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QUARTERLY COMMODITY INSIGHTS BULLETIN

Uranium Aluminum Copper Diamond Gold Iron Ore Metallurgical Coal Nickel Platinum Potash/Phosphates Rare Earth Elements Thermal Coal

KPMG
cutting through complexity

Q3 & Q4 – 2012

Uranium

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The continued softening of the uranium price linked to market visibility on demand post Fukushima, global decreases in commodity prices and worldwide economic concerns has led to ongoing uncertainty for investment decisions. Right now, only the strongest projects are passing internal approval gateways. It is a time for prioritization of capital allocation decisions.

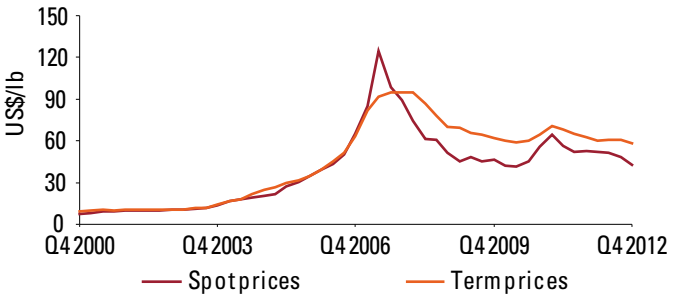
Despite ongoing competition from fossil fuels, the strategic value of nuclear as part of a national energy strategy is clear and continues to drive the long-term demand fundamentals.

On the supply side, the major mining houses are reconsidering the extent of their uranium resolve whilst the junior explorers risk grinding to a standstill without access to funding or joint ventures. These factors support the long term fundamentals of uranium.

Commodity outlook

The uranium spot prices in 4Q12 decreased trading in the range of US$41-44/lb, from 3Q12 price range of US$47–50/lb. The average long-term price showed a similar trend and declined 4 percent to US$58.50/lb over the same period.

Figure 1: Prices of uranium, 4Q00 – 4Q12

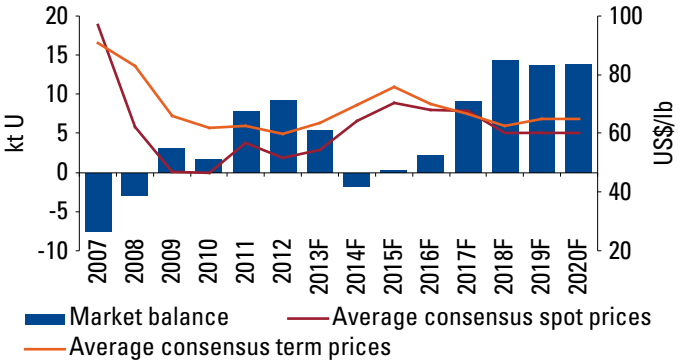


Source: Bureau of Resources and Energy Economics (BREE), Intierra, Cameco, KPMG analysis

The low uranium prices are causing deferrals in project expansions and approvals. Delays in reactor restarts in Japan has also hit demand. Surplus uranium supply and lower demand from the utilities, is believed to be the major disruptive force in the industry, thereby causing a decrease in uranium prices and depressing market capitalisations.

Despite reduced uranium spot prices, the long-term uranium prospects remain bullish. The average long-term consensus price is expected to gain momentum from 2013, currently estimated at US$60/lb but expected to reach US$76/lb by 2015. This is anticipated to be driven by the following key factors: (1) Japan expected to have a clearer nuclear outlook post the election victory of the Liberal Democratic Party; (2) grant of approvals for new nuclear reactors in China; and (3) clarity over Russian supplies post expiry of the HEU supply agreement in 2013.

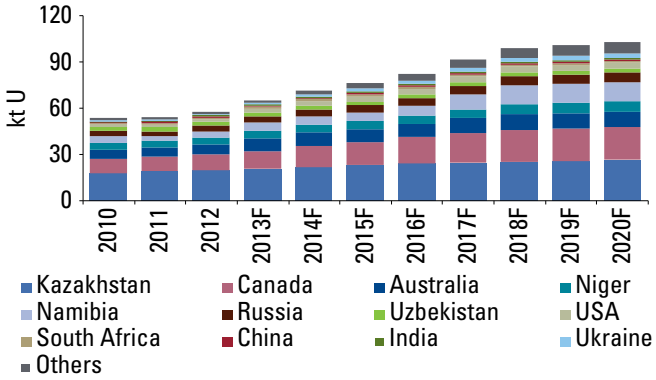
Figure 2: Market balance vs. prices, 2007 – 20F



Source: BMO Capital Markets, RBC Markets, CANACCORD, Deutsche Bank, JP Morgan, Dundee, CIBC, Macquarie Research, Credit Suisse, KPMG analysis

Supply and demand

Figure 3: Primary uranium supply, 2010 – 20F



Source: JP Morgan, World Nuclear Association, KPMG analysis

Global uranium mine supply increased 6 percent to reach 57.8kt U in 2012, higher than the 2 percent growth rate witnessed during 2011. In future, the supply is expected to grow at a CAGR of 7 percent to reach 103.3kt U by 2020.

