

February 2012

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URANIUM

MARKET SHAKEOUT BRINGS OUTSTANDING VALUE

SUMMARY

Concerns over the economic outlook coupled with the Fukushima nuclear power plant incident have brought the spot price of uranium lower and major falls in the share prices of uranium companies.

However MPS forecasts that the demand for U₃O₈ will still rise by 21% by 2020 and by 90% to 2030 as the demand for electricity, particularly from non-fossil fuels, continues its current trend. With this demand will come increased prices.

KEY POINTS

- ✔ Since 1990, electricity demand has grown 3.0% pa with nuclear power producing ~14% of global generation
- ✔ Nuclear power provides over 21% of electricity in OECD countries, but only 1.8% in China
- ✔ Nuclear power generation was 2,630TWh in 2011 from 434 reactors with 370GWe capacity, consuming 73,800t U₃O₈
- ✔ U₃O₈ demand is forecast to be 97,700t by 2020 (500 reactors - up 17%) and 158,400t by 2030 (820 reactors - up 85%)
- ✔ U₃O₈ supply of 84,000t in 2010 met by mine production (78%), secondary sources and inventory (22%)
- ✔ Secondary supply will fall by ~8,800t (10% of total supply), after the Megatons-to-Megawatts program ends in 2013
- ✔ The Fukushima incident in Mar'11 has caused only a 2% cut in global capacity (13 reactors/11.3GWe)
- ✔ Uranium spot price fell 32% from Feb'11 highs to US\$49/lb in Sep'11 and is currently US\$52/lb
- ✔ The value of ASX-listed U companies slumped 60% from A\$11.4b in Feb'11 to A\$4.6b in Oct'11

MPS has carried out a sector wide analysis of 60 ASX-listed stocks with uranium interests and focussed on 31 companies that offer capital appreciation from current depressed levels through:-

- ✔ Current production
- ✔ Future production potential
- ✔ Opportunities in corporate rationalization of strategic deposits

Of these 31 companies, there are 14 companies with economically viable resources: with either a resource base above 25mlb (~US\$1.3bn) or a grade above 300ppm (~US\$61/t) trade at weighted average of A\$3.84/lb WCM .

MPS has selected five companies as preferred investment opportunities based upon prospects for current or future production and strategic attraction of the value of potentially minable resources.

CONTENTS

URANIUM	1
SUMMARY	1
KEY POINTS	1
SUMMARY OF ASX-LISTED U COMPANIES	2
SUMMARY OF KEY DRIVERS	3
MPS URANIUM COVERAGE BRIEFS	5
DEMAND	7
SUPPLY	11
PRICE	14
AUSTRALIA	15
STATE OVERVIEWS	18
EXPLOITABLE DEPOSITS	20

SUMMARY OF ASX-LISTED URANIUM COMPANIES

Company Name	ASX Code	Price \$	Mkt Cap \$m	EV \$m	Resource (mlbs)	U3O8 (ppm)	EV/WCM A\$/lb
BHP Billiton	BHP	35.98	180,308	180,314	5,597	277	na
Aura Energy	AEE	0.17	27	20	689	166	0.12
ERA*	ERA	1.35	699	563	606	1,505	1.57
Paladin Energy	PDN	1.53	1,278	1,867	520	679	6.49
Extract Resources	EXT	8.51	2,137	2,083	515	401	5.50
A-Cap Resources	ACB	0.27	54	45	261	152	0.53
Greenland Min	GGG	0.51	210	192	214	257	2.05
Rio Tinto	RIO	64.89	104,220	104,120	176	278	na
Bannerman Res	BMN	0.23	67	53	170	193	0.73
Deep Yellow	DYL	0.14	158	148	123	286	3.58
Gold One Int	GDO	0.50	708	748	91	200	11.83
Berkeley Resources	BKY	0.38	66	18	79	448	0.41
Wildhorse Energy	WHE	0.16	39	30	79	723	1.58
Summit Resources	SMM	1.68	366	358	76	664	11.35
Marathon Res	MTN	0.07	6	1	69	615	0.07
Stonehenge Metals	SHE	0.04	12	10	69	324	0.56
Energy & Min Aus	EMA	0.08	32	23	60	490	1.53
Black Range Min.	BLR	0.03	21	15	58	598	0.73
Uranex	UNX	0.34	62	59	44	163	4.87
Toro Energy	TOE	0.10	93	74	44	433	5.19
Marenica Energy	MEY	0.02	9	8	43	85	0.69
UraniumSA	USA	0.11	16	11	42	284	1.01
Peninsula Energy	PEN	0.04	81	58	41	422	4.37
Energy Ventures	EVE	0.04	14	12	38	248	0.66
Energy Metals	EME	0.39	60	34	29	316	3.32
Forte Energy	FTE	0.03	21	14	29	285	1.84
Acclaim Exploration	LRR	0.01	20	20	24	350	3.25
Mintails	MLI	0.10	14	14	22	39	1.57
Manhattan Corp	MHC	0.25	23	23	17	300	5.38
Alliance Resources	AGS	0.31	106	71	17	3,257	11.35
Globe Metals	GBE	0.13	29	-13	16	113	-2.58
Energia Minerals	EMX	0.06	7	2	16	406	0.56
AA Mining Corp	AIW	0.07	5	2	13	872	0.63
African Energy Res	AFR	0.30	98	89	11	269	19.24
Encounter Res	ENR	0.55	55	50	9	175	22.29
Maximus Resources	MXR	0.01	5	4	8	180	2.37
PepinNini Minerals	PNN	0.09	8	4	5	298	1.77
Cauldron Energy	CXU	0.13	12	11	5	296	9.01
Curnamona Energy	CUY	0.07	5	2	5	260	1.40
Resource Star	RSL	0.03	1	1	1	325	4.78
Southern Cross Expl	SXX	0.02	4	4	1	1,283	8.07
Total & Weighted Average#			6,627	6,725	4,172	534	2.97
Pure Australian Based			1,397	1,148	963	1,181	2.62
Pure Offshore Based			2,829	2,625	1,621	326	2.64
Diversified Players			1,532	2,096	1,392	371	2.96
Total Pure U Companies			5,114	5,266	3,688	552	2.54

Excludes BHP & RIO.

* ERA includes \$550m rehab provision as debt.

SUMMARY OF KEY DRIVERS

Nuclear power will increase its share of global electricity generation from the current 14% as new reactors come on stream, especially in China and India, and as additional capacity is planned into the next 20 years. **U₃O₈ demand can only grow.**

From 2013 the US/Russia Megatons-to-Megawatts warhead conversion programme ends and mine production is expected to be slow in making up this supply loss. **Consequently U₃O₈ faces a supply deficit and prices must rise.**

Australia has 31% of global U₃O₈ resources primarily through BHP's Olympic Dam (2.49mt) but only 12% of production at 5,900t in 2011, a share that will decline until 2020 when the proposed Olympic Dam expansion is on stream.

ASX U companies however, have global horizons and have been steadily increasing U₃O₈ resources bases to 2.2blb (990t), up 193% from end 2008 and up 37% in 18 resources upgrades post Fukushima in March 2011.

The combination of lower share prices and a substantial build-up of the U₃O₈ resource base has given a sharply lower implied valuation of in ground resources for the MPS universe of 31 stocks. Valuations fell from a peak enterprise value of \$12.34/lb Weighted Contained Metal (WCM) in Jan'09 to just \$2.16 (down 83%!) in Oct'11.

MPS has noted in its universe of 31 stocks that (ex BHP, RIO, WHE, AFR and ENR) the 14 companies having a resource base above 25mlb or a grade above 300ppm trade at weighted average of A\$3.84/lb WCM, five times higher than the 12 companies with smaller resources and/or lower grades.

Steady economic and population growth, coupled with rising living standards in non-OECD countries has increased world demand for electricity. Despite the Fukushima disaster, numerous governments are still pushing ahead with plans to reduce their dependence on fossil fuels and increase nuclear energy's share.

Nuclear power represents the most feasible and CO₂ efficient option for many countries to increase their energy supply security and decrease their dependency on natural gas and oil from politically unstable regions. A more secure supply is from uranium resources mined in stable countries, including Australia and Canada.

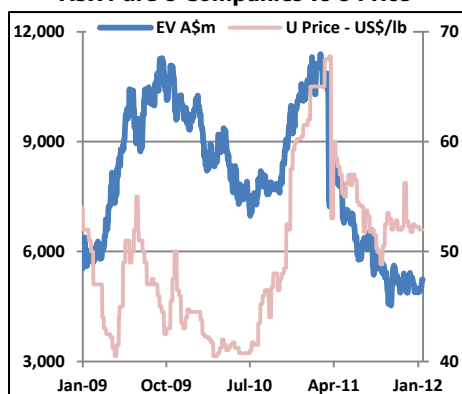
Also, uranium's energy density is very high in comparison to other energy commodities. A tonne of uranium metal produces the same energy as 10,000-16,000 tonnes of crude oil. This high energy density means that uranium is far cheaper to transport and store per unit of available energy than other forms of energy, such as natural gas. It is also, therefore, less vulnerable to supply disruption.

MPS considers that nuclear power represents the most economically-feasible low- CO₂ alternative to coal at providing base-load electricity.

MPS forecasts give 500 nuclear reactors with a capacity of 454GWe by 2020 and ~820 reactors by 2030. This implies the demand for U₃O₈ will rise by 21% over current requirements to 97,700t by 2020 and by 90% to 158,400t by 2030.

