

2008 Winter Market Survey: Calm after the Storm

Last week we reviewed the results of our Winter Market Survey questions on the conversion and enrichment markets. This week we turn to the survey results on uranium issues, which show a general perspective by market participants that the extreme volatility of last year is giving way to calmer waters.

Where's the Bottom? – This time, we asked people to comment on whether uranium spot price has bottomed. As the graph to the right shows, a majority (55%) believe that it has, although a significant number (45%) say that the spot price still has more room to decline. Distilling the numbers a bit more, we find that utilities are more inclined to see price falling further, while most suppliers take the opposite view.

We received numerous comments on this issue, from which it was clear that people's responses to this question reflected their own interpretation of the question's intent. For those who thought we were asking about the short term situation in the market, it appears that most feel that price is either at or near a

bottom for 2008, with an uptick expected over the next six months or so. Reasons given for this expected near term price increase included the argument that once the current "cheaper" spot supply has cleared, the next available supply will be priced higher. In addition, some fear that additional announcements concerning production problems will cause a quick jump in price. Commenting on what many believe to be the continuing volatility in the spot market, one person suggested that we "follow the bouncing ball."

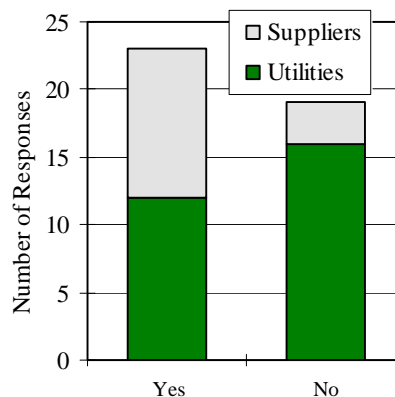
However, for those referring to the longer term, it appears that many feel price has much more room to decline. Respondents noted that new supplies are coming, and many feel demand from new reactors will not grow as quickly as touted. In terms of a long term bottom or equilibrium spot price, a number of people suggested it will be in the \$40-\$60 range (with emphasis on the \$60s).

Spot Price Expectations for 2008 – As the bottom left graph indicates, there is strong consensus in the market that

Ux U₃O₈ Price: (4/7/08)
\$71.00 (Unch.)

Ux LT U₃O₈ Price: (3/31/08)
\$95.00

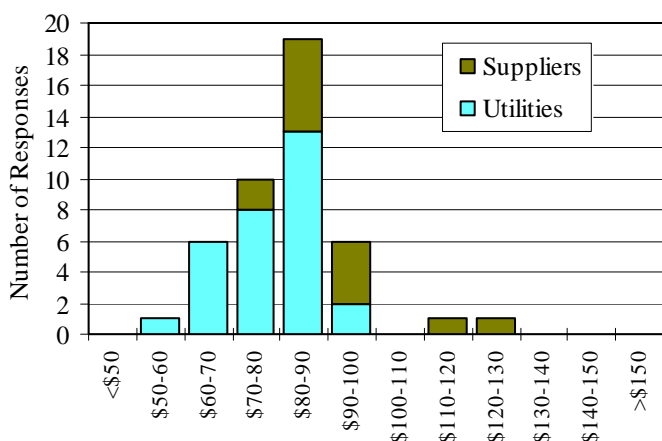
Do you believe the spot uranium price has bottomed?



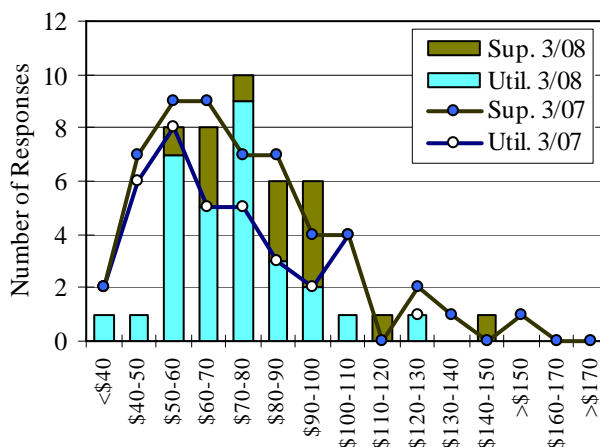
spot prices will be in the \$80-\$90 range by year's end. More broadly, very few respondents see spot prices outside of the \$60-\$100 range this year, with more favoring the lower end of the range. In general, suppliers see higher prices as opposed to their utility counterparts, which likely reflect each side's wishes.

Again, we saw a few interesting comments to this question. For those arguing for lower prices, the reasons given were that "supply is increasing/recovering" and "confidence in ex-

Where will the spot price be at year-end?



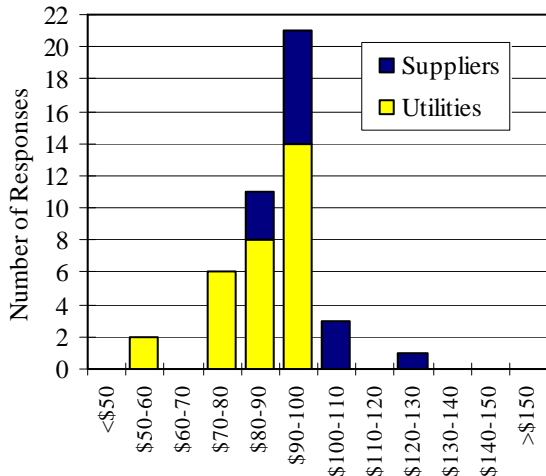
Where will the spot price be in 5 years (2012\$)?



pected/projected demand will decrease.” As for the \$70-\$80 range responses, one person provided a very rational explanation of why price won’t change much from now to year’s end: “It seems we have arrived at an equilibrium price, where both utilities and suppliers feel comfortable. Also, price is high enough for new exploration and production.” However, among those that sense price will rise over the balance of the year, one answer was that “spot price will rise slightly as buyers need to return to the market, but the rebound should not be dramatic barring any unplanned supply interruptions.” Finally, looking at the most bullish arguments, two main points were made. First, is that the spot price must return closer to the long term (LT) price, since the current large differential cannot continue forever, especially as spot supplies are exhausted over the year. Second, any actual demand in the next two years will need to be filled by spot supplies because there is very little uncommitted primary supply. Overall, the bulls seem to outnumber the bears, albeit just slightly.

Spot Price in 2013 – The graph on the previous page shows that spot price expectations for five years out have risen a bit since our March 2007 survey. While there is clearly no consensus on this issue, the majority of responses fell in three ranges, between \$50 and \$80. However, a significant number of people feel price will be in the \$80-\$100 range in 2013. Like with other price expecta-

Where will the LT price be at year-end?



tion questions, we again find that utilities anticipate lower prices than suppliers.

