

URANIUM PRICES	LONG TERM PRICE US\$/lb U ₃ O ₈	SPOT PRICE US\$/lb U ₃ O ₈
UC PRICES		
August 1, 2017	\$32.00	\$20.15
September 1, 2017	\$32.00	\$20.12
SLUC PRICE OUTLOOK		
December 31, 2017	\$30.00	\$22.50
March 31, 2018	\$35.00	\$24.00
June 30, 2018	\$37.50	\$27.00
September 30, 2018	\$39.50	\$31.00
December 31, 2018	\$39.00	\$29.00
December 31, 2019	\$44.50	\$35.00
December 31, 2020	\$47.00	\$42.00

SLUC EQUITY INDEX

June 1, 2017	427.98
July 1, 2017	440.73
August 1, 2017	445.52
September 1, 2017	426.53

WORLD NUCLEAR ASSOCIATION

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

UXC: UX Consulting Company

MONTH IN REVIEW

January's announcement of a 10% cut in Kazakhstan production and reductions from Cameco and Paladin created early expectations that uranium prices would begin to see a rise through 2017. Unfortunately, as we head into September we have seen only a meager rise in the long-term price and a fairly unmoving spot price.

The reason may be the impact of the Husab uranium mine in Namibia, which went into production at the end of last year. The Chinese owned Husab has a targeted peak production of 15 million pounds U₃O₈ per year and 2017 production should have balanced out reductions seen elsewhere. We are, in fact, forecasting a slight reduction in the long-term price by year-end.

Next year will be a different story, however, as 26 reactors (11 in Japan, 10 in Asia and 5 in Russia) come on line by the end of 2018 resulting in a 10% increase in nuclear power generation.

JAPANESE RESTARTS – CURE OR MISDIRECTION

EXCLUSIVE TO SIGHTLINE U₃O₈ - On March 11, 2011 the Tohoku earthquake, and its resulting tsunami, disabled the emergency generators necessary to cool the reactors of the Fukushima Dai-ichi Nuclear Power plant causing the meltdown of three of its ten reactors. In the subsequent months, Japan would shut down the country's remaining 42 operable reactors for review and overhaul.

Not only did Japan lose 30% of the country's electricity but also eliminated over 10% of the world's nuclear power generation.

Making matters worse – the world's uranium producers were engaged in the process of ramping up production to meet a growing global reactor fleet.

Over the course of the following year, this slump in demand and rising supply caused a