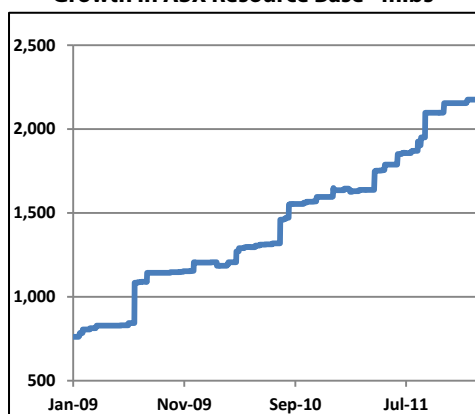
Non-OECD countries will continue to drive demand for uranium. China and India alone, with just 1.8% and 2.9% resp. (2101) of nuclear power share of electricity production, have the potential to add over 275GWe of nuclear capacity by 2030, a figure 175% higher than their current levels.

ASX Pure U Companies vs U Price



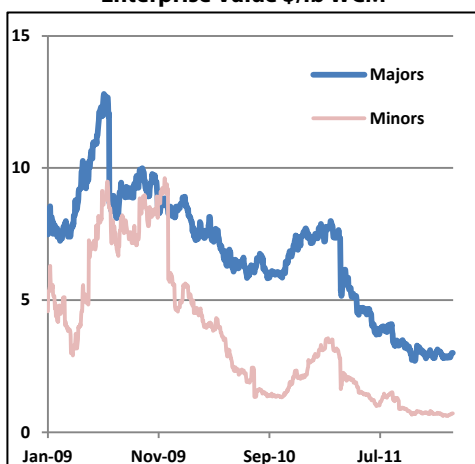
Source: MPS

Growth in ASX Resource Base - mlbs



Source: MPS

Enterprise Value \$/lb WCM



Source: MPS

Effect of Fukushima on nuclear capacity was minimal with capacity cuts of less than 2% in 2011.

Australia has the largest U resource in the world and is the third largest producer.

ASX-listed U companies have ~4.8mt (10.5blb) of U₃O₈ resource. BHP's Olympic Dam dominates with its 2.5mt resource.

Other ASX-listed companies have:

- 35 deposits in Australia, with 688,000t (1.5blb) U₃O₈ and
- 35 deposits with 1.6mt (3.5blb) U₃O₈ in offshore locations

Together these almost match Olympic Dam in terms of size.

An almost 50% reduction in secondary supply from completion of the Megatons-to-Megawatts program in 2013 should also tighten the market.

The net effect of the Fukushima disaster on nuclear capacity was minimal with capacity cuts of less than 2% in 2011. The long-term uranium price remained relatively stable post-Fukushima, falling only 15% in comparison to the 32% fall seen in the spot price.

Australia contains the largest U resource in the world and is the third largest producer with ~6,000t in 2011. Despite these lofty spots on the global league tables, the ~\$7b in export earnings in 2011 represents only a small portion of Australia's ~\$200b in mineral resource exports.

In view of the potential economic benefits, uranium policy in Australia is slowly changing to encourage exploration and mining. The Dec'11 decision by the Australian Labor Party to approve U sales to India is another small step forward. A change in Queensland U mining policy may be forthcoming at the next State election (Mar'12) and even NSW is flagging a change to its exploration ban.

In addition to new exploration activity across most of Australia, there are corporate activity opportunities that could unlock greater shareholder value. MPS has identified consolidation possibilities in each of the U regions across Australia.

During 2010 and 2011 there was substantial consolidation of the uranium sector with downstream nuclear companies and current producers securing additional uranium assets. China has remained active in corporate activity with bids for Bannerman Resources, Kalahari Minerals and Uranex.

ASX-listed U companies are substantial players in the international U exploration and development sector with ~4.8mt (10.5blb) of U₃O₈ resource. This includes 37 deposits within Australia and a further 35 deposits accounting for 1.6mt (3.5blb) U₃O₈ in offshore locations. This compares to the top 15 listed on other exchanges U companies with ~3.6mt (8blb) of U₃O₈ resource spread across 120 deposits.

Australian U₃O₈ Projects – Capacity & EV/lb Capacity (excluding BHP)

Code	Project	Capacity (mlb pa)	EV \$m	EV/lbpa Capacity	Starting Date
ERA	Ranger	13.0	563	43	Operating
PDN	LH & KM	8.5	1,823	228	Operating
BMN	Etango	6.0	51	7	2015
MHC	Ponton	5.0	19	4	>2016
AGS	Four Mile	5.0	73	4	>2016
EMA	Mulga Rocks	2.6	24	9	>2016
ACB	Lethakane	2.2	39	18	>2016
DYL	Omahola	2.2	142	65	2015
PEN	Lance (Ross)	2.2	58	26	2014
TOE	Wiluna	1.8	75	42	2014
USA	Samphire	1.3	12	9	2013
EME	Bigryli JV	1.3	34	14	>2016
AFR	Chirundu	1.3	87	67	>2016
		52.5	3,000	57	

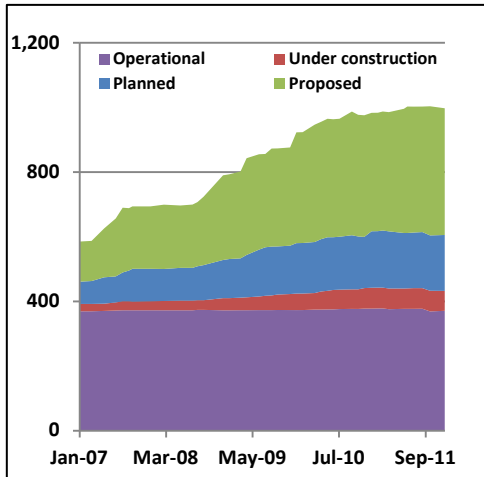
Source: MPS

MPS URANIUM COVERAGE BRIEFS – 31 COMPANIES

Company	Code	Comment
A-Cap Resources	ACB	Large, low grade deposit Has nine PLs (~5,950km ²) in Botswana, with the 100%-owned Letlhakane Project the primary asset. The BFS is due for completion in 2012.
Aura Energy	AEE	Large multi element resource Advancing two U projects to PFS stage. Haggan is a very large multi element deposit in Sweden and Reguibat is a promising calcrete U deposit in Mauritania.
African Energy Resources	AFR	Secondary focus Focused on the Sese Coal Project in Eastern Botswana but has a small uranium position in the Karoo Basins of Zambia.
Alliance Resources	AGS	Legal hassles Development of the Four Mile high grade, low cost ISR mine held up over the size and capital costs. Awaiting JV resolution.
BHP Billiton	BHP	Market changer Olympic Dam current capacity of 4,500tpa U ₃ O ₈ with expansion to 19,000tpa by 2020, will give global leadership. Second U growth option is the Yeelirrie project, WA.
Berkeley Resources	BKY	Ongoing JV dispute A Spain based U explorer. While awaiting the creation of a suitable JV with ENUSA over the Salamanca Project, BKY is focused on its 100%-owned project.
Black Range Minerals	BLR	Impressive size and grade Focused on the development of the Taylor Ranch and Hansen U Deposits in Colorado, USA. The combined resource is the 3rd largest in the USA.
Bannerman Resources	BMN	Low grade medium sized deposit Key asset is the 80%-owned Etango deposit in Namibia, located 50km W of Paladin's Langer Heinrich mine and 30km SW of Rio Tinto's Rossing mine.
Cauldron Energy	CXU	Multiple prospects Focused on prospective areas in Australia and Argentina. Once heritage issues are resolved at Bennet Well, drilling will recommence.
Deep Yellow	DYL	Namibia focus Flagship project is Omahola U project in Namibia, with proposed production by 2015. Has a well advanced low grade uranium sand project.
Energy & Minerals Australia	EMA	Potential for large ISR project Looking to expand the resource base of its Mulga Rocks U deposits. An updated resource estimate is due during 2Q12.
Energy Metals	EME	Major strategic shareholder Strategic U holdings in the NT and WA. EME also has a U export license and a strategic alliance with its major shareholder – one of two companies authorised to import and export U in China.
Energia Minerals	EMX	Tailgating major operators An extensive portfolio of tenements across Australia and Italy. The Australian assets are positioned close to major existing U deposits.
Encounter Resources	ENR	Regional consolidation Focused on the Yeneena Cu project and has a small uranium position in the Yilgarn district. Consolidation of uranium interests in the region is well underway.
Energy Resources of Australia	ERA	Distance growth Operates the Ranger mine and holds title to the Jabiluka deposit, NT. Mining at Ranger 3 will shortly start a decline through to 2016. FID on Ranger 3 Deeps (34,000t U ₃ O ₈ @ 3,400ppm) is expected during 2014. At some stage, ERA will seek Mirarr consent to develop Jabiluka (141,600t U ₃ O ₈ @ 4,840ppm).
Energy Ventures	EVE	Refocusing on the U.S. Five 100%-owned advanced U exploration and development projects in western United States and located in pro-mining regions.
Extract Resources	EXT	Emerging as a major producer Key asset is the Husab Project, a global top five U deposit in Namibia. The DFS envisages a 15mtpa processing plant costing US\$1.66bn with OPEX of US\$32/lb.
Forte Energy	FTE	West African focus West African focused company with 100%-owned projects in Guinea and Mauritania. The 13,000km ² of tenements are prospective for both U and REE. FTE's focus is to become the first uranium producer in Guinea.
Greenland Min. & Energy	GGG	Huge untapped REO & U deposit Progressing the Kvanefjeld multi-element Project, in southern Greenland. This project and the surrounding northern Ilimaussaq Complex offer a supply of REO and