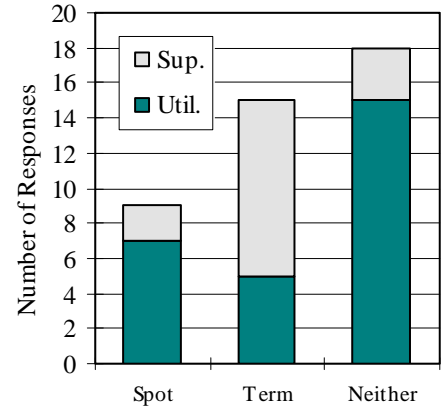
Comments to this question reflected the significant variation in price expectations. For those forecasting lower prices, the main points are that there will be ample supplies while demand pressures will be lower than forecast. Arguments for price to remain at current or higher levels include slower than expected new production, continued or greater demand from new reactors, and a resulting imbalance in the market. Perhaps the only thing that everyone seems to agree on is that price should end up at a level allowing for sustained production expansion.

Term Price by Year-End – Similar to the spot price responses, the majority of those surveyed feel that the year-end long term price will be at or near the current level, although a decent number (mostly utilities) believe the LT price will come down a bit from the current \$95/lb.

Looking at the majority view, we find that there appears to be a widely held belief that both supply and demand are not growing as fast as forecast. Thus, while 2008 is not expected to be as big a year as the recent past in terms of LT contracting volume, there are few who see price dropping much either. One respondent suggested that “the tugs in both directions will result in no movement overall.” It is debatable whether or not it is still a sellers’ market, but another argument for LT price stability is that “given the current outlook, there is no

incentive for sellers to lock in anything less than current levels.” However, for those suggesting that the LT price will decrease, a drop in demand seems to be the biggest factor. Still, a number of the bears also indicated that the current large spot/LT price differential will be reduced not through an increase in spot price, but rather through a decrease in the LT price.

What do you think is the best market price indicator for long-term contracts?



Why the Current Price Disparity –

As most market participants are aware, there continues to be a significant (double-digit) disparity between spot and LT U₃O₈ prices. In our survey, we asked for comments about the reason for this disparity and received a variety of interesting explanations:

- Spot market reflects current supply/demand situation, while LT price is a guess about the future.
- Traditional thinking has placed a premium on LT price to cover exploration and development.
- There is a lack of transparency or competition between suppliers in the long term market.
- Term sellers are more disciplined (less need to be aggressive), but hedge funds are primarily involved in the spot market and the speed at which they are willing to do deals has contributed to spot volatility.
- Published LT prices are not representative of prices acceptable to buyers for terms beyond 2013.

Price Indicator Preferences – In our latest survey, we asked market participants to comment on what the best price indicator is for long term contracts. The responses (see above graph) indicate that the most popular choice is neither spot nor term price indicators. However, given a choice, it appears that the term price indicator is viewed more favorably than the spot price indicator. Again, there was a differential between utility

and supplier perspectives, with suppliers preferring the term indicator and most utilities choosing the spot indicator or “neither.”

Comments to this question provide additional insights into people’s views on this issue. For those arguing for the use of the spot price indicator, the most compelling point is that it “reflects market conditions at time of delivery/payment” and is therefore the most accurate for use in market-related term contracts. However, the argument for the LT price indicator is that it is less volatile and better reflects the actual contracting volumes in the market, i.e. much more material is sold in the term market and so the LT price is perceived as carrying more weight.

Ultimately, the most comments came in on the side of using neither indicator. There were numerous points, and some actually suggested that the best market-related contracting methods are those that use a hybrid or combination of all price indicators. However, the perceived lack of transparency in the market and participants’ unease about the credibility of current published price indicators appears to lead many to argue for a totally new system. One idea given was that the “best indicator would be a future/forward price,” likely based off of a liquid futures market.

U₃O₈ Production Plans – To help us gauge market perspectives on new uranium supplies, we asked respondents to rate the likelihood of the four biggest production plans in the world. The results are shown in the graph to the right. Starting with Kazakhstan’s aim of producing 39 million lbs U₃O₈ by 2010, the level of confidence appears to be quite high, although 39% did think it was unlikely. Nevertheless, there did seem to be general agreement that Kazakhstan will continue to be a bright spot for worldwide uranium production expansion, and it received the most positive response in the survey.

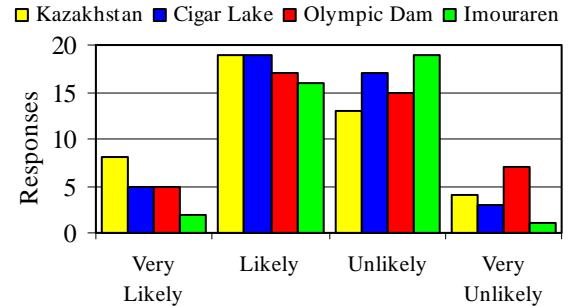
An almost equal number of positive

and negative responses were given in assessing Cameco’s ability to open Cigar Lake by 2012, although the “likely” responses held a slight edge. There was a split opinion as to whether Olympic Dam expanding to greater than 30 million lbs by 2014 was likely or not. In this regard, one respondent noted that BHP’s attempt to purchase Rio Tinto will probably get in the way of focusing on Olympic Dam expansion.

The last project we asked about is AREVA’s Imouraren mine in Niger, which is scheduled to start up in 2010 with a production rate of over 10 million lbs U₃O₈ beginning in 2014. Again, we saw a nearly equal number of responses of “likely” and “unlikely,” with a few more on the “unlikely” side. A number of respondents had no knowledge about this project, suggesting that some market participants are not following individual projects closely.

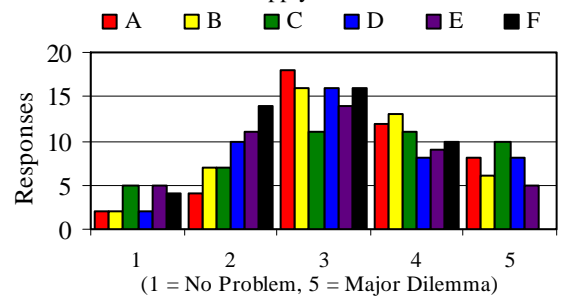
New Reactor Challenges – Looking at the demand side of the equation, we included a question about views on hurdles for new reactor construction. We asked respondents to rate the significance of a number of issues, as seen in the graph on the right. Very few people rated the potential hurdles we asked about as “no problem,” and there does appear to be greater concern about some. One of the highest on the list is the issue of financing these large capital expenditures, which was rated as a “3” or above by 73% of those surveyed. Labor shortage, which received 80% of 3 or above, is another top concern, while government policies and regulations got 73% of 3 or above. Supply chain constraints and public advocacy groups are also viewed as potential stumbling blocks, but perhaps the only bright spot from these results is that fuel supply concerns received no responses in the “major dilemma” category.

