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2018 Winter Uranium Survey: More Cutbacks Needed; Utilities Bothered by Trade Cases

Last week, we reviewed the conversion and enrichment-related questions to our 2018 Winter Market Survey, and we now cover the uranium and reactor-related questions. While this survey provided a host of informative results and insights into the latest market views, some of the highlights are responses to our questions on recent uranium production cutbacks as well as the major trade cases currently under review by the U.S. Government.

Spot Price Expectations for 2018 – We start with the much-discussed topic of spot price expectations for this year. As shown in the bottom left chart, there is a range of opinions concerning where the spot uranium market is headed in 2018, with responses as low as $18 to as high as $30. However, a clear plurality selected the $22-$24 range, which would indicate a slight upwards bias given that current prices are closer to the $20-$21 range. Not surprisingly, suppliers are more optimistic about a price rise this year.

We received numerous comments to this question. Those that believe the price will remain low or decline further focus on the weak fundamentals in the market, including low demand, high inventories, oversupply, and lack of buying interest by utilities for spot material. The potential for additional reactor closure announcements this year adds to this negative sentiment. On the flip side, there are several respondents that believe a combination of supply-side developments will drive prices higher. These include Cameco's suspension of McArthur River, reduced production plans by Kazatomprom, the U.S. uranium producers' 232 petition, and the recent halting of U.S. Department of Energy (DOE) UF_6 barters.

Ux Price Indicators

Weekly* Ux U_3O_8 Price® *(4/16/18) **$20.50** (-$0.50)

Ux 3-Yr U_3O_8 Price $24.75 | Ux 5-Yr U_3O_8 Price $29.50

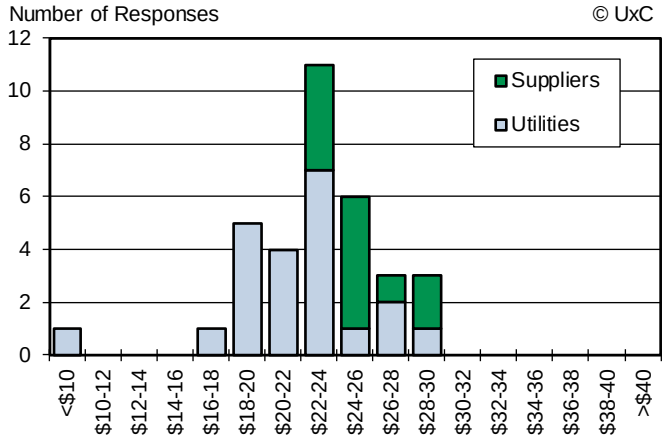
Month-end (3/26/18) **Calculated values*

U_3O_8	Spot	**$21.10**	Conversion	NA Spot	**$6.35**
	Spot MAP*	*$21.78*		NA Term	**$12.00**
	3-Yr Forward	$25.50		EU Spot	**$6.85**
	5-Yr Forward	$30.25		EU Term	**$12.00**
	Long-Term	**$30.00**	SWU	Spot	**$36.00**
UF_6 Spot	NA Price	**$61.25**		Long-Term	**$44.00**
	NA Value*	*$61.48*	EUP	NA Spot*	*$ 853*
	EU Value*	*$61.98*		NA Term*	*$1,198*

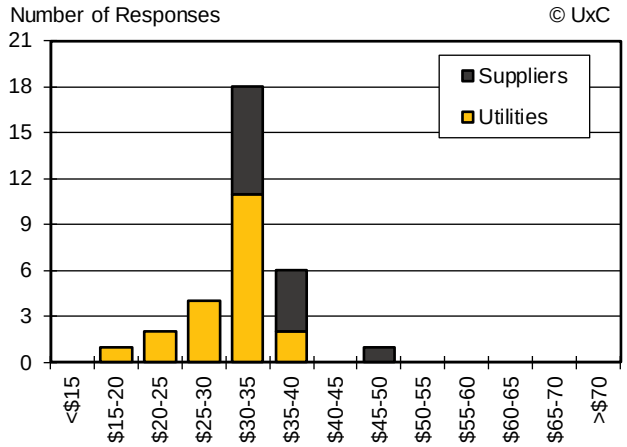
Long-Term Price for Year-End 2018 – Shifting to the long-term (LT) price, we can see from the bottom right chart that there is less expectation for any significant increase from the current $30 level. If there will be much change this year, utilities generally agree that it will be to the downside, whereas suppliers are more hopeful of a turnaround.

The negative price sentiments were again due to weak fundamentals in the current market. Moreover, the trend towards financing low cost inventory material into term contracts was mentioned as another reason why the LT price has little to no upward momentum. Additionally, the 232 petition has forced U.S. utilities to stall new term contracting activity, which in turn has reduced what limited demand exists. Reasons for an increase in the LT price were hard to find.

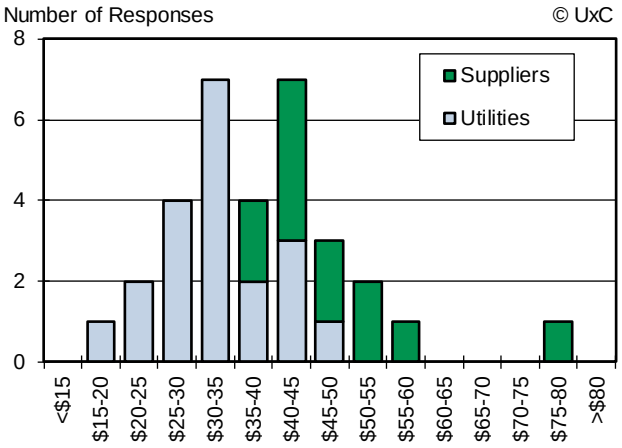
Where will the spot U_3O_8 price be at year-end?



Where will the Long-Term price be at year-end?



Where will the spot price be in 5 years (2023$)?



Spot Price in 2023 – Looking further out in time, we asked for market views on the spot uranium price in five years (i.e., in 2023). The above chart reflects the lack of any consensus on how the spot uranium prices will move in the next half-decade. Responses were wide-ranging, from as low as $15 to as high as $80 – the weighted average is roughly $38. As with previous questions, suppliers are more bullish about prices rising than utilities.

Starting with those arguing for little change from the current price levels, there is a belief among some that the ability of the market to rebalance, including a large work-off in inventories over the next five years, is unlikely. As such, some respondents suggest prices will fall in real dollar terms in the medium term. On the other hand, those that suggest a moderate increase in prices view the recent trend towards supply rationalization as likely having a more significant affect in reducing inventory overhang by 2023. These participants also believe demand will stabilize as additional reactor closures are prevented. The most bullish suppliers focus on the future uncovered needs of utilities and the higher production costs for new mines as drivers for a more rapid upward price trajectory. They also highlight more positive demand-side developments, such as large numbers of Japanese reactors restarting.

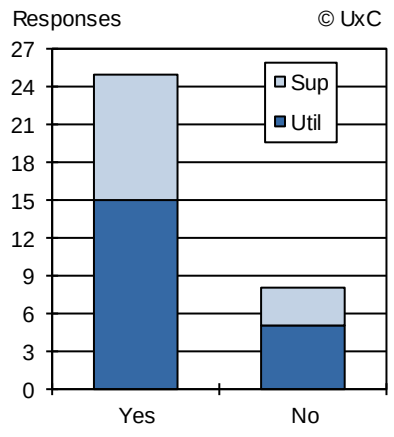
Are More Mine Production Cuts Necessary? – Given that ~9 million pounds U_3O_8 were cut back in 2017, and an additional 13 million pounds U_3O_8 is targeted to be cut in 2018, we asked survey participants if they believe more production cutbacks are still necessary. The responses shown in the bottom left chart indicate that a large majority of both utilities and suppliers think more cuts are still necessary.

As for those that do not want to see more cuts, a few arguments were made. The first is that the market should adjust to the latest cuts before doing more. Another point raised is that if more production is cut, this could further concentrate supply in the hands of just one or two large producers. On the other hand, the majority views on the need to cut more supply were plentiful with a large proportion of respondents suggesting that, even with the latest cutbacks, oversupply remains far too high. The need to work off inventories was highlighted by several, which can only occur if more output is reduced by primary producers. A notable number of respondents also focused on Kazakhstan as the place where more needs to be done to curtail production.

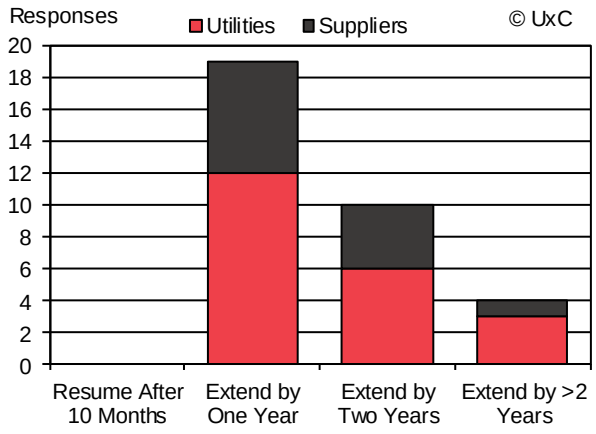
How Long Will Cameco Suspend McArthur River? – On a related topic, we asked for views on whether the announced 10-month suspension at Cameco's McArthur River mine and Key Lake mill will be implemented as currently announced or extended beyond ten months. The chart below shows that an extension of one year is seen as the most likely scenario, although a sizeable number of market participants believe that an even longer suspension is probable. Most telling is that nobody expects the mine to restart late this year when the initial ten months are over.