		potentially a substantial U source.
Marenica Energy	MEY	Elephant country Located in uranium rich Namibia. The company's main asset is the 75%-owned Marenica Project, located 69km N of Rio Tinto's Rossing mine.
Manhattan Corporation	MHC	Minister concurrence required Focused on U exploration in WA. The Ponton Project (2,140km ²) is the flagship asset with resource upgrade potential and is potentially amenable to ISL recovery.
Marathon Resources	MTN	Compensation case Key asset is the Mt Gee Project, SA. Subject to resumption and SA Government's compensation.
Paladin Energy	PDN	Development options Operates two U mines in Africa and has a U portfolio spanning from Africa to Canada and Australia. Its 236,000t U ₃ O ₈ resource gives it # 6 global ranking.
Peninsula Energy	PEN	Near term ISR production Holds key land positions in both the United States and South Africa. PEN's flagship Lance Project in Wyoming has both a U and V resource. PEN is aiming to have two producing U mines within 6 years.
Rio Tinto	RIO	Rossing to 2023 and beyond Two uranium interests – a 68%-interest in ERA and a 69%-interest in Rossing, Namibia. Profitability at Rossing has deteriorated since 1H08 to the point where a US\$25m EBITDA loss was reported during 1H11.
Stonehenge Metals	SHE	South Korean potential Three projects located in the Ogchon Belt in South Korea. The key asset is 29,500t (65mlb) Daejon Project, the largest known uranium resource in South Korea. Ultimate goal is to become Korea's first uranium producer.
Summit Resources	SMM	Queensland focus Holds the largest U deposits in Queensland. The ~59,100t (130mlb) resource is located N of Mount Isa. The development of this resource awaits a change in Queensland Government policy towards uranium mining.
Toro Energy	TOE	Racing to be Western Australia's first producer Key asset is the 100%-owned Wiluna uranium project (52mt U ₃ O ₈ @ 434ppm). Completed public review phase of the WA Govt approval process – a first for U in WA. DFS expected in 2Q12.
Uranex	UNX	Southern Tanzanian focus Repositioned itself as a uranium and coal explorer and developer focused on Southern Tanzania. Non-core assets in Central Tanzania and Australia to be divested.
UraniumSA	USA	Potential near term production Uranium exploration and developer in South Australia. The Blackbush deposit within the Samphire Uranium Project may be in production by 2013.
Wildhorse Energy	WHE	Eastern European energy Primary focus is on the development of a UCG project in Southern Hungary. In addition, WHE hold a major interest in the Mecsek Hills Uranium Project (72km ²), the only active uranium project in the country.

History of Reactor Capacity Growth – Gwe



Source: WNA

Operational Reactors by Age

Age Years	No. Of Reactors	Capacity GWe	Av. Size MWe
0-30	273	250	917
31-35	71	60	844
36-40	67	47	696
41+	24	11	472
Total	434	370	853

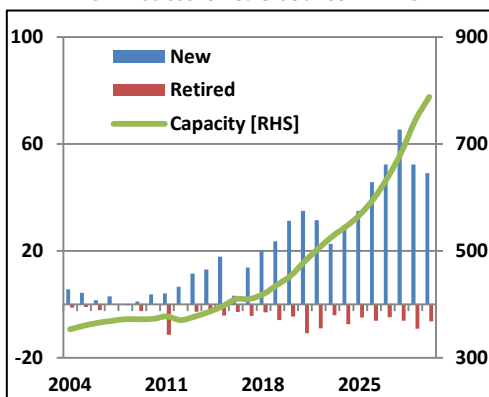
Source: WNA

Nuclear Reactor Forecasts

	No. Of Reactors	Cap. GWe	Av. Size MWe	Req. U ₃ O ₈ t
2012A	434	370	853	73,800
2020F	500	454	909	97,700
2030F	820	830	1,014	158,400
2020/2012	17%	28%	9%	21%
2030/2012	85%	120%	19%	90%

Source: MPS

New Reactors vs. Closures – Mwe



Source: MPS

DEMAND

Nuclear power accounts for the vast majority of the world's uranium demand. Consumption of nuclear power has grown 1.6% pa since 1990 and in 2011 accounted for ~13.8% of the world's electricity. Developed nations have traditionally placed a greater emphasis on nuclear power. In the OECD and European Union, nuclear power accounts for 21% and 28% respectively of total electricity consumed.

There are currently 434 operating nuclear reactors with a combined net capacity of 370GWe across 31 countries. The World Nuclear Association (WNA) estimates that these reactors required 73,800t U₃O₈ in 2011, equivalent to 170t/reactor. MPS is forecasting 500 reactors by 2020 and 820 by 2030. Uranium feedstock required will need to grow by 90% to 158,400t U₃O₈.

Construction of Nuclear Power Plants

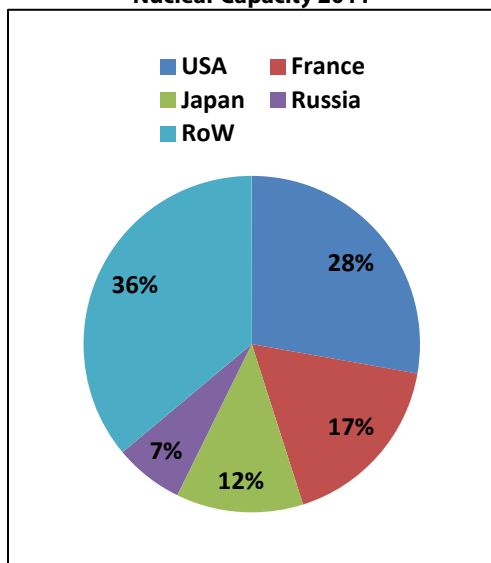
The World Nuclear Association (WNA) tracks the nuclear powered reactors of the world from the planning stage to construction through to retirement. A bi-monthly table of reactors operating, under construction, planned and proposed is produced at www.world-nuclear.org/info/reactors.html. This table includes only those future reactors envisaged in specific plans and proposals and expected to be operating by 2030. The definition of operating and under construction are self-evident. WNA's definition of "planned" means approvals, funding or major commitments are in place and most operations will be operational within 15 years. The "proposed" category requires there is a specific program or site proposal and the reactor should be in operation within 15 years.

Uranium demand follows the construction and expansion of nuclear power plants. Over the last 15 years, there has been a reactor renewal process underway. Since 1996, there have been 61 new plants come on line and 57 retirements (including eight in Germany during 2011). In Jan'07, there were 435 reactors connected to the grid with 369GWe of capacity and consuming 78,500t U₃O₈ (173mlbs). Over the last five years, operating reactor numbers climbed to 443 in Mar'11 (179mlb U₃O₈) until in reaction to the Japanese nuclear disaster fell back to the current 434 reactors with 370GWe of capacity and consuming 73,800t U₃O₈ (163mlbs). Another feature of the industry's evolution has been a shift away from OECD countries. Since 2000, 70% of new nuclear power plants have been in non-OECD countries, with 20 in China and India alone. In summary, five year growth for nuclear generated electricity has been flat, leading to a 6% decline in the demand for uranium.

The net effect of the Fukushima disaster in Japan and decisions by the German Government on nuclear capacity is minimal. Thirteen reactors closed in 2011 with 11.3GWe capacity, less than 3% of active and under construction reactors. Seven new reactors were connected, adding 4GWe of capacity. All six reactors were built in non-OECD countries, including the first reactor in Iran. Additionally, capacity upgrades at plants added 440MWe of capacity.

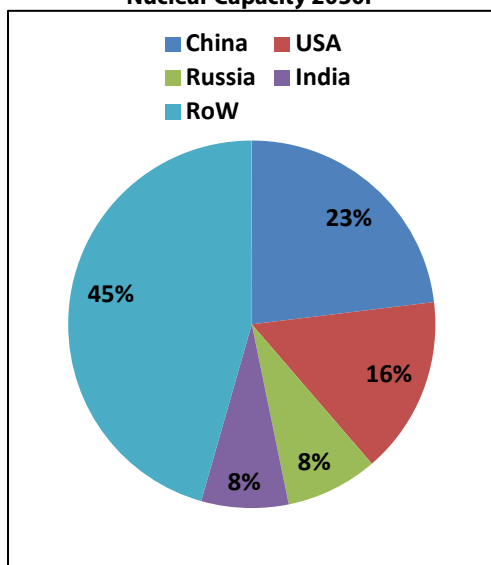
The outlook for uranium demand for electricity generation appears to be altogether different to the last five years' performance. First up, there are 61 reactors in 14 countries currently under construction with potential capacity of 61.7GWe. That's equal to 17% of current capacity. Secondly, the table documenting the history of reactor proposals for the last five years indicates that an era of substantial growth in reactor numbers and capacity is dawning and the period of reactor renewal is finished.

Nuclear Capacity 2011



Source: WNA

Nuclear Capacity 2030F



Source: WNA

China Matrix

	2007	2011	2020	2030
No. Reactors	10	15	75	190
Capacity (GWe)	7.5	11.9	75	200
U ₃ O ₈ Req. (t)	1,715	4,810	24,000	60,000
Share of Electricity	1.9%	1.8%	6%	11%

Source: WNA, MPS

The number of planned reactors has jumped from 64 (across 17 countries) in Jan'07 to 156 (28 nations) in Jan'12 and the number of proposals has doubled to 343 reactors (38 countries). Notable players in the growth of the nuclear industry are China, India, Russia and the United States. The WNA currently estimates 60 to 140 reactor closures by 2030.

