	-	-	-	-	-	-	-	-	-
Lost Soldier (URE)	-	-	-	-	-	-	-	300	500	1,000	1,000	1,000	1,000
Lost Creek (URE)	-	-	-	880	1,000	1,000	1,000	1,000	1,000	1,000	1,000	859	-
Goliad	-	-	770	980	980	1,400	1,400	1,400	1,070	-	-	-	-
<b>Total USA</b>	<b>(594)</b>	<b>(661)</b>	<b>901</b>	<b>2,738</b>	<b>2,699</b>	<b>3,753</b>	<b>4,253</b>	<b>5,003</b>	<b>2,785</b>	<b>2,570</b>	<b>1,015</b>	<b>874</b>	<b>15</b>
<b>Uzbekistan</b>													
Navoie	(32)	218	468	468	468	468	468	468	468	468	468	468	468
<b>Total Uzbekistan</b>	<b>(32)</b>	<b>218</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>
<b>TOTAL CHANGES TO SUPPLY (base 2007)</b>	<b>8,220</b>	<b>19,322</b>	<b>37,248</b>	<b>48,267</b>	<b>55,510</b>	<b>83,043</b>	<b>99,105</b>	<b>116,932</b>	<b>116,536</b>	<b>120,015</b>	<b>127,498</b>	<b>127,111</b>	<b>121,098</b>

Source: World Nuclear Association, Ux Consulting, company reports, RBC Capital Markets estimates

Exhibit 17. Mine Supply, Non-Mine Supply and Demand

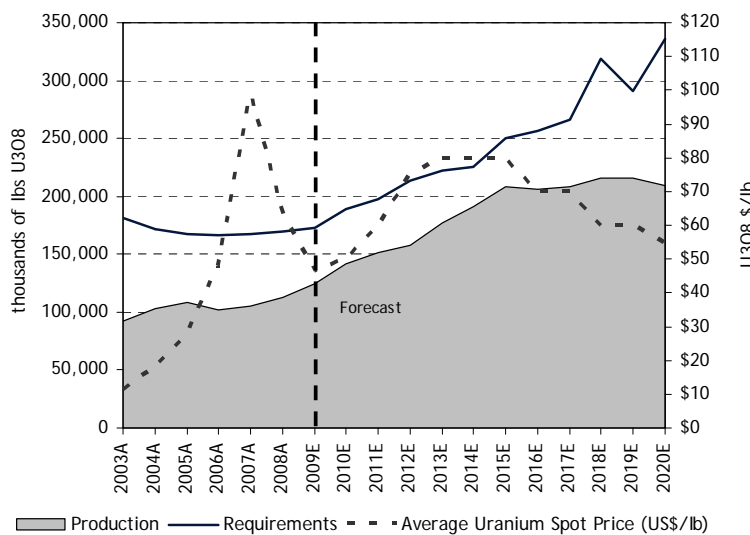


**We believe the market will be in deficit from 2010 onward.**

We continue to see a large supply-demand gap opening in the near term and growing significantly post-2013. While this seems many years away, we believe the uranium price will need to reach higher levels in order to spur the development of new projects to fill this gap, and those projects will likely take many years to bring into production.

Source: World Nuclear Association, Ux Consulting, RBC Capital Markets estimates

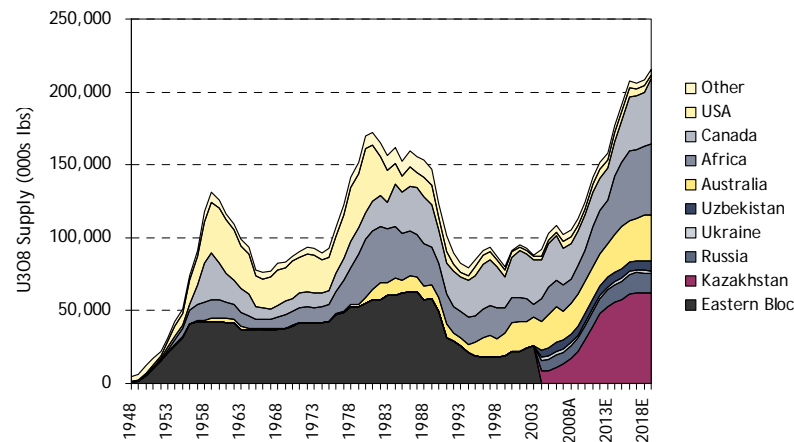
Exhibit 18. Global Mine-Sourced Uranium, Uranium Demand and Price Forecast



**Mine-sourced uranium production remains well short of demand.** While we are forecasting deficits going forward, the secondary supplies and certain inventories will likely help minimize the gap until 2013 when the HEU agreement terminates.

Source: World Nuclear Association, Ux Consulting, RBC Capital Markets estimates

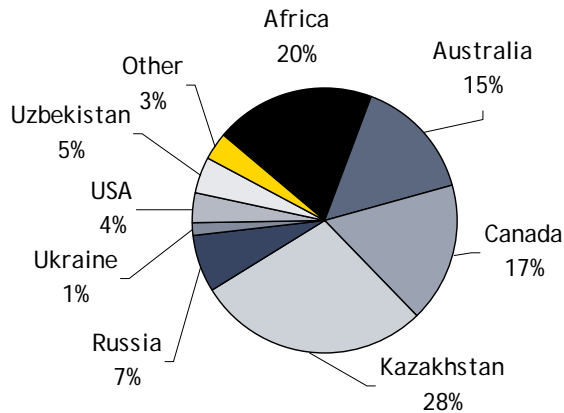
Exhibit 19. Uranium Production by Region 1948-2020E (000 lb U<sub>3</sub>O<sub>8</sub>)



The rising uranium price from 2003 onward has stimulated a significant rise in mined output, particularly from Kazakhstan and Africa.