CONTINUED ON PG 2

THE WORLD'S FIRST URANIUM BANK IS READY FOR WITHDRAWALS

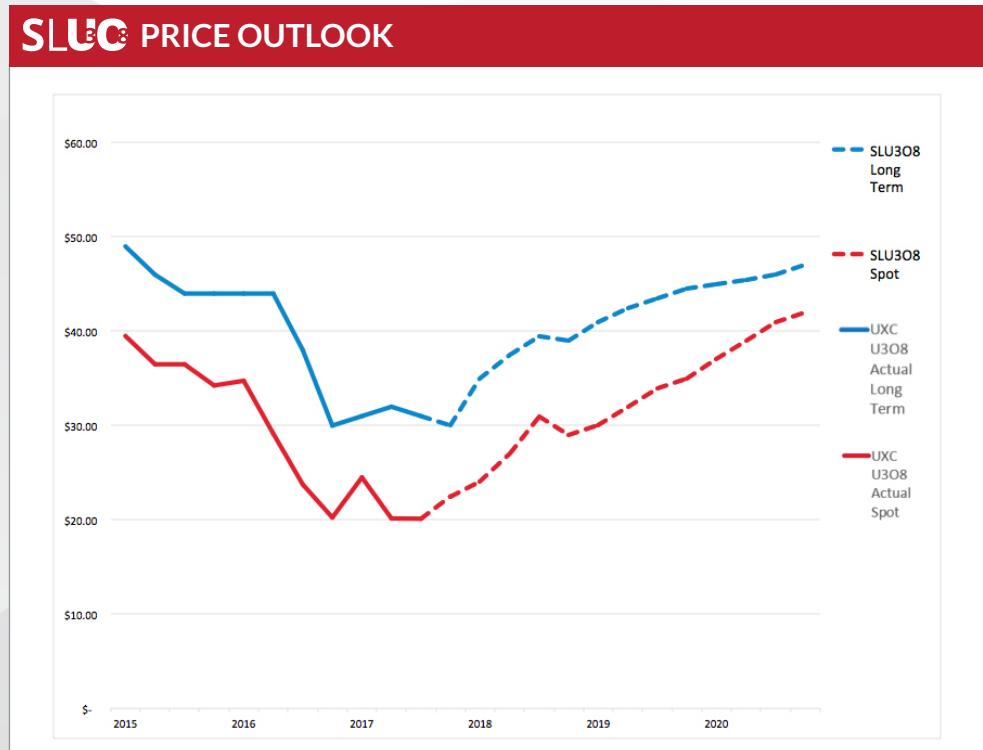
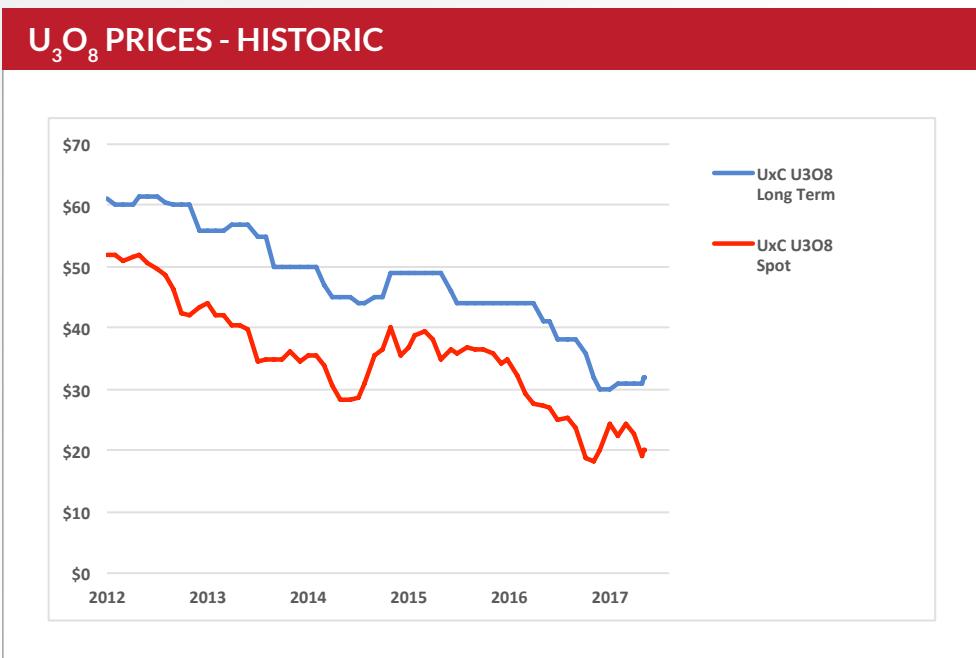
Dan Vergano, BuzzFeed News - An international nuclear watchdog agency opened the first independent "bank" for nuclear reactor fuel on Aug. 29 in Kazakhstan, a bid to forestall developing nations from building their own nuclear capabilities.

Uranium can both make electricity and make bombs, a key dilemma of the nuclear age. The International Atomic Energy Agency's low-enriched uranium (LEU) bank is intended to forestall developing nations from building their own uranium enrichment factories – capable of making both reactor

CONTINUED ON PG 4



URANIUM PRICES	LONG TERM PRICE US\$/lb U ₃ O ₈	SPOT PRICE US\$/lb U ₃ O ₈
UC PRICES		
September 1, 2017	\$32.00	\$20.12
SLUC PRICE OUTLOOK		
December 31, 2017	\$30.00	\$22.50



JAPANESE RESTARTS – CURE OR MISDIRECTION (Cont'd)

23% drop in long-term U₃O₈ prices and a 37% drop in the spot price.