How likely do you believe the following announced U₃O₈ production plans will be achieved:



Ratings of issues seen as major hurdles to new reactor development:

- A. Supply chain constraints, B. Labor shortages, C. Financing large capital expenditures, D. Gov’t policies/regulations, E. Public/advocacy groups, F. Fuel supply concerns



Comments to our new reactor question provided additional perspectives. First, there were a number of people who suggested that the responses depend on the region of the world in question. For example, it was suggested that labor shortages may be a bigger issue in developed countries as opposed to places like China, India, etc. As for government policies/regulations, one person noted that this is a bigger issue in the U.S. than in China. One additional hurdle mentioned is the fact that the reactor vendors have yet to finalize the design details for the various Generation III+ reactors. Looking at the positive, a respondent said that perhaps the many issues associated with new reactor build could be seen as a good problem, since the slower rate of demand growth will allow for fuel supplies to “catch up.”

In this same vein, we should note that in our upcoming edition of UxC’s *Nuclear Power Outlook* report, we will be including an in-depth essay on the “Top Ten Challenges to Nuclear Power Expansion,” in which we will analyze these and other issues in much greater detail.

News Briefs

House hearing sharpens focus on DOE's DUF₆ stockpile

An April 3 hearing in the House Energy and Commerce Committee's Subcommittee on Oversight and Investigations helped to raise the profile of management of the U.S. Department of Energy's stockpile of depleted uranium (DUF₆ or tails). The subcommittee hearing was focused on pushing the U.S. Department of Energy (DOE) to identify the best alternative for the government's depleted uranium so as to maximize its value, and then moving DOE to realize that alternative. Witnesses at the hearing, which was chaired by Michigan Democrat Bart Stupak, included Robert Robinson, Managing Director, Natural Resources and the Environment of the Government Accountability Office, The Honorable Dennis Spurgeon, Assistant Secretary for Nuclear Energy, Robert Ervin, President of the United Steelworkers (USW) Local 550 at Paducah, and Marvin Fertel, Executive Vice President and Chief Nuclear Officer of the Nuclear Energy Institute.

The hearing was focused largely on a March 31, 2008 report by the Government Accountability Office (GAO) that key members of Congress had requested. GAO set out to identify various options for management and disposition of the depleted uranium and determine the potential value of the material, while identifying factors that would affect its value. DOE's depleted uranium stockpile, which is estimated to be approximately 67.5 million pounds U₃O₈ equivalent, is part of a larger stockpile of surplus uranium that is now being held by the Department. With large increases in the price of uranium in recent years, the government's stockpile of depleted uranium (DUF₆ or tails) is now considered an asset of considerable value to DOE. Estimates by the GAO put the value at about \$7.6 billion at February 2008 prices, down from a high of approximately \$20 billion when uranium was at

its peak price.

Direct DUF₆ Sales Legal and Desirable?

In its report, GAO explored three options for DOE's tails: sale of the material "as is"; re-enrichment of the tails and then sale or transfer of the resulting natural or low-enriched uranium product; or indefinite storage. However, an additional finding by GAO was that it believes that DOE does not currently have the authority to sell the depleted uranium in its "current unprocessed form" because no explicit statutory authority for doing so is provided in the USEC Privatization Act. As such, GAO's legal analysis suggests that DOE is prohibited from selling its depleted uranium "as is." DOE did not provide any legal analysis regarding this issue to either the GAO or the Hill, but DOE Assistant Secretary Dennis Spurgeon told the Committee that DOE believes it has the general authority it needs to implement its plans.

As part of the work done for Congress, GAO interviewed a number of industry representatives and learned that 8 of 10 may potentially be interested in purchasing the material should they be allowed to do so. Similarly, the Nuclear Energy Institute found that utilities representing at least 61 generating units might also be interested in purchasing the government's tails. But the idea was not supported universally. One concern raised by GAO with respect to this direct sale option is that buyers might discount their offering prices for the DUF₆ to compensate for additional risks, particularly those related to securing necessary enrichment services and transportation of the old DUF₆ containers. Additionally, USW's Robert Ervin opposed the direct sale of DUF₆ to end users or suppliers, noting that the enrichment of this material would likely be done by foreign enrichers, which he characterized as an outsourcing of U.S. jobs.

DOE's Plans Inching Forward

DOE's March 2008 Policy Statement provides a general framework for man-

Industry Calendar

- April 8-11, 2008
World Nuclear Fuel Cycle
WNA/NEI
<http://www.world-nuclear.org/>
Intercontinental Hotel
Miami, FL, USA
- May 4-5, 2008
North American Young Generation in Nuclear
Nuclear Energy Institute
<http://www.nei.org/newsandevents/>
The Fairmont Chicago
Chicago, IL, USA
- May 5-7, 2008
Nuclear Energy Assembly
Nuclear Energy Institute
<http://www.nei.org/newsandevents/>
The Fairmont Chicago
Chicago, IL, USA
- June 1-4, 2008
WNFM 35th Annual Meeting
World Nuclear Fuel Market
<http://www.wnfm.com/>
Charleston Place Hotel
Charleston, SC, USA
- June 10-13, 2008
2008 China Nuclear Energy Congress
China Decision Makers
<http://cnec.alt-power.com/>
Kempinski Hotel Beijing
Beijing, China
- June 18-19, 2008
Australia's International Uranium Conference 2008
Aus. Inst. of Mining & Metallurgy
<http://www.ausimm.com/>
Adelaide Convention Centre
Adelaide, South Australia
- July 22-25, 2008
Global Nuclear Renaissance Summit
Exchange Monitor
<http://www.exchangemonitor.com/>
Hilton Alexandria Mark Center
Alexandria, VA, USA
- October 19-22, 2008
NEI Uranium Fuel Seminar
Nuclear Energy Institute
<http://www.nei.org/newsandevents/>
Westin Tabor Center
Denver, CO, USA

Details are available at:
<http://www.uxc.com/c/data-industry/uxc-calendar.aspx>

agement of its surplus uranium, including the tails, said DOE Assistant Secre-

tary Dennis Spurgeon. That Statement suggests that DOE will place uranium equivalent to up to 10% of U.S. demand into the market in any year after conducting an analysis of the impact of that proposed disposition on the domestic uranium industry and the market. Further, Spurgeon noted that "All transactions involving excess uranium transfers or sales to non-U.S. Government entities must result in the Department's receipt of reasonable value...."

Assistant Secretary Spurgeon noted that DOE has begun characterizing its inventory of depleted uranium to try to identify which categories have the highest potential market value or utility. DOE will then conduct a cost-benefit analysis to determine if any options provide better economic value than DOE's current plans for de-conversion of the uranium and storage.

But GAO says "DOE has not completed a comprehensive assessment to decide among its sales, re-enrichment or storage options." GAO would like to see DOE discuss its plans in more detail, including when any sales or re-enrichment might occur. The Subcommittee members also told DOE to try to move a little more quickly with respect to actions that enhance the value of this stockpile to the taxpayers.