History of Reactor Development Proposals

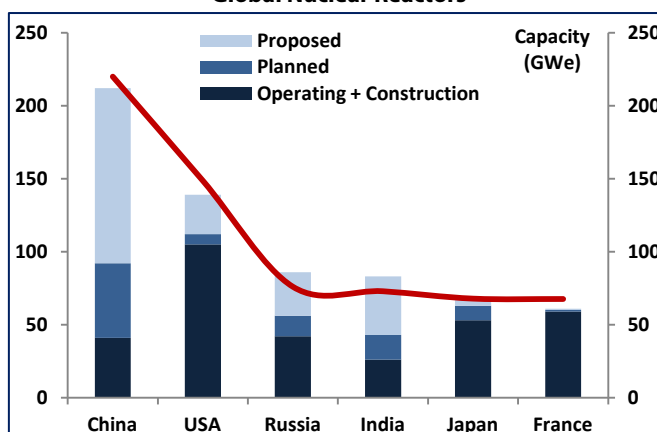
	Under Construction		Reactors Planned		Reactors Proposed	
	No.	MWe	No.	MWe	No.	MWe
Jan'07	28	22,800	64	68,900	158	124,300
Jan'08	34	27,800	93	100,600	222	193,100
Jan'09	43	37,700	106	118,100	266	262,100
Jan'10	53	51,200	142	156,100	327	343,000
Jan'11	63	64,600	156	174,800	322	366,600
Jan'12	61	61,700	156	173,100	343	392,200

Source: WNA

MPS is forecasting that by 2020 there will be 500 reactors with a capacity of 454GWe requiring 97,700t U₃O₈ and by 2030 there is likely to be 820 reactors requiring 158,400t U₃O₈. This is 90% higher than the current level. The key assumptions are:

- Approximately 85% of the reactors under construction are completed by 2016. The current WNA list contains a small number of projects that appear to have stopped construction.
- Approximately 90% of the planned and proposed categories go ahead.
- Progressive closure of all reactors over the age of 34 years plus the nine remaining German reactors by 2022.
- The retiring reactors normally have smaller capacities compared to the new reactors. The latter are also more efficient and use less uranium feedstock.

Global Nuclear Reactors



Source: WNA

China

As China continues to industrialise, its energy consumption continues to grow and in 2010 it surpassed the United States as the world's largest energy consumer. While nuclear power only accounted for 1.8% of total electricity generation in China in 2010, the lowest of 30 countries followed by the WNA, it was still the ninth highest global producer with 70TWh. Nuclear share should be 6% by 2015 and 11% by 2030.

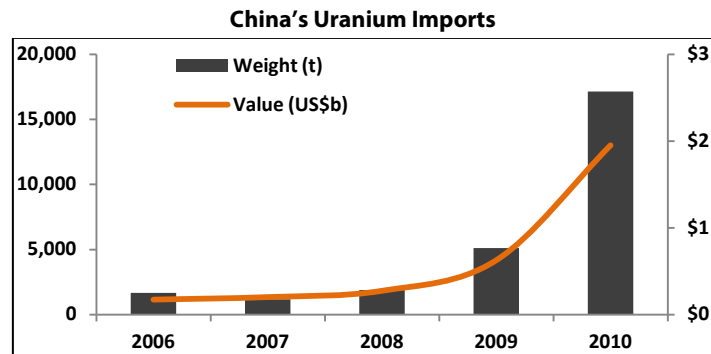
The clear message from China's government in relation to energy is simple; increase efficiency and ensure a stable, reliable, and low-carbon energy supply. This involves steering away from coal dependency and moving towards less carbon intensive fuels. China's 12th Five-Year Plan (FYP), approved by the PRC National People's Congress in Mar'11, provided greater emphasis on the role nuclear power will play in China's

China has 15 nuclear reactors and is a net importer of uranium.

By 2050 China could have over 200 ...

future. The 12th FYP aims to accelerate the development of nuclear power in coastal provinces and construct nuclear power projects with a total installed capacity of 40GWe by 2015, a fourfold increase on current generation.

In Mar'11, China reacted to the Fukushima disaster by pausing approvals on new nuclear power stations pending a safety review. This review was completed in Aug'11 and it is believed approvals will recommence shortly. China currently has 15 nuclear reactors with capacity of 11.9GWe, 26 reactors under construction (27.6GWe), 51 planned reactors (57.5GWe) and a further 120 proposed reactors (123GWe). Although government comment has varied, the general consensus is that overall nuclear capacity will increase to 40GWe by 2015, 70-80GWe by 2020, 200GWe by 2030 and a possible 400-500GWe by 2050.



Source: UN Comtrade

China is a net importer of uranium. In 2010, imports rose 235% to 17,136t with a value of US\$1.95b, while local production rose 10% to 827t. Imports from 2006 to 2008 remained relatively stable, averaging 1,577tpa before rising 170% in 2009 and a further 235% in 2010. It is believed that China is building considerable uranium stockpiles due to future nuclear reactor requirements. On average, 200t of uranium is required to fuel 1GWe, given China created 10.8GWe in 2010 and uranium supply equalled ~18,000t, it can be reasonably assumed that almost 16,000t would have been stockpiled in 2010 alone. Since 2009, China's two largest nuclear companies have continued to secure long-term supply contracts with uranium producers.

It is likely that China will have an ongoing demand for uranium with

- 15 operating nuclear reactors
- 26 reactors under construction,
- 51 planned and a further
- 120 proposed.

Long-Term Uranium Supply Contracts with China

Date	Supplier	Country	Importer	Detail
Nov'10	Areva	France	CGNPC	20,000t over 10 years
Nov'10	Cameco	Canada	CGNPC	~13,150t through to 2025
Jun'10	Cameco	Canada	CGNPC	~10,400t through to 2020
May'09	Kazatomprom	Kazakhstan	CNNC	~24,200t through to 2020

Source: Company announcements

Despite a joint OECD and IAEA report in 2009 detailing 171,000t of known recoverable resources, China produces only small amounts of uranium from a limited number of small mines. Local production has averaged 722tpa since 2000 and has only grown 10% since 2003.

To ensure future uranium supply, Chinese companies remain actively involved in corporate activity involving offshore companies, including those ASX-listed. In Jul'11, Sichuan Hanlong Group made a \$143.5m offer for Bannerman Resources' 170mlb Etango Project, valuing the company at a 59% premium and equivalent to \$1.89/lb EV/WCM. In Aug'11, a Chinese investment group offered \$20m (\$1.42/lb) for Uranex's Australian deposits (14mlb). The offer has since been abandoned. In addition, since 2H09, GGNPC has held a 60.6% interest in Energy Metals Ltd. CGNPC's takeover offer of LSE-listed Kalahari Minerals (42.8% owner of Extract Resources) highlights China's ongoing demand for uranium.

Australia now exports U to India.

Nuclear provided 2.9% of India's electricity in 2010.

USA is the world's largest producer of nuclear power and largest consumer of U.

In contrast, Germany is phasing out nuclear reactors: 5% of current global U demand.

India

India continues to build their nuclear power capacity. The fourth unit at the Kaiga nuclear plant was connected in Jan'11 and the sixth unit at the Rajasthan nuclear plant was connected in Mar'10. India currently has 20 reactors operating with a net capacity of 4.4GWe and a further 6 under construction with 4.6GWe gross capacity. Based on data from the WNA, India has 57 planned or proposed reactors with 64GWe gross capacity, a figure almost 15 times current levels.

While estimates are varied, the Government of India's Planning Commission released a report in May'11 entitled 'Low Carbon Strategies for Inclusive Growth' which stated nuclear power could reach 17.5GWe by 2020. India's 10th FYP, ending 2006, added 1.1GWe of nuclear capacity while their 11th FYP is targeting a 3.4GWe increase. The 12th FYP states India will require 5,057t (1,011tpa) of uranium over the five year period commencing 2012 with ~50% supplied by long-term agreements with Russia and Kazakhstan. The recent Labor decision to allow uranium exports to India provides Australian companies with additional exporting opportunities.

United States

The United States has 104 operating reactors, the highest of any country, and is the world's largest producer of nuclear power, accounting for ~31% of global production in 2011. Nuclear power has accounted for 20% of electricity consumption in the United States since 2000. Consequently, the United States is the largest consumer of uranium and is likely to require 29% (18,376t) of global supply in 2011. Unit 2 at the Watts Bar Nuclear Generating Station in Tennessee is expected to come online in 2013, the first new reactor in the United States since 1996. According to the WNA, the United States has 34 planned or proposed reactors with gross capacity of 46GWe (~9,160t uranium). In addition to these plans, the U.S. Nuclear Regulatory Commission is continuing to extend the lifetime of their currently operating reactors. Currently, 93 reactors have licences expiring post-2020 and 61 reactors post-2030.

Germany

In May'11, Germany's Christian Democratic Government announced that in addition to the seven oldest reactors that were announced to be shut immediately in Mar'11, the remaining nine reactors will be phased-out and closed by 2022. An additional reactor has been off the grid for years. The net effect of this decision on the nuclear industry is minimal and has passed. In 2010, Germany only accounted for 5% of global nuclear energy production and 5% of global uranium demand. In context, Germany's current capacity equals less than 4% of planned and proposed reactors around the world.