The current long-term price of uranium sits 20-30% lower than the marginal cost of global production (US\$40-50.00/lb). The obvious conclusion is that prices must rise significantly in the coming years. What is not obvious is when and why. Many point to the re-starting of the Japanese reactors as the bell-weather of a dramatic rise in uranium prices, however, investors may be missing the real action driving uranium prices.

The Quietly Growing Global Fleet

While investors have been licking their wounds over the loss of Japan's reactors, the rest of the world has continued its nuclear build. Japan currently has 42 operable reactors with a total capacity of 40,000 Mwe. Since the Japanese shutdown, however, 39 new reactors have been brought on line around the rest of the world (more than half in China) with a collective capacity of over 38,000 Mwe. If you include the five reactors Japan has already turned back on, the global fleet now generates more power than it did prior to the Tohoku tsunami.

Loading New Reactors

A new reactor's impact on fuel demand begins long before it is connected to the grid. The initial fill of a new reactor can be significant and the lead-time on that first order is in the range of 30 months. Since 2011, these lead orders have amounted to an additional 5 million lbs of U₃O₈ per year. In preparation for reactors planned over the next decade that number is now growing to over 8.5 million lbs per year.

IAEA Low Enriched Uranium (LEU) Bank

Last month the International Atomic Energy Agency (IAEA) launched its LEU Bank in Kazakhstan to provide peaceful access to nuclear energy without raising questions about dual-use technology. The bank a new point of ongoing demand and is looking to initially acquire up to 200,000 lbs of U₃O₈.

Reduced Production

As one would expect, uranium producers are loath to sell their product at current low prices, in many cases representing a loss. In

