## THE MONTHLY MONITOR

## OCTOBER 2017

URANIUM PRICES	LONG TERM PRICE US\$/Ib U <sub>3</sub> O <sub>8</sub>		SPOT PRICE US\$/Ib U <sub>3</sub> O <sub>8</sub>
September 1, 2017	\$32.00	•	\$20.12 📕
October 1, 2017	\$31.00	<b>↓</b>	\$20.32
December 31, 2017	\$30.00	Ŧ	\$22.50 1
March 31, 2018	\$35.00	1	\$24.00
June 30, 2018	\$37.50	1	\$27.00
September 30, 2018	\$39.50	1	\$31.00
December 31, 2018	\$39.00	Ŧ	\$29.00
December 31, 2019	\$44.50	1	\$35.00
December 31, 2020	\$47.00	1	\$42.00

July 1, 2017	440.73	1		
August 1, 2017	445.52	1		
September 1, 2017	426.53	Ŧ		
October 1, 2017	418.99	Ŧ		
<b>WORLD NUCLEAR</b> ASSOCIATION	ł			
Clobal Deactor Count	#	GMa		

Global Reactor Count	#	GWe
Operable	447	392
Under construction	58	63
Planned	162	168
Proposed	349	400

UXC: UX Consulting Company

#### **MONTH IN REVIEW**

September saw little movement in Uranium prices with the longterm price dropping by US\$1.00 to US\$31.00/lb. This is in line with our expectations and we expect to see a bit more slippage before the end of the year. We do continue, however, to anticipate an upward trajectory commencing in 2018 that should bring new life to the sector.

For now, equities continue to languish with the  $SLU_3O_8$  Equity Index dropping slightly by 1.8% to 418.99.

Good news out of Japan saw their Nuclear Regulation Authority (NRA) take a more sympathetic attitude towards their approval of TEPCO's No. 6 and 7 Kashiwazaki-Kariwa reactors. This may signal a new urgency from the NRA in getting the remaining Japanese reactors back on line.

### WHO HOLDS THE KEY TO HIGHER U PRICES?

**EXCLUSIVE TO SIGHTLINE U**<sub>3</sub>**O**<sub>8</sub> – It is a fundamental economic cycle: Prices move up or down and the industry adjusts supply/demand. Industry supply/demand moves and the prices adjust accordingly...then we start again. Why, when it comes to uranium prices, does the timing of these activities defy prediction?



Since 2007, long-term  $U_3O_8$  prices have fallen to record lows, currently (US\$31.00/ lb). Yet despite prices that are approximately 20-30% lower than the marginal cost of global production (US\$40-50.00/lb) and bulging inventories resulting from Japanese reactor shut-downs, production has been increasing at an accelerating rate of over 8 million lb of  $U_3O_8$  per year for the last few years.

CONTINUED ON PG 2

### JAPAN'S KASHIWAZAKI KARIWA 6 & 7 CLEAR SAFETY EXAMS

**Japan Atomic Industry Forum, Inc.** – At its regular meeting on September 27, the Nuclear Regulation Authority (NRA) of Japan approved draft review reports concerning the Kashiwazaki Kariwa-6 and -7 Nuclear Power Plants (NPPs, ABWRs, 1356MWe each) owned by the Tokyo Electric Power Co. (TEPCO) in Niigata Prefecture. The power company is working toward the restart of the reactors

It was the conclusion of the drafts that both reactors meet the country's new regulatory standards.

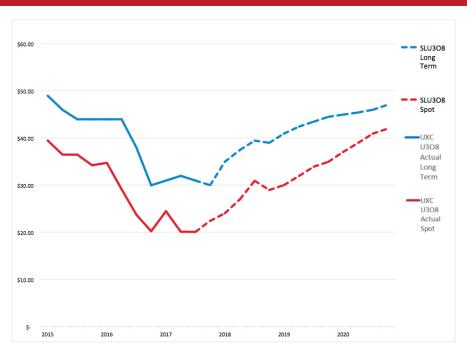
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URANIUM PRICES	LONG TERM PRICE US\$/Ib U <sub>3</sub> O <sub>8</sub>	<b>SPOT PRICE</b> US\$/lb U <sub>3</sub> O <sub>8</sub>
October 1, 2017	\$31.00 🖊	\$20.32
December 31, 2017	\$30.00 🖡	\$22.50 🕇

### U<sub>3</sub>O<sub>8</sub> PRICES - HISTORIC



### **SLUC** PRICE OUTLOOK



#### WHO HOLDS THE KEY TO HIGHER U PRICES? (Cont'd)

Only in late 2016 did producers announce adjustments, with KazAtomProm promising a 6 million lb cut in annual production and Cameco and Paladin following suit with an additional 2 million lb reduction, both in reaction to depressed prices.

