Uranium – An Asian tide

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Uranium themes and catalysts

Positive mid-term price outlook supported by several underlying themes

Kazakhstan

- Kazakhstan is the dominant supplier and seen by many buying entities as an authoritarian regime in a geopolitically unsteady area, fuelling an increasing concern about supply security. Kazakhstan was also the only country that continued to build out its capacity during times of low prices, with little new supply from established producers

Japanese reactor re-starts

- Currently 43 Japanese reactors are operable and available for restart, and 24 of these 43 reactors are in the process of restart approvals. 2 reactors had restarted by Nov 2015

New reactor capacity

- China's government plans to increase nuclear generating capacity three-fold to 58 GWe by 2020-21 and 150GWe by 2030. China completed construction and commenced operation of 20 new nuclear power reactors from 2002-14

US Department of Energy inventory sales litigation

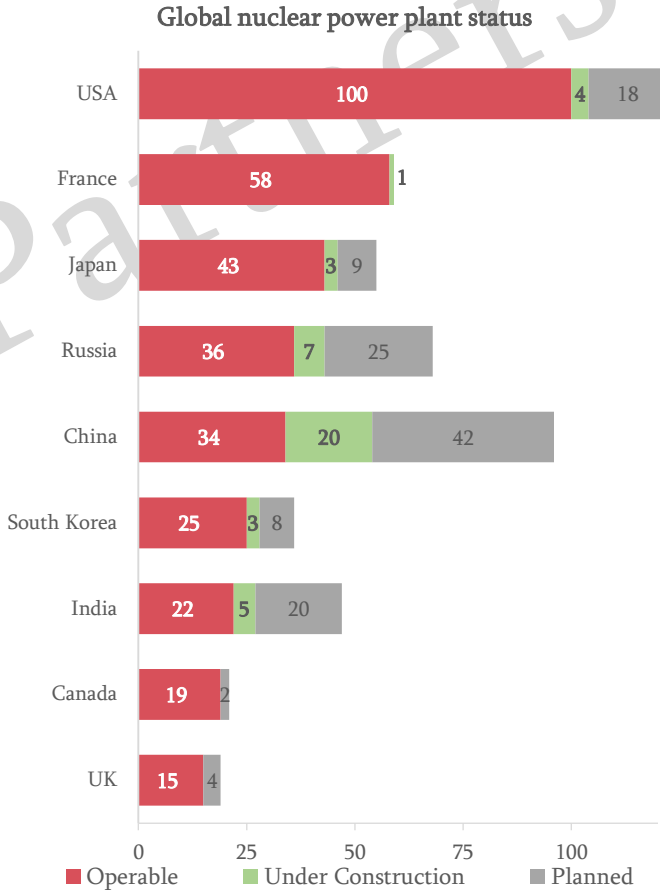
- The DoE has been dumping ~5Mlb of uranium per annum to the market (>8Mlb in 2013, twice the US production)
- The settlement reached late July 2016 between Converdyn and the DoE has produced a "more open process" for future DoE decisions to release excess uranium into the battered nuclear fuel market, which should cause spot prices to increase gradually

Project deferrals due to low prices

- Weak prices over the last four years have caused project deferrals, which will cause an undersupply given that global demand will likely increase due Japan's return to nuclear power, as well as new reactors in China, India, Russia and Korea

Accelerating M&A

- Consolidation such as Energy Fuel's acquisition of Uranerz Energy may be commonplace in order to drive project advancement. China's strong appetite to secure further supply through overseas investments has been seen through CNNC's purchase of Fission in early 2016 as well as 25% in Paladin's Langer Heinrich and CGNPC's takeover of Kalahari Minerals



Source: World Nuclear Association

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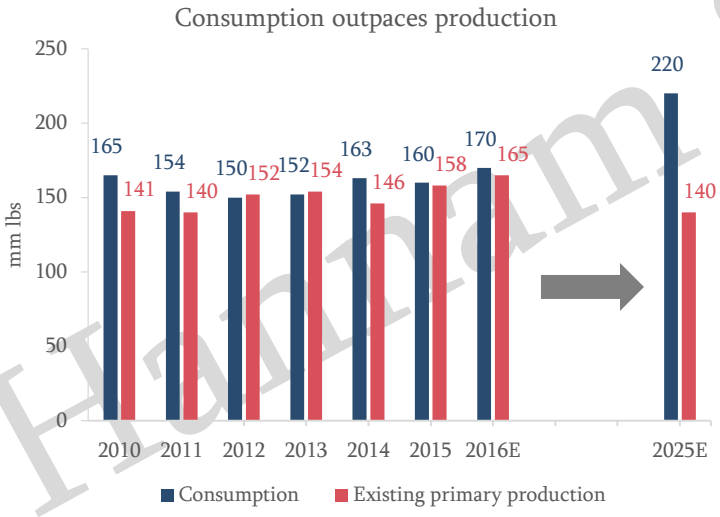
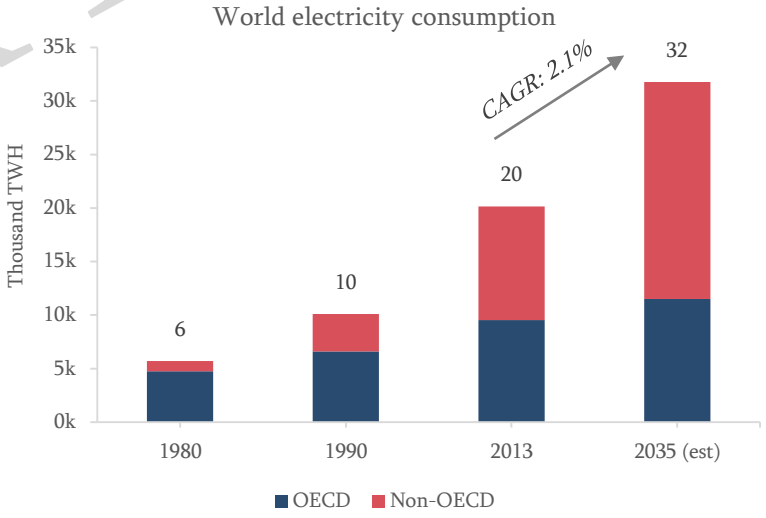
Uranium – the future is getting bright for miners