CONTINUED ON PG 3

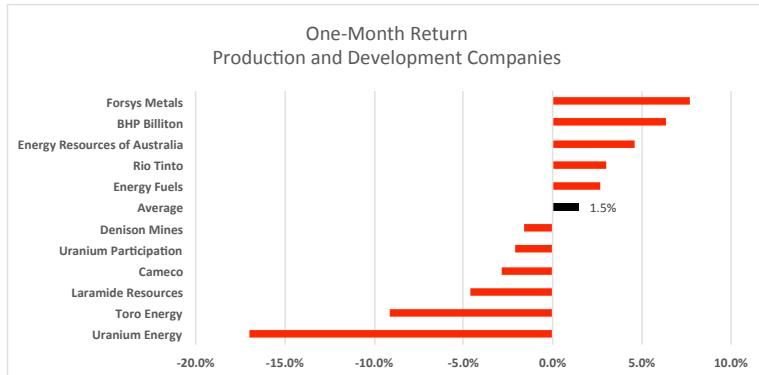
UEQUITIES

PRODUCTION COMPANIES		Country Focus	Price (Aug 31/17)	52 Week Low	52 Week High	Mkt Cap (\$MM)
tse:cco	Camco Corp	Canada	\$12.41	\$9.88	\$17.65	4,911.8
tse:dml	Denison Mines Corp	Canada	\$0.60	\$0.49	\$1.10	331.8
tse:efr	Energy Fuels Inc	United States	\$2.32	\$1.74	\$3.53	163.8
asx:era	Energy Resources of Australia Limited	Australia	\$0.56	\$0.32	\$0.76	292.5
uec	Uranium Energy Corp.	United States	\$1.34	\$0.81	\$1.92	185.1
DEVELOPMENT COMPANIES						
tse:fsy	Forsys Metals Corp	Namibia	\$0.14	\$0.06	\$0.28	20.6
tse:lam	Laramide Resources Ltd.	United States	\$0.32	\$0.18	\$0.74	36.8
asx:toe	Toro Energy Limited	Australia	\$0.04	\$0.03	\$0.06	70.3
EXPLORATION COMPANIES						
asx:aee	Aura Energy Limited	Sweden, Mauritania	\$0.02	\$0.02	\$0.05	19.1
tse:azz	Azarga Uranium Corp	United States	\$0.25	\$0.19	\$0.57	20.1
asx:bmnn	Bannerman Resources Limited	Namibia	\$0.04	\$0.02	\$0.10	29.7
asx:bky	Berkley Energia Ltd	Spain	\$0.83	\$0.65	\$1.20	211.3
asx:dyl	Deep Yellow Limited	Namibia	\$0.23	\$0.02	\$0.64	44.7
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	\$0.68	\$0.49	\$0.92	329.7
cve:kiv	Kivalliq Energy Corp	Canada	\$0.10	\$0.06	\$0.19	26.2
tse:mga	Mega Uranium Ltd	Australia	\$0.20	\$0.11	\$0.32	58.6
tse:nxe	Nexgen Energy Ltd	Canada	\$2.94	\$1.42	\$4.45	994.7
cve:plu	Plateau Uranium Inc	Argentina	\$0.34	\$0.17	\$0.71	19.6
cve:ptu	Purepoint Uranium Group Inc.	Canada	\$0.06	\$0.06	\$0.19	11.4
cve:syh	Skyharbour Resources Ltd	Canada	\$0.41	\$0.24	\$0.70	22.3
tse:uem	UEX Corporation	Canada	\$0.20	\$0.15	\$0.43	63.9
urg	Ur-Energy Inc. (USA)	United States	\$0.61	\$0.41	\$0.91	84.8
asx:vmy	Vimy Resources Ltd	Australia	\$0.11	\$0.10	\$0.31	39.6
OTHER						
tse:u	Uranium Participation Corp	Canada	\$3.74	\$3.50	\$4.73	452.0

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

UEQUITIES MONTHLY PERFORMANCE

Producers/Developers



Explorers



JAPANESE RESTARTS – CURE OR MISDIRECTION (Cont'd)

In 2016, many companies announced plans to reduce their production levels and those plans are now in effect. Kazakhstan, the world's largest producer, is reducing production by 10% - well over 6 million lbs of U₃O₈ per year. Cameco and Paladin are in the process of cutting their collective annual production rates by more than 2 million lbs of U₃O₈ per year.

Exaggerated Expectations from Japan

There is no doubt that the re-start of Japan's reactors will have an upward impact on uranium prices, however, investors must keep their expectations in check as to the extent of that impact.

- Of the 42 operable reactors in Japan, it is expected that as many as 12 may never be turned on again. Taking into account the 5

CONTINUED ON PG 4

TOP CORPORATE NEWS

[Denison: Intersects 5.0% eU₃O₈ Over 4.7 Metres](#)

August 30, 2017

[Berkley: Oman wealth fund bets \\$120m on uranium](#)

August 30, 2017

[Skyharbour: Summer Diamond Drill Program](#)

August 29, 2017

[UFC: Closes Acquisition - Reno Creek Project](#)

August 23, 2017

[Fission: Hits 8.03m Composite >10,000 cps](#)

August 23, 2017

[Energy Fuels: New Estimate for Uranium & Copper Resources](#)

August 23, 2017

[Paladin Energy: To retain Langer Heinrich](#)

August 21, 2017

[Fission 3.0: 7 Athabasca Basin Uranium Projects](#)

August 09, 2017

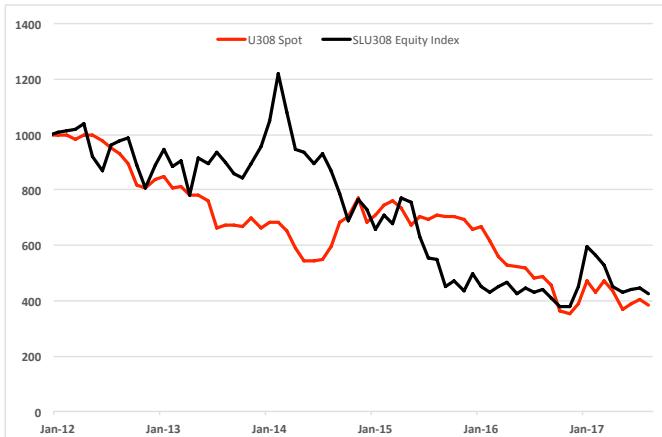
[Rio Tinto: Announces cash generation of \\$6.3 billion](#)