Timely Re-enrichment Encouraged

There was also considerable discussion regarding a bill (HR 4189) introduced by Rep. Ed Whitfield (R-KY), whose district includes the Paducah enrichment plant. The Whitfield bill directs DOE to conclude a sole source contract with USEC for the re-enrichment of high assay DOE tails within 120 days. Although additional enrichment plants are both planned and being constructed, USEC is the sole U.S. enricher that is in a position to begin tails re-enrichment in the near-term. However, GAO found that USEC may only be able to re-enrich 14% of DOE's stockpile between now and the planned 2012 shutdown of the Paducah

USEC proposes near-term tails re-enrichment

Although not a witness at the Congressional hearing on April 3, USEC weighed in by issuing a statement regarding DOE's depleted uranium stockpile. USEC suggests that beginning re-enrichment of DOE's high-assay tails at the Paducah GDP in the near-term would allow the government "to take advantage of current market conditions that make the re-enriching program a valuable proposition." USEC said that it conducted an earlier assessment that indicated that a four-year re-enrichment campaign (2008-2012) would create a net value of \$1 billion for the U.S. Government. They note that a program like this could begin as early as 2009.

In addition, USEC suggests that a "more extensive" program to re-enrich most of DOE's high-assay tails between 2012 and 2021 would result in about \$7 billion for the U.S. Treasury. This analysis assumed prices of \$200-\$250/kg of uranium. In putting forth this idea, USEC points out that operating the Paducah GDP plant past its planned shutdown in 2012 would provide an additional source of enrichment supply to the market and keep the workforce employed longer. USEC also notes that the U.S. Government would benefit by reducing its long-term liabilities stemming from the tails; USEC estimates this benefit to be about \$500 million if all the tails were re-enriched. DOE would also reduce its storage and cylinder maintenance costs related to these tails.

There was significant discussion about the prospect of USEC receiving a sole source contract for re-enriching DOE tails at the Congressional hearing held on April 3. (See related story on page 4.) Other companies, including Louisiana Energy Services (LES) and General Electric-Hitachi, have also expressed an interest in DOE's stockpile of high-assay tails.

GDP. On the day of the hearing, USEC issued a statement regarding a proposal to re-enrich DOE tails that would keep the plant operating until 2021. (See related story above.)

Earlier this year, DOE initiated an Environmental Assessment (EA) required by the National Environmental Policy Act (NEPA) that considers the proposal for DOE to have its tails re-enriched. That EA is expected to be completed in the fall, when the contracting process for re-enrichment could begin. The length of time needed for the Government procurement process to be completed was lamented by many subcommittee members. Even DOE's Spurgeon, who spent much of his career in the private sector, including a stint as Chief Operating Officer of USEC, expressed frustration at government procurement timelines and processes. One concern was that the uranium market could fall, losing value to the taxpayers, before DOE had a chance to act.

Some subcommittee members also expressed concern about the sole source nature of the Whitfield proposal suggesting that by its structure, it would be challenging to ensure that the government was getting fair value from the deal.

Industry Viewpoint

In his testimony, Marvin Fertel noted that NEI supported both the auction and re-enrichment approaches to tails disposal. For the latter, Fertel noted that NEI supports re-enrichment by multiple U.S. enrichment facilities when they begin operating, but between now and 2020, Fertel suggests that the U.S. Government contract with USEC. Fertel also expressed concern that government contracting for re-enrichment not have an adverse effect on enrichment supply that would be available to the commercial market. He noted that any sale of material into the market – either DUF₆ directly or re-enriched material – should be done so as not to undermine devel-

opment of new mines and conversion capacity in the U.S. Fertel also suggested that revenues from DOE uranium sales should be directed into the Uranium Enrichment Decontamination & Decommissioning Fund to make up expected deficits in the Fund. (At least one subcommittee member suggested that revenues be directed towards other priorities of the subcommittee including various health care concerns.) Finally, Fertel advised that continued operations at the Paducah plant from government missions should be done in a manner that does not artificially impact the commercial market.

Congressional Reaction

The hearing was not without controversy. Both Subcommittee Chairman Stupak and Full Committee Chairman John Dingell expressed their frustration that DOE had not responded adequately to a letter suggesting that it issue a "Request for Expressions of Interest" to gauge industry interest in DOE's depleted uranium. They also questioned whether Assistant Secretary Spurgeon's prior employment by USEC and the substantial payout he received upon departure would color his approach to a sole source proposal by USEC. Dingell asked Spurgeon to provide key legal opinions regarding his post-employment restrictions, if any. The Subcommittee Chairman also asked that the Committee be consulted on any future sole source contract to be concluded with USEC.

There seemed to be consensus among the subcommittee members that DOE's authorities regarding depleted uranium needed to be clarified. Moreover, Subcommittee members strongly urged DOE to work a bit faster to characterize its inventories and complete its required preparatory work so that taxpayers can benefit from the potential disposition of DUF₆. Legislation that clarifies DOE's authority related to its tails and potentially sets some direction for both the auctioning and the re-enrichment of the tails is likely to be forthcoming. The legislation could also

potentially provide some direction on the question of how revenues received by the government from uranium sales would be used.

U.S.-Russia 123 Agreement moves forward

The U.S. and Russia confirmed in a joint statement issued this weekend that the Agreement for Cooperation in the Peaceful Use of Nuclear Energy (the 123 Agreement) would be signed in the near future. Additionally, both countries committed to work to bring the proposed Agreement into force. Although initialed on June 29, 2007, the necessary steps to get the proposed Agreement signed and for it to enter into force were not taken. This was due, in part, to concerns about U.S.-Russian relations on key issues such as Iran and missile defense.

The announcement was made as part of the broader U.S.-Russia Strategic Framework Declaration that was inked by Presidents Bush and Putin in Russia this weekend. The framework is intended to put the Cold War in the past and to try to find key strategic areas where the two governments can cooperate.

Fortum submits EIA report for potential new reactor

On April 3, Fortum announced it submitted an Environmental Impact Assessment report for a potential new reactor at the Loviisa nuclear power plant to Finland's Ministry of Employment and the Economy. The utility is considering building a reactor with a capacity of between 1,000 and 1,800 megawatts. The report includes an examination of the environmental impact of discharging cooling water into the sea. The EIA also includes results from a survey of resident opinions toward construction of a new reactor, which found that 53 percent of permanent residents of the area are supportive while another 26 percent are against building a new unit.

The Ministry of Employment and the

Economy will make the EIA available for public comment and will then issue its own conclusions on the report. If Fortum decides to move forward with the process for building a new unit, it will need to file an application for a decision-in-principle, which requires approval from Finland's Radiation and Nuclear Safety Authority and the town of Loviisa as well as a favorable vote from the nation's Parliament.