Source: World Nuclear Association, Ux Consulting, RBC Capital Markets estimates

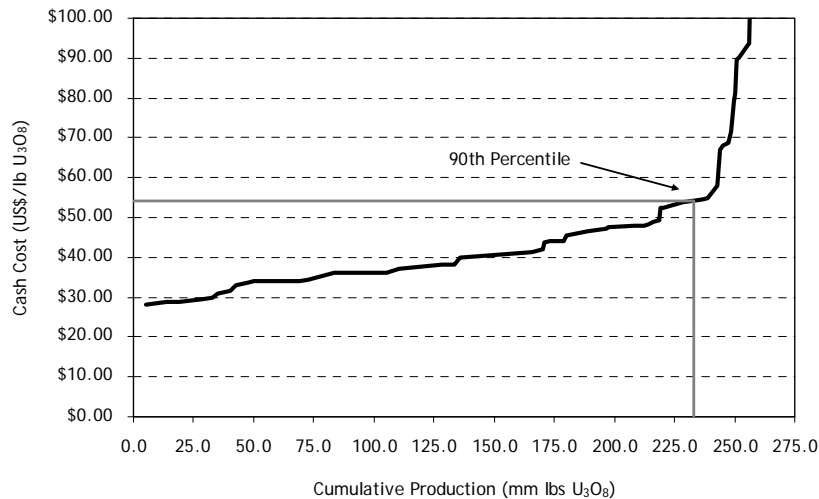
Exhibit 20. 2010E Production by Geographical Region



The distribution of global uranium production has changed dramatically over the past few years. In 2006, uranium production was led by Canada (25%), Australia (19%) and Africa (18%). In 2010, we are forecasting the global leader to be Kazakhstan, followed by Africa, then Canada and Australia. We believe much of this change is driven by the very different permitting and government policies in these jurisdictions.

Source: World Nuclear Association, Ux Consulting, RBC Capital Markets estimates

Exhibit 21. RBCCM Long-Term Uranium Production Cash Cost Curve

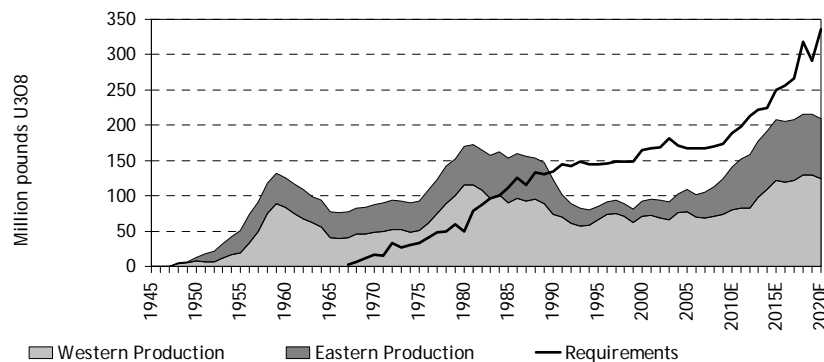


**We are forecasting a long-term uranium price of \$55/lb starting in 2020.**

Our long-term price is based upon the 90th percentile of our cash cost curve forecast. We believe this level is appropriate for maintaining uranium production over the long term. We believe our higher price forecasts between 2009 and 2017 are sufficient to bring enough production to the market to satisfy future demand.

Source: Ux Consulting, Company reports, RBC Capital Markets estimates

Exhibit 22. Long-Term Uranium Production and Requirements (1945 to 2020E)



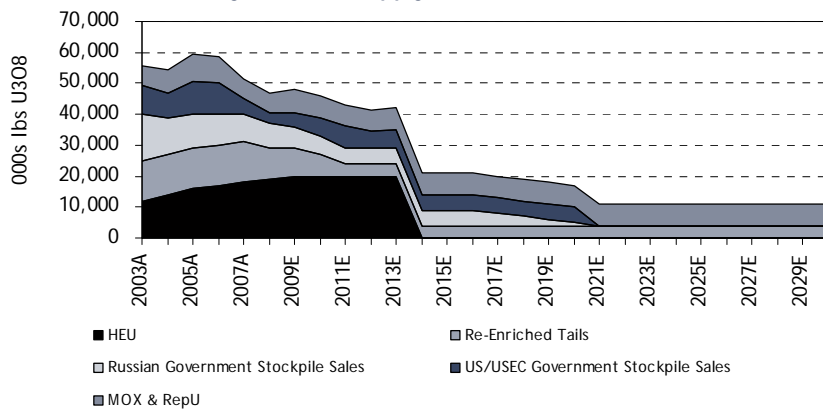
**Historical inventories were built up from the mid-1950s through the late 1980s.** However, much of the uranium produced during that period was, and still is, used for military purposes. We believe there is no significant inventory remaining outside of military or government holdings that is not destined for reactor requirements.

Source: Ux Consulting, World Nuclear Association, RBC Capital Markets estimates



## Secondary Uranium Supply

Exhibit 23. Secondary Uranium Supply 2003A to 2030E



Secondary supply has comprised a large portion of the uranium supply over the past 20 years. We believe there will be no continuation of the current HEU supply agreement with Russia when it expires in 2013 (see the “Russian Suspension Agreement” section on the following page).

Source: Ux Consulting, RBC Capital Markets estimates

Aside from the primary mine supply of uranium, a key component of the supply-demand balance is the contribution from secondary sources. The secondary sources are varied and comprise the following:

- **MOX and RepU** – See below.
- **US/USEC Government Stockpile Sales** – The sales of previous government strategic stocks that have been deemed surplus. Some of this material is sold through the United States Enrichment Corporation (USEC), a public company that was previously a government organization.
- **Russian Government Stockpile Sales** – Surplus strategic stocks.
- **Re-Enriched Tails** – Derived from the waste streams of previous enrichment (called depleted uranium) that are reprocessed to extract additional usable uranium.
- **HEU** – See below.
- **Cameco, Areva (the French nuclear utility), Nukem (a German nuclear services company) and GNSS (Globe Nuclear Supply Services)** – The original companies that were assigned the rights to sell the HEU/LEU products outside of Russia. Effective January 2004, GNSS lost its rights to sell Russian HEU/LEU material.