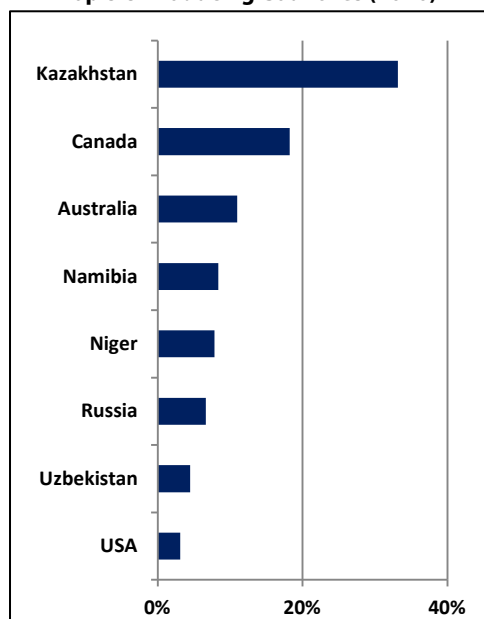
Nuclear Share of Electricity Generation - 2010

Selected Countries	%
Belgium	51
Canada	15
China	<2
Finland	28
France	74
Germany	28
India	<3
Japan	29
South Korea	32
Russia	17
Slovakia	52
Sweden	38
UK	16
USA	20

Source: WNA

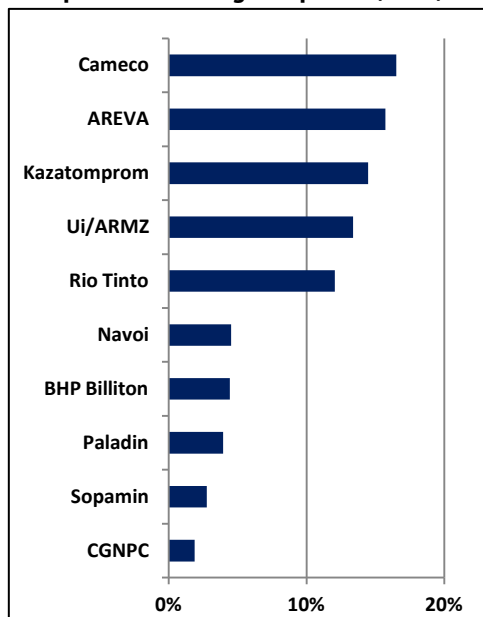
SUPPLY

Top 8 U Producing Countries (2010)



Source: WNA

Top 10 U Producing Companies (2010)

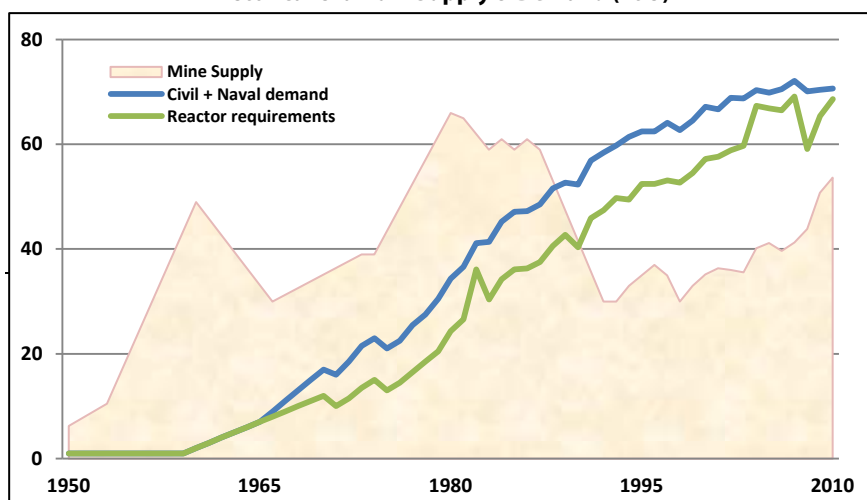


Source: WNA

Uranium is supplied from six main sources:

- **Primary Supply:**
 - Mine production
- **Secondary Supply:**
 - Commercial stockpiles
 - Nuclear weapon stockpiles
 - Recycled plutonium (Mixed Oxide Fuel or MOX)
 - Reprocessed uranium (RepU)
 - Re-enrichment of depleted tails (used reactor pellets)

Historical Uranium Supply & Demand (kt U)



Source: ABARE, IAEA

Production of U since the 1950s resulted in a stockpile that has overhung the market. A net drawdown began in the late 1980s and MPS estimates this at around 300,000t before the net position of Soviet uranium production and consumption. The current stockpile is unknown but may be closer to 100,000t.

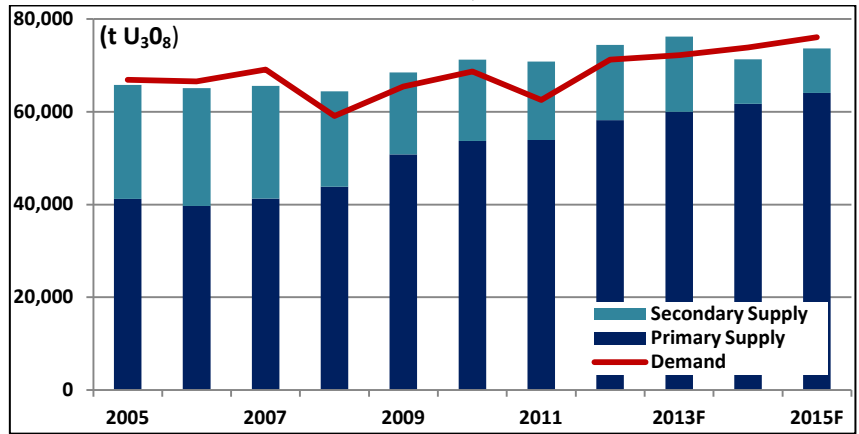
Primary Supply

Mine production accounts for the lion's share of global uranium production, providing ~78% of supply in 2010. Due to declining secondary supplies, MPS forecasts this will increase to ~85% by 2015.

There are four main steps in the primary supply of uranium for nuclear reactors. They are as follows:

1. **Mining & Milling:** uranium ore is chemically processed into uranium oxide (U_3O_8) known as "yellowcake".
2. **Conversion:** the U_3O_8 is then converted into uranium hexafluoride (UF_6), which is a gas at room temperature.
3. **Enrichment:** the UF_6 gas is enriched to increase the proportion of U-235 isotopes from 0.7% to 3-5%.
4. **Fuel Fabrication:** the enriched UF_6 gas is then converted into uranium dioxide (UO_2), fired and then formed into ceramic fuel pellets. These pellets are then formed into rods that can be used in nuclear power generation.

2005 to 2015 Supply & Demand



Source: WNA, MPS

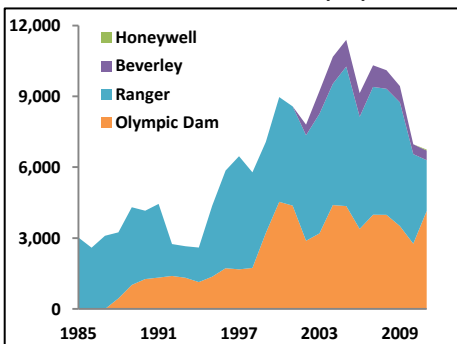
Kazakhstan is the world's largest uranium producer, producing ~17,350t in 2011 which accounts for ~32% of global production. MPS forecasts that Kazakhstan's production will increase to ~23,000t by 2015. This expansion is largely due to Katco (Areva 51%, KazAtomProm 49%) formally obtaining permission in Jun'10 to increase production at their Tortuduk deposit to 4,000tpa by 2012.

Canada, the world's second largest uranium producer, produced ~8,150t in 2011 and accounted for ~15% of global production. It will encounter a near-term production decline before steadying in 2015. The near-term decline is due to the McClean Lake open-pit mine, majority owned by Areva, entering into care and maintenance mode in 2010. Production will begin to increase again in 2013 as the Cameco operated Cigar Lake ramps-up production. MPS forecasts Canadian production will increase to ~12,900t by 2015.

Australia was the third largest uranium producer in 2011, producing ~6,000t from four mines. Honeymoon started-up during Sep'11. Assuming steady volumes from Olympic Dam until the 2020 open pit operation ramps up and ongoing declines at Ranger and Beverley, Australia's contribution to global supply will continue to decline until 2015. Start-ups at Four Mile and Wiluna could soften the decline.

Namibia accounted for ~9% of global production in 2011, producing 4,900t. Namibia's production will undertake moderate growth over our forecast period. Continued expansion is expected at Rossing (Rio Tinto) and Langer Heinrich (Paladin), while the commencement of the Valencia/Namibplaas operation owned by Forsys Metals in 2013 will see Namibian production reach ~7,800t by 2015.

Australian Production (U t)



Source: Company Reports

Secondary Supply

The most fundamental shift in the supply of uranium over our forecast period is the decline of secondary supplies, most notably the curtailing of nuclear weapon stockpiles. In 2010, secondary supplies accounted for 22% of uranium supply, down from 32% in 2008 and 40% in 2006. MPS forecasts that secondary supply will decline to <10% by 2015.