Utilities file COL application for new reactor at Summer nuclear power plant

South Carolina Electric & Gas (SCE&G) and Santee Cooper have filed a combined construction and operating license (COL) application with the U.S. Nuclear Regulatory Commission for two potential new reactors at the V.C. Summer Nuclear power plant, according to a March 31 press release from SCE&G. The NRC is expected to take three to four years to review the application and could reach a decision on approval in 2011. The utilities referenced the Westinghouse AP1000 in the COL application. In order for a new reactor to be built, approval also must be obtained from the South Carolina Public Service Commission. A new reactor at the Summer nuclear plant could be completed in 2016. "Filing the application does not commit our two utilities to build, but is the logical next step as we move forward with our efforts to bring new electric generation onto our system around 2016. We're confident that new nuclear is the right decision for South Carolina. It's a clean, safe, non-emitting generation choice that will ultimately result in a significant reduction in emissions for our state," said SCE&G President Kevin Marsh.

In another press release issued on April 1, SCE&G announced that it has signed agreements with Westinghouse and the Shaw Group to acquire long-lead reactor components. "This keeps us on schedule if we are to build new nuclear generation and have a plant

online by 2016," said Kevin Marsh. "We're pleased that after more than two years of diligent work, we're able to achieve this milestone. Our focus now is on finalizing the Engineering, Procurement, and Construction (EPC) contract as soon as possible."

Southern Company and SCG&E could soon finalize contracts with Westinghouse

According to several news sources, the Southern Company is in final negotiations to order two AP1000 reactors from Westinghouse that would be built at the Vogtle nuclear power plant. South Carolina Electric & Gas (SCG&E) parent company Scana Corp. is also in advanced talks with the company for reactors at the Summer nuclear power plant. On April 3, the *Atlanta Journal-Constitution* reported that the Southern Company is looking to reach an agreement with Westinghouse on the purchase price for the two new units at Vogtle in 10 to 14 days. The utility also wants an agreement on the construction timeframe for the reactors.

Nuclear Power Corporation of India and BHEL sign cooperation agreement

Nuclear Power Corporation of India Ltd. (NPCIL) has signed a memorandum of understanding with a major engineering and manufacturing firm, Bharat Heavy Electricals Limited (BHEL), for the creation of a new joint venture company, according to an April 4 BHEL press release. NPCIL is a government-owned company, and the Indian government also owns a majority stake in BHEL. The joint venture, which is to be owned by both companies, will conduct engineering, procurement, and construction activities for new reactors in India and potentially also in other nations. "The two companies will work jointly to complement their respective core strengths in the areas of nuclear power generation at a crucial juncture when the nation is looking at adding huge power generating capacities from nuclear energy to meet

the growing needs of the country," said the press release. A key objective of the joint venture is to give BHEL the capacity to domestically develop steam turbine generator sets for use in reactors with ratings of 700 megawatts and above.

Mitsubishi Heavy agrees to supply nuclear technology to China's Harbin Group

On April 4, Mitsubishi Heavy Industries (MHI) announced that it reached an agreement to license technologies for pressurized water reactor equipment to Harbin Turbine Co., and Harbin Boiler Company, two subsidiaries of Chinese company Harbin Group. The technologies apply to steam turbines for use in 1,200 MWe reactors as well as auxiliary equipment. "With this agreement... MHI aims to respond, chiefly through collaboration with local companies, to China's quest to achieve domestic manufacture of this type of equipment in the future, while simultaneously also aiming at expansion of the company's NPP equipment business in the growing Chinese market," said an MHI press release.

Atomic Energy of Canada suspends participation in UK's Generic Design Assessment

According to an April 4 press release, Atomic Energy of Canada Ltd. (AECL) has decided to suspend participation in the UK's Generic Design Assessment (GDA) process. Although AECL's Advanced CANDU Reactor (ACR-1000) successfully passed the safety requirements from the first phase of the process, the company said it is withdrawing its participation in order to focus on its resources for the ACR-1000 on the marketplace in Canada. "The nuclear renaissance has taken hold in Canada as several Canadian provinces are currently considering the ACR as the technology-of-choice for the next generation nuclear technology. We believe very strongly that our best course of action to ensure the ACR-1000 is successful in the global marketplace is to focus first

and foremost on establishing it here at home," said AECL President and CEO Hugh MacDiarmid. AECL also stated that it could choose to re-enter the GDA program in the future.

The withdrawal of AECL leaves three reactor designs, Westinghouse's AP1000, AREVA's EPR, and GE-Hitachi's ESBWR, as participants in the GDA program. All three remaining designs will most likely move forward to the next phase of the program, which is expected to conclude in 2011, and reactor designs that successfully complete the GDA will be eligible for use in new reactor projects in the UK without the need for an additional design approval during the licensing process.

USEC purchases former Boeing facility in Oak Ridge

On March 31, USEC announced that it purchased a former Boeing site covering 74-acres in Oak Ridge, Tennessee for \$5 million in support of its American Centrifuge program. The site has 440,000 square feet of buildings, including a 200,000 square-foot building built specifically to manufacture, balance, and test centrifuge machines, and USEC says that workers at the site have been carrying out manufacturing, balancing and testing on a limited number of centrifuge components. "This unique building has been a focal point for centrifuge balancing and testing activities for decades and is a core element of the manufacturing infrastructure for our American Centrifuge program. Using this facility saves USEC valuable time and money compared to building a new one," said USEC senior vice president Philip G. Sewell. The company plans to invest \$50 million to make improvements to the site.

Urenco releases 2007 annual results

On April 2, Urenco released its annual results for 2007. The company reported revenue of €1.024 billion, an increase of nearly 15 percent over revenue reported

in 2006. Urenco reported a net profit of €239 million in 2007, an increase of 14 percent over net profit of €209 million in 2006. Capital investment in 2007 grew by 50 percent over the previous year to €527 million. Urenco estimated that it has a market share of 23 percent. The company's order book is at €18 billion with some contracts extending past 2025. SWU capacity at the three Urenco centrifuge plants in Europe increased by 7 percent in 2007. According to the company, "The Group's Capenhurst plant in the UK delivered the fastest build, installation, and commissioning program in Urenco's history."

Urenco says that the National Enrichment Facility in the U.S. remains on track to begin initial production in 2009. By 2012, Urenco intends to increase its total production capacity to about 15,000 SWU, an increase of about 50 percent over the company's current SWU capacity. "To reach 15,000 we have an investment plan cumulative of 3 billion euros, which is spread 50/50 between the U.S. and the three European sites," said Urenco's Chief Financial Officer Bart Le Blanc in a quote to *Reuters*.

Namibia to build second desalination plant for U mines

Namibia Water Corp., the state-owned water utility, plans to build a second desalination plant to cater to increasing water demand from existing and planned uranium mines. The facility will be built on Namibia's Atlantic coastline at a cost of 1.5 billion Namibian dollars (US\$192.1 million). The plant is expected to be commissioned in 2010 and will have the capacity to pump 25 million cubic meters (~6.6 billion gallons) of water per year. "Due to the pressure on groundwater sources, we were directed by the government to construct a desalination plant," said NamWater CEO Vaino Shivute.