August 02, 2017

[Denison: High-Grade Discovery on Waterbury Lake](#)

August 01, 2017

SLU308 EQUITY INDEX



TOP DEMAND STORIES

- [Brazil Requests China's Assistance](#)
August 30, 2017
- [Japan keen to Start 3 Nuclear](#)
August 29, 2017
- [Kudankulam Nuclear Power - Restarts](#)
August 29, 2017
- [Putin Fuels Hungary's Nuclear Expansion](#)
August 28, 2017
- [Cameco Shareholders Worried](#)
August 24, 2017
- [Ukraine Spends \\$213 MM on Nuclear Fuel](#)
August 23, 2017

TOP POLITICAL STORIES

- [Argentina Moves to Hydroelectric Dams](#)
August 30, 2017
- [Cut Nuclear Power by 22% - Macron](#)
August 28, 2017
- [IAEA's Nuclear Assessment on China](#)
August 28, 2017
- [U.S. Energy Dept. Calls for Boost to Nuclear](#)
August 24, 2017
- [S. Korea Conducts Survey on Nuclear Reactors](#)
August 17, 2017
- [U.S. Nuclear Industry's Future?](#)
August 15, 2017

TOP SUPPLY STORIES

- [Uranium in Namibia](#)
August 31, 2017
- [Fully Financed Project – Salamanca](#)
August 31, 2017
- [Warren Buffet Bankrolls uBank](#)
August 24, 2017
- [Australia's Uranium for India](#)
August 23, 2017

TOP TECHNOLOGY STORIES

- [Europe: The First Thorium Salt Reactors in over 40 Years](#)
August 29, 2017
- [Global Solar Capacity Surpasses Nuclear](#)
August 22, 2017
- [Canadian SMR plans](#)
August 21, 2017
- [China Approves Unified Nuclear Reactor Brand](#)
August 14, 2017
- [S. China Sea: Beijing's Plan for Floating Nuclear Reactor](#)
August 11, 2017

JAPANESE RESTARTS – CURE OR MISDIRECTION (Cont'd)

reactors already up and running, the tally we are currently monitoring is really only 25;

- The Japanese re-start will not be an “event” but instead is a “process”. The reactors will not start all at once but systematically over a 4-5 year period;
- Over the next 2-3 years, the power delivered by re-engaged Japanese reactors will represent only half of that generated by newly constructed reactors added to the fleet; and
- Japan has been taking delivery of and stockpiling their contracted uranium fuel for the past 6 years. In addition, the Japanese fleet will not require the same initial fill one would see in a new reactor. The point being, turning on a Japanese reactor will not result in an immediate and abrupt draw on global uranium inventories.

The loss of Japan’s nuclear power assets laid a devastating blow to the uranium industry; a blow that will have taken nearly a decade from which to recover. That recovery, however, will not have come solely from a rebuild of Japan’s capacity. It will have been driven by an ever-growing movement towards the use of nuclear power and the adaptation of the mining industry. ■

THE WORLD'S FIRST URANIUM BANK IS READY FOR WITHDRAWALS (Cont'd)

fuel and bomb material – by serving as a lender of last resort if the uranium market fails to supply reactor fuel.

Initially funded by billionaire investor Warren Buffett as well as the US, Norway, United Arab Emirates, European Union, Kazakhstan, and Kuwait, the bank will stockpile 90 metric tons (almost 200,000 pounds) of reactor fuel by next year, about enough to supply 200 to 500 nuclear reactor fuel rods able to power a city for three years.