Nuclear Weapon Stockpiles: Megatons-to-Megawatts Programme

Weapons grade uranium, called highly enriched uranium (HEU), contains between 20% and 90% U-235. If HEU is blended down with uranium containing low levels of U-235 to produce low enriched uranium (LEU), which typically contains between 3%-5% U-235, it can be formed into ceramic pellets and used as fuel in nuclear power generation.

In 1993, the United States and Russia signed a government-to-government agreement in which 500t of HEU from nuclear stockpiles would be converted to LEU. This program was called the Megatons-to-Megawatts Program. Since 1995, the program has created ~125,400t of uranium and accounts for about 13% of total uranium supply. The program is due to expire in 2013 and MPS considers it unlikely to be renewed. Uranium created from 2011 until 2013 is expected to be ~8,870tpa. From 2014 onwards, the program completion will leave a supply gap of around 8,870tpa, a figure unlikely to be filled by mine production.

Sector Consolidation

2010 and 2011 saw the continuing consolidation of the uranium sector with downstream nuclear companies and current producers securing additional uranium assets. The largest transaction has been RIO's successful takeover of Hathor Exploration. The final C\$4.70/share cash bid was 76% above the last trading price before the initial Cameco bid and equates to \$32/lb WCM EV.

Significant ASX-Related 2011 Deals

Date	Target	Acquirer	Major Project	EV/WCM (A\$/lb)
Dec'11	Hathor Exploration	Rio Tinto	Roughrider, Canada	32
Jul'11	Bannerman Res.	Hanlong	Etango, Namibia	1.86
Mar'11	Mantra Resources	ARMZ	Mkuju River, Tanzania	23
Feb'11	White Canyon	Denison Mines	Daneros, United States	142

Source: Company Reports

PRICE

While a spot market exists, the vast majority of uranium is traded through medium and long-term contracts negotiated directly between a buyer and seller (typically a utility and a uranium miner). Nevertheless, China and Russia continue to secure supplies and long-term contracts are becoming more and more linked to the spot price.

Spot prices began a recovery in 2010, rising ~80% YoY to US\$72/lb in Mar'11. However, subsequent to the Fukushima disaster, spot prices fell sharply and most recently hit US\$49/lb, down 32% YoY. The current spot price is US\$52/lb. The weakness of the USD increased the downside for Australian producers. Nevertheless, the current Australian dollar uranium price has bounced off Sep'11 lows of A\$46/lb and has recently traded at A\$50.50/lb.

The long-term price was not as adversely affected by the Fukushima disaster as the spot price. The long-term price reached a peak of US\$73/lb in 1H11 before falling 15% to current levels of US\$62/lb.

Security of supply is so important that long term contracts are the norm.

Contract prices are currently well above spot prices

Spot vs. Long-Term Price – US\$/lb



Source: The Ux Consulting Company, LLC (<http://www.uxc.com>)

Security of supply is imperative and global producers have continued signing long-term supply contracts with either current or near-term producers. In Aug'11, Paladin announced it had signed sales agreements with three U.S. customers for 2.8mlbs of U_3O_8 at US\$60-65/lb. In addition, near-term producer Peninsula Energy signed a sales agreement with a Tier 1 U.S. customer in Feb'11 for 1.15mlbs of U_3O_8 at ~US\$74/lb.

Uranium Spot Price – A\$/lb



Source: Bloomberg

AUSTRALIA

Uranium Policies

In Australia, concerns over the potential long term effects of nuclear energy have been a major plank in environmental policies of the Australian Labor Party ('ALP') and similar groups. The policy had led to the establishment of the Three Mine Policy during the ALP's 1983-1996 terms in office that allowed only three mines, Ranger, Nabarlek (later Beverley) and Olympic Dam, to operate. The Three Mine Policy was abandoned with the defeat of the ALP in 1996 Federal Election and the policy itself was abolished within the ALP in 2007.

The various State ALP governments had instigated legislation banning mining of uranium and in some cases, banning exploration for uranium.

The regulatory framework regarding uranium exploration and mining in Australia is complex and varies between states and territories. Uranium exploration and mining is allowed in South Australia, Northern Territory, and Western Australia and, despite having no deposits, Tasmania. The Western Australia government lifted an administrative ban on uranium mining in Nov'08. This was a significant decision as it hosts sizable deposits, including the Yeelirrie (BHP) and the Kintyre (Cameco).

Queensland, New South Wales and Victoria all have bans on uranium mining. Queensland, the most important of the three owing to it containing significant deposits, allows for uranium exploration.

In Dec'11, the ALP approved the sale of uranium to India. Sales have been historically banned due to India being a non-signatory to the nuclear non-proliferation treaty.

State-by-State Uranium Policies

Activity	NSW	VIC	WA	QLD	SA	NT	TAS
Exploration	x	x	✓	✓	✓	✓	✓
Mining	x	x	✓	x	✓	✓	✓
Mines	0	0	0	0	3	1	0

Source: MPS

Uranium Resources

Australia has ~31% of the world's known recoverable uranium resources. MPS has identified 52 deposits with 3.3mt U₃O₈. Olympic Dam in South Australia, owned and operated by BHP, holds the lion's share of this resource, with almost 316,000t of reserves and over 2.5mt of resource. Second to South Australia, the Northern Territory has ERA's Jabiluka and Ranger deposits which host almost 275,000t U₃O₈ of resource. Only one of Australia's top ten deposits is foreign owned with Cameco and Mitsubishi the joint owners of the Kintyre deposit in Western Australia.

Top 10 Australian Uranium Deposits

	Company	Deposit	State	(ppm)	U ₃ O ₈ (t)
1	BHP	Olympic Dam	SA	272	2,486,440
2	ERA	Jabiluka	NT	4,845	141,670
3	ERA	Ranger	NT	868	133,003
4	Oz Minerals	Carrapateena	SA	270	54,837
5	BHP	Yeelirrie	WA	1,500	52,500
6	Summit Res. & Paladin	Mt Isa	QLD	730	45,869
7	Alliance Resources	Four Mile	SA	3,257	31,591
8	Marathon Resources	Mt Gee	SA	615	31,353
9	Cameco & Mitsubishi	Kintyre	WA	4,860	28,001
10	Energy & Minerals	Mulga Rock	WA	490	27,173
				Total:	3,032,437

Source: Company Reports

Regulations regarding U exploration and mining are dominated by State and territory governments.

QLD, NSW and VIC all have bans on uranium mining.

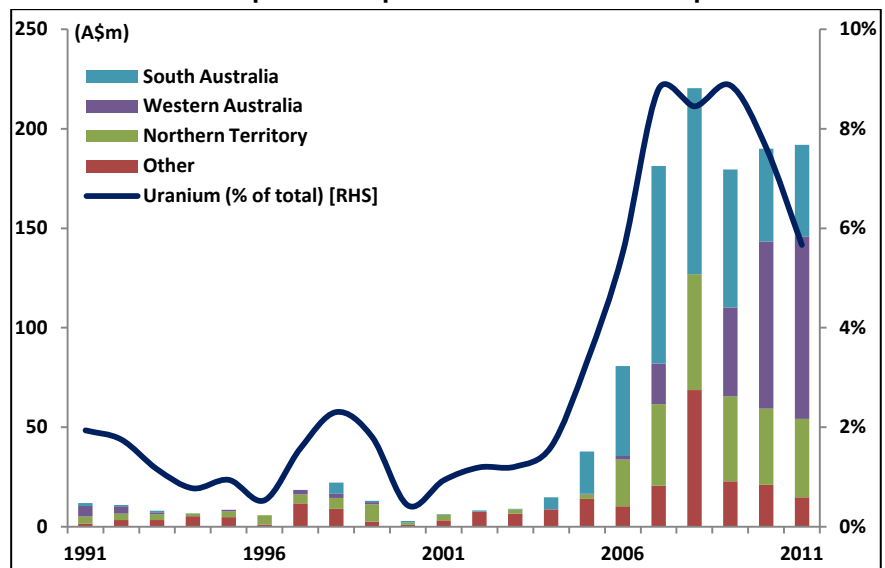
Exploration Expenditure

Despite hosting the world's largest uranium resource base, uncertainty and restrictive uranium policies have limited exploration in Australia since 1989. **From 1989 to 2003, uranium exploration expenditure averaged just \$11m a year while gold exploration averaged \$436m p.a. over the same period.**

Uranium exploration expenditure has, however, increased significantly since 2004, growing from \$15m to over \$190m in 2011, averaging 60% p.a. growth and now accounting for ~6% of total exploration. In comparison, gold exploration expenditure has grown 9% p.a. over the same period. In 2010, uranium exploration expenditure in Western Australia surpassed South Australia, the first time in 10 years, reflecting the 2008 decision to overturn a ban on uranium mining in the state. This trend continued in 2011 with Western Australia accounting for ~50% of uranium exploration expenditure.

Changes to Uranium mining policy has led to major exploration expenditure increases.

Australian U Exploration Expenditure & Share of Total Exploration



Source: ABS

ASX-listed U companies are substantial players in the international U exploration and development sector.

The top 15 internationally listed U companies have ~3.6mt (8blb) of U₃O₈ resource spread across 120 deposits.

Drilling programs for 2012 in Australia currently include Mulga Rock (EMA), Nyang (EMX), Ranger (ERA), Skal & Elbow (PDN, SMM) and Samphire (USA). Projects awaiting some type of approval include Yanrey (CXU) and Ponton (MHC). Cameco plans to lift its Australian exploration spending by 30% during 2012 as it targets new deposits near its Kintyre project in WA.