Given the preponderance of opinion that Cameco will extend the shutdown, the only real difference of opinion is about the length of the outage. In this regard, the main factor driving the length of the shutdown extension is the time it will take for an adequate increase in the spot price to justify a return to production. Although some acknowledge that Cameco will require uranium to place into its future contract commitments, those that view an extended outage as likely suggest that the more important factor for Cameco will be the future market price of uranium. As one person bluntly put it, "Hard to imagine they bring it back in a $20 market."

Global U production was cut back by ~9 million lbs in 2017, and an additional 13 million lbs is targeted to be cut in 2018. Do you believe more cuts are necessary?

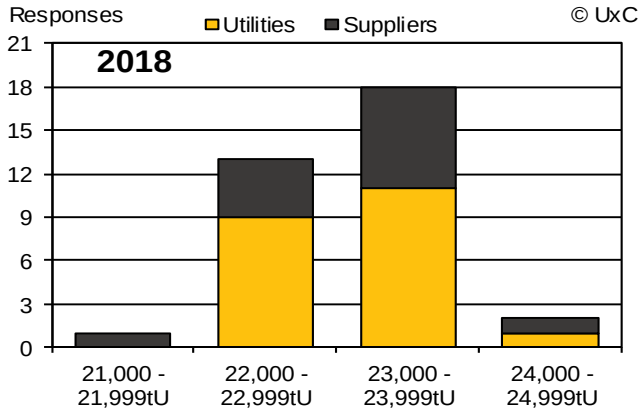


Cameco suspended McArthur River/Key Lake production in Jan. 2018. After 10 months, the company plans to evaluate whether to resume production or extend the suspension further. Which scenario is most likely going forward?

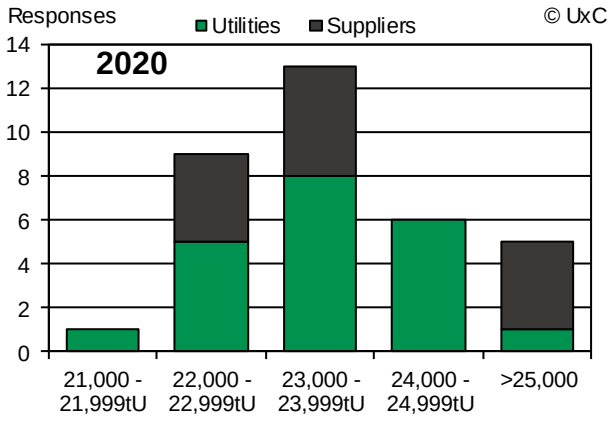


In late 2017, Kazatomprom announced its intention to reduce planned uranium production by 20% under the existing subsoil use agreements. Kazatomprom CEO Galymzhan Pirmatov clarified that Kazakhstan was expected to produce 23,000 tU (~59.8 million pounds U_3O_8) in 2017 and a similar amount in 2018.

What Kazakh production level do you see in 2018?



What Kazakh production level do you see in 2020?



Kazakh Production in 2018 and 2020 – Since the other big announcement in late 2017 was by Kazatomprom (KAP) regarding its production levels, we wanted to gauge market participants' expectations for the total output from Kazakhstan in both 2018 and 2020. The above two charts present the results. For both years, the majority expect Kazakh production to follow the KAP announced target of roughly 23,000 tU (~59.8 million pounds U_3O_8), although a sizeable number believe that Kazakh output will rise above that level by 2020.

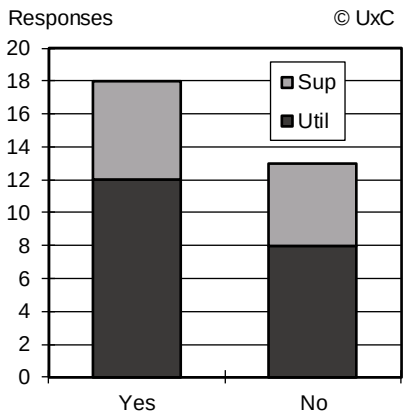
The comments to this question highlighted the general sentiment that, while KAP's messaging has been "confusing," there is also overall agreement that the world's largest uranium producer will do as it has said and maintain output near the 2017 level for the next three years. A discussion that follows from this question relates to why KAP is not reducing its output further, and to this point, there were several additional comments. One respondent noted that KAP is the dominant supplier, and therefore can squeeze other producers out of the market. Another noted that KAP's major market is China, and there is no reduction in demand from the world's fastest growing reactor market. Ultimately, since, as one person put it, KAP is "playing a different game," it seems that the market is expecting Kazakh production to remain unchanged from its current level for the foreseeable future.

Views on U.S. Uranium Producers' 232 Petition – One of the biggest developments in the uranium market this year is the request to the U.S. Department of Commerce (DOC) by Energy Fuels and Ur-Energy to seek relief from imports of uranium products to the U.S. on national security grounds, also known as a "232 petition." We asked a series of questions on this topic, with the results shown in the three charts at the bottom of this page. On the first question, there is a slight majority (~58%) who believe the petitioners will be successful. However, regarding whether a quota should be established in the interest of national security, a clear majority (~74%) say "no." For those that do want to see a quota, there is an obvious preference for a level of 25% of U.S. utility requirements, which has been proposed by the petitioners, although some utilities seem to be comfortable with lower levels (i.e., between 5% and 15%).

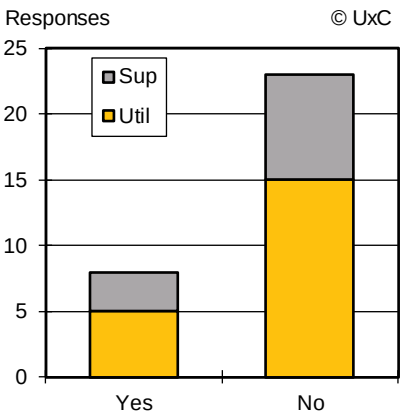
Naturally, this question elicited quite a few comments. Among U.S. utilities, there is a notable level of consternation

Last month, U.S. producers Energy Fuels and Ur-Energy filed a Section 232 petition with the U.S. Department of Commerce (DOC) for relief from imports of uranium products that threaten U.S. national security, specifically citing imports from Russia, Kazakhstan, Uzbekistan, and China. As proposed relief, the two U.S. producers are calling for domestic production to meet 25% of U.S. commercial reactor requirements.

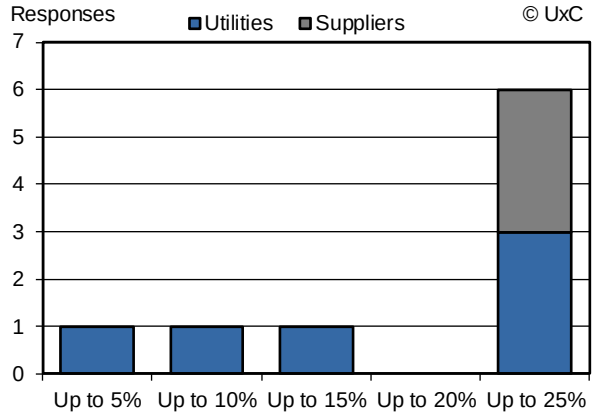
Will petitioners obtain relief?



Should quota be established?

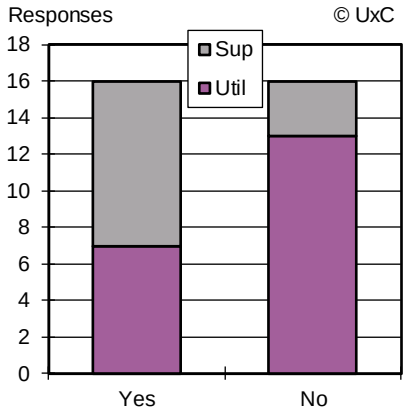


If yes, what % of U.S. requirements?

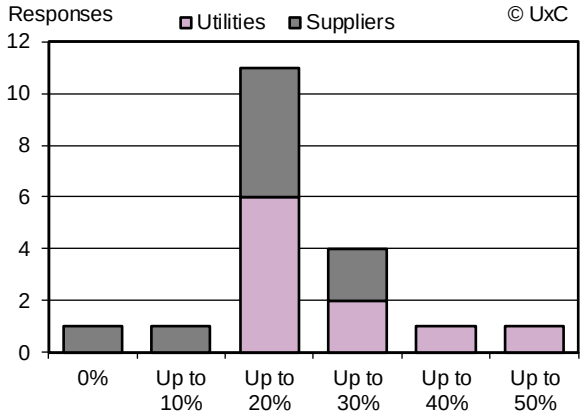


The U.S. DOC is conducting an administrative review of the Russian Suspension Agreement (RSA) as amended, which is currently set to expire in 2020, after which Russian access to the market could become unrestricted.