## Highly Enriched Uranium

Historically, more than half of the uranium produced in the world has been used in the production of nuclear weapons and in fueling military vessels. However, since the end of the Cold War in the early 1990s, many weapons have been dismantled under international treaties and some of the highly enriched uranium (HEU) and plutonium has been declared surplus.

In 1993, the governments of the United States and Russia agreed to allow 500 tonnes of Russian surplus HEU containing about 90%  $U^{235}$  to be sold into the market as blended-down low enriched uranium (LEU) containing about 4%  $U^{235}$ ; this equates to approximately 395 million pounds of  $U_3O_8$ . The agreement called for the material to be sold into the market over a 20-year period.

Recently it was announced that the Russian HEU partner, Tenex, has asked the Western partners (Cameco, AREVA and Nukem) to renegotiate the  $U_3O_8$  component of the HEU agreement. We are assuming that the volumes sold under the HEU contract are unaffected; therefore, any renegotiation of the price will have no effect on our supply-demand outlook or price forecast.

## MOX and RepU

Mixed oxide fuel (MOX) is a combination of plutonium oxide recovered from spent fuel and new uranium oxide from depleted uranium (a “waste” product of the fuel enrichment), while reprocessed uranium (RepU) involves the removal of uranium and plutonium from spent fuel to fabricate new fuel. While these two fuel sources have been used for many years, the contribution has been quite low (approximately 5% of total uranium supply). We have assumed that the contribution from both MOX and RepU will decrease, on both a percentage and an absolute basis. With a high uranium price, the economics of reprocessing become more attractive (still considered marginal and done more for political than economic reasons), but the ability to increase production is currently limited by the capacity of existing facilities.

We believe the secondary supply will remain fairly constant and predictable. However, with high uranium prices, the potential increase of supply from MOX, RepU and re-enriched tails exists. Also, while Russia has significantly reduced its supply of weapons-grade uranium through the HEU program, the United States has not. Depending on political pressure and the availability of resources, there is always a possibility that the U.S. material could find its way to the market in the future.

## Russian Suspension Agreement (RSA)

Russia and the United States have established a framework to allow for the importation of Russian-origin uranium products starting in 2011 through 2020 (after the expiry of the HEU agreement in 2013). **We continue to believe that the RSA is focused on providing U.S. utilities with access to Russian enrichment services. We do not think that the RSA will introduce any “new” uranium to the global supply chain; therefore, our supply-demand forecast is not affected by this agreement.**

Of particular note are the following aspects of the amended RSA:

- The annual quotas come into effect post-2013, and equate to 20% of the total forecast U.S. annual consumption (as per the World Nuclear Association’s 2005 Reference Case adjusted to 0.30% tails assay), and all material will be measured in terms of kilograms of Enriched Uranium Product (EUP) standardized to 4.4% U<sup>235</sup> with a tails assay of 0.30%.
- Russia can sell uranium from EUP stockpiles that were brought into the U.S. as part of deliveries grandfathered by the original 1992 RSA. No further approvals are necessary for sales of these EUP stockpiles if the sales are made before January 1, 2014.
- While Russia considers SWU transactions services, the U.S. wishes to treat them as goods and therefore subject to anti-dumping regulations.
- Essential definitions and processes under the amendment remain to be clarified by “Statements of Administrative Intent” to be issued by the U.S. government at some undetermined time in the future.
- “Reopener” periods in 2016 and 2019 will allow adjustments to these export limits if the WNA’s forecasts of U.S. demand are revised higher.
- The U.S. may consider termination of the amended RSA if Russia fails to carry out its commitments under the initial HEU agreement.
- Although implementation has not yet been set, the U.S. believes that Russian uranium imported for initial cores should be used exclusively for that purpose and, if not, should be counted against the export limits under the amended RSA.
- The U.S. can unilaterally increase the export limits to address what it calls “unforeseen situations of substantial market disruption,” but stressed that such an action would only be done to support the U.S. economy and after consulting the domestic uranium industry.

## Uranium Demand

Exhibit 24. Uranium Demand 2004A to 2020E (000 lb U<sub>3</sub>O<sub>8</sub>)