NamWater is already building a desalination plant jointly with UraMin, which is expected to be commissioned at the end of 2009. The facility will have

the capacity to pump 20 million cubic meters per year and serve UraMin's Trekkopje project. "All capital and operational costs associated with desalination and supply of desalinated water will be carried by the mining companies, either by capital payment upfront or via water tariffs," Shivute said.

Currently, five more uranium mines are being planned for Namibia by 2015. Forsys Metals Corp. plans to commission its Valencia mine by September 2009, while Bannerman's mine, as well as projects by Extract Resources Ltd. and West Australian Metals Ltd., are planned for 2011. Deep Yellow projects it will start production in Namibia in 2013.

Ur-Energy provides independent preliminary assessment on Lost Creek

Ur-Energy Inc. released April 2 the results of a Preliminary Assessment for the Lost Creek project located in Sweetwater County, Wyoming. The assessment was prepared by Lyntek Inc. in accordance with NI 43-101.

Sensitivity analyses completed as part of the study demonstrate that the project will be economically feasible at uranium prices above US\$40 per pound U₃O₈. This base case produced a pre-tax internal rate of return of 43.6% at a uranium price of US\$80 per pound U₃O₈. To be conservative, the base case model developed and applied by Lyntek uses a 20% contingency to capital and operating costs for the life of the mine producing one million pounds U₃O₈ per year. The operating costs in the base case are US\$23.26 per pound U₃O₈. The capital cost to build the two million pound per year capacity ISR (in-situ recovery) plant at Lost Creek is US\$30 million. Development of Lost Creek to the initiation of producing, including drilling, environmental permitting, engineering, construction management, disposal wells and ponds, and header houses, is projected to be US\$32.5 million. Of this amount, US\$5.5 million

was expended during 2007 to advance the project during 2008. Sustaining capital requirements, starting in 2010, to maintain production will be in the range of US\$4 to US\$5 million per year. The base case assessment does not consider any revenue from the additional one million pound capacity of the plant which is expected to be filled by material from satellite mining operations in the Great Divide Basin of Wyoming.

The economic analysis in the Preliminary Assessment is based on a conservative model of production, starting in the fourth quarter of 2009, from six individual mine units, each containing about 1.2 to 1.4 million pounds U₃O₈ for a total of 8.1 million pounds U₃O₈. The model does not address all of the current NI 43-101 compliant indicated resources totaling 9.8 million pounds U₃O₈ and inferred resources totaling 1.1 million pounds U₃O₈. Also, the assessment does not consider the ability of the company to increase its resources at Lost Creek, particularly in the underlying KM horizon which, based on preliminary drilling and assessment of historic data, has the potential for resource expansion.

Australia's Labor Party quietly resurrecting Howard's uranium plan

According to *The Age* newspaper, the Australian Federal Government is quietly resurrecting former Prime Minister John Howard's plan to expand uranium mining in Australia. Resources Minister Martin Ferguson, an industry advocate, has reconvened the Uranium Industry Framework, a hand-picked advisory group appointed by the previous government. Policies on its agenda include a forthcoming information campaign, paid for by the uranium industry, to address public concern about uranium mining.

The group also wants to introduce national rules for the industry, better training for workers exposed to radiation, and a national register recording mining workers' levels of exposure to radiation.

There is a separate strategy to use uranium mining to improve the economic fortunes of indigenous communities and to improve "engagement" between traditional owners and mining companies. However, Mr. Ferguson states that the current government will not pursue the idea the previous government flirted with in overriding state bans in Western Australia and Queensland that prevent new uranium mines or other nuclear activities. Mr. Ferguson added that it is only a matter of time before mining developments occur in those states, which have large uranium deposits.

Ferguson believes Australia will play an important role in powering nuclear reactors in other countries wanting to cut their greenhouse gas emissions. "Some countries see nuclear as part of their commitment to reduce greenhouse gas emissions," he stated. "Uranium mining has got a bright future and it's going to lead to increased export earnings for Australia and jobs."

Uranium Equities acquires Nabarlek mine lease

Uranium Equities Limited (UEQ) has reached agreement with Hanson Australia Pty Ltd to acquire 100% of the issued capital in Queensland Mines Pty Ltd, the registered owner of Mineral Lease MLN 962 in the Alligator Rivers Uranium Province, Northern Territory. Mineral Lease MLN 962 contains the historic Nabarlek uranium mine and covers an area of 12.79 square kilometers surrounded by the tenements of the West Arnhem joint venture between UEQ (40%) and Cameco Australia Pty Ltd (60%).

The Nabarlek mine operated from 1979 to 1988 and produced 24.4 million pounds U_3O_8 at an average grade of 1.84% U_3O_8 . No exploration has been conducted on MLN 962 in the current uranium price environment. The last exploration drilling was carried out in 1994. UEQ believes in the immediate mine environment, the potential to generate drill targets at depth and along and across strike is high.

Marathon reports encouraging drill results at Mt Gee

On April 1, Marathon Resources Limited announced the first assay results from the most recent diamond drilling programs carried out at the company's Mt Gee uranium deposit since July 2007, with more intensive drilling involving four rigs between November 2007 and February 2008. At Mt Gee East and Mt Gee West, drillhole MN091 intersected 5 meters of 0.05% U_3O_8 at a depth of 188-193 meters, along with 6 meters of 0.07% U_3O_8 at a depth of 209-215 meters. Drillhole MN092 intersected 5 meters of 0.06% U_3O_8 at a depth of 132-137 meters, as well as 15 meters of 0.07% U_3O_8 at a depth of 151-166 meters, and 9 meters of 0.08% U_3O_8 at a depth of 183-192 meters. Drillhole MN093 intersected 5 meters of 0.05% U_3O_8 at a depth of 181-186 meters and 7 meters of 0.14% U_3O_8 at 206-213 meters. Marathon said that results from holes MN091, MN092 and MN093 are very significant as these were not drilled in the past and they document the extension of the mineralization about 100 meters to the East South-East.

Marathon is continuing to work closely with PIRSA to develop a suitable resolution for retrieval and disposal of drilling residue buried at Mt Gee. Once a decision has been reached, the company will announce the methodology, and implement rehabilitation as soon as possible. Work is also continuing on the Pre Feasibility Study and Environmental Impact Study, which commenced in December 2007 and is expected to take 12 to 18 months to complete.

Strathmore/American Uranium announce intent to submit Reno Creek license application

American Uranium Corporation announced April 3 that its Reno Creek Joint Venture partner Strathmore Resources, US Ltd. has informed the U.S. Nuclear Regulatory Commission (NRC) of its intent to submit a license application for a Uranium In-Situ Recovery

(ISR) mine and processing plant to be located at the Reno Creek deposit in Campbell County, Wyoming.