Should Ru access to U.S. be restricted after 2020?



If yes, what % of access should be given to Ru sales of nuclear fuel products in the U.S.?

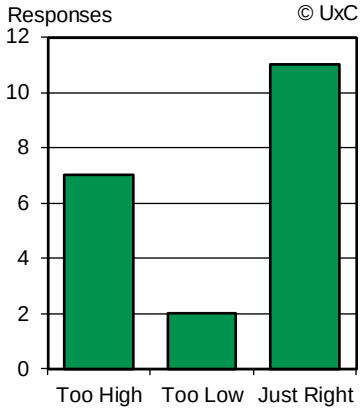


about the prospects that they may be forced to buy more uranium viewed as higher-priced. Several pointed out that they see the national security argument as weak, but they acknowledge that the current Trump administration is prone to use protectionist policies to help U.S. businesses. They also question the ability of U.S. producers to expand production sufficiently to meet 25% of total U.S. requirements. As for non-U.S. utilities, there appears to be a level of indifference about the whole issue. Suppliers are also of varied opinion, with U.S. producers clearly in favor and hoping for the U.S. government to give them relief while non-U.S. producers contend the global market works well enough to ensure U.S. national security, and therefore they see no rational reason to limit imports.

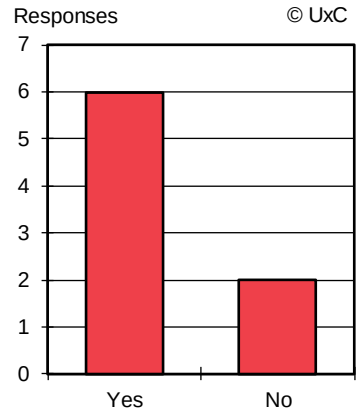
Future of Russian Suspension Agreement – Another major trade case under review by the U.S. DOC is the Russian Suspension Agreement (RSA), which is currently undergoing an administrative review requested by URENCO's U.S. subsidiary LES. The responses to our two questions on this topic are found at the top of this page. Surprisingly, there is a perfect 50/50 tie between those that think Russian access to the U.S. market should be restricted and those that want open access for Russian nuclear fuel imports. Not surprisingly, utilities are much more in favor of unrestricted access than suppliers. For those that do want to see a restriction stay in place after the RSA expires in 2020, the second chart shows that the current quota of 20% of the U.S. market is preferred by a wide margin. However, quite a few would be willing to have the quota increase to 30%.

In the comments, we again heard from many utilities that strongly favor open markets and fewer trade restrictions. Some noted that even if they choose to limit their procurement to 25-30% of total requirements for any single supplier, they should be able to make that decision on their own and not have the government pre-determine this for them. This is especially the case for enrichment supply, where there are currently only three primary global producers in the market. As for suppliers, a number pointed to the poor state of U.S.-Russian intergovernmental relations as a reason to remain cautious about giving Russia too much access to the U.S. market. Some also pointed out that Russian suppliers like TENEX may actually prefer maintaining a quota since this would create certainty regarding their future position in the U.S. market, thereby deterring any possible future antidumping trade action.

If a utility, do you believe your total nuclear fuel inventories (pipeline, strategic, other) are:



If "Too High," do you plan to reduce inventories in 5 years?



Utility Inventory Levels – Another hot topic in the industry is the level of inventories and the question of how much is excess to current and future needs. Since utilities are the largest holders of inventories, we wanted to gauge their views on the levels of their own inventories and what they may do with any excesses in the future. The two charts on this page present our findings. On the first question, a majority of those surveyed believe their inventory level is "just right." However, a sizeable number (~35%) said it is "too high," while only 10% responded "too low." As for those that feel they are holding too much, a clear majority (75%) plan to reduce their inventories in the coming five years.

Some said that they have already begun to implement an inventory reduction strategy due to current market conditions. In most cases, the process of reducing inventories is believed to involve the deferment of new contracting as opposed to direct sales back into the market.

Additional U.S. Premature Reactor Closures – Turning to our nuclear power-related questions, we first asked about the

state of the U.S. nuclear fleet and the potential for more early closure announcements beyond the 14 that were already completed and/or announced at the time we began this survey in early February. The bottom left chart on page 5 shows that nearly everyone that responded believes more announcements are coming with a range of opinions between one and six more units. It should be noted that since this question was asked, FirstEnergy announced plans at the end of March to close its four reactors prematurely by 2021, but that was not known by many who had already responded to our question before then.

In the comments, many pointed to FirstEnergy as a likely next victim of the negative economic pressures hitting U.S. utilities. No other possible casualties were named, but many seem to agree with the sentiment expressed by one respondent who said, "It's a bad time for [U.S.] nuclear utilities."

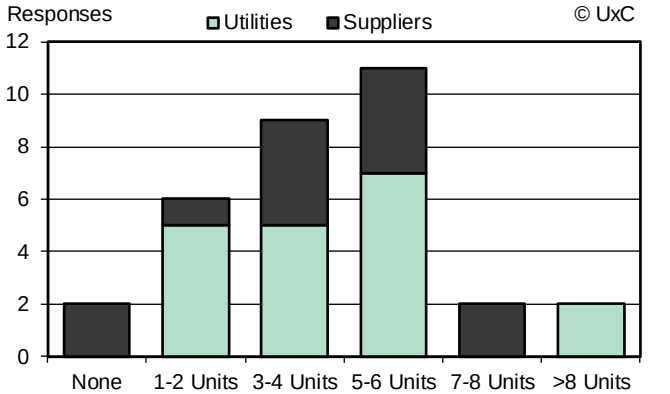
How to Save U.S. Reactors – A natural follow-on to the previous question is what should be done to prevent premature reactor closures in the U.S. Based on the results of our question (see bottom right chart), there is no obvious best choice for what should be done. While many seem to blame subsidies for renewables as the primary cause, others also want to see the U.S. Congress pass a tax incentive for nuclear power. Meanwhile, quite a few think the issue should be left to the individual states as currently is the case. Interestingly, very few agree with Secretary of Energy Rick Perry's proposed remedy whereby the Federal Energy Regulatory Commission (FERC) institutes a grid resiliency rule.

Other ideas mentioned were a national carbon tax, some form of limitation on the reliance on natural gas, and environmental regulations on hydrofracking. There is clear agreement that the situation as it currently stands makes much of the U.S. nuclear reactor fleet vulnerable; however, there is also apparently no silver bullet to solve this problem.

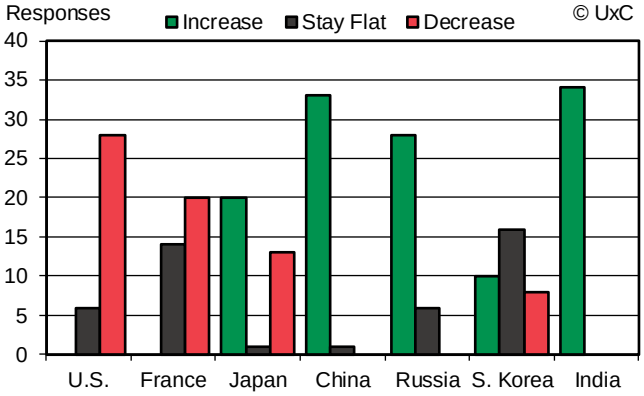
Prospects for Nuclear Power in Key Countries – Our last question asked respondents to tell us whether they expect nuclear power capacity to rise, fall, or stay unchanged by 2030 in seven key countries. The chart on the top right of this page shows that China, Russia, and India are most likely to see strong growth in the coming decade. South Korea is now seen as most likely to stay flat, while the responses for Japan reflect various interpretations of this question. Those that see reactor capacity growing in Japan mentioned that this relates to capacity online from future restarts and not total installed capacity, which is expected to drop in the future. As for the U.S. and France, the largest number of respondents seem to agree that the world's current two largest users of nuclear power will see their capacities fall by 2030.

In the commentaries, we heard from several who want to focus on other countries that will see future growth. In their view, this includes nations like UAE, Saudi Arabia, and others in the Middle East.

Six reactors have been closed in the U.S. since 2013 and another eight are announced for closure between 2018-2025, primarily due to negative economic conditions. How many more U.S. reactors do you believe will be closed prematurely by 2025?