A strong inverse correlation between long-term  $U_3O_8$  prices and mining activity may sound confusing, and a four-year delay in production cuts appear irrational but unfortunately, a producers' ability to react to price movements is akin to swatting a fly with a tree trunk.

## Supply, Demand, and Price – A Delicate Balancing Act

Uranium prices are free to fluctuate quickly based on major disruptive events. The cost and time involved with materially changing mine output however, forces producers to live with the longer-term effects of their supply decisions. This difference in consequences creates a time lag between price fluctuations and a producers' reaction; a lag that becomes increasingly complex when considering a producers' price *elasticity* versus a utility's inelasticity (fuel is a small component of the overall cost of power). As one factor changes, the other two react at different times, rates, and amounts requiring an impossible balancing act between demand, supply, and price.

#### Contract Renegotiations Will be the Trigger

As a result of current low prices, the spot market now makes up over 22% of all uranium purchases - an all-time high. Countries with high nuclear ambitions (China, India, Saudia Arabia, UAE) are taking advantage of a low spot price environment to stock up on  $U_3O_8$  for the inevitable price increase.

Over the same four or five year period, the number of long-term contracts signed has decreased by about 2/3 relative to pre-2012 levels. Typically, such contracts are renegotiated every three to five years. The older, more profitable contracts are a major part of why producers like Cameco can deliver uranium at a price that is 60%

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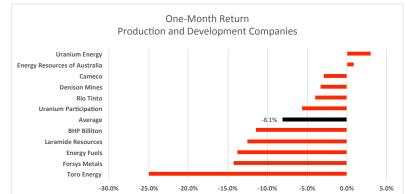
#### UEQUITIES

PRODUCT	TION COMPANIES	Country Focus	Price (Aug 31/17)	52 Week Low	52 Week High	Mkt Cap (\$MM)
tse:cco	Camco Corp	Canada	\$12.05	\$9.88	\$17.65	\$4,804.9
tse:dml	Denison Mines Corp	Canada	\$0.58	\$0.49	\$1.10	\$324.2
tse:efr	Energy Fuels Inc	United States	\$2.00	\$1.74	\$3.53	\$139.2
asx:era	Energy Resources of Australia Limited	Australia	\$0.57	\$0.32	\$0.76	\$295.1
uec	Uranium Energy Corp.	United States	\$1.38	\$0.81	\$1.92	\$190.6
DEVELOP	MENT COMPANIES					
tse:fsy	Forsys Metals Corp	Namibia	\$0.12	\$0.06	\$0.28	\$16.9
tse:lam	Laramide Resources Ltd.	United States	\$0.28	\$0.18	\$0.74	\$30.4
asx:toe	Toro Energy Limited	Australia	\$0.03	\$0.03	\$0.06	\$52.7
EXPLORA	TION COMPANIES					
asx:aee	Aura Energy Limited	Sweden, Mauritania	\$0.03	\$0.02	\$0.05	\$19.1
tse:azz	Azarga Uranium Corp	United States	\$0.21	\$0.18	\$0.57	\$16.0
asx:bmn	Bannerman Resources Limited	Namibia	\$0.03	\$0.02	\$0.10	\$25.2
asx:bky	Berkeley Energia Ltd	Spain	\$0.81	\$0.65	\$1.20	\$206.2
asx:dyl	Deep Yellow Limited	Namibia	\$0.22	\$0.02	\$0.64	\$41.8
asx:eme	Energy Metals Ltd	Australia	\$0.09	\$0.05	\$0.28	\$18.0
cve:fuu	Fission 3.0 Corp	Canada	\$0.06	\$0.05	\$0.13	\$13.2
tse:fcu	Fission Uranium Corp	Canada	\$0.64	\$0.49	\$0.92	\$300.6
cve:kiv	Kivalliq Energy Corp	Canada	\$0.08	\$0.07	\$0.19	\$19.8
tse:mga	Mega Uranium Ltd	Australia	\$0.19	\$0.11	\$0.32	\$51.5
tse:nxe	Nexgen Energy Ltd	Canada	\$2.77	\$1.42	\$4.45	\$948.1
cve:plu	Plateau Uranium Inc	Argentina	\$0.30	\$0.17	\$0.71	\$15.8
cve:ptu	Purepoint Uranium Group Inc.	Canada	\$0.07	\$0.06	\$0.19	\$12.3
cve:syh	Skyharbour Resources Ltd	Canada	\$0.42	\$0.24	\$0.70	\$22.3
tse:uex	UEX Corporation	Canada	\$0.19	\$0.15	\$0.43	\$59.0
urg	Ur-Energy Inc. (USA)	United States	\$0.57	\$0.41	\$0.91	\$79.2
asx:vmy	Vimy Resources Ltd	Australia	\$0.11	\$0.10	\$0.31	\$39.6
OTHER						
tse:u	Uranium Participation Corp	Canada	\$3.53	\$3.47	\$4.73	\$430.2

Note: Currencies for the price and market cap are respective to the country of trade.