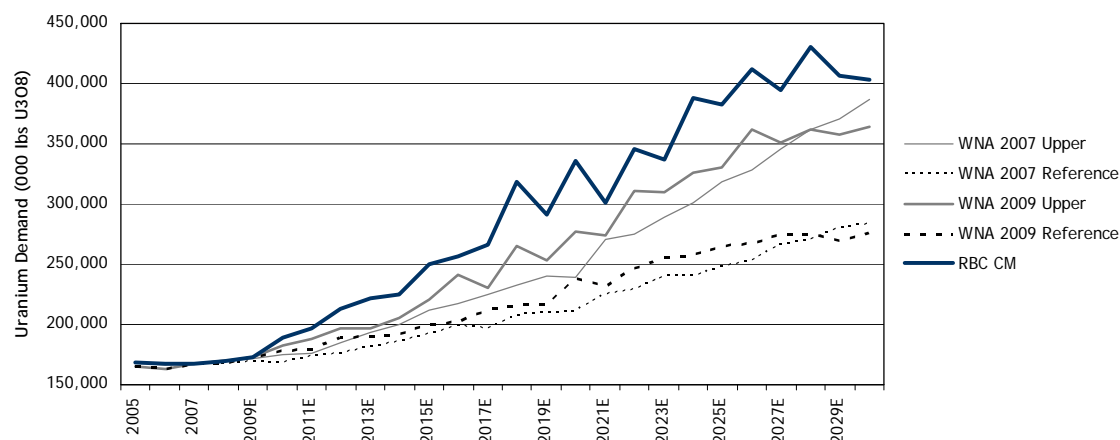
Year	2005A	2006A	2007A	2008A	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
North America	55,776	54,938	55,585	56,159	56,110	57,638	58,047	58,553	59,807	60,816	59,637	65,269	62,245	71,176	68,385	76,214
South America	1,217	1,102	1,112	1,123	1,346	1,128	1,740	1,357	2,633	1,588	2,908	2,545	2,162	2,170	2,178	3,457
West & Central Europe	57,783	58,753	58,168	58,228	58,158	62,169	57,479	60,482	57,932	57,648	61,096	62,434	59,612	70,024	68,402	66,936
East and South-East Europe	15,289	13,902	15,142	15,412	14,944	16,250	16,862	18,484	19,323	19,941	22,858	22,730	21,261	24,470	25,240	25,142
Africa	848	795	806	813	824	834	834	834	834	834	1,183	2,435	1,932	5,441	2,725	7,477
West and Central Asia	1,032	146	146	1,242	143	1,971	535	541	4,236	1,021	2,958	2,360	4,279	9,943	4,089	13,256
South Asia	1,393	1,190	1,419	2,149	2,864	4,549	5,282	5,108	7,241	7,813	10,982	8,908	12,132	10,705	11,182	14,822
South-East Asia & Pacific	0	0	0	0	0	0	0	0	0	0	0	0	0	5,568	894	6,717
East Asia	34,473	32,085	34,879	34,837	38,756	44,545	56,437	67,980	69,784	75,273	88,813	89,404	102,391	118,894	108,323	121,947
<b>Total Demand</b>	<b>167,812</b>	<b>162,911</b>	<b>167,256</b>	<b>169,964</b>	<b>173,145</b>	<b>189,084</b>	<b>197,218</b>	<b>213,339</b>	<b>221,790</b>	<b>224,936</b>	<b>250,433</b>	<b>256,086</b>	<b>266,015</b>	<b>318,391</b>	<b>291,419</b>	<b>335,968</b>
<i>y/y Change</i>	-2.1%	-2.9%	2.7%	1.6%	1.9%	9.2%	4.3%	8.2%	4.0%	1.4%	11.3%	2.3%	3.9%	19.7%	-8.5%	15.3%
Including:																
USA	51,224	49,994	50,647	50,730	51,099	50,912	52,145	52,612	53,640	53,934	53,508	58,156	55,900	62,681	61,804	67,333
France	25,631	25,348	25,067	25,067	25,067	26,388	23,965	25,129	23,508	23,061	24,753	22,648	24,295	22,954	22,772	24,678
Russia	7,823	8,668	9,894	10,159	9,689	10,972	11,568	13,052	12,911	14,476	15,177	16,901	14,248	18,279	16,602	16,292
Japan	18,440	19,391	21,364	20,228	22,216	20,800	25,927	30,164	24,040	33,467	30,377	30,388	32,646	33,834	27,718	32,937
UK	6,443	6,326	5,892	5,824	5,819	5,809	5,874	5,661	5,718	7,059	7,059	5,154	6,482	4,577	10,622	6,225
China	4,486	2,994	3,706	3,688	5,489	9,505	14,283	21,076	25,426	24,040	41,595	39,992	54,265	62,104	59,784	66,724
<i>y/y Change</i>	39.8%	-33.3%	23.8%	-0.5%	48.8%	73.2%	50.3%	47.6%	20.6%	-5.5%	73.0%	-3.9%	35.7%	14.4%	-3.7%	11.6%
India	1,219	1,084	1,268	1,999	2,708	3,907	5,105	4,249	6,924	7,493	10,192	8,627	10,928	10,279	10,066	13,783
<i>y/y Change</i>	1.6%	-11.1%	17.0%	57.6%	35.5%	44.3%	30.7%	-16.8%	62.9%	8.2%	36.0%	-15.4%	26.7%	-5.9%	-2.1%	36.9%

Source: World Nuclear Association, Ux Consulting, company reports, RBC Capital Markets estimates

## WNA Demand Forecast Analysis

Every two years the World Nuclear Association (WNA) revises its forecast of nuclear electricity generation and the supply and demand for uranium, conversion, enrichment and fuel fabrication. For our forecast purposes, we focus on the demand portion of the study; we carry out our own uranium supply forecast. Our demand forecast is based on the WNA Upper scenario contained within *The Global Nuclear Fuel Market – Supply and Demand 2009–2030*.

Exhibit 25. WNA Forecast 2007, 2009 and RBC Forecast Demand for 2003A to 2030E (000 lb U<sub>3</sub>O<sub>8</sub>)



Source: World Nuclear Association, Ux Consulting, company reports, RBC Capital Markets estimates

**The outcome of the 2009 study is somewhat different than the one published in September 2007.** In the Upper Scenario, demand is higher in the 2009 study compared to the 2007 study for most of the forecast period (as it is for the Reference Scenario, as well).

**The WNA carries out its study without consideration of the price of inputs or products.** As stated in the 2009 report: “**Consideration of likely price levels is outside the scope of this report**, but the scenarios presented could change substantially within a few years if perceived market conditions become very different from those presently prevailing.” We believe that forecasting supply and demand levels absolutely requires the consideration of price; otherwise the study could tend toward unrealistic outcomes.

**We have used the WNA report as the foundation for our demand forecast; however, we believe that the WNA work provides only a partial picture of future demand. Our forecast differs from that of the WNA in two areas: (1) the growth of China’s nuclear build program; and (2) new reactor inventories.**

### (1) China’s Nuclear Build Program - “The” Growth Driver

Officially, China has said it is targeting 75GW of nuclear generation and more recently industry insiders in China have noted 86GW as a more accurate target.