There is a higher level of drilling activity by ASX-listed U companies in foreign lands. At least 10 companies have planned drilling programs for 2012. Namibia is a clear focus with drilling continuing at Etango (BMN), Ongolo-INCA (DYL) and Rossing (RIO). Multi-element deposits including Haggan (AEE) in Sweden and Reguibat (AEE) in Mauritania will also be drilled.

Current Company Activity

Code	Exploration Activity	Deposit	Country
ACB	Bolau the focus of 2012 drilling season	Letlhakane	Botswana
AEE	Drilling planned for 2012	Haggan	Sweden
	Drilling planned for 2012	Reguibat	Mauritania
AFR	No drilling. Environmental studies	Chirundu	Zambia
AGS	No drilling	Four Mile	Australia
BHP	No drilling	Yeelirrie	Australia
BKY	No drilling	Salamanca 1	Spain
	No drilling	Salamanca JV	Spain
BLR	No drilling. Detailed economic study commenced	Taylor Ranch/ Hansen	U.S.
BMN	\$2m drilling program for 2012. Completing DFS	Etango	Namibia
CXU	No drilling. Awaiting heritage clearance	Yanrey	Australia
DYL	No drilling. PFS underway	Omahola	Namibia
	Drilling	Ongolo-INCA	Namibia
EMA	ET of 7,600-13,000t U ₃ O ₈ @ 240-650ppm	Mulga Rock	Australia
EME	Assay results due during Jan'12	Bigrlyi	Australia
	Negotiating access for drilling	Ngalia	Australia
EMX	ET of 15-25mlb U ₃ O ₈ @ 300-500ppm	Nyang	Australia
ENR	No drilling	Yilgarn	Australia
ERA	\$40m exploration program for 2012-14	Ranger	Australia
EVE	No drilling. Metallurgical testwork	Aurora	U.S.
EXT	Mining licence just received	Husab	Namibia
FTE	Drilling 1,500-2,000m RC in early 2012	Firawa	Guinea
	Assay results & resource update due 1Q12	Bir Moghrein	Mauritania
GGG	Exploration laws amended. Awaiting exploration license	Kvaneefeld	Greenland
MEY	No drilling. Metallurgical testwork	Marenica	Namibia
MHC	No drilling. WA Govt approval is outstanding	Ponton	Australia
MTN	Drilling held up by mining ban	Mt Gee	Australia
PEN	Assay results released, 2012 drilling planned	Lance	U.S.
PDN	Updated resource estimate due in early 2012	Kayelekera	Malawi
	Assay results due during Jan'12	Bigrlyi	Australia
	Targeting Skal and Elbow	Mount Isa JV	Australia
	Mining moratorium to be lifted Mar'12	CMB	Canada
RIO	Drilling Zone 20 and beneath current pit	Rossing	Namibia
SHE	No drilling. Pit optimisation study underway	Daejon	S. Korea
SMM	Targeting Skal and Elbow	Mount Isa JV	Australia
TOE	No drilling. Awaiting EPA & Govt approvals	Wiluna	Australia
UNX	Drilling planned for 2012	Mkuju	Tanzania
USA	Drilling to start Feb/Mar'12	Samphire	Australia
WHE	No drilling	Mecsek Hills	Hungry

Source: Company Reports

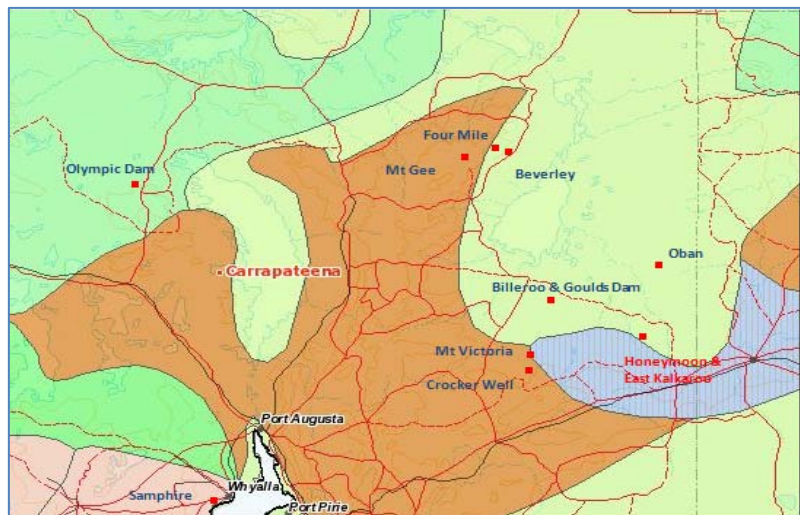
STATE OVERVIEWS

South Australia has three U producing Mines:

- **Olympic Dam,**
- **Beverley, and**
- **Honeymoon.**

South Australia is the key U producing state of Australia. In addition to Olympic Dam (BHP), it is home to two other producing mines (Beverley and Honeymoon) and ~10 non-producing U deposits. Carrapateena (OZL), Four Mile (AGS/Healthgate) and Mt Gee (MTN) are deposits that are of sufficient size and grade to become U mines, assuming certain localised issues can be overcome. Sub-economic deposits like Crocker Well, Mt Victoria (PNN/Sino) and Oban (CUY) are within trucking distance of the recently commissioned Honeymoon mine.

U Deposit Locations: South Australia

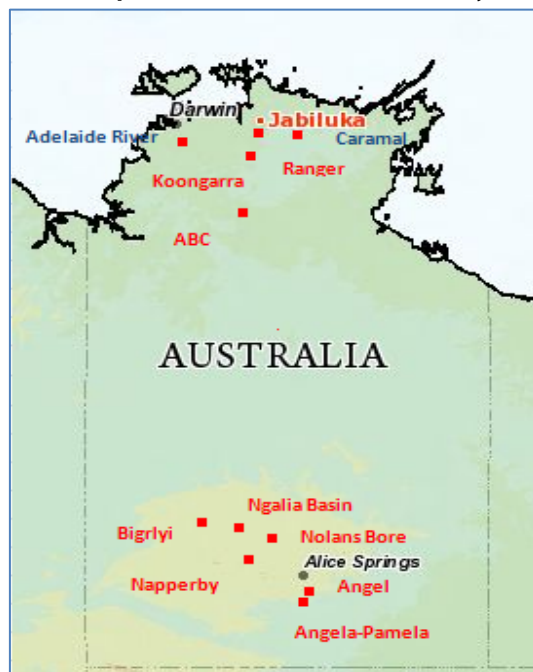


Source: Intierra

ERA's Ranger Mine in the NT has operated for 40 years. It is expected to close in 2021.

The Northern Territory is the only other Australian state or territory currently mining uranium. Ranger (ERA) is currently expected to close in 2021 after 40 years of operation. The very economically viable Jabiluka (ERA) and Koongarra (Areva SA) deposits await native owner approval. A cluster of deposits surrounding Alice Springs also await a change in local attitudes towards U mining.

U Deposit Locations: Northern Territory



Source: Intierra

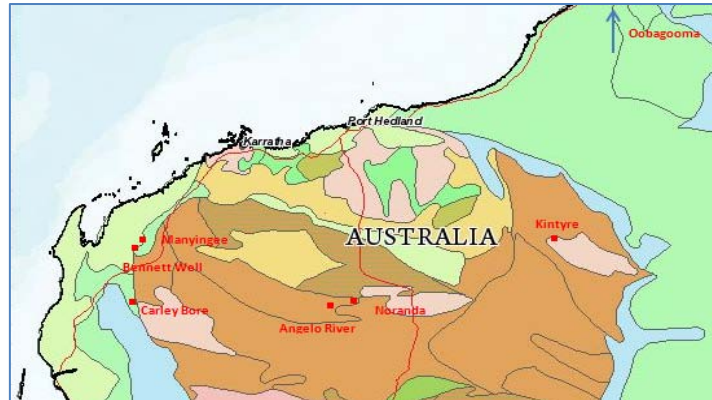
WA had its ban on mining U lifted in 2008 and exploration grew from almost nothing to A\$100m and x% of Australian exports in just four years.

WA's reputation for allowing rapid mine development is likely to result in new mines in the near future.

If the QLD state U mining ban is lifted we should see at least two mines developed.

Western Australia currently has 20 U deposits containing 203,000t U₃O₈. Wiluna (TOE) is leading the race to be WA's first U producer. Other deposits with economically viable size & grade are Yeelirrie (BHP), Kintyre (Cameco/Mitsubishi) and Mulga Rock (EMA). A cluster of deposits in northern WA (Manyingee, Bennett Well & Carley Bore) may form a viable U project in the future.

U Deposit Locations: Western Australia (North)



Source: Intierra

At this time, the seven deposits W of Yeelirrie appear to be too low grade for development. Lakeside, Wondinong, Anketell, Yuinmery, Lake Mason, Windimurra and Hillview contain ~37mlb @ 182ppm U₃O₈.