#### **UEQUITIES MONTHLY PERFORMANCE**





#### **Explorers**



#### WHO HOLDS THE KEY TO HIGHER U PRICES? (Cont'd)

higher than average spot prices in 2016 and weather  $U_3O_8$  prices halving since 2011. However, all good things must come to an end and these profitable contracts are coming due for re-negotiation. The maturing of these contracts will result in immediate increased pressure to lift  $U_3O_8$  prices from currently unsustainable levels.

## Reactors Under Construction at Record Highs

Without a doubt, nuclear energy generation is taking off. With 2017 nuclear electricity generation on track to exceed pre-Fukushima levels, a new urgency to restart Japanese reactors, and over 60 reactors under construction (all requiring their initial load of uranium 30 months before operation), there are new heightened efforts to negotiate

#### CONTINUED ON PG 4

#### TOP CORPORATE NEWS

Purepoint Moves to Complete Drill Program at Hook Lake September 28, 2017

<u>Plateau Commences Trading on OTCQB</u> September 28, 2017

Denison Extends the Huskie Zone at Waterbury September 19, 2017

<u>NexGen Files NI 43-101 Report on Arrow</u> September 15, 2017

UEX Extends Orora Zone September 13, 2017

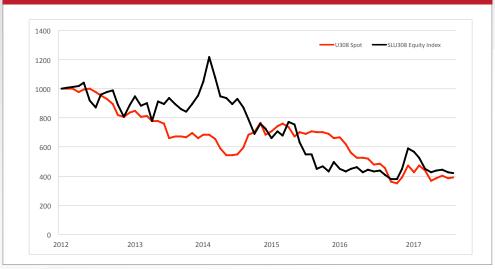
<u>Denison Increases Drill Program</u> <u>at Wheeler</u> September 12, 2017

Fission Reports New High-Grade Zone September 7, 2017

<u>Vimy Reports Major Ore Reserve</u> September 5, 2017

<u>Kivaliq Completes Genesis Partnership</u> September 1, 2017

## **SLUC** EQUITY INDEX



#### TOP DEMAND STORIES

Japan's Oi Reactor gets Implicit Approval September 28, 2017

<u>UAE to Connect First Reactor in 2018</u> September 25, 2017

India's Kudankulam to restart October 7 September 19, 2017

Turkey's Reactor Construction Begins in. 2018

September 15, 2017

Japan's Ongoing Support of Nuclear Power September 14, 2017

Dome Installed on China's Hongyanhe Unit September 11, 2017

#### **TOP POLITICAL STORIES**

Rosatom's IAEA Address September 23, 2917

India and Canada Discuss Nuclear Collaboration September 21, 2017

World Nuclear Associations Call to Action September 14, 2017

India and Japan's Nuclear Deal September 13, 2017

Leveling the Nuclear Playing Field September 12, 2017

<u>Australian Committee Calls for an End</u> <u>to Nuclear Ban</u> September 1, 2017

#### TOP SUPPLY STORIES

India to Create Uranium Reserve September 25, 2017

KazAtomProm Transformation on Track September 15, 2017

Energy Fuels Production Potential September 13, 2017

World's Largest Producers September 8, 2017

Bannerman Hopeful on Uranium Prices-September 6, 2017

<u>Trump's Nuclear Future</u> September 4, 2017

#### TOP TECHNOLOGY STORIES

CNNC & Shenhua to develop Gen-4 Reactor September 27, 2017 Japan Looks to Export Next-Gen Reactors September 17, 2017 CNNP Establishes Traveling-Wave Reactor Co. September 13, 2017

Advanced Fuel Agreements Signed September 7, 2017

#### WHO HOLDS THE KEY TO HIGHER U PRICES? (Cont'd)

uranium contracts from countries such as: China, India, Russia, Saudi Arabia, and the UAE. As world requirements for  $U_3O_8$  ramp up from these new sources, there are few producers that have the necessary margins to cover the demand increase, at current prices, while still turning a reasonable profit.