- Nuclear power currently provides 11% of the world's electricity and is popular globally
- Whilst there is a lack of feasible clean energy alternatives to nuclear, nuclear will remain a key component of the developed world's requirements to achieve reduced carbon emissions alongside increased electricity demands
- With the number of planned or proposed reactors in China, India, Russia and South Korea, the market is looking at a 2-3% annual growth rate over the next 15 years (largest growth since 1970s)
- Currently 59 reactors are under construction worldwide, with 447 operational. The majority of reactors are found in the USA, France, Japan, and Russia. An additional 168 reactors have been planned, with approvals, funding and major commitments in place. These are expected to be in operation within 8-10 years
- Whilst there is currently a significant inventory overhang of uranium in the market (particularly in Japan) we anticipate a gradual clearing of excess inventory from 2017 with a material tightening of the market possible
- Increased near term demand for uranium is unlikely to be met by timely increases in supply due to the long permitting process for new mines, generally few new credible projects and many projects put on ice since Fukushima (11th March 2011)





Increased demand for uranium is unlikely to be met by timely increases in supply due to the long permit process for new mines and the lack of high grade uranium deposits with appropriate infrastructure

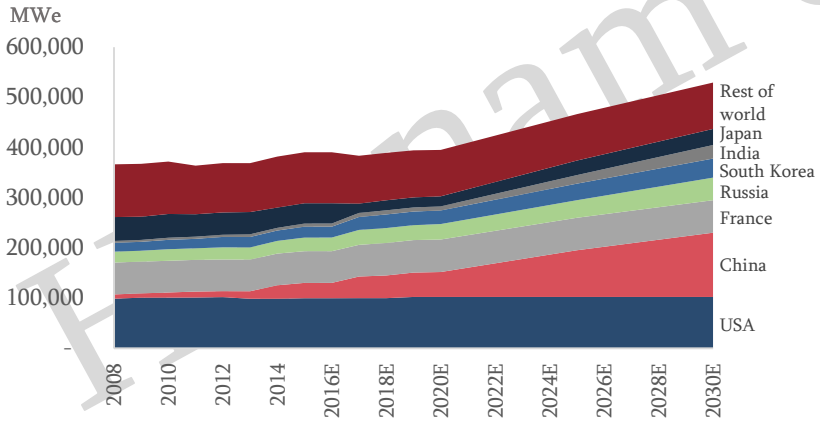
Source: Cameco Annual Report 2015, OECD / International Energy Agency

Uranium long-term market outlook is positive

Overview

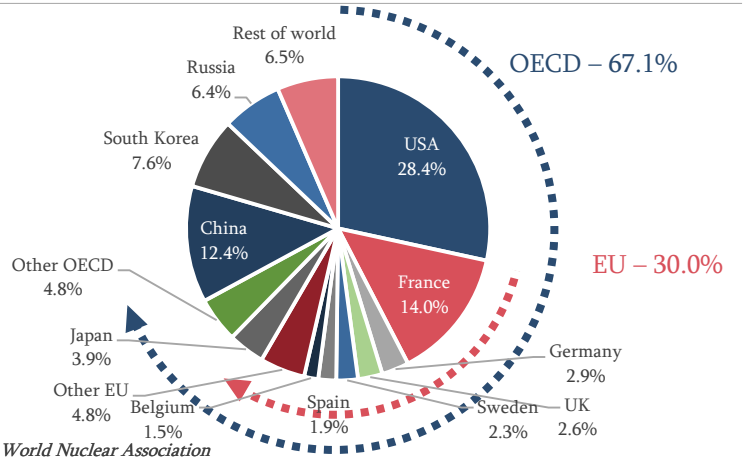
- Global requirements for 2015 are estimated at 63,404tU with OECD countries representing about 67% (42,481tU) of global demand
- The United States accounts for approximately 28% of global uranium consumption and is the single largest consumer
- The European Union as a whole consumes around 30% and has no production of significance at the moment
- China and India are key demand drivers. China's power generation is projected to grow 26% by 2020, and India's to more than double, from 5.8GWe to 12GWe by 2020
- We estimate that OECD demand is set to grow by 10.3% from 2015-2020
- Uranium is a very small cost of the electricity production from nuclear, with the largest cost being upfront capital