In addition, Strathmore on behalf of the joint venture has begun discussions with the Wyoming Department of Environmental Quality in advance of performing certain studies that will be used to support the environmental assessment and engineering documents required for the State Mine Permit and NRC license applications. Initial drilling, coring and baseline groundwater characterization activities are planned for the summer and fall of 2008. Design basis documents and ISR process reviews are being prepared by Strathmore. Data collection will continue for at least one year for those environmental factors that require determination of annual variations. The joint venture anticipates submission of the Federal and State applications during the fall of 2009.

Judge blocks U exploration near Grand Canyon

A federal judge last Friday evening issued an injunction against the British mining firm VANE Minerals and the Kaibab National Forest, halting uranium exploration on public lands within a few miles of Grand Canyon National Park. The order came after a day-long hearing in a case brought by three conservation groups – Center for Biological Diversity, Sierra Club, and Grand Canyon Trust – to challenge drilling taking place close to the Grand Canyon with no public hearing and no environmental review.

In December 2007, the Kaibab National Forest approved exploratory uranium drilling by VANE Minerals at up to 39 locations across seven project sites just south of the Grand Canyon. The approval was granted using a "categorical exclusion," the least rigorous public and environmental review available to the agency under the National Environmental Policy Act. In March, environmental groups sued the Forest Service, demanding that a more complete analysis be conducted.

The Market

March Market Review

Both term and spot activity slowed last month for all three front-end markets. While no term deals were reported as awarded during March, a total of seven spot deals were reported during the month. Four deals involved straight U₃O₈, one deal as UF₆, one deal as straight conversion, and the last deal as enrichment services. A total of about 1.2 million pounds U₃O₈ equivalent is included in the table below, bringing the year's total volume to 6.8 million pounds U₃O₈e under 33 transactions; however, spot conversion and enrichment data are withheld due to client confidentiality.

Uranium

A non-U.S. utility has offers due tomorrow (Tuesday) for up to 300,000 pounds U₃O₈e as either U₃O₈ or UF₆. Beyond this activity, it seems like there was more focus last week on depleted uranium than fresh uranium, as a Congressional hearing was held on the disposition of DOE's DUF₆ stockpile (see story on page 4). Also, market players have been gearing up to meet at the World Nuclear Fuel Cycle 2008 conference

being held in Miami this week. In the light of limited activity, the Ux Spot U₃O₈ Price remains at \$71 this week, after falling to this level at the end of last month.

Although our recent survey (see cover story) showed that only a very small minority of respondents believed that the spot uranium price will end the year below \$70, that question may have had a much different response if the time period in question was the middle of the year, in light of the fact that price has recently been under downward pressure. Some market observers see \$70 as a support level to the market, and note that the \$70-\$75 range has been sufficient to stimulate interest on the part of both buyers and sellers. Still, these same observers do not hold out much hope for price to increase anytime in the near future.

While there has been a fair amount of activity in the \$70-\$75 price range, we would also note that there was much more activity in this range in February than March, as shown in the chart below. This possibly suggests that while this price range was perceived as a good entry point earlier, it may not look as attractive now. Also, the one time

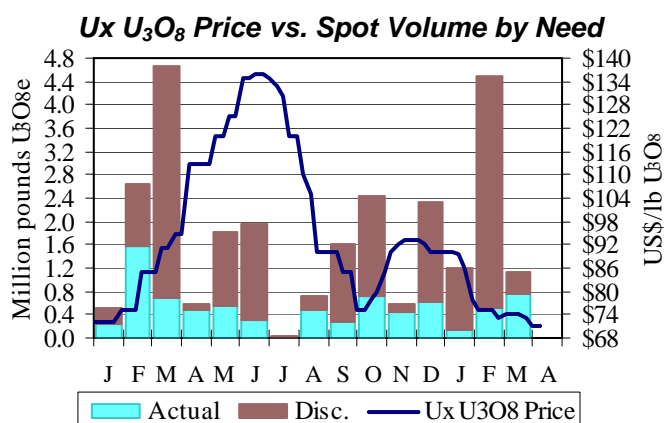
Ux Price Indicators (€Equiv**)			
Weekly (4/7/08)		1 US\$ = .63737€	
Ux U₃O₈ Price	\$71.00	€45.25	
Mth-end (3/31/08)		1 US\$ = .63454€	
U₃O₈	Spot	\$71.00	€45.05
	Long-Term	\$95.00	€60.28
Conversion	NA Spot	\$9.00	€5.71
	NA Term	\$12.25	€7.77
	EU Spot	\$10.00	€6.35
	EU Term	\$13.00	€8.25
UF₆ Spot	NA Price	\$194.00	€123.10
	NA Value*	\$194.51	€123.42
	EU Value*	\$195.51	€124.05
SWU	Spot	\$146.00	€92.64
	Long-Term	\$148.00	€93.91
EUP	NA Spot**	\$2,897	€1,838
	NA Term**	\$3,584	€2,274

this year that price made a slight (\$1) increase, demand was not strong enough to sustain any upward pressure on price given the extent of supply available in the market. This is still characteristic of the market today.

U₃O₈ Physical Forwards Market

As the previous week, Tullett Prebon has shown offers at prices ranging from the low to mid \$70s for April and May delivery, with the lowest offer at \$71 as of COB on Friday. Reflective of the current state of the market, there are no

UxC Market Statistics				
Monthly (Mar)	Spot		Term	
	Volume	# Deals	Volume	# Deals
U ₃ O ₈ e (million lbs)	1.2	5	0	0
Conv. (thousand kgU)	>75	2	0	0
SWU (thousand SWU)	W	1	0	0
2008 Y-T-D	Spot		Term	
	Volume	# Deals	Volume	# Deals
U ₃ O ₈ e (million lbs)	6.8	33	14.5	6
Conv. (thousand kgU)	W	6	W	2
SWU (thousand SWU)	W	3	W	2
Key: N/A – Not available. W – Withheld due to client confidentiality.				
UxC Leading Price Indicators				
Three-month forward looking price indicators, with publication delayed one month. Readings as of Mar 2008.				
Uranium (Range: -17 to +17)	+1 [down 2 points]			
Conversion (Range: -16 to +16)	+2 [unchanged]			
Enrichment (Range: -18 to +18)	+7 [unchanged]			
Platts Forward Uranium Indicator	\$68.00-\$75.00			
A forward two-week outlook.	As of 4/7/08 (US\$/lb)			



Changing fashion

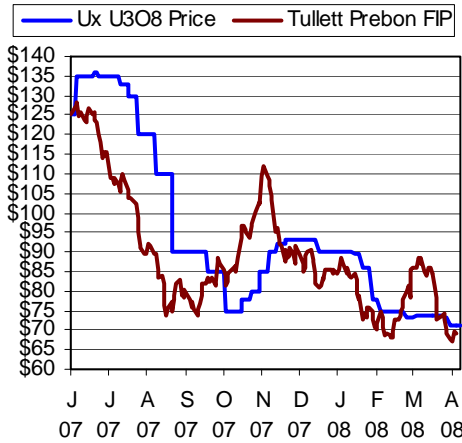
This man is at work one day when he notices that his male co-worker is wearing an earring. He knows his co-worker to be a normally conservative fellow, and is curious about his sudden change in 'fashion sense.' "Yo, Bob, I didn't know you were into earrings."