“The point is to make nuclear power to make electricity,” former US Secretary of Energy Ernest Moniz of MIT said at a Tuesday media briefing. In a nutshell: Nations that meet IAEA

CONTINUED ON PG 5

THE WORLD'S FIRST URANIUM BANK IS READY FOR WITHDRAWALS (Cont'd)

requirements for regular inspection of their facilities will be allowed to purchase uranium from the bank in supply emergencies. The bank, Moniz said, "is saying you are going to have an assured supply chain."

Former US senator Sam Nunn, now of the Nuclear Threat Initiative (NTI), said at the briefing that the bank removes a pretext some nations might use to justify building their own enrichment facilities. Kazakhstan "has been a model" for limiting nuclear arms, he added, having gotten rid of its own highly enriched uranium in the last decade, making it an ideal host for the independent bank.

NTI, a nuclear nonproliferation organization, first recruited Buffett to make the initial \$50 million pledge, contingent on other nations providing another \$100 million toward the bank. The IAEA, an international nuclear reactor watchdog that reports to the United Nations, voted to proceed with the bank in 2010.

"I made a phone call to Warren from Vienna in March of 2005," asking him to make the donation, Nunn said. Buffett, a famously savvy investor, agreed so long as the rest of the world matched his investment two to one, and the IAEA worked to raise the funds and ensure transit for the fuel through Russia and China. "Warren Buffett has said many times that from his perspective, there is no better investment than non-proliferation of nuclear materials," Nunn said.

About 45 more nations are interested in developing their own new reactors, according to the World Nuclear Association.

Uranium has to be "enriched" – meaning it must be in its most powerful molecular form, known as U235 – to serve as reactor fuel. That same enrichment technology can further concentrate the radioactive metal into a form useful for making atomic bombs, a classic dual-use technology that internal organizations have sought to control since the dawn of the nuclear age.

In the early 2000s, revelations about illicit export of Pakistan's nuclear weapons technology by scientist A.Q. Khan to Iran, Libya, North Korea, and other countries,

alongside Iran's nuclear program, led the IAEA to look for ways to cut incentives for countries to build their enrichment facilities. The new bank is the only concrete project to emerge from those proposals.

"As more nations seek nuclear power, it is imperative for the world to improve the security of the nuclear fuel cycle," Nunn said.

By establishing an IAEA repository not under the control of any nation, he said, the bank will strengthen its credibility as an honest broker among nuclear powers, essential in its main watchdog role of assuring nations that their neighbors aren't secretly developing weapons capabilities under the guise of a reactor program.

However, the bank has limitations: The amount of uranium it holds is not large compared to world demand and is basically intended to help out small countries with between one and five reactors. And the uranium would still have to be fabricated into nuclear fuel rods for use in reactors.

The world now has a 90-year supply of uranium, according to the IAEA, with vastly more ore reserves. Aside from states such as India, Pakistan, and Iran, which have been shut out of the international fuel market for their suspicious activities, the market for uranium has generally worked smoothly. That means the world might never use the bank, Nunn and other experts said.

"It's a good idea, but its real-world impact is likely to be limited" because that market has diverse suppliers, nuclear proliferation expert Robert Einhorn of the Brookings Institution told BuzzFeed News by email.

"A country determined to pursue enrichment for nuclear weapons – or at least the option to acquire nuclear weapons – may well claim that, for energy security and independence, it must have its own capability, even if not economical," Einhorn said. "It is very unlikely that the IAEA bank would have discouraged Iran from pursuing its indigenous enrichment program."

A UN agency bank for nuclear fuel will open next week. It aims to keep developing nations from building uranium factories. ■

ABOUT THE SLU₃O₈ OUTLOOK

The SLU₃O₈ 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 SLU₃O₈ EQUITY INDEX

The SLU₃O₈ Equity Index tracks the relative share price of a select basket of uranium-based 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 SLU₃O₈

Sightline U₃O₈ 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

SIGHTLINE | U₃O₈

www.sightlineu3o8.com