Global nuclear power production



Source: World Nuclear Association

Global uranium consumption by country - 2015



Source: World Nuclear Association

We expect the current oversupply situation to ease now that Japan has decided to restart its nuclear power generation

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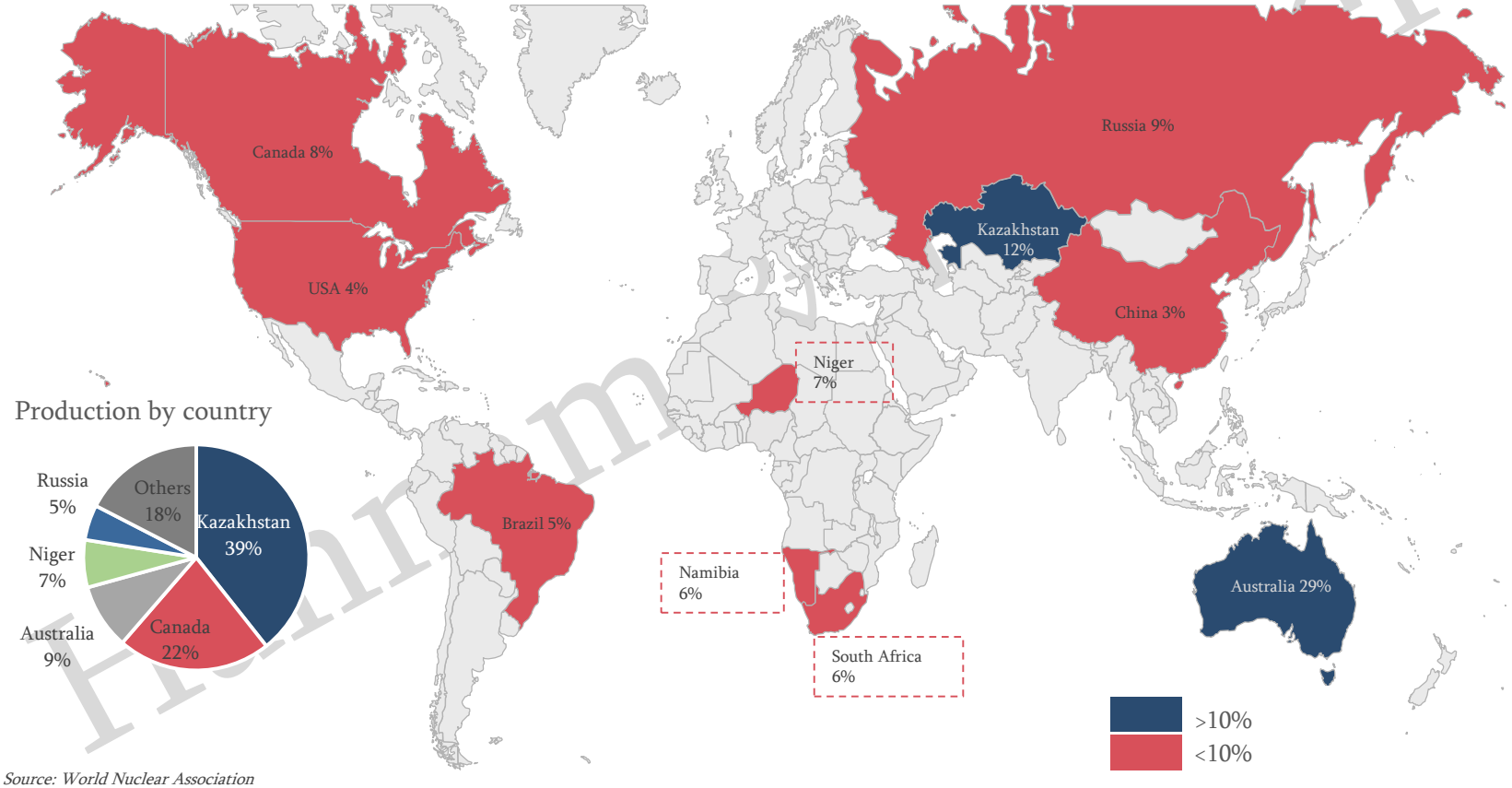
Uranium globally – reserves and current supply

European production and resources are minimal even so Europe consumes 30% of global supply

- Currently 43% of production is through underground mining, 15% open pit and 39% in-situ recovery (and 3% as a combination of these)