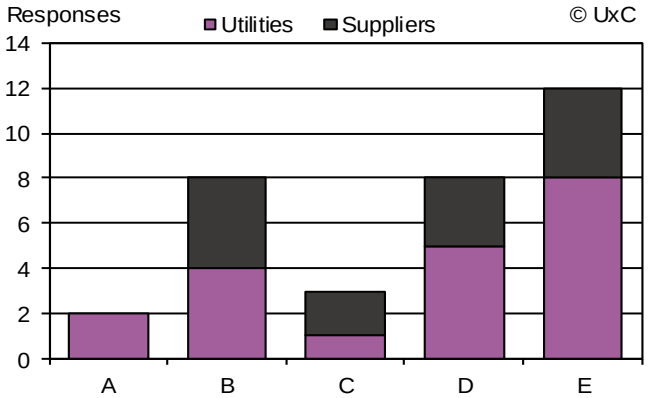


Globally, prospects for nuclear power remain mixed, including the largest existing user countries as well as the primary new build countries. Do you believe nuclear power capacities will increase, decrease, or stay flat through 2030 in the following key countries?



Efforts to save reactors in the U.S. have centered around providing incentives to increase their revenues, including laws passed in three states (New York, Illinois, and Connecticut). However, similar action by the Federal Energy Regulatory Commission (FERC) and by other states (e.g., Ohio and New Jersey) have so far not been successful. What do you believe should be done to save reactors?

A-Nothing (let the power market decide the reactors' fates)
B-U.S. Congress should pass a federal tax incentive laws for nuclear
C-FERC creates a new wholesale power market rule to support nuclear
D-Issue should be left to the states (e.g., zero emissions credits)
E-Create a level playing field by eliminating subsidies for renewables



Conclusions – This year's Winter Market Survey has again provided us with a plethora of useful insights into the current state of the uranium market and expectations for key developments in the coming years. One obvious takeaway is a general view that the market remains oversupplied and inundated with inventories, whereas demand expectations remain relatively weak amidst negative conditions for nuclear power in key markets, including the U.S. As such, our future price expectations predictions show that most believe the near-term is likely to see a flat market. However, compared with last year's Summer Market Survey, we find that the five-year forward price expectations this time are somewhat higher than just six months ago. Clearly, the recent production cutback announcements have had some impact in shifting perceptions in the market. However, as our current survey also shows, very few market participants believe the supply side has done enough to reduce output enough to fully rebalance the market. Moreover, since many utilities view their inventory levels as too high, it appears that the need for most utilities to commit to large new contracts may not be as likely as some suppliers may wish to believe.

Another major concern in the market is the recent developments regarding nuclear fuel trade policy, especially the latest moves involving the 232 petition and the RSA review. In both cases, there are clearly sides being drawn, with U.S. utilities strongly in favor of open access to imports, while suppliers like the U.S. uranium producers and LES are pushing for new or continued restrictions. While these cases are far from being resolved, they have already impacted the market and are creating a more volatile atmosphere.

As for the reactor and demand situation, responses to our survey indicate a general sense of negativity about the state of nuclear power in the U.S. On the other hand, there is still optimism about nuclear power's growth prospect in places like China, India, and Russia, and new markets in the Middle East are now seen as bright spots for the future.

Industry Calendar

- May 14-16, 2018
  ATOMEXPO 2018
  Rosatom
  http://2018.atomexpo.ru/eng
  Sochi, Russia
- May 21-23, 2018
  Nuclear Energy Assembly
  NEI
  https://www.nei.org/Conferences/
  Atlanta Marriott Marquis, Atlanta, GA, USA
- June 3-5, 2018
  WNFM 45th Annual Meeting
  World Nuclear Fuel Market (WNFM)
  http://wnfm.com/annualmeeting/
  Portola Hotel and Spa, Monterey, CA, USA
- June 7-8, 2018
  Decommissioning Strategy Forum
  https://www.exchangemonitor.com/evtx/decommisioning-2018/
  Gaylord Opryland Resort, Nashville, TN, USA
- June 26-28, 2018
  UxC Nuclear Fuel Training Seminar
  UxC
  https://www.uxc.com/p/products/uxc_seminar.aspx
  InterContinental Buckhead, Atlanta, GA, USA
- July 24, 2018
  Nuclear Fuel Supply Forum
  NEI
  https://www.nei.org/Conferences/
  The Mayflower Hotel, Washington, DC, USA
- September 5-7, 2018
  WNA 43rd Annual Symposium
  World Nuclear Association
  http://www.wna-symposium.org/
  Park Plaza Westminster Bridge, London, UK

Details are available at:
https://www.uxc.com/c/data-industry/Calendar.aspx

News Briefs

Draft sanctions bill submitted in Russian Duma targets U.S. trade

In a draft bill submitted on April 13, Russia's lower house of parliament, the State Duma, outlined a broad range of potential retaliatory actions against recently-imposed U.S. economic sanctions. Nuclear energy finds itself among the targeted industries, which also includes aerospace and agricultural products, as the bill proposes the suspension of cooperation between the two counties in the nuclear field. There are no details included in the bill, which ultimately leaves the government to make the final decision as to what actions should be taken against the U.S. if and when the bill is passed. The proposal is expected to be discussed by the Duma this week, but there is no timeframe regarding a vote on the bill.

Kremlin spokesman Dmitry Peskov said the government will study the bill, adding that no actions harmful to Russia's interests will be taken. Mr. Peskov's comments echoed those of Prime Minister Dmitry Medvedev, who told *RT* on April 11, "Response measures should be well-calculated, should not harm ourselves, they must be adequate." According to the draft bill, the economic measures could also apply to countries deemed to be supporting the U.S. sanctions as well as the latest U.S.-led strikes against Syria. The proposed draft bill has raised concerns in the nuclear industry about the possibility of Russia banning exports of nuclear fuel to the U.S. However, there has so far been no public statement by state-owned Rosatom regarding the possibility of any change to Russian nuclear exports to the U.S. or elsewhere.

New Jersey lawmakers approve nuclear subsidy

On April 12, New Jersey lawmakers approved a slate of bills designed to ensure the continued operation of PSEG's Salem and Hope Creek nuclear power plants there. The bills,

namely S-2313, direct the Board of Public Utilities (BPU) to establish a zero emissions certificate (ZEC) program for the state's nuclear power plants, passed the state senate 29-7 and the assembly 60-10. The bills are now on Governor Phil Murphy's desk awaiting signing.

The estimated annual cost of the ZEC program to New Jersey's ratepayers is $300 million per year via an increase of about $41 annually to the average power bill. Currently, about 40% of the state's electricity stems from three nuclear power plants: PSEG's Salem and Hope Creek and Exelon's Oyster Creek. However, Exelon said in February that it would close Oyster Creek in October 2018 due to high maintenance costs amid low power prices. PSEG spokesman Michael Jennings told *POWER* on April 13 that the ZEC program is vital to the state's energy security and its environmental goals. "Collectively, the benefits of preserving nuclear far outweigh the costs by 6-to-1. In the end, this wasn't about PSEG, but rather what is best for New Jersey."

Nuclear Energy Institute (NEI) President and CEO Maria Korsnick said, "Like New York, Illinois and Connecticut before them, the state's leaders have made a wise investment in New Jersey's clean energy future. Policymakers in Ohio and Pennsylvania now must follow suit and act expeditiously to preserve nuclear plants in their states."

Arizona Public Service warns that it might close Palo Verde nuclear plant

Arizona Public Service (APS) has warned that if voters in Arizona approve a ballot initiative in favor of renewable energy, the utility would be forced to close the Palo Verde nuclear power plant within ten years. The Clean Energy for a Healthy Arizona ballot initiative would amend the state's constitution to require renewable energy sources to account for half of the state's electricity generation by 2030. APS has stated that the extra electricity generated as a result of this would force it to shutter both nuclear and coal capacity. The Palo Verde nuclear power plant has three reactors with capacities of about 1,300 MWe each. The combined capacity of all three units makes Palo Verde the largest nuclear power plant in the U.S. The ballot initiative must secure enough signatures in order to be put up for a vote this November.