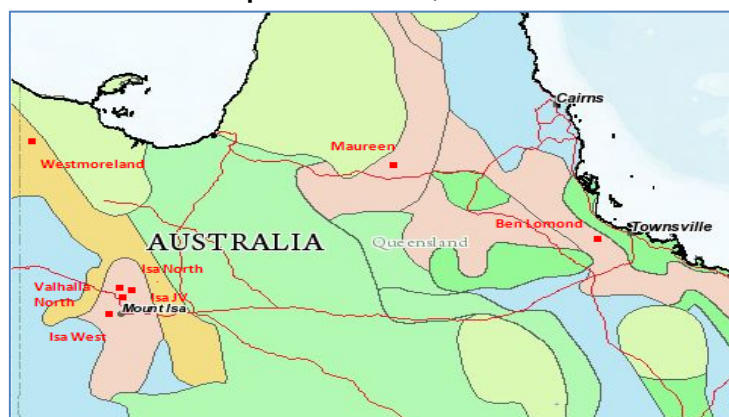
U Deposit Locations: Western Australia (Mid)



Source: Intierra

Queensland has had exploration despite the U mining ban. MPS has identified seven U deposits with 94,700t (209mlb) U₃O₈. In the case that the U ban is lifted, there appears to be at least two potential U mines – Westmoreland (Laramide) and an Mt Isa cluster (PDN).

U Deposit Locations: Queensland



Source: Intierra

EXPLOITABLE DEPOSITS

Based upon the International Atomic Energy Agency uranium deposit classification system there are 14 types of uranium deposit. An outline of the classification is reproduced below with sub-classes and mine examples. The key commercial deposit types are the unconformity and sandstone types. Unconformity deposits are typically high capex and opex operations where high grade delivers a low overall cost. Sandstone deposits typically use in situ leaching (ISL) methods that minimise capex and lower opex costs. The majority of the deposits owned by ASX-listed companies are either unconformity or sandstone type deposits.

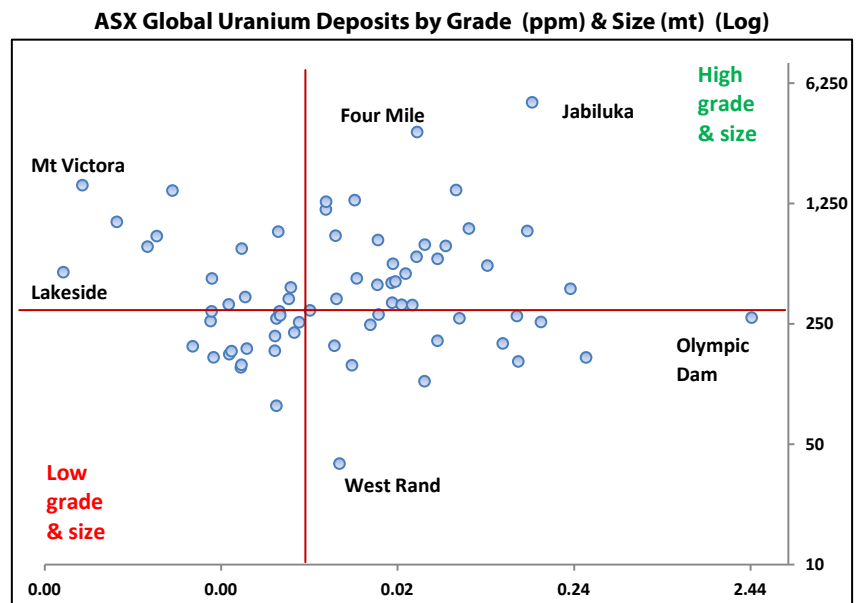
Classification of Uranium Deposits

Type of Deposit	Sub-class	Examples
Unconformity-related	Clay-bound Prot.	Cigar Lake, Saskatchewan, CAN
Either Proterozoic or Phanerozoic age.	Strata-bound Prot.	Jabiluka, NT, Australia
Unconformities separate the basement and overlying sedimentary rocks.	Fracture-bound Prot.	Rabbit Lake, Saskatchewan, CAN
	Phanerozoic	Bertholene, France
Sandstone		
Occur in carbon &/or pyrite-bearing fluvial, arkosic sandstones.		
Roll-types are arcuate zones of U matrix-impregnation that crosscut sandstone bedding	Detrital carbon	Shirley Basin, Wyoming, USA
Tabular deposits crosscut sandstone bedding and are bound by pyrite-bearing sandstone.	Extrinsic sulphide	Crow Butte, Nebraska, USA
	Extrinsic carbon	Grants Region, New Mexico, USA
	Vanadium-uranium	Henry Basin, Utah, USA
	Basal channel	White Canyon District, Utah, USA
	Precambrian	Oklo, Gabon
Quartz-peddle veins		
Upper Archean to Lower Proterozoic age.	Uranium & REE	Elliot Lake, Ontario, Canada
Pyritiferous interbedded with layers of quartzite and argillite.	Uranium & Au	Witwatersrand, South Africa
Veins		
Uranium lenses or sheets in joints, fractures, breccias or stockworks.	Intragrantic	Fanay, Haute Vienne, France
	Perigrantic	Pribram, Czech Republic
	In metamorphic or sedimentary rocks	Beaverlodge, Saskatchewan, CAN
		Schwartzwalder, Colorado, USA
Breccia complex intrusive		
Occur within complexity intermixed breccias composed dominantly of hematite or granite clasts		Olympic Dam, SA, Australia
Intrusive		
Disseminated primary, non-refractory	Alaskite	Rossing, Namibia
Generally low grade	Granite, monozite	Bingham Canyon, Utah, USA
	Peralkaline syenite	Kvanefjeld, Greenland
	Carbonatite	Phalaborwa, South Africa
	Pegmatite	Bancroft area, Ontario, Canada
Phosphorite		
Occurs in fine-grained apatite in phosphorite horizons within interbedded marine muds, shales& sandstones		Utah-Idaho, USA
Collapse breccia pipe		
Circular, vertical pipes filled with down-dropped fragments from overlying sediments		Orphan mine, Arizona, USA
Volcanic		
Stratabound or structure-bound or both.		Michelin, Labrador, Canada
		Ben Lomond, Qld, Australia
Surficial		
Occurs as recent near-surface concentrations which is exclusively uranyl minerals or absorbed on other minerals	Duricrust	Lake Raeside, WA, Australia
	Peat and bog	Yeelirrie, WA, Australia
	Karst cavern	Flodell Creek, Washington, USA
	Pedogenic & structure fill	Pryor Mountains, Montana, USA
		Summerland area, BC, Canada
Metasomatite		
Occurs in alkali silicate metasomatites, commonly intruded by microcline granite		Zheltve Vody, Krivoy Rog, Ukraine
Metamorphic		
Stratabound, disseminated material in metasediments and/or metavolcanics		Forstau, Austria
Lignite		
Irregular concentrations of U in lignite and in clay or sandstone immediately adjacent to lignite		North & South Dakota, USA
Black shale		
Occurs in carbonaceous marine shales		Kolm/Alum Shale, Sweden.

Source: International Atomic Energy Agency

The quantity and quality of a resource are important determinants of an exploitable deposit. **In MPS's view a resource of 25mlb and grade of 300ppm is a reasonable benchmark in filtering for economically minable deposits.** There will be situations where lower parameters may be viable due to existing infrastructure etc. The following logarithmic chart highlights the wide range of U deposit sizes and grades across seventy deposits. Relatively few deposits fall into the low grade and low sized category.

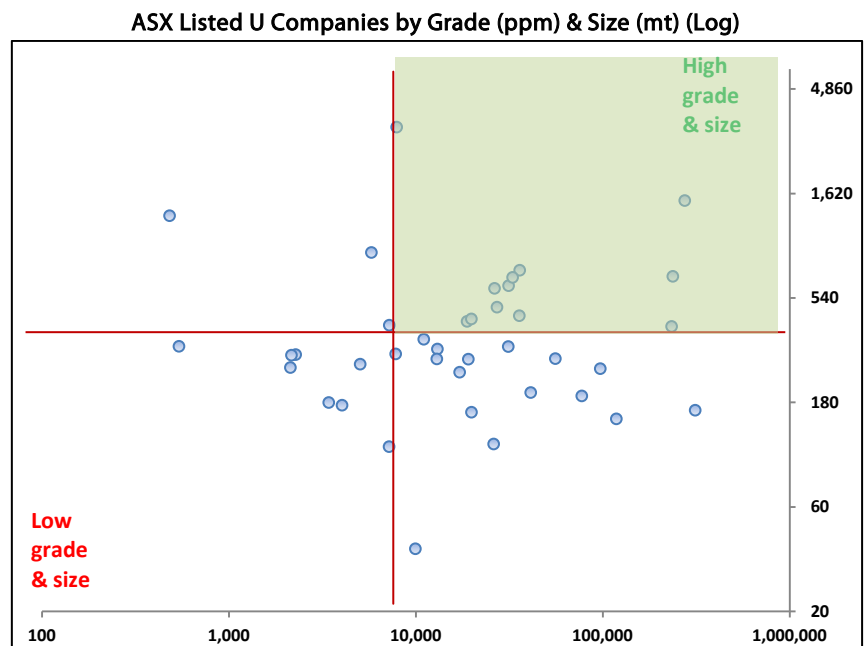
The benchmark of 300ppm (US\$61/t ore) and 25mlb (US\$1300m in ground value ore) is useful for filtering for economically minable deposits.



Source: Company Reports

Using the same approach to grade and size on the ASX-listed U companies, MPS has identified fourteen companies with grades averaging at least 300ppm and having greater than 25mlbs in contained metal. This list contains either the current producers or the most likely candidates for developing one or more viable U project. This is not to say that projects that do not to meet our hurdles are doomed. Olympic Dam is an exception and many others are still building their resource base or due to location have a strategic value to other potential producers.

14 of the 27 companies are potential producers.



Source: MPS

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