Source: World Nuclear Association

Global distribution of resources is focussed in politically difficult areas

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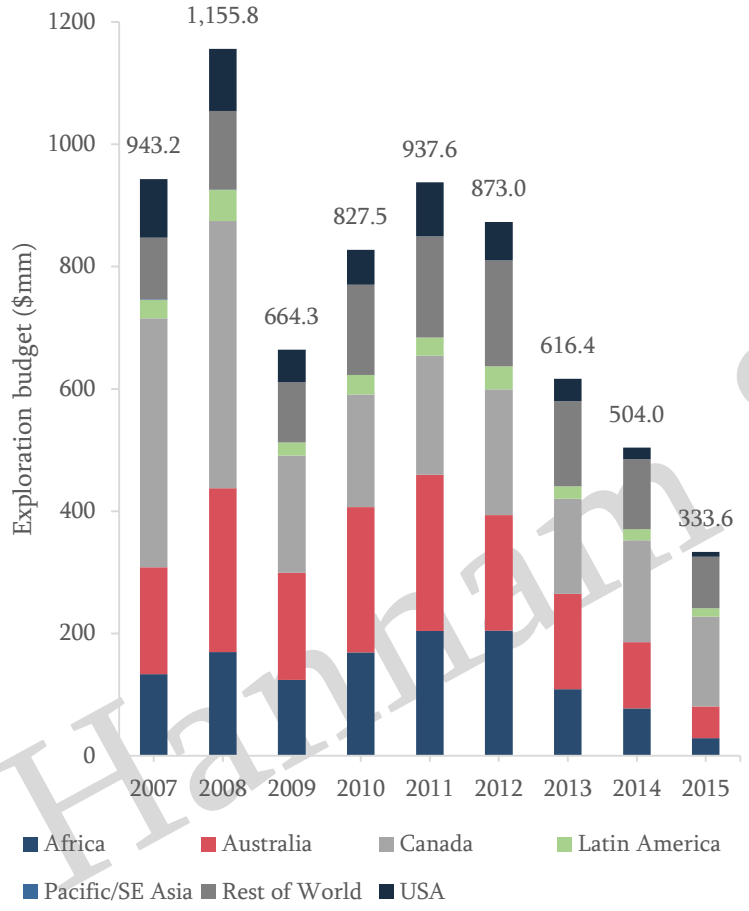
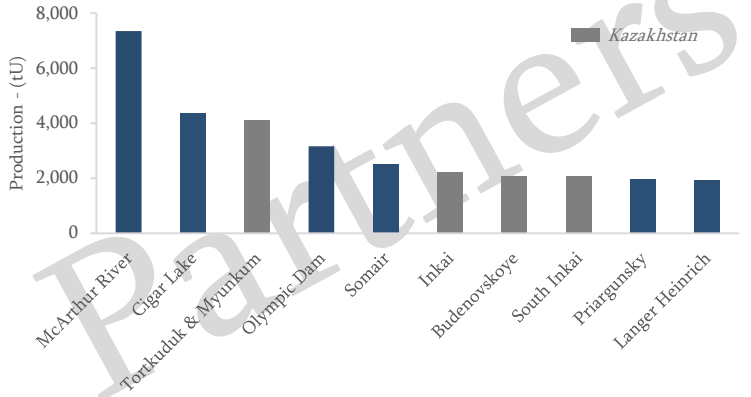
Uranium: drilling for success