PJM Interconnection proposes changes to electricity market

Last week, PJM Interconnection, which manages the grid for a region of the U.S. covering New Jersey, Ohio, Virginia, a portion of Illinois and several other states, asked the Federal Energy Regulatory Commission to look at how subsidies for nuclear and coal power could impact the electricity market. PJM expressed concern that state government subsidies for nuclear and renewable power are threatening the viability of other types of power plants. Therefore, PJM wants the ability the change the way generation capacity is sold through the use of Capacity Repricing, which would use a two-stage auction process that allows states to continue providing subsidies without price distortion. "Left unaddressed the subsidies will crowd out efficient, competitive resources and shift to consumers the investment and operational risks of generation," said PJM CEO Andrew Ott as quoted by *Delaware Business Now*. "We seek the appropriate balance that respects state

EIA - U.S. Nuclear Power Plant Operations

Year	Net Gen. (MMkWh)	Summer Net Cap. (MkW)	Capacity Factor (%)	Operable Reactors	Nuclear % of Net Generation
1973	83,479	22,683	53.5%	42	4.5%
1974	113,976	31,867	47.8%	55	6.1%
1975	172,505	37,267	55.9%	57	9.0%
1976	191,104	43,822	54.7%	63	9.4%
1977	250,883	46,303	63.3%	67	11.8%
1978	276,403	50,824	64.5%	70	12.5%
1979	255,155	49,747	58.4%	69	11.4%
1980	251,116	51,810	56.3%	71	11.0%
1981	272,674	56,042	58.2%	75	11.9%
1982	282,773	60,035	56.6%	78	12.6%
1983	293,677	63,009	54.4%	81	12.7%
1984	327,634	69,652	56.3%	87	13.6%
1985	383,691	79,397	58.0%	96	15.5%
1986	414,038	85,241	56.9%	101	16.6%
1987	455,270	93,583	57.4%	107	17.7%
1988	526,973	94,695	63.5%	109	19.5%
1989	529,355	98,161	62.2%	111	17.8% *
1990	576,862	99,624	66.0%	112	19.1%
1991	612,565	99,589	70.2%	111	19.9%
1992	618,776	98,985	70.9%	109	20.1%
1993	610,291	99,041	70.5%	110	19.1%
1994	640,440	99,148	73.8%	109	19.7%
1995	673,402	99,515	77.4%	109	20.1%
1996	674,729	100,784	76.2%	109	19.6%
1997	628,644	99,716	71.1%	107	18.0%
1998	673,702	97,070	78.2%	104	18.6%
1999	728,254	97,411	84.9%	104	19.6%
2000	753,895	97,860	88.1%	104	19.8%
2001	768,826	98,159	89.3%	104	20.0%
2002	780,064	98,657	90.6%	104	20.3%
2003	763,733	99,209	87.8%	104	19.7%
2004	788,527	99,988	90.1%	104	19.9%
2005	781,987	99,988	89.3%	104	19.3%
2006	787,218	100,334	89.6%	104	19.4%
2007	806,426	100,266	91.3%	104	19.4%
2008	806,207	100,755	91.1%	104	19.6%
2009	798,854	101,004	90.3%	104	20.2%
2010	806,966	101,167	91.1%	104	19.6%
2011	790,205	101,419	89.1%	104	19.2%
2012	769,331	101,855	86.1%	104	19.0%
2013	789,016	99,240	89.9%	100	19.4%
2014	797,068	98,569	91.7%	99	19.5%
2015	797,177	98,729	92.2%	99	19.5%
2016	805,692	99,565	92.5%	99	19.8%
J	73,121	99,616	98.7%	99	21.4%
F	63,560	99,616	94.9%	99	21.9%
M	65,093	99,616	87.8%	99	20.3%
A	56,743	99,616	79.1%	99	19.3%
M	61,313	99,616	82.7%	99	19.1%
J	67,011	99,635	93.4%	99	18.8%
J	71,314	99,635	96.2%	99	17.8%
A	72,384	99,635	97.6%	99	18.9%
S	68,098	99,635	94.9%	99	20.4%
O	65,995	99,635	89.0%	99	20.7%
N	66,618	99,635	92.9%	99	21.7%
D	73,700	99,635	99.4%	99	21.3%
2017	804,950	99,635	92.2%	99	20.0%

* 1989 includes non-utility facilities.

policy while avoiding policy impacts of a state's subsidies on the market as a whole and on other states."

ASN inspection uncovers additional welding flaws at Flamanville 3 EPR

France's Nuclear Safety Authority (ASN) reported April 10 that it conducted an inspection of EDF's Flamanville 3 EPR reactor in northern France on how welds to the reactor's secondary system were checked following EDF's February discovery of issues with the system's welds. ASN said that the organization and working conditions during the manufacturing completion checks were "on the whole prejudicial to the quality of the checks." The regulator identified inappropriate surveillance by EDF and Framatome, stating that these companies "failed to identify and remedy the difficulties being experienced by the operators." ASN said that certain welding flaws are still under investigation to determine why they were not detected during the manufacturing completion inspections.

Reuters reported that the weldings are worse than initially expected, and thus could potentially delay Flamanville 3's projected 2018 startup. When EDF initially reported the welding problems in February, the company said there would be no impact on safety, costs, or the startup schedule. EDF said, "Following the current checks and the licensing process by the ASN, EDF will be able to specify whether the project requires an adjustment to its timetable and its costs."

The secondary circuit consists of nearly 400 meters of piping that conducts steam from the reactor's four steam generators to the plant's turbine, and pumps condensed water back to the steam generators. EDF Head of New Nuclear Xavier Ursat said that testing and review of the weldings will be completed by the end of May.

Kansai EPC completes fuel loading at Ohi 4

Kansai Electric Power Co. (EPC) reported April 11 that it had successfully completed the loading of 193 total fuel assemblies into the core of Unit 4 at the Ohi nuclear power plant in Fukui Prefecture, Japan. Fuel loading commenced on April 8 and was concluded on April 11. Kansai EPC expects to restart Ohi 4 sometime in mid-May.

Ohi 3 was restarted in March and achieved commercial operation on April 10 after completing pre-service inspections by Japan's Nuclear Regulation Authority (NRA). Ohi 3 & 4 are 1,180 MWe PWRs.

Japan energy panel forecasts nuclear to aid in 2050 emissions targets

On April 10, *Reuters* reported that an influential Japanese energy advisory panel recently said that nuclear energy could play a role in meeting the country's long-term emissions reduction targets. The panel listed nuclear power as a potential option for Japan to reduce carbon emissions by 2050, thus implying the possibility of building new reactors. The energy advisory panel's recommendations are set to feed into Japan's 2030 basic energy plan and measures to cut carbon emissions by 2050.

Ministry of Economy, Trade and Industry Energy Strategy Director Shogo Tanaka said, "The report does not specifically talk about possible building of new reactors or replacing existing reactors, but it does not deny such a possibility either." The advisory panel, however, did not give a proposed energy mix in future years. Rather, it called specifically for an increase in renewable energy to make it a key and economically independent power source by 2050, citing accelerating development of hydrogen and energy storage technology.

Barakah 4 dome completed

Emirates Nuclear Energy Corp. (ENEC) reported April 10 that it successfully completed the Reactor Containment Building (RCB) dome for Unit 4, the final unit of the Barakah Nuclear Energy Plant, located in Abu Dhabi, UAE. The dome is the final structural component of the RCB, which houses the reactor pressure vessel, steam generators, and other major components.

ENEC reported that Unit 4's Reactor Coolant Loop (RCL) pipe welding, and the setting of key equipment have also been completed. Furthermore, the company has concluded "a significant amount" of major equipment setting at the reactor. Overall, construction completion of units 1-4 at Barakah stands at 87%.

ENEC CEO Mohamed Al Hammadi said, "Construction of last unit of the plant commenced in 2015, and it continues to benefit from the lessons learned and experience gained by the teams responsible for the construction of the other three units. With construction completion for Unit 4 currently standing at 67%, the next phase for the unit will be to start the transition from construction to testing and commissioning."

Kori 4 restarts in South Korea

Yonhap News Agency reported April 12 that South Korea's Nuclear Safety and Security Commission (NSSC) has confirmed the safety of the Kori 4 nuclear reactor operated by Korea Hydro & Nuclear Power (KHNP) following its shutdown in March 2017 due to a coolant leak. "We have confirmed that there is nothing that could compromise safe operation of the reactor," said NSSC. The Commission will now oversee eleven follow-up safety tests through to a full commercial restart of the reactor over the next few days.

CGN commences fuel loading at Taishan 1

Reuters reported April 11 that China General Nuclear (CGN) has begun loading fuel at Unit 1 of the Taishan nuclear power plant in Guangdong province, China. The Nuclear Safety Commission (NSC) also confirmed that it consented to fuel loading, thus moving Taishan 1 closer to becoming the world's first operating EPR. Fuel loading at the site began late on April 10.

CGN holds a 70% interest in Taishan 1 with France's EDF holding the remaining 30%. The two EPRs at Taishan have

been subject to repeated delays, technical issues, and cost overruns since starting construction in 2009. China's NSC said in March that it expected Taishan 1 to be completed and begin startup by the end of 2018.

CNNC ships reactor internals to Fuqing 5

China National Nuclear Corp. (CNNC) announced April 11 that the reactor internals for the first demonstration Hualong One (HPR-1000) reactor, Unit 5 at the Fuqing nuclear power plant, have been shipped from the manufacturing plant. The reactor internals were designed by China Nuclear Power Research & Design Institute and manufactured by the Shanghai No. 1 Machine Tool Plant. The internals consist of the major structures within the reactor pressure vessel, vital to supporting the core, maintaining fuel alignment, directing primary coolant flow, providing radiation shielding, and guiding in-core instrumentation.

Pouring of first concrete for Fuqing 5 began in May 2015 with Unit 6 commencing constructing in December of that same year. Fuqing 5 is targeted for completion in 2019 with Unit 6 following in 2020.