The WNA Reference scenario assumes China reaches ~50.5GW in 2020 (much higher than the 29GW in the 2007 report) and in the Upper scenario, it assumes 73GW by 2020. We continue to believe that the 86GW target is achievable and will be the minimum China achieves in that year.

China currently has 20 reactors under construction. We expect it will continue to build many more in the coming years. When asked during the conference why the WNA assumes a lower level than the Chinese government has targeted, the WNA representative indicated that the WNA believes China will face infrastructure limitations that will prevent it from attaining its goals. We think it is unwise to bet against China and its industrial might: when China sets its mind to build something, we believe it has the ability to carry out that wish in a manner that cannot be copied by any other nation. We think China has the will, money, skills, technology and desire to build its reactor fleet in the coming decade.

Our forecast for China’s nuclear build-out assumes it will attain the 86GW goal by 2020. As a result, China’s uranium demand is forecast to grow from 5.5 million pounds U<sub>3</sub>O<sub>8</sub> in 2009 to 67 million pounds U<sub>3</sub>O<sub>8</sub> in 2020 – or 3% of global demand in 2009 to 20% in 2020.

### (2) New Reactor Inventories

The WNA forecast is designed to measure the amount of uranium required by reactors at the time of need. By limiting the forecast scope in this manner, the WNA ignores the necessity for utilities to build an inventory for each new reactor



constructed. For our forecast, we have assumed that utilities will build inventories of between one year and three years, depending on the country (see Exhibit 26). Based on these assumptions, we have modeled an additional 291 million pounds of demand between 2010 and 2020.

**Exhibit 26. Utility Strategic Inventory in Terms of Desired Level of Forward Requirements (Demonstrated as % of utilities replying) 2009 vs. 2007**

	2009			Change 2009 vs. 2007		
	North America	Europe	East Asia	North America	Europe	East Asia
6 mo+	13%	10%	0%	-11%	-8%	0%
12 mo	34%	30%	14%	0%	0%	2%
18 mo	33%	27%	18%	6%	5%	-10%
2 yrs	15%	21%	30%	5%	3%	6%
3yrs +	5%	12%	38%	0%	0%	2%

	2007		
	North America	Europe	East Asia
6 mo+	24%	18%	0%
12 mo	34%	30%	12%
18 mo	27%	22%	28%
2 yrs	10%	18%	24%
3yrs +	5%	12%	36%

Source: World Nuclear Association

## Strategic Inventories

As the world looks forward to a renaissance for nuclear power, many countries are proposing to build strategic inventories of uranium to ensure that their fuel supplies are secure. India, China, the United States, South Africa and others have jumped on this bandwagon and, in total, could provide substantial buying in the uranium market. **We have not modeled any strategic inventory buying as it is highly discretionary, but it will likely comprise a substantial portion of future demand.**

Uranium fuel is unique in the energy world because it is not hard to store many years of requirements. Uranium inventories are typically stored outdoors in 12.5 tonne containers of uranium hexafluoride (UF<sub>6</sub>). In our view, storage is not a limiting factor for the creation of a very large, strategic inventory.

Once uranium is purchased, transported and stored, a country can then be assured of a fuel supply with no concerns regarding security of supply for that volume. This cannot be done with coal, oil or gas due to the relatively low energy content by volume when compared to uranium.

## Reactor Growth

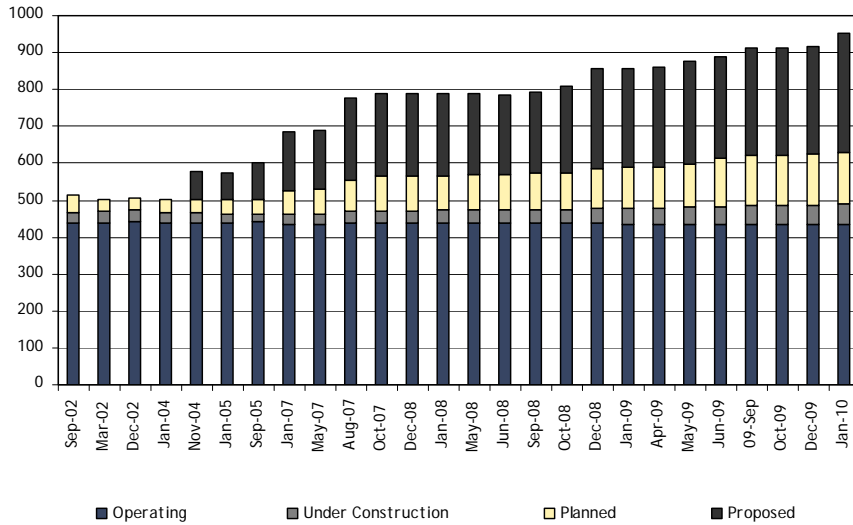
According to the World Nuclear Association, there are 436 reactors operating globally and 53 under construction. Additionally, there are 142 reactors planned and another 327 proposed. Should all of the planned and proposed reactors be built, the world total would be more than 958, or a 120% increase over the current level (assuming no closures).

**Exhibit 27. Nuclear Power Generation - Current, Under Construction and Planned**

	NUCLEAR ELECTRICITY GENERATION 2008		REACTORS OPERABLE (Jan 2010)		REACTORS UNDER CONSTRUCTION (Jan 2010)		REACTORS PLANNED (Jan 2010)		REACTORS PROPOSED (Jan 2010)		TOTAL REACTORS Oper, Const, Planned, Prop	
	billion kWh	% total generation	No.	MWe	No.	MWe	No.	MWe	No.	MWe	No.	MWe
OECD North America	907	19	124	115,081	3	2,680	15	18,200	24	30,800	166	51,680
OECD Europe	825	54	129	123,603	2	3,230	5	8,230	22	17,230	148	28,690
Japan & Korea	385	29	74	64,818	7	8,073	19	26,105	1	1,300	101	35,478
China	65	2	11	8,587	20	21,880	37	41,250	120	120,000	188	183,130
India	13	2	18	3,981	5	2,774	23	21,500	15	20,000	61	44,274
Rest of World	405	7	80	56,530	16	12,477	43	40,797	145	155,775	294	209,049
<b>TOTAL</b>	<b>2,600</b>	<b>16</b>	<b>436</b>	<b>372,600</b>	<b>53</b>	<b>51,114</b>	<b>142</b>	<b>156,082</b>	<b>327</b>	<b>345,105</b>	<b>958</b>	<b>552,301</b>