Falling uranium exploration budgets



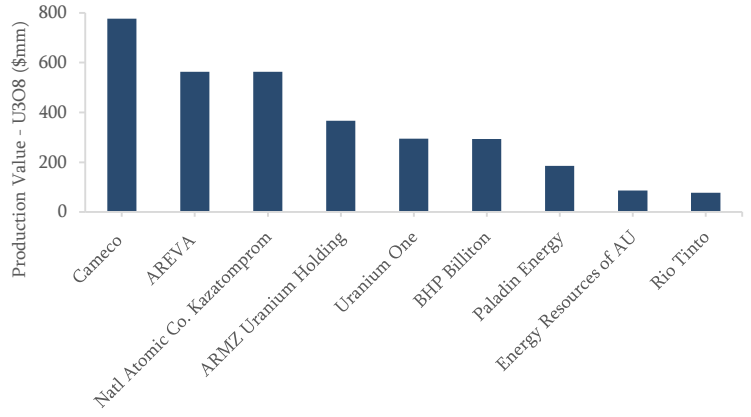
Source: SNL

Uranium mine rank by production - 2015



Source: World Nuclear Association

Uranium company rank by production – 2014



Source: SNL

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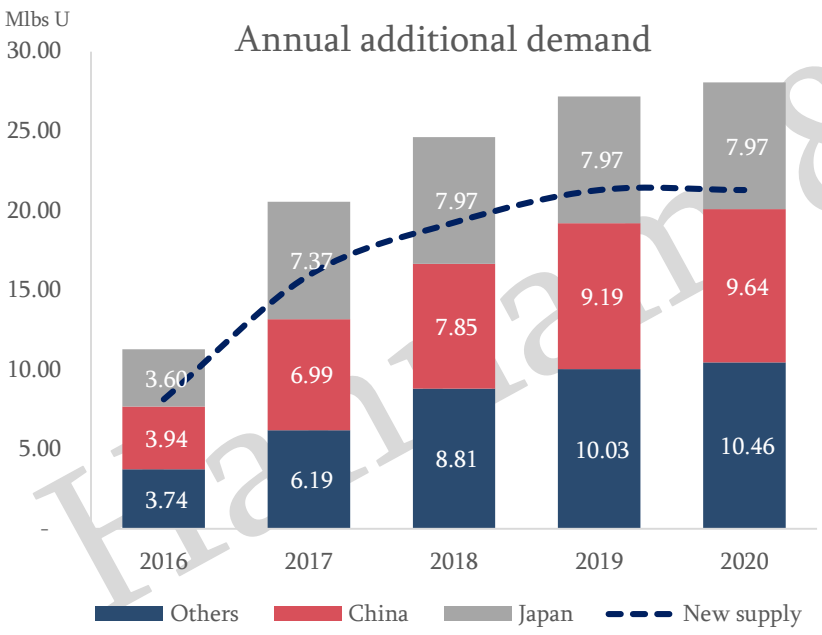
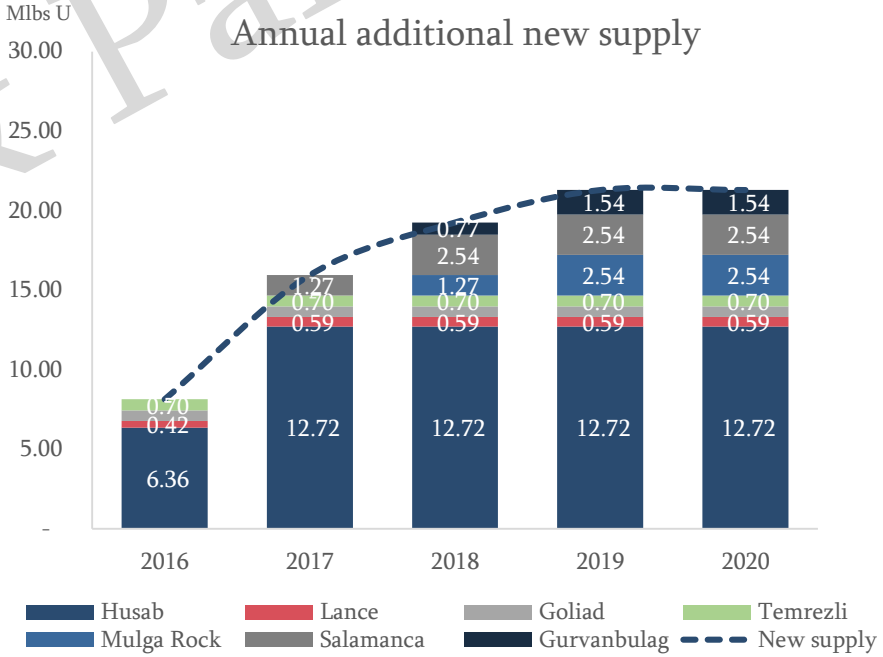
Asian demand will drive consumption through reactor construction and Japanese restart

- Japanese stock positions increased as a result of low demand in 2012-2015 while reactors were offline following the Fukushima disaster. We believe that Japan continued receiving contracted uranium deliveries
- The Japanese have target stock levels of 4x annual requirements, whilst China aim to have x7. Once the current stockpiles are depleted to this constant level of inventory, there is potential for prices to rebound
- Forecast reactor consumption in Asia suggests that stockpiles could back to normalised levels in four to five years
- We expect a tightening of market conditions because of a tide of demand coming online and few committed projects
- Although the Husab mine would bring significant amounts of uranium to the market, it is set to be a high cost mine (~$50/lb)





Source: World Nuclear Association, H&P research
Assumes 0.85tU/U3O8

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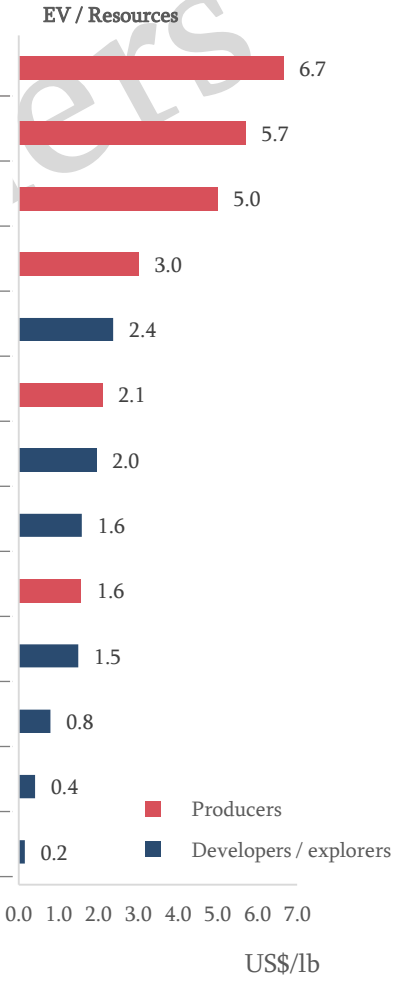
Summary of listed uranium players