No timetable for Kuosheng 2 restart

Taiwan News reported April 15 that Unit 2 at the Kuosheng nuclear power plant in New Taipei, Taiwan, remains offline today with no firm schedule for restart. Kuosheng 2 has been undergoing restart operations, but the reactor automatically shut down on March 28 because of a steam pressure overload. Speaking at a media roundtable last week, Premier Lai Ching-te iterated that safety will not be sacrificed to meet rising energy demand. He said that Kuosheng 2 operator Taipower must first pass a Cabinet-level Atomic Energy Commission (AEC) inspection to restart the reactor. "The government will never sacrifice the health of its citizens in exchange for economic development," said Lai.

Kuosheng 2 was shut down following a two-year stint offline for repairs and a maintenance overhaul. Taipower filed an application with the AEC in February 2018 to restart the reactor.

Atucha 1 operating license extended to 2024

World Nuclear News reported April 16 that Autoridad Regulatoria Nuclear (ARN) has extended the operating license of Unit 1 at the Atucha nuclear power plant in Argentina. The updated license allows the 44-year-old Pressurized Heavy Water Reactor (PHWR) to operate until 2024. ARN granted the permit to Atucha 1 to operate for five years of full power generation, or until September 29, 2024, whichever occurs first.

The Atucha nuclear power plant is home to two of Argentina's three operating reactors – all of which are PHWRs. The country is also constructing a 25 MWe CAREM prototype SMR at the Atucha site. Nuclear power accounts for about 10% of Argentina's total energy supply.

Bechtel discussing participation in Saudi Arabia's nuclear program

Bechtel's CEO Brendan Bechtel said his company is interested in participating in Saudi Arabia's planned nuclear power program. Negotiations are now in progress between the company and Saudi Arabia's King Abdullah City for Atomic and Renewable Energy. "It's going to be highly competitive and there are multiple solutions from different nation-states competing," said Bechtel as quoted by *Bloomberg*. "The U.S. is going to need to be competitive to secure a role." Saudi Arabia anticipates that it will sign a contract for two reactors before the end of the year.

ERA's Ranger production declines 26% in Q1 2018

Energy Resources of Australia Ltd. (ERA) reported April 11 production results for the first quarter of 2018 (Q1 2018). ERA said that processing stockpiled ore at the Ranger mill in Northern Territory, Australia returned 974,000 pounds U_3O_8 during Q1 2018, which is down 26% from ~1.32 million pounds U_3O_8 in Q1 2017. The company noted that Q1 production was affected by mill maintenance, declining grades, and weather events during the quarter. Furthermore, ERA said that the higher-grade laterite stocks have been substantially exhausted in line with the mine plan. Ranger production henceforth is based on the processing of primary ore stockpiles.

ERA maintained its production guidance for 2018 at between 3.5-4.4 million pounds U_3O_8 from the processing of stockpiled ore. Rio Tinto Uranium markets 100% of Ranger production.

Battery minerals show potential to improve Mulga Rock economics

On April 12, Vimy Resources Ltd. announced that the recently completed Definitive Feasibility Study (DFS) at the Mulga Rock uranium project in Western Australia shows that the operation's economics could be improved by base metal byproduct credits. The Mulga Rock DFS investigated a stand-alone base metals plant onsite, designed to recover copper, zinc, nickel, and cobalt as mixed sulfide by-products from the tailings of the uranium plant. While the DFS was focused solely on mining uranium at the project, Vimy says that growing demand for base metals prompted a review of the base metals plant.

Initial indications show that a base metals plant at the Mulga Rock project could return byproduct credits of approximately US$4 per pound U_3O_8. Going forward, Vimy expects to complete an updated study on the base metals plant in 2018 comprised of the latest drilling, an updated base metals by-product mine schedule, a flowsheet review, metallurgical recoveries and reagent consumption updates, and updated capital and operating costs.

Vimy Managing Director and CEO Mike Young said,

"Mulga Rock is first and foremost a uranium project that happens to have base metal by-products. However, it makes sense to re-examine the base metals plant given the strength in prices and growing demand for base and battery metals. It now appears that the base metals circuit has gone from breakeven to a position of enhancing the already strong uranium economics of the Mulga Rock Project.

Ur-Energy releases Q1 2018 operational results

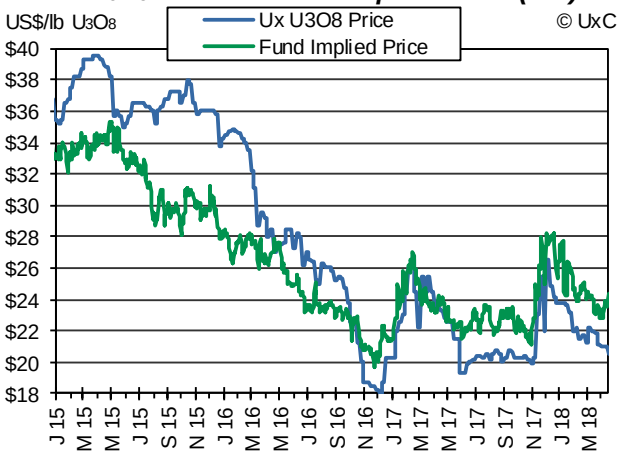
On April 12, Ur-Energy Inc. reported operational results from the Lost Creek in-situ recovery (ISR) uranium project in Wyoming for the first quarter ended March 31, 2018 (Q1 2018). The Lost Creek plant captured 84,047 pounds U_3O_8 during Q1 2018, 79,961 pounds U_3O_8 were packaged in drums, and 73,515 pounds U_3O_8 of drummed inventory were shipped. As of March 31, 2018, inventory at the conversion facility was approximately 159,296 pounds U_3O_8.

Q1 2018 sales totaled $19.7 million on 380,000 pounds U_3O_8 at an average price of $51.75 per pound. Ur-Energy said it sold 10,000 pounds of Lost Creek production into a spot sale at $23.75 per pound. The remaining 370,000 pounds U_3O_8 were purchased at an average cost of $25.00 per pound and sold into term contracts at $52.50 per pound. The company noted that the purchase contracts were entered into at various times and purchase prices ranged from $22.25 to $26.55 per pound. The small sale from production was done for tax purposes, said Ur-Energy.

During Q1 2018, the second of the first three header houses in the second mine unit (MU2) commenced production, with the third header house online sometime in April. The company said that both grades and flow levels continue to increase. Since commencing production, Lost Creek U_3O_8 head grades have averaged 85.7 mg/l for life-of-project. Ur-Energy said it suspended further MU2 development activities, implemented further cost reductions, including an additional reduction in force, and secured purchase contracts for nearly 100% of its 2018 delivery obligations in line with its 2018 Lost Creek operational plan. Production from the company's operating MU1 and MU2 header houses will be used to build an inventory position of finished product at the conversion facility, which will provide flexibility to react to changing market conditions and easily restart development activities at MU2.

Ur-Energy said it expects to deliver a total of 470,000 pounds into term contracts in 2018 at an average price of approximately $49 per pound. The remaining 100,000 pounds will be delivered in Q2 2018.

Ux U_3O_8 Price vs. Fund Implied Price (FIP)



UCIL to revive Musabani uranium recovery plant

According to an April 13 article in *The Times of India*, Uranium Corporation of India Ltd. (UCIL) will revive its uranium recovery plant in Musabani, India. In light of improved prospects for copper mining, Musubani-based Hindustan Copper Ltd. (HCL) has decided to expand its mines and its concentrator plant, and UCIL has similarly decided to revive its uranium recovery plant at the same location.

The proposed Musabani Uranium Recovery Plant (MURP) will utilize tailings received from HCL's Copper Concentrator Plant (HCCP) to extract uranium-bearing material. The uranium content of the tailings will be upgraded through beneficiation. After recovery of the uranium bearing material, the remaining tailings will be pumped back to HCCP.

The proposed plant will be operated in three shifts per day for 300 days per year, with 22 hours of daily work. Initially the plant will operate with copper tailings throughput of 450,000 t/year and later increase to 900,000 t/year in line with the expansion plan of the concentrator plant. The uranium ore grade is believed to average around 0.01% U_3O_8, which could yield up to ~198,000 pounds U_3O_8 per year.

Bannerman reports Etango Membrane Study results

Bannerman Resources Ltd. announced April 11 that it has completed the Membrane Study (MS) for its Etango uranium project in Namibia. The company said that the MS delivered substantial reagent and operating cost reductions, which is to be confirmed in the Etango Definitive Feasibility Study Update (DFS Update). The MS was commissioned to test the effectiveness of five membrane types on two different solution streams generated from the Etango Heap Leach Demonstration Plant (HLDP): concentrated eluate stream from an Ion Exchange (IX) process; and Pregnant Liquor Stream directly from the heap leach circuit (without an IX circuit).