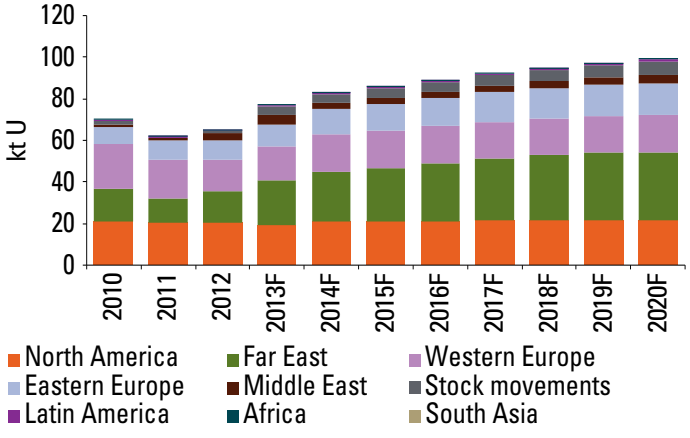
- Kazakhstan, the world's largest producer, produced 20kt U of uranium in 2012, up 3 percent y-o-y. The Kazakh uranium industry has been growing quite rapidly over the past few years and the country plans to increase the production by about 50 percent, to 26.7kt U, by 2020.

- In Canada, production has been forecast to increase at a CAGR of 9 percent to reach 21.2kt U by 2015, mostly due to the commissioning and ramp up of Cameco's Cigar Lake project. The country has signed a civilian nuclear cooperation agreement with UAE for the sale of Canadian uranium to the UAE for nuclear power purposes. The UAE is Canada's largest export market in the Middle East and this agreement is expected to further increase Canadian export volumes. Further, a deal between Canada and India, wherein India would import uranium and reactors from Canada, is expected to support production by driving exploration and higher production of uranium in the country.
- In Namibia, production is projected to increase at a CAGR of 15 percent to reach 12.4kt U in 2020, supported by the commissioning of CGNPC Uranium's Husab uranium project by 2015, commissioning of Forsys' Valencia and higher-grade access at Rio Tinto's Rossing mine. However, there is a downward risk to the growth in production, as some of these projects may face delays due to low prices.
- Secondary sources, such as spent nuclear fuel, mixed oxide fuels and down-blended highly enriched uranium (HEU) from nuclear weapons, have been part of the global uranium supply in the last few years. In 2012, secondary sources accounted for about 30 percent of the total uranium supply. However, this proportion is expected to decline significantly in the coming years, with an increase in production from mines and expected closure of the HEU agreement between Russia and the USA in 2013.

In recent months, some companies have made announcements regarding changes in their strategy.

- BHP Billiton announced its decision to transfer responsibility of its Olympic Dam operation to the Base Metals Customer Sector Group. The announcement comes post the August 2012 decision to explore an alternative, less capital-intensive design for the Olympic Dam open-pit expansion project. The expansion was expected to make the mine the world's biggest open-pit copper and uranium mine. The company has also sold its Yeelirie uranium deposit in Western Australia to Cameco for US$430 million.
- Cameco lowered its long-term uranium production target by 10 percent to 36 million pounds a year through 2018, anticipating slower demand growth.

Figure 4: Global demand for uranium, 2010 – 20F



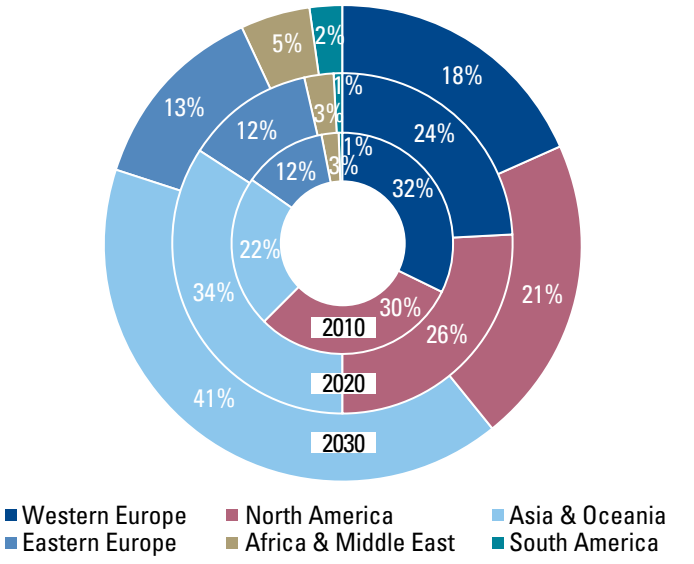
Source: JP Morgan, World Nuclear Association, KPMG analysis