Company	Listing	Countries	Main Project	Status	Production (Mlb pa)	Capex (US$mm)	IRR	EV (US$mm)	Resource (Mlb)
UEnergy	TSX		Lost Creek	Ops	0.7	3,369	53.7%	131	20
Cameco	TSX		McArthur River	Ops	12.3	3,530	11.9%	6,385	1,119
PALADIN ENERGY LTD	ASX		Langer Heinrich	Ops	5	-	-	665	133
DENISON MINES	TSX		Wheeler River	Exp	-	1,103	20.4%	345	114
Fission URANIUM CORP.	TSX		Patterson Lake	PEA	7.2	1,100	34.2%	257	108
TORO ENERGY LIMITED	ASX		Wiluna	SS	2.0	220	-	98	47
PENINSULA ENERGY	ASX		Lance	Cons	2.3[1]	1,463	36%	105	54
Berkeley Energy Limited	ASX / AIM		Salamanca	PFS	3.0	100	93.3%	142	89
UEC Uranium Energy Corp	AMEX		Hobson Hub	Ops	2.0[2]	-	-	137	87
EF ENERGY FUELS	TSX		White Mesa Mill	Ops	8	-	-	202	135
UEX	TSX		Hidden Bay	SS	2.4	82	42%[3]	54	39
VIMY RESOURCES	ASX		Mulga Rock	SS	3	233	39%[4]	61	76
Kivalliq	TSX		Angilak	Exp	-	-	-	18	43



Source: Capital IQ as of 7 September 2016
[1]0.5Mlbs Stage 1, 2.3Mlbs Stage 3
[2]Total hub capacity which processes material from multiple mines owned by UEC
[3]EBIT IRR @ $60/lb
[4]Pre-tax IRR

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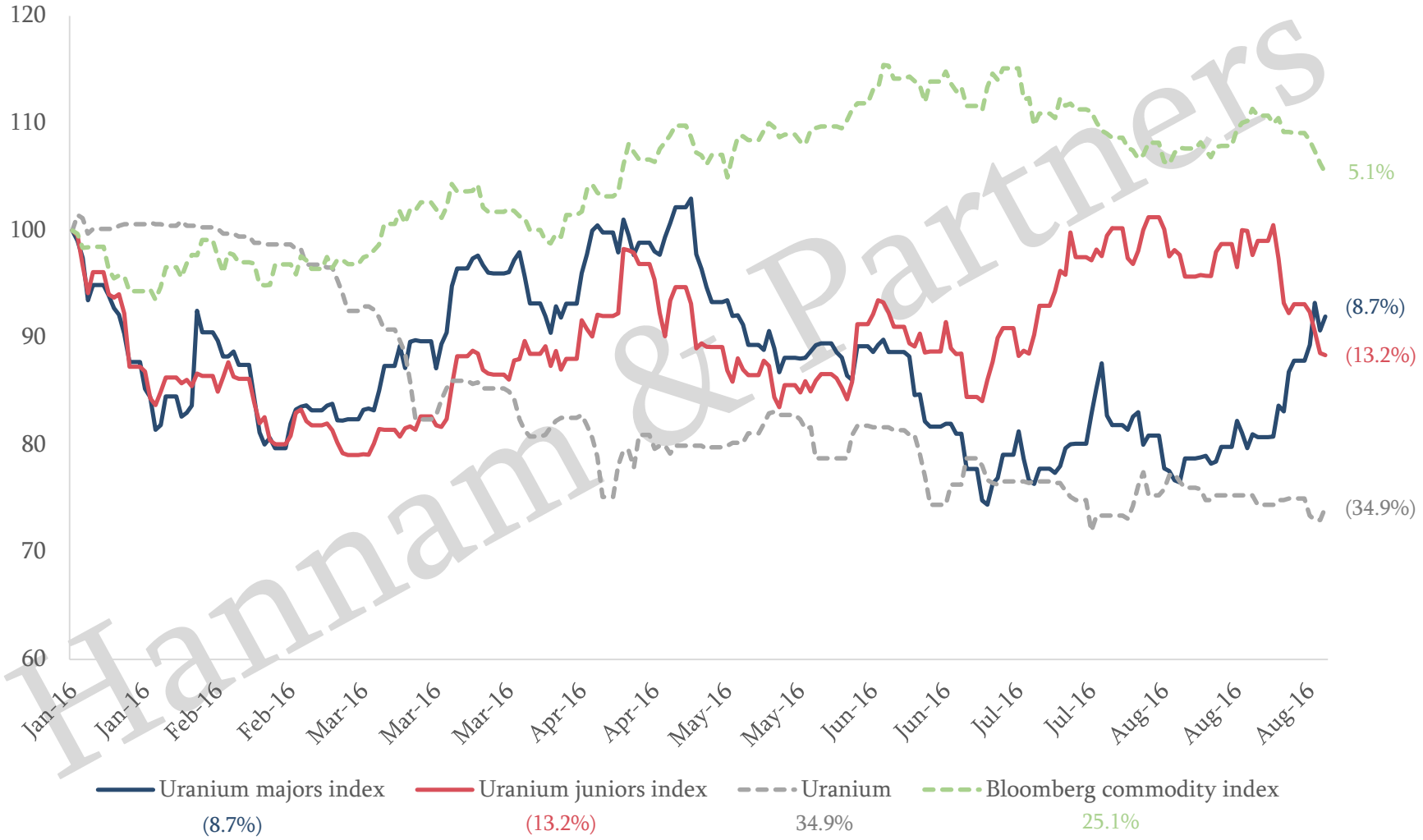
2015 Uranium stock performance (rebased to 100)