Bannerman said that the MS demonstrates that nano-filtration provides several benefits to the Etango plant, including: acid recovery for reuse; uranium solutions upgraded nearly ten-fold; and removal of deleterious elements. The nano-filtration process delivers potentially substantial cost savings as well, with over 80% of acid recovered leading to a corresponding decrease in acid-neutralization chemical volumes. Bannerman contends that the reuse of acid could lead to further cost savings via a reduction in downstream equipment size. Finally, the MS confirms that IX with nano-filtration is favorable over Solvent Extraction (SX), which Bannerman intends to replace in the DFS Update.

The Market

Uranium Spot & Forward Market

Spot activity throughout the second week of April was very similar to that reported for the first week; largely inactive. During the week, a U.S. utility received offers for up to about half a million pounds U_3O_8 equivalent as UF_6 with delivery over the next 12-13 months and is believed to have made its selection(s). The IAEA also continues to evaluate offers for EUP with delivery this year.

However, the week's overall activity was low with spot demand interest remaining limited, resulting in only a few transactions based off new activity and pricing flat with some downward pressure through Thursday. As we witnessed the previous Friday, a seller emerged late in the day seeking to place material against limited demand and offering it down. Not unexpected, the few potential buyers that had active bids also stepped them down in response. However, unlike the previous week, no transaction was reported as a result of this movement.

Buying interest today also remains limited as many are preparing for travel to this week's WNFC meetings in Madrid, Spain. Based on recent activity as well as currently available bids and offers, the Ux U_3O_8 Price slips this week to $20.50 per pound, down $0.50 for the week. The Ux 3-Year and 5-Year U_3O_8 Forward Prices also slip this week to $24.75 and $29.50 per pound, respectively (see chart on page 13).

With the recent news stories concerning Russia's intention for sanctions against the U.S. nuclear industry among others (see page 6), along with the ongoing activity surrounding the U.S. miner 232 petition, potential support of U.S. reactors, and the warning that more may be shut down (see page 7), there will be plenty to discuss at the WNFC meetings. Some of the questions raised may relate to how recent news impacts utility procurement plans for the remainder of the year.

UxC Market Statistics

Monthly (Apr)	Spot		Term	
	Volume	# Deals	Volume	# Deals
U_3O_8e (million lbs)	W	10	0	0
Conv. (thousand kgU)	W	2	0	0
SWU (thousand SWU)	0	0	0	0
2018 Y-T-D	**Spot**		**Term**	
	Volume	# Deals	Volume	# Deals
U_3O_8e (million lbs)	>17.5	106	>10.0	8
Conv. (thousand kgU)	>1,187	9	W	3
SWU (thousand SWU)	W	1	W	1

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. 2018.

Uranium (Range: -17 to +17)	**-4** [unchanged]
Conversion (Range: -16 to +16)	**+3** [unchanged]
Enrichment (Range: -18 to +18)	**-9** [unchanged]
Platts Forward Uranium Indicator A forward one-week outlook.	**$20.50-$21.50** As of 4/13/18 (US$/lb)

UxC Broker Average Price

The UxC Broker Average Price (BAP) started the week down $0.25 to $20.81 per pound on Tuesday. By Friday, the midpoint continued to slide posting $20.56, down $0.06 on the day. Today's UxC BAP is $20.44 per pound, down $0.12 from Friday and down $0.62 from last week's $21.06. The BA Bid is $20.00, down $0.75 from last Monday's $20.75 and the BA Offer is $20.88, which is down $0.50 from last Monday's $21.38.

Fund Implied Price (FIP)

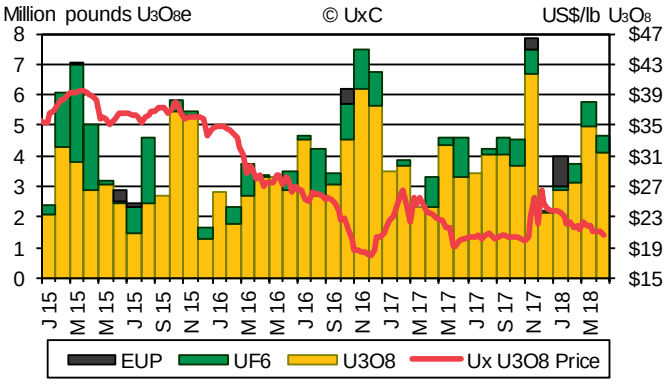
Fund Implied Prices (FIP) began the week on Tuesday at $23.90. After taking a dip in the middle of the week, the FIP ended Friday at $23.68, up $0.13. Today's FIP is $24.31, up $0.63 from Friday and up $0.57 from Monday's $23.74. The latest FIP information can be found in the chart on page 10.

U_3O_8 Futures Market

The CME Group futures market for uranium was again quiet during the week as no new contract volume was booked. Prices on the strip declined by an average of about $0.28 or 1.3% during the week. For the latest futures market prices, please refer to the table on page 13.

As no new volume was booked, the 2018 annum total remains unchanged from last week at 885 contracts (221,250 pounds U_3O_8). Open interest realized the only change on the market with the closure of the March 2018 contract month. The closure removed 200 contracts (50,000 pounds U_3O_8), and total open interest now stands at 2,764 contracts (691,000 pounds U_3O_8).

Ux U_3O_8 Price vs. Spot Volume by Form

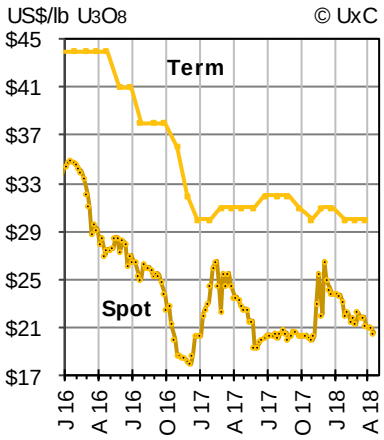


Sewing

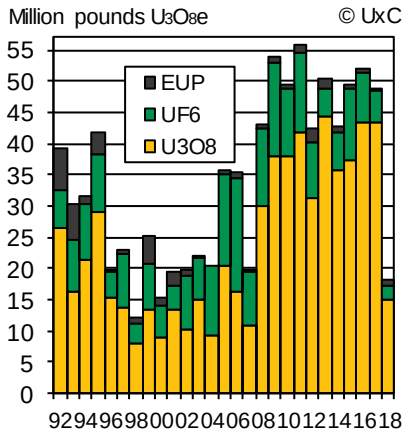
My granddaughter came to spend a few weeks with me, and I decided to teach her to sew.

After I had gone through a lengthy explanation of how to thread the machine, she stepped back, put her hands on her hips, and said in disbelief, "You mean you can do all that, but you can't operate my Game Boy?"

Ux U_3O_8 Prices



Annual Spot Uranium Volumes



Ux Price Indicators (€ Equiv‡)

Weekly (4/16/18)		1 US$ =	**.80800€**
Ux U_3O_8 Price		**$20.50**	€16.56
Ux 3-Yr Forward		$24.75	€20.00
Ux 5-Yr Forward		$29.50	€23.84
Mth-end (3/26/18)		1 US$ =	**.80290€**
U_3O_8	Spot	**$21.10**	€16.94
	Spot MAP†	*$21.78*	€17.49
	3-Yr Forward	$25.50	€20.47
	5-Yr Forward	$30.25	€24.29
	Long-Term	**$30.00**	€24.09
Conversion	NA Spot	**$6.35**	€5.10
	NA Term	**$12.00**	€9.63
	EU Spot	**$6.85**	€5.50
	EU Term	**$12.00**	€9.63
UF_6 Spot	NA Price	**$61.25**	€49.18
	NA Value*	*$61.48*	€49.36
	EU Value*	*$61.98*	€49.76
SWU	Spot	**$36.00**	€28.90
	Long-Term	**$44.00**	€35.33
EUP	NA Spot**	*$ 853*	€ 685
	NA Term**	*$1,198*	€ 962

Uranium Term Market

For the week leading up to the WNFC meetings, the term uranium market has been quiet with no new demand or reported contract awards, although some off-market discussions are continuing. While some utilities may enter the market after this week's face-to-face discussions in Madrid, issues of potential sanctions or restriction could further delay decisions and market entry for some buyers. A non-U.S. utility is evaluating offers based on its request for about 2.5 million pounds U_3O_8e with delivery in 2020-2025. A non-U.S. utility is evaluating offers for EUP or its components with delivery in 2019-2023 (for about 2.3 million pounds U_3O_8e) and optional years in 2024-2028 (for a potential 3.6 million pounds U_3O_8 of additional quantity). A non-end user remains active in the market evaluating offers based on its request for a large quantity of EUP with delivery over the 2019-2023 time period.

Conversion & UF_6

Although a UF_6 award was reported, activity in the conversion market was quiet over the past week with no new demand for either spot or term delivery. A U.S. utility that entered the market with a quick turnaround request for UF_6 is believed to have made its selection(s). The IAEA remains active in the market evaluating offers for EUP with delivery later this year. For term, a non-U.S. utility is evaluating offers from qualified bidders based on its request for just under one million kgU of UF_6 for delivery in 2020-2025. A non-end user is out for EUP with delivery in 2019-2023. A non-U.S. utility is evaluating offers based on its request for EUP or its components with delivery in 2019-2023 and options through 2028 (up to 2.3 million kgU as UF_6).