"Oh, yeah, sure," replies Bob sheepishly.

"Really? How long have you been wearing one?"

"Ever since my wife found it in our bed!"

Ux U₃O₈ Price vs. Tullett Prebon FIP



Tullett Prebon Fund Implied Price (FIP) as of COB 4/7/08

\$69.92 (+0.00%) US\$/lb U₃O₈

bids shown on the Tullett screens.

As of COB Friday, the FIP was almost \$70 (\$69.92), or very close to the physical price of \$71, as shown above.

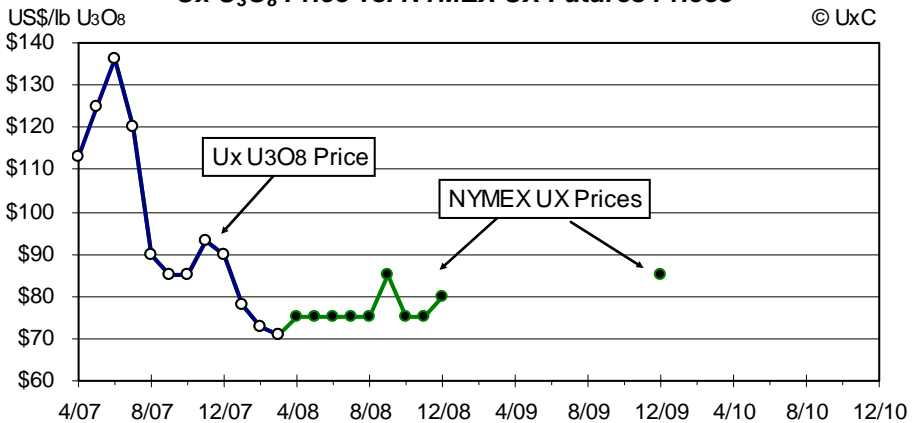
U₃O₈ Futures Market

After a couple of weeks of increased activity on the NYMEX exchange for the UX contract, no contracts were transacted last week, leaving open interest unchanged at 1,158 contracts (equivalent to 289,500 pounds U₃O₈). As shown in the table above, settlement prices through December 2009 remain unchanged and total exchange volume is still at 2,161 contracts (540,250 pounds U₃O₈).

NYMEX UxC Uranium U₃O₈ (UX) Futures Activity

Settlement Prices as of 4/7/08		Activity for 5/7/07-1/28/08			
Settlement Month	Price	Volume	Open	High	Low
June 2007	\$136.00	108	N/A	\$148.00	\$130.00
July 2007	\$120.00	1	N/A	\$140.00	\$140.00
December 2007	\$90.00	739	N/A	\$159.00	\$58.00
January 2008	\$78.00	76	N/A	\$151.00	\$70.00
February 2008	\$73.00	42	N/A	\$126.00	\$80.00
March 2008	\$71.00	97	96	\$119.00	\$80.00
April 2008	\$75.00	41	41	\$119.00	\$75.00
May 2008	\$75.00	42	40	\$119.00	\$75.00
June 2008	\$75.00	275	274	\$119.00	\$75.00
July 2008	\$75.00	40	40	\$117.00	\$75.00
August 2008	\$75.00	40	40	\$117.00	\$75.00
September 2008	\$85.00	81	62	\$117.00	\$84.00
October 2008	\$75.00	30	30	\$117.00	\$75.00
November 2008	\$75.00	40	40	\$117.00	\$75.00
December 2008	\$80.00	508	494	\$117.00	\$80.00
December 2009	\$85.00	1	1	\$85.00	\$85.00
Totals:		2,161	1,158		

Ux U₃O₈ Price vs. NYMEX UX Futures Prices



Tullett Prebon Physical Forwards Activity as of 4/7/08

COD: Convertor Delivered – Bid / Ask Offer Ranges US\$/lb U₃O₈ (* form as UF₆)

Delivery Month	USA-ConverDyn	Europe-AREVA	Canada-Cameco
Apr 2008	/ \$72-150K	/	/ \$75-100K
May 2008	/	/ \$72-50K	/ \$71-50K
Jun 2008	/	/ \$73-50K	/

Ux Price Indicator Definitions

The Ux Prices indicate, subject to the terms listed, the most competitive offers available for the respective product or service of which The Ux Consulting Company, LLC (UxC) is aware. The Ux U₃O₈ Price (Spot) includes conditions for delivery timeframe (≤ 3 months), quantity (≥ 100,000 pounds), and origin considerations, and is published weekly. The Ux LT U₃O₈ Price (Long-Term) includes conditions for escalation (from current quarter), delivery timeframe (≥ 24 months), and quantity flexibility (up to ±10%) considerations. The Ux Conversion Prices consider offers for delivery up to twelve months forward (Spot) and base-escalated long-term offers (LT) for multi-annual deliveries with delivery in North America (NA) or Europe (EU). The Ux NA UF₆ Price includes conditions for delivery timeframe (6 months), quantity (50-150,000 kgU), and delivery considerations. *The Ux NA and EU UF₆ Values represent the sum of the component conversion and U₃O₈ (multiplied by 2.61285) spot prices as discussed above and, therefore, do not necessarily represent the most competitive UF₆ spot offers available. The Ux SWU Price (Spot) considers spot offers for deliveries up to twelve months forward for other than Russian-origin SWU. The Ux LT SWU Price (Long-Term) reflects base-escalated long-term offers for multi-annual deliveries. **The Ux Spot and Term EUP Values represent calculated prices per kgU of enriched uranium product based on a product assay of 4.50% and a tails assay of 0.30%, using spot and term Ux NA and appropriate spot and term price indicators and are provided for comparison purposes only. All prices, except for the weekly Ux U₃O₈ Price, are published the last Monday of each month. (Units: U₃O₈ = US\$ per pound, Conversion/UF₆: US\$ per kgU, SWU: US\$ per SWU, EUP: US\$ per kgU) The Ux Prices represent neither an offer to sell nor a bid to buy the products or services listed. **The Euro price equivalents are based on exchange rate estimates at the time of publication and are for comparison purposes only.

The Platts Forward Uranium Indicator price range belongs to Platts, a McGraw Hill Company, and is published with permission. Definitions of these prices are available from their original source.

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