Source: Capital IQ and Bloomberg as of 7 September 2016
Uranium majors: Cameco, Areva, Paladin
Uranium juniors: Berkeley Energy, Vimy Resources, Peninsula Energy, Toro Energy, UR Energy, Kivalliq

Uranium price outlook

Prices are expected to increase in the coming years…

Tradetech, UX Consulting Co
[1]As of 7 September 2016
**Long-term contract prices have historically been 19% above spot prices*

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Uranium: a commodity underperformer

Performance of commodities

Commodity	Spot price*	Performance 2016 (%)	2 year performance	Long term price[1]	Change between spot and long term prices (%)
Uranium (US$/lb)	26	(26.2%)	(22.1%)	56	116.8%
Lead (US$/t)	1,927	(12.3%)	(12.4%)	1,993	3.4%
Gold (US$/oz)	1,343	26.7%	7.4%	1,300	(3.2%)
Silver (US$/oz)	20	42.9%	3.9%	20	1.0%
Thermal coal (Newcastle) (US$/t)	70	37.9%	(6.1%)	70	0.0%
Aluminium (US$/t)	1,576	5.0%	(23.7%)	1,874	18.9%
Copper (US$/t)	4,632	(1.6%)	(33.8%)	6,620	42.8%
Coking Coal (US$/t)	150	104.9%	(54.9%)	129	(14.2%)
Zinc (US$/t)	2,316	45.4%	(2.9%)	2,205	(4.8%)
Platinum (US$/oz)	1,093	22.5%	(22.2%)	1,325	21.2%
Palladium (US$/oz)	692	23.0%	(22.1%)	800	15.6%
Iron Ore (62% CFR) (US$/t)	58	33.4%	(38.7%)	58	0.9%
Nickel (US$/t)	10,162	15.7%	(47.9%)	16,216	59.6%

Source: Capital IQ & Bloomberg as of 7 September 2016
[1] Broker consensus pricing as of August 2016

Conclusions

- The Uranium market was impacted in 2011 by an external effect that saw Japan idle almost 10% of installed global nuclear capacity and in the wake saw Germany deciding to exit the market
- The price for uranium fell in the wake of the Fukushima disaster and is still close to multi-year lows
- Husab (in Namibia) is the only large project that was under construction in the last years and like most projects perceived in the recent past has high incentive costs (>$50/lb)
- Exploration budget were curtailed and many projects were postponed indefinitely
- Re-starts in Japan have commenced and China and India continue to construct nuclear power stations, tightening the market for uranium in the near future
- In our view, a strong case exists that uranium prices face upside pressure in the near future, providing a sought after reprieve from a generally negative price outlook for hard commodities
- As a result of the above, current prices are materially below long term forecast prices (70% upside)
- Share prices of most uranium miners do not yet reflect price increases
- We think that uranium juniors would benefit most from a uranium price uplift, especially ones with low production costs and well advanced and run projects (post feasibility study) in stable jurisdictions
- Being a strategic commodity and based on recent conversations with market participants we believe that Japanese, Chinese and European utilities are becoming increasingly concerned by the supply dominance of Kazakhstan, looking to gain access to long term supply from a diversified pool of sources

Increased demand for uranium might well provide an antidote to the negative outlook for most other commodities