Source: World Nuclear Association, RBC Capital Markets estimates

Exhibit 28. WNA Global Reactor Statistics (September 2002 to January 2010) (number of reactors)



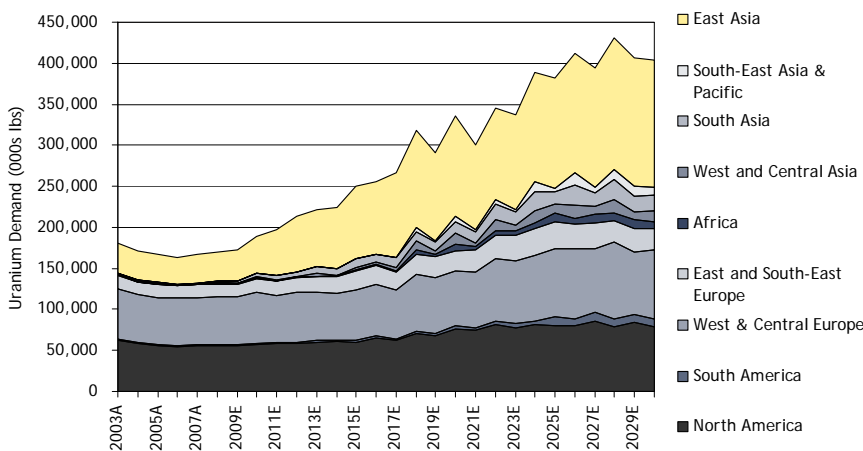
There has been significant growth in the number of planned and proposed new reactor builds since 2004, reflecting the increased global demand for nuclear generating capacity.

China accounts for a very large proportion of this growth. **China's operating + under construction + planned + proposed total has increased from 78 in January 2007 to 188 in January 2010.**

More recently, the number of planned and proposed reactors globally has increased. New entrants to the nuclear industry include Italy, the UAE and Poland.

Source: World Nuclear Association

Exhibit 29. Forecast Uranium Demand by Region 1975 to 2030E

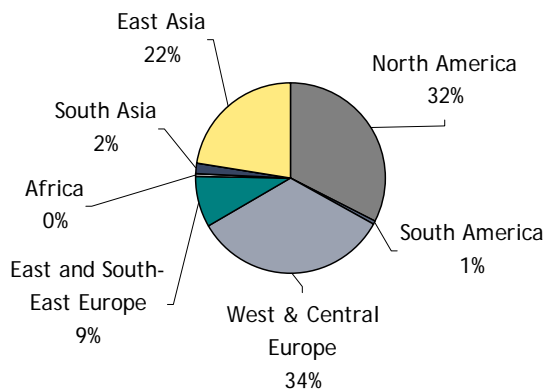


Until the 1990s, North America and Europe dominated global uranium demand. We believe that by 2015 East Asia (including China, Japan and Korea) will account for 30% of total demand, roughly on par with North America and Europe at 24% and 34%, respectively.

It is important to note that there is no data for Russia prior to the end of the Cold War in 1990.

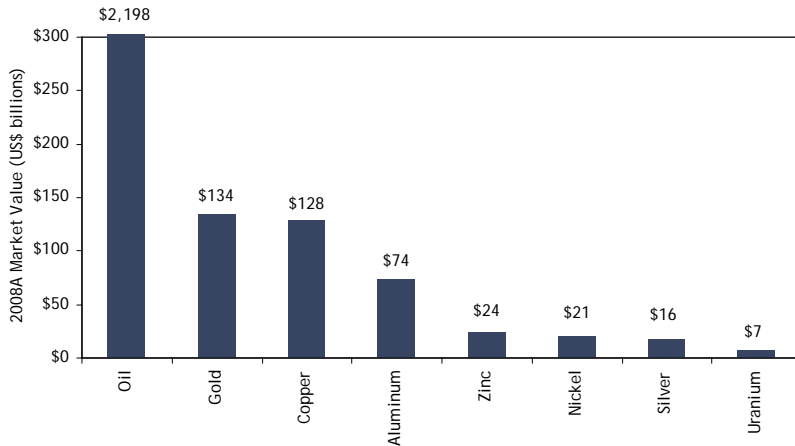
Source: World Nuclear Association, Ux Consulting, RBC Capital Markets estimates

Exhibit 30. Uranium Demand by Region, 2009E



Source: World Nuclear Association, Ux Consulting, RBC Capital Markets estimates

Exhibit 31. Relative Size of the Uranium Market 2008A (US\$B)

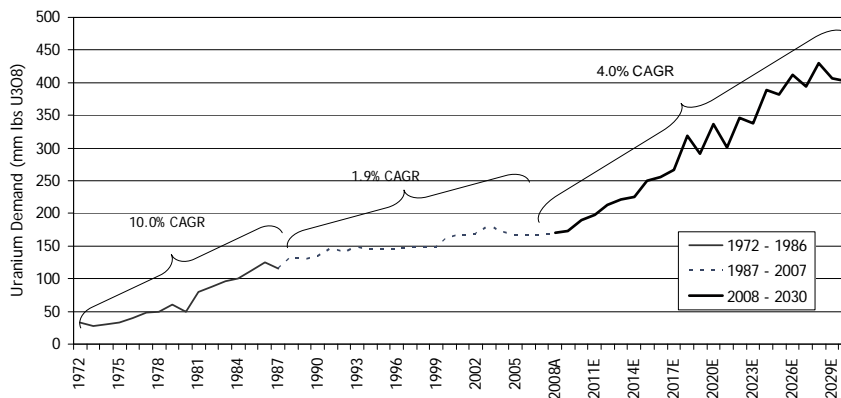


Despite significant price increases over the past five years, the uranium market is relatively small compared to other base and precious metals.