Enrichment & EUP

The enrichment market remains quiet with no new demand or reported transactions over the past week. The IAEA is evaluating offers for EUP with deliveries later this year. A non-U.S. utility continues to evaluate offers for EUP or its components with delivery in 2019-2023 (totaling just over 650,000 SWU) and options for 2024-2028 (adding up to one million SWU). A couple of other utilities are looking at mid-term options. A non-end user is also seeking large quantities of SWU contained in EUP with delivery in 2019-2023.

Ux Price Indicator Definitions

The Ux Spot 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, taking into consideration information on bid prices for these products and services and the timing of bids and offers as well. *The **Ux U_3O_8 Price**® (Spot) includes conditions for delivery timeframe (≤ 3 months), quantity (≥ 100,000 pounds), and origin considerations, and is published weekly. †The **Ux U_3O_8 Monthly Average Price** (Spot MAP) represents the average of all weekly Ux U_3O_8 Prices for the month. The **Ux 3-Year** and **5-Year U_3O_8 Forward Prices** reflect UxC's estimate of prices for U_3O_8 delivery 36 and 60 months forward taking into account market activity and other indicators, using the same quantity and origin specifications as the Spot indicator. The **Ux LT U_3O_8 Price** (Long-Term) includes conditions for escalation (from current quarter), delivery timeframe (≥36 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 (Term) for multi-annual deliveries with delivery in North America (NA) or Europe (EU). The **Ux NA UF_6 Price** includes conditions for delivery timeframe (6 months), quantity (50-150,000 kgU), and delivery considerations. *The **Ux NA** and **EU UF_6 Values** represent the sum of the component U_3O_8 (multiplied by 2.61285) and conversion spot prices as discussed above and, therefore, do not necessarily represent the most competitive UF_6 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 spot Ux U_3O_8 and Forward Prices, are published the last Monday of each month. 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. (Units: U_3O_8 = US$ per pound, Conversion/UF_6: US$ per kgU, SWU: US$ per SWU, EUP: US$ per kgU)*

The Platts Forward Uranium Indicator price range belongs to S&P Global Platts and is published with permission. Definition of this price is available from Platts.

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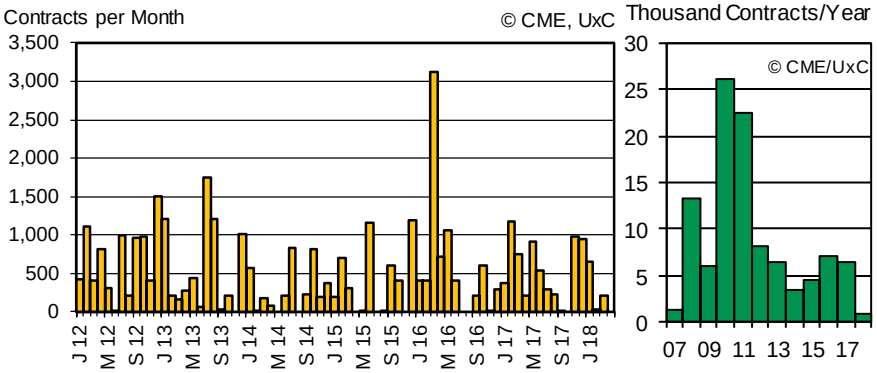
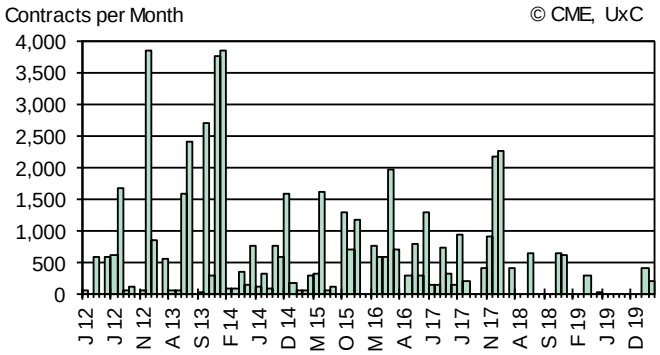
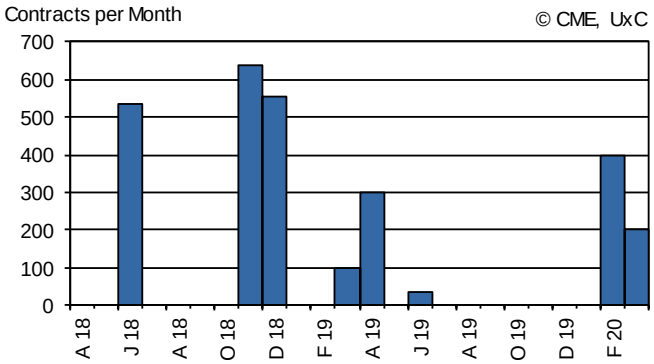
CME/NYMEX UX Futures Activity
Total Contracts by Transaction Month, by Transaction Year



Total Contracts by Settlement Month



Open Interest by Settlement Month

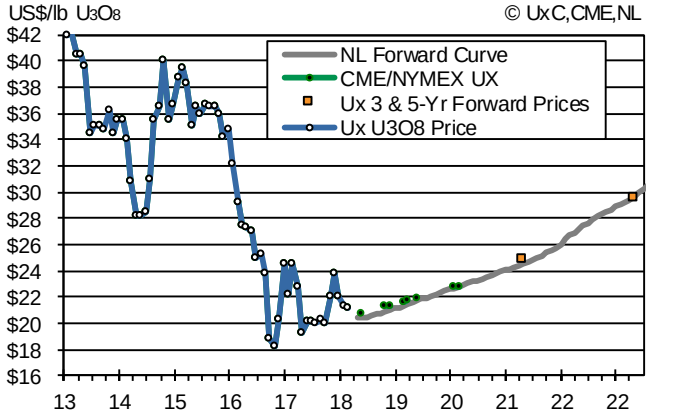


CME Uranium U_3O_8 (UX) Futures

Activity as of April 13, 2018

	Settlement	Price	Volume	Open
U_3O_8	May 2016	**$27.25**	600	N/A
	Jun 2016	**$27.00**	1,963	N/A
	Jul 2016	**$25.00**	700	N/A
	Sep 2016	**$23.75**	300	N/A
	Oct 2016	**$18.75**	800	N/A
	Nov 2016	**$18.25**	300	N/A
	Dec 2016	**$20.25**	1,300	N/A
	Jan 2017	**$24.50**	133	N/A
	Feb 2017	**$22.25**	133	N/A
	Mar 2017	**$24.50**	733	N/A
	Apr 2017	**$22.75**	333	N/A
	May 2017	**$19.25**	133	N/A
	Jun 2017	**$20.10**	941	N/A
	Jul 2017	**$20.15**	200	N/A
	Oct 2017	**$19.95**	400	N/A
	Nov 2017	**$22.00**	900	N/A
	Dec 2017	**$23.75**	2,166	N/A
	Jan 2018	**$22.50**	2,267	N/A
	Mar 2018	**$21.10**	400	N/A
	Jun 2018	**$20.65**	636	534
	Nov 2018	**$21.25**	640	640
	Dec 2018	**$21.35**	609	555
	Mar 2019	**$21.65**	100	100
	Apr 2019	**$21.75**	300	300
	Jun 2019	**$21.95**	35	35
	Feb 2020	**$22.70**	400	400
	Mar 2020	**$22.70**	200	200
	*From May 2007	**Totals:**	**106,317***	**2,764**

Ux U_3O_8 Price vs. CME/NYMEX Forward UX Price Curve



UxC Broker Average Price (BAP) Definition

*The **UxC BAP** (Broker Average Price), subject to the terms listed, is a calculated average mid-point of bid and offer prices as supplied to UxC by participating brokers. The participating brokers are Evolution Markets and Numerco Limited (the "Brokers"). Data posted by the Brokers are kept confidential and will not be published or made available independently. The Broker data are subject to verification by The Ux Consulting Company, LLC (UxC), which compiles and reports the UxC BAP. In order to have a sufficient number of data points and to represent submissions by all of the Brokers, the UxC BAP includes the best bids and offers reported up to a three-month forward period. This period is consistent with the three-month delivery period for offers considered in the determination of the **Ux U_3O_8 Price**. On a daily basis, the Brokers submit their best bids and offers over a forward three-month period through a secure system. From these postings, UxC separately calculates the UxC Broker Average (BA) Bid and the UxC Broker Average (BA) Offer prices. The UxC BAP is a simple mid-point average of the **UxC BA Bid** and **UxC BA Offer** prices. Other Broker data collected include lot volume on a per offer basis. The UxC BAP is published on a daily basis and is made available to subscribers through email updates and UxC's Subscriber Services website.*