Appendix

Trading comparables

Company	Mkt cap (US$mm)	Net debt (US$mm)	EV (US$mm)	EV/EBITDA 2016E	EV/EBITDA 2017E	P/E 2016E	P/E 2017E	Current gearing	P/B 2016E	P/B 2017E	P/B 3-month	EV/Resources (US$/lb)	EV/Reserves (US$/lb)
Uranium peer group													
Producers													
Cameco	3,703	1,230	4,933	10.0x	7.7x	21.1x	12.6x	33.2%	0.86x	0.94x	(23.6%)	4.22	12.03
Denison Mines	281	(18)	264	NM	NM	NM	NM	(6.3%)	1.58x	1.68x	(5.6%)	1.82	NA
Paladin	210	370	502	NM	10.8x	NM	NM	175.8%	NA	NA	(21.7%)	0.96	4.97
ERA	133	(286)	(153)	12.7x	7.8x	NM	NM	(214.5%)	0.65x	0.74x	(3.1%)	NM	NM
UR-Energy	76	26	102	NM	16.2x	NM	19.0x	34.0%	NA	NA	(19.3%)	3.56	NA
Average				11.3x	10.6x	21.1x	15.8x	4.4%	1.03x	1.12x	(14.6%)	2.64	8.50
Median				11.3x	9.3x	21.1x	15.8x	33.2%	0.86x	0.94x	(19.3%)	2.69	8.50
Developers / Explorers													
NexGen Energy	523	(21)	503	NM	NM	NM	NM	(4.0%)	NA	NA	(23.2%)	2.49	NA
Uranium Participation Corp.	363	(6)	356	NA	NM	NM	NM	(1.7%)	NA	NA	(7.0%)	NA	NA
Fission	255	(55)	200	NM	NM	NM	NM	(21.7%)	NA	NA	1.5%	1.85	NA
Energy Fuels	136	18	158	NM	NM	NM	NM	13.0%	NA	NA	(6.4%)	1.05	NA
Uranium Energy Corp.	133	9	142	NM	14.4x	NM	NA	6.6%	NA	NA	15.2%	0.90	NA
Berkeley Energy	117	(6)	111	NM	NM	NM	21.8x	(5.2%)	NA	NA	20.1%	1.24	NA
Peninsula Energy	78	0	80	NM	3.9x	NM	7.7x	0.4%	NA	NA	(7.0%)	0.72	NA
Toro Energy	74	1	75	NM	NM	NA	NA	1.7%	NA	NA	(3.3%)	0.89	NA
Vimy Resources	52	(5)	47	NM	NM	NM	NM	(10.0%)	NA	NA	(5.3%)	0.62	2.12
UEX	49	(7)	42	NM	NM	NM	NM	(14.7%)	NA	NA	(7.9%)	0.31	NA
Kivalliq	14	(1)	13	NA	NA	NA	NA	(4.4%)	NA	NA	(7.2%)	0.27	NA
Average				NA	9.2x	NA	14.8x	(3.6%)	NA	NA	(2.8%)	1.03	2.12
Median				NA	9.2x	NA	14.8x	(4.0%)	NA	NA	(6.4%)	0.90	2.12
Overall average				11.3x	10.1x	21.1x	15.3x	(1.1%)	1.03x	1.12x	(6.5%)	1.49	6.37
Overall median				11.3x	9.3x	21.1x	15.8x	(2.9%)	0.86x	0.94x	(6.7%)	1.00	4.97

Source: Capital IQ as of 7 September 2016
Note: Fission Energy and Denison mines announced a merger in 2014 but was cancelled in Oct 2015

Transactions in uranium space

Precedent transactions in the uranium sector since 2011

Closed	Target	Buyer	Seller	Geography	Deal value (US$mm)	EV / resources (US$/lb)	Resources contained (Mlb)
Nov-15	Uranium One Australia	Boss Resources; Wattle Mining	Uranium One	Australia	10	0.62	16.6
Nov-15	Denison Mines (Mongolia)	Uranium Industry	Denison Mines Corp	Mongolia	13	NA	NA
Nov-15	Anatolia Energy	Uranium Resources	Sprott Asset Mgmt, LP; RMB Resources; Resource Capital Investment Corp; Aterra Capital; Aterra Investments; Azarga Uranium Corp	Turkey	25	1.70	13.3
Sep-15	Black Range Minerals	Western Uranium Corp	Green Cay Asset Mgmt; Siebels Hard Asset Fund Cayman; Empire Equity, Asset Mgmt Arm; Azarga Uranium Corp.	US	15	0.16	90.4
Jun-15	Uranerz Energy Corp	Energy Fuels		US	190	8.08	23.6
Apr-15	Semizbay-U (49%)	CGN Mining Co	CGNPC Uranium Resources	Kazakhstan	133	2.72	99.7
-	Four Mile Project[1]	Quasar Resources	Alliance Resources	Australia	55[2]	3.73	14.8
Nov-14	Paladin Energy (15%)	HOPU	-	-	52	0.90	57.7
Jan-14	Langer Heinrich (25%)	CNNC	Paladin	Namibia	190	5.57	34.1
Sep-13	Alpha Minerals	Fission Uranium Corp	-	US	176	3.25	54.2
Jan-13	Uranium One (48.6%)	ARMZ Uranium Holding Co	-	Global	1,320	6.97	189.4
Aug-12	Yeelirrie	Cameco Corp	BHP Billiton	Australia	430	3.09	139.0
Jun-12	Denison Mines Corp (US Mining Division)	Energy Fuels	Denison Mines Corp	US	110	4.18	26.3[3]
Jun-12	Millenium Project (27.94%)	Cameco Corp	Areva Resources	Canada	150	7.94	18.9
Dec-11	Extract Resources (57.26%)	CGNPC Uranium Resources	-	Namibia	2,200	4.18	526.3
Aug-11	Hathor Exploration	Rio Tinto Plc	-	Canada	642	9.98	64.3
TOTAL					**5,711**		

- Recent precedent M&A transactions in the uranium sector suggest EV / resource valuations of between US$4/lb to US$9/lb
- M&A is concentrated around uranium deposits where resource size exceeds 25mm lbs

Source: SNL, Merger market, company filings

[1] *Deal announced but not completed*

[2] *Deal included US$25mm worth of mined concentrate*

[3] *Historical resource estimates*