Note: Calculated using estimated global demand and priced at recent spot levels.

Source: World Nuclear Association, Ux Consulting, RBC Capital Markets estimates

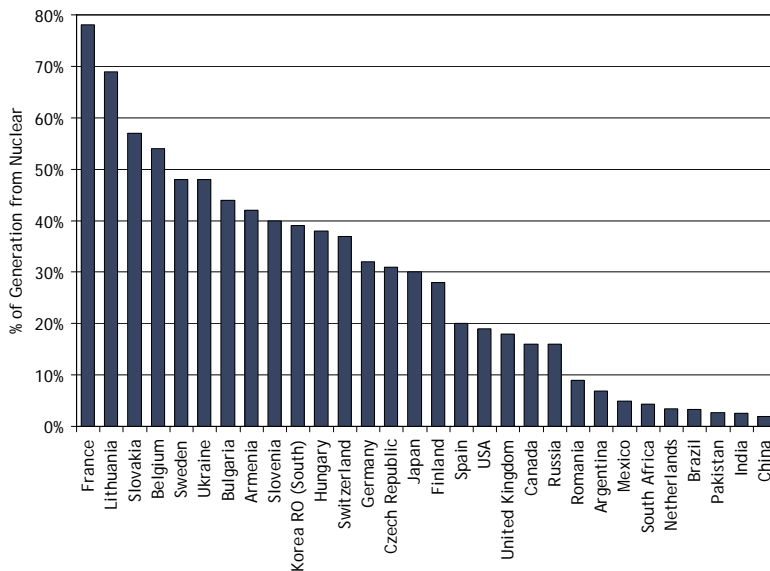
Exhibit 32. Uranium Demand Growth



From the early 1970s to the late-1980s, the rate of demand growth for uranium was very high, approximately 10% annually. After the accidents at Three Mile Island and Chernobyl, the growth in demand fell significantly and averaged 2.0% annually to 2007. **We are forecasting that growth from 2008A to 2030E will be significantly higher, averaging 4% per year.**

Source: World Nuclear Association, Ux Consulting, RBC Capital Markets estimates

Exhibit 33. Nuclear Contribution to Electricity Generation



The first nuclear renaissance occurred from the 1970s through the late 1980s, when various countries, specifically in Europe, North America and the former Soviet Union, built their existing fleet of nuclear reactors. Today there are 436 reactors operating, accounting for approximately 15% of total global electricity generation. However, these reactors are, for the most part, concentrated in developed countries. **In the rapid-growth economies of China and India, the contribution of nuclear to the energy mix is minimal, at 2% and 3%, respectively, but it is expected to grow over the coming years.**

Source: World Nuclear Association

## Nuclear Generating Costs

Nuclear power is considered to be a relatively inexpensive, clean method of electricity generation that is key to the development of a reliable baseload system. We compared nuclear power generation to its peers on a new-build basis and it continues to be an economically competitive solution. With carbon costs added, nuclear looks even better.

We estimate that the current installed base of nuclear generation will be mostly insensitive to the cost of uranium as fuel. Even at high prices, the overall contribution to costs remains manageable.

We have updated our analysis of the economics of electricity generation to reflect the significantly higher capital costs that have been incurred recently. Compared to our previous estimates, nuclear generation continues to be very competitive on a cash cost basis; however, due to the higher capital cost and associated financing costs, the levelized cost for nuclear power is estimated to be quite high. **This analysis assumes equal financing costs, which may not be appropriate for nuclear given that nuclear plants are often owned by government agencies that should have a lower cost of capital than private enterprises.**

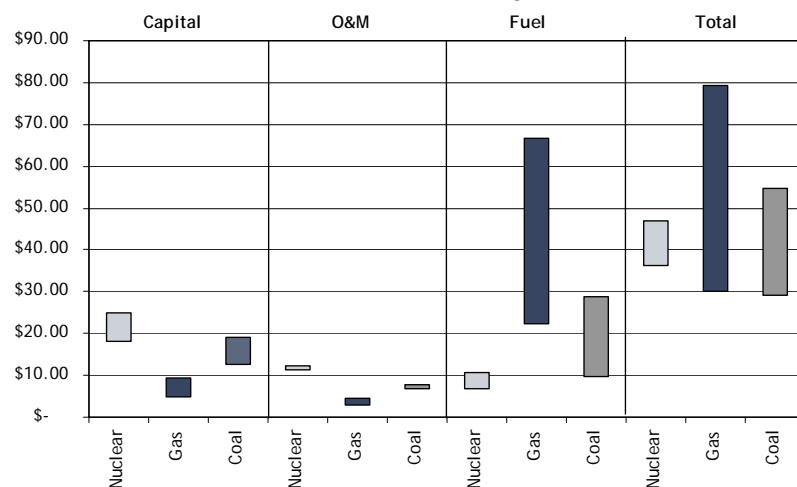
Exhibit 34. Nuclear Fuel Cost Analysis

Enrichment Level	4.50%	4.50%	4.50%	4.50%	4.50%
Tails Assay	0.25%	0.25%	0.25%	0.25%	0.25%
Uranium Price (US\$/lb U <sub>3</sub> O <sub>8</sub> )	10.00	25.00	50.00	75.00	100.00
Conversion Price (US\$/kg UF <sub>6</sub> )	11.50	11.50	11.50	11.50	11.50
Enrichment Price (US\$/SWU)	140	140	140	140	140
Fabrication Price (US\$/kg)	250	250	250	250	250
Fuel Cost (US\$/MWe)	4.78	5.75	7.37	8.99	10.60
O&M Cost (US\$/MWe)	12.70	12.70	12.70	12.70	12.70
Total Cost (US\$/MWe)	17.48	18.45	20.07	21.69	23.30
Change in cost (%)		6%	9%	8%	7%
Uranium as % of Total Cost	4%	16%	16%	22%	28%

**The sensitivity of existing nuclear generation to changes in the uranium price is quite low.** Even at \$100/lb U<sub>3</sub>O<sub>8</sub> for all uranium (ignoring contacted material), we estimate that the cost of generating electricity is highly competitive.