While there is concern in the uranium market about the falling prices, the demand continues to remain high, primarily driven by the demand pull from the Asian economies. Both India and China are considered to be aggressively working toward securing uranium for their civilian nuclear programs.

- Canada and India have signed a deal to supply Saskatchewan uranium to India, which has a major nuclear program (after China in scale). India plans to build 12 new reactors by 2021, which is expected to increase its demand for yellowcake three times to US$650 million in annual purchases.
- China has lifted its ban on new nuclear plants imposed after Japan's Fukushima disaster in 2011 and will approve projects proposed for coastal areas. Further, the country plans to approve a number of projects in each of the coming five years and restrict technology selection to third-generation designs. Overall, Chinese uranium demand is a key factor in the global demand even though China's current domestic consumption is extremely limited.
- The Japanese demand for Uranium could see a resurgence following the victory of the Liberal Democratic Party in the recent Japan general elections. While the previous government planned to phase out nuclear power by the end of the 2030s, the new Liberal Democratic Party government is expected to increase the number of operable nuclear reactors in the country at an appreciable pace.

Global uranium nuclear reactor demand increased 1 percent to reach 65.5kt U in 2012. Further, it is expected to grow at a CAGR of 5 percent through 2020 to reach the 99.5kt U level. This demand growth will be primarily driven by China, India and South Korea. By 2030, the Asia and Oceania regions are expected to account for 41 percent of the total nuclear-generating capacity, outpacing Western Europe, which accounted for 32 percent in 2010.

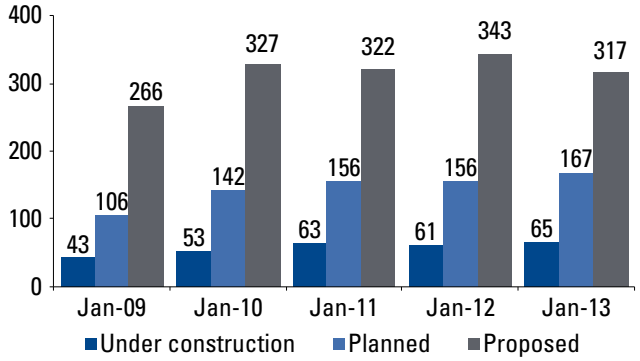
Figure 5: Nuclear-generating capacity shares, by region, 2010 vs 2020 vs 2030



Source: CIBC

The number of proposed nuclear reactors has declined to 317 as of January 2013, compared to 343 in the previous year. However, the number of planned and under-construction reactors in January 2013 is higher (although marginally for under-construction plants) than January 2012 numbers.

Figure 6: Number of nuclear reactors, January 2009 – 2013



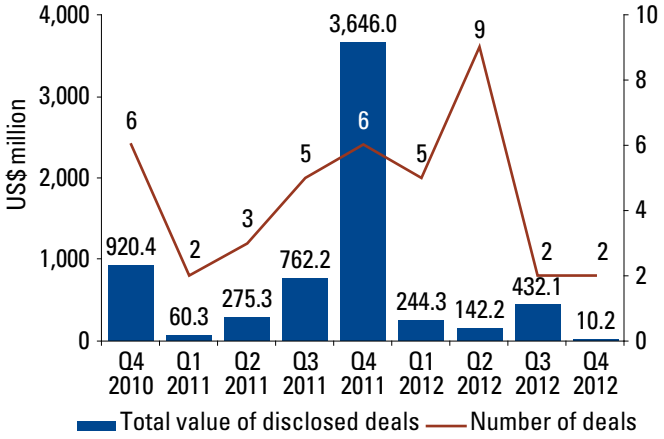
Source: World Nuclear Association

Key developments

Ownership changes

There was limited transaction activity in 4Q12.