No producer wants to lock in a three to five-year contract to supply uranium at historic lows, well below the global cost of production. The anticipated demand simply cannot be met at current long-term prices.

#### The Bottom Line

As fundamental supply/demand economics would expect, uranium producers are positioning themselves to drive their commodity's market price back to profitable levels.

In 2011, we abruptly lost 10% of the world's nuclear generating capacity in Japan resulting in an almost immediate drop in the price of uranium. To make matters worse, the uranium industry was amid an aggressive growth strategy aimed at meeting the pending demand of a significantly larger global fleet of nuclear reactors.

Although it has taken time for all of the elements to come together, producers are now stepping back into the driver's seat. As the global reactor fleet enters a record growth period, producers have reduced their output to create a more favorable and sustainable long-term balance, preparing for new profitable contracts.

Although the pace of these renegotiations are not evident, the data certainly points to significant price moves in the coming year.

#### JAPAN'S KASHIWAZAKI KARIWA 6 & 7 CLEAR SAFETY EXAMS (Cont'd )



Kashiwazaki Kariwa Nuclear Power Plant

The NRA has now begun deliberations toward finalizing the reports, and the final documents are expected to be approved at the body's next meeting on October 4.

The units have thus effectively cleared safety examinations under the new standards. They will be the first of TEPCO's NPPs to be approved, even though it was responsible for the March 2011 accident at the Fukushima Daiichi NPPs. They will also be the first boiling-water reactors (BWRs)—the same type as those used at Fukushima Daiichi—to have passed the examinations.

The examinations of Units 6 and 7 at Kashiwazaki Kariwa focused on the eligibility of TEPCO itself as an operator: that is, whether it was truly fit to restart the plants as the party responsible for the Fukushima Daiichi accident. The NRA even pursued that question in the exceptional way of calling TEPCO's management to testify.

It is expected that permission to restart the reactors will be officially granted early next year, or sometime soon after, following public reviews and an opinion from the head of the Ministry of Economy, Trade and Industry (METI) on TEPCO's eligibility.

The agreement of Niigata Prefecture, though, is another matter. The position of

the governor, Ryuichi Yoneyama, is that the cause of the Fukushima Daiichi accident has not been verified, and that it will take three or four years before it can do so. Several years are therefore expected to be needed before TEPCO can restart the units.

The NRA, when it took up the issue of the power company's eligibility, decided that it was necessary to hear from TEPCO President Tomoaki Kobayakawa and other management officials. It called them to its meetings in July and August to sound them out on NPP decommissioning and ensuring safety.

At a meeting in July, former NRA Chairman Shunichi Tanaka said, "An operator that cannot actively tackle the issue of the decommissioning of Fukushima Daiichi is not eligible to restart the units." He instructed TEPCO to respond in writing on such matters as how it would dispose of contaminated waste.

In response, while TEPCO did not present any specific measures for contaminated-water disposal, it did declare its determination to "carry out the decommissioning through to the end" at a hearing held at the end of August. The NRA has recognized the power company's intent, and demonstrated a certain level of understanding toward it.

#### ABOUT THE SLU<sub>3</sub>O<sub>8</sub> OUTLOOK

The  $SLU_3O_8$  Outlook; is an in-depth forecast model, optimized to anticipate the timing and extent of pending changes in uranium prices. Projections are maintained quarterly and based on the analysis of uranium price movement relative to detailed supply and demand changes over the past 15 years.

#### ABOUT THE SLU<sub>3</sub>O<sub>8</sub> EQUITY INDEX

The  $SLU_3O_8$  Equity Index tracks the relative share price of a select basket of uraniumbased equities, checking the market's reaction to industry activities. The Index is based on share price movement since January 1, 2012 (1,000.00) of the following companies\*:

- AREVA SA
- Cameco Corporation
- Denison Mines Limited
- UEX Corporation
- Energy Fuels Inc.
- UEX Corporation
- UR-Energy Inc.
- Uranium Energy Corp.
- Uranium Participation Corp

\* As the significant stock price movement of Fission Uranium Corp and NexGen Energy Ltd. is a function of major uranium discoveries, we have not included their stock performance in the Index to better reflect the uranium equities market in general.

#### ABOUT SIGHTLINE SLU<sub>3</sub>O<sub>8</sub>

**Sightline U<sub>3</sub>O<sub>8</sub>** is a monthly newsletter and supporting website created and maintained to provide uranium investors and industry stakeholders with a single source of insight into the ongoing factors that directly affect uranium prices.

We welcome your comments, questions and ideas. Please contact us at editor@sightlineu3o8.com

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