Source: Ux Consulting, RBC Capital Markets estimates

Exhibit 35. Nuclear Contribution to Electricity Generation (US\$/ MWh)

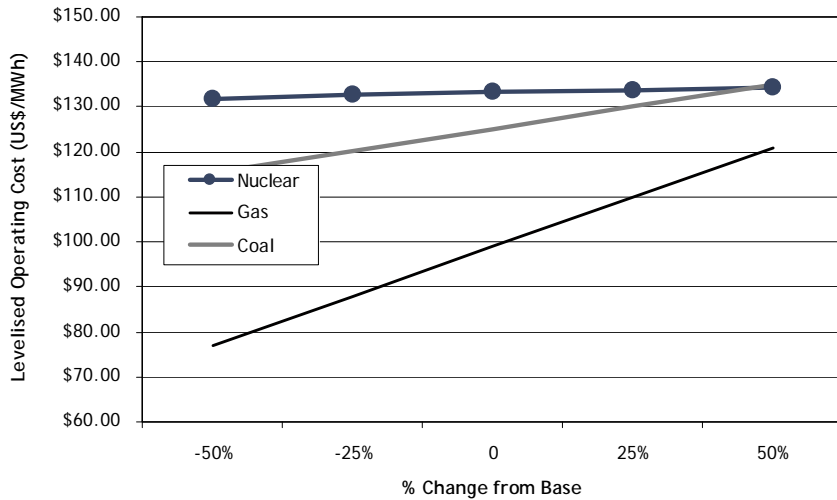


**Based on a range of capital costs and fuel costs, nuclear power generation remains very competitive.** Volatility in gas and coal fuel cost continues to drive the higher-end costs well beyond those of nuclear.

Notes: Capex Ranges: Nuclear = \$3,500/kW low, \$5,000/kW high; Gas = \$1000/kW low, \$1400/kW high; Coal = \$2,500/kW low, \$4,000/kW high. Fuel Ranges: Uranium = \$40/lb U<sub>3</sub>O<sub>8</sub> low, \$100/lb U<sub>3</sub>O<sub>8</sub> high; Gas = \$3/MMBtu low, \$9/MMBtu high; Coal = \$1/MMBtu low, \$3/MMBtu high. O&M costs for each are assumed to have one price.

Source: OECD, University of Chicago, MIT, ABARE, CERJ, Uranium Information Centre, RBC Capital Markets estimates

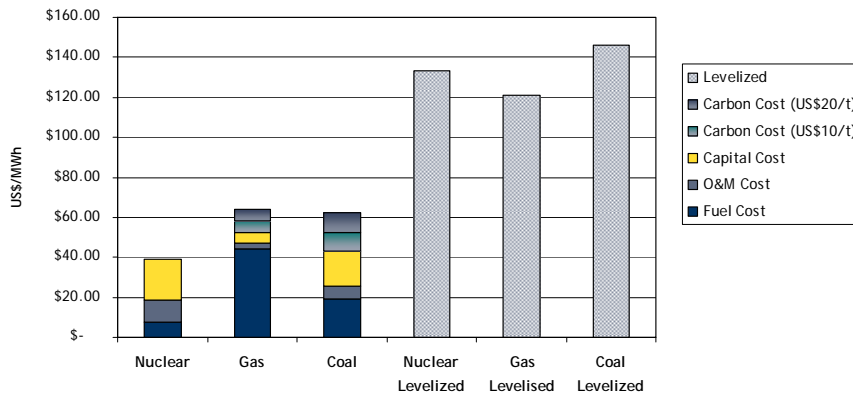
Exhibit 36. Levelized Production Cost by Fuel Costs for Nuclear, Gas (CCGT) and Coal



**The cost of uranium has little effect on the economics of a new nuclear reactor.** Based on levelized cost analysis, the sensitivity to uranium costs is very low compared to coal and gas.

Note: Base fuel prices are assumed to be US\$50/lb U<sub>3</sub>O<sub>8</sub> for uranium, \$6.00/MMBtu for gas and \$2.00/MMBtu for coal. Base capex assumed to be \$4,000/kW for nuclear, \$1,400/kW for gas and \$3,500/kW for coal. Equity discount rate = 12%; 40-year life and 38% tax rate are assumed. Uranium fuel: \$12/jkg conversion, \$135/SWU, \$240/kg fuel fabrication, 4.5% enrichment, 0.26% tails assay.  
 Source: OECD, University of Chicago, MIT, ABARE, CERl, Uranium Information Centre, RBC Capital Markets estimates

Exhibit 37. Nuclear, Gas and Coal Production Costs Including CO2 Cost



Adding the cost of CO<sub>2</sub> to electricity generation makes nuclear look like the least expensive option for new generation.

Note: Costs above illustrate generating costs with capital and financing charges amortized equally over the life of the asset (on the left) and levelized costing (on the right). Assumptions: Nuclear: \$50/lb U<sub>3</sub>O<sub>8</sub> uranium, \$4,000/kW capex; Gas: \$3/MMBtu gas, \$1,400/kW capex; Coal: \$2/MMBtu, \$3,500/kW capex.  
 Source: OECD, University of Chicago, MIT, ABARE, CERl, Uranium Information Centre, RBC Capital Markets estimates



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