Figure 7: Major deals in the uranium industry



Source: Intierra, Mergermarket, KPMG analysis

Table 1: Uranium deals announced in 4Q12 and 3Q12

Date announced	Target	Country (target)	Acquirer	Country (acquirer)	Status	Value of transaction (US$ million)	Stake (%)
19-Dec-12	Royalty in Diabase Peninsula property	Canada	Nuinsco Resources Ltd	Canada	Closed	0.15	3
14-Nov-12	JNR Resources Inc	Canada	Denison Mines Corp.	Canada	Announced	10.00	2
11-Sep-12	West Arnhem joint venture	Australia	Uranium Equities Limited	Australia	Announced	2.07	60
26-Aug-12	Yeelirrie uranium project	Australia	Cameco Corporation	Canada	Closed	430.00	100

Source: Intierra, Mergermarket, KPMG analysis

Regulatory updates

During 4Q12 and 3Q12, most new regulations were targeted at lifting bans and nuclear supply agreements.

Table 2: Recent regulations in the uranium industry

Country	Regulation	Description
USA	Authorization grant	Uranium Energy Corp. has received the final authorization for production from its Goliad in-situ-recovery uranium project in South Texas, USA.
Australia	Lift ban on uranium mining in Queensland	Queensland's premier, Campbell Newman, has announced lifting the ban on the state's uranium mining. The state has not produced Uranium since 1982.
US	Lift ban on uranium mining in Virginia	The Uranium Working Group submitted a report on the issues facing the uranium industry to Republican Governor Bob McDonnell. The report is intended to help policy makers to indentify whether uranium can be safely mined in Virginia.
US	License grant	The Nuclear Regulatory Commission awarded a license to a venture headed by GE Hitachi Nuclear Energy for the construction and operation of a uranium-enrichment plant in North Carolina using a new laser process.
Uganda	Introduced a competitive bidding process for its mine licenses	Following the completion of a US$75 million national mineral survey, which has identified a number of new targets to explore and exploit across the country, the Ugandan government is about to introduce a competitive bidding process for its mine license.

Table 3: Recent agreements in the uranium industry

Counties involved	Agreement	Description
Russia and UAE	Nuclear agreement	Russia and UAE signed a nuclear cooperation agreement to share technology, equipment and nuclear material to help UAE meets its goal of acquiring 25 percent of its energy needs from nuclear power
Russia and France	Declaration of Cooperation	Russia and France signed a declaration of cooperation aimed at collaboration between French and Russian nuclear companies and commitment to to development of advanced reactor technology
Canada and China	Nuclear agreement	Canada and China signed a nuclear expansion agreement to increase uranium exports to China.
Canada and India	Finalize conditions on nuclear deal	India and Canada have finalized the terms for their nuclear deal for export of Canadian uranium to India.
Canada and UAE	Civilian nuclear cooperation agreement with UAE	Canada has signed an agreement with UAE for the sale of Canadian uranium for nuclear power purposes.

Future projects

Table 4: Cross-section of major uranium projects[1]

Project	Country/Region	Operators	Capex (US$ million)	Initial production	Total Uranium (U3O8) capacity (Mlbs)
Palangana Project	Texas, USA	Uranium Energy Corp	NA	2012	1.1
Cigar Lake	Canada	Cameco	NA	2013	216.7
Imouraren	Niger	Areva NC	More than 1,200*	2014-15	NA
Four Mile	Australia	Quasar Resources	98**	2013	5.1
Wiluna Uranium Project	Australia	Toro Energy	280**	2014	1.8
Valencia	Namibia	Forsys Metals	NA	2015	56.0
Husab Uranium Project	Namibia	China Guangdong Nuclear Power Group	NA	2015	274***
Omahola	Namibia	Deep Yellow Limited	Less than 340	NA	45.1
Westmoreland	Australia	Laramide Resources	250–500**	NA	3.1
Mulga Rock	Australia	Energy and Minerals Australia	260**	NA	2.6
Lake Maitland	Australia	Mega Uranium	250–500**	NA	2.2
Bigryli	Australia	Energy Metals Limited	270**	NA	1.3
Yeelirrie	Australia	Cameco	NA	NA	139##
Valhalla	Australia	Paladin Energy	250–500**	NA	22.0
Trekkopje	Namibia	Areva NC	1,000	NA	NA
Kintyre	Australia	Cameco	NA	NA	55.2#
Mkuju River Project	Tanzania	Uranium One, ARMZ	NA	NA	7.6
Dornod	Mongolia	Khan Resources	NA	Currently stalled	NA

Note: Project names are hyperlinked to source links.
* €, ** AU$, *** Indicated Resources, # Indicated resources as on December 31 2012, ## Indicated and measured resources
1 The list is not exhaustive and contains only a limited number of projects
Source: Company data, BREE, Intierra

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