# BGFEquities Sector Analysis

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## **Uranium**

## The Sustainable Phase of the Uranium Bull Market

We saw a uranium bubble driven by speculators in 2007 that has since been blown away. Longer-term money is now getting set for the real wealth creation phase.

The Nuclear Resurgence is Happening: During 2007 four new reactors were added to the grids, adding 2,922 MWe of capacity. Construction commenced on another 10, making a total of 34 now under construction. Another 29 were added to the planned category and 64 to the proposed category. On the basis that each of these will need 500 t  $U_3O_8$  to start up, and 200 tpa  $U_3O_8$  thereafter, they will consume 20,600 tpa  $U_3O_8$  annually (as well as the 30,900 t start up boost). Annual mine production is currently in the order of 40-45,000 tpa  $U_3O_8$ . Hence, the industry needs many more mines

**Uranium Prices Have Turned Around:** The  $U_3O_8$  spot price has recovered to US\$64/lb at the time of writing following a week of good demand. All the indications now are that the US\$57/lb figure of a few weeks ago will be the low of this wave. Whether or not is marches higher, investors will take comfort that the fall has ended. It is time for uranium stocks to return to favour.

**Nuclear Image is Improving:** More work is required to overcome the image problem of nuclear power, but sentiment is gradually changing – especially with those countries that already rely on nuclear power. Germany and Sweden previously proposed to phase out nuclear power. Both are back-peddling on this policy, preparing the electorate for the inevitable recommitment to nuclear power.

**Is PM Rudd Wearing Blinkers?** The Australian PM has been making climate change and greenhouse gases the primary focus of his Government as he struts the world stage, but where is the initiative, let alone discussion, on the most efficient and cleanest form of base load energy – nuclear power? The silence is deafening. It is a sad case that the only State in Australia that supports uranium mining is South Australia. Our politicians need to get their heads out of the sand.

**Kintyre Sale Gives Market Value:** The sale of Kintyre by RIO, to Cameco and Mitsubishi for US\$495m, works out a US\$10.27/lb. It is a quality project with high grades but political problems, but this sale price will work as a useful reference point.

The Market is Sorting Itself: The average movement of uranium stocks over the past three months has been a neutral -1%, while the rest of the stock market has been crunched. This shows that the uranium bear market has run its course. Individual uranium stocks have moved in a wide range as investors have become more selective.

**Strong Performers:** Alliance Resources and Peninsula Minerals, two of our favourites, were the best performing stocks over the past three months. They continue to be high conviction stocks.

Top 10 Performers - 18 April '08 to 17 July '08

Company	% Rise	Notes
Alliance Resources	63%	High grades at Four Mile
Peninsula	63%	Wyoming potential
Mantra Resources	56%	Tanzanian exploration
Summit Resources	47%	Queensland interests
Bannerman	34%	Namibian project
Berkely Resources	26%	Spanish deal
Energy Metals	26%	High grade in NT
Paladin	25%	Institutional money
Energy & Minerals	25%	Recent IPO
Curnamona	24%	Retention licence granted

## **Companies Covered in this Review**

#### A. Producers and Potential Producers (Where Uranium is the Primary Focus)

		Quality	Value	Mkt Cap	Location	Style/Target	Page
AFR	African Energy	Sound	Fair	\$28m	Zambia	Karoo	11
AGS	Alliance Resources	Excellent	Excellent	\$300m	Sth Australia	paleochannel	11
BMN	Bannerman Resourc.	Sound	Fair	\$338m	Namibia	alaskite	12
BKY	Berkely Resources	Sound	Fair	\$102m	Spain	carbonaceous shale's	13
BLR	Black Range Minerals	Good	Excellent	\$33m	Colorado, USA	sandstone	14
CTS	Contact Resources	Poor	Cheap	\$10m	Peru	volcanics	15
CUY	Curnamona Energy	Good	Fair	\$36m	Sth Aust	paleochannel roll-front	16
DYL	Deep Yellow	Good	Expensive	\$250m	Namibia/Aust	calcretes/various	16
EMA	Energy & Minerals	Fair	Fair	\$180m	WA	lignite hosted	17
EME	Energy Metals	Good	Excellent	\$116m	NT	sandstone	18
ERA	ERA	Excellent	Fair	\$4.6bn	NT	unconformity	18
EXT	Extract Resources	Good	Fully Priced	\$191m	Namibia	alaskite	19
MTN	Marathon Resources	Fair	Fully Priced	\$71m	Sth Aust	granites	20
MRO	Monaro Mining	Good	Excellent	\$42m	USA/Kyrgyz/Australia	sandstone/limesto/gran	20
PDN	Paladin Resources	Excellent	Good	\$3.5bn	Nambia/Malawi/Aust	calcretes/Karoo	21
PEN	Peninsula Mining	Good	Excellent	\$30m	Wyoming/Sth Afr/Aus	sandstone/Karoo/paleo	22
PNN	PepinNini Minerals	Fair	Fully Priced	\$50m	Sth Australia	granites	23
SMM	Summit Resources	Good	Fully Priced	\$601m	Qld	volcanic/breccia	23
TOE	Toro Energy	Excellent	Fair	\$104m	WA/NT/Namibia	paleochannel/IOCGU	24
UNX	Uranex	Fair	Fair	\$20m	WA/Tanzania	calcrete/Karoo	25
WCU	White Canyon	Reasonable	Fair	\$31m	Utah, USA	sandstone	25
WHE	Wildhorse Energy	Good	Fully Priced	\$39m	USA/Hungary/Paraguay	sandstone	26

## B. Companies Where Uranium is a By-Product or a Secondary Project

ARU	Arafura Resources	Good	Fair	\$124m	NT	rare earths/uranium	28
CMR	Compass Resources	Excellent	Sound	\$227m	NT	lead/cobalt/uranium	28
EQN	Equinox Minerals	Excellent	Good	\$2.6bn	Zambia	copper/uranium	29
GGG	Greenland Minerals	Fair	Expensive	\$161m	Greenland	uranium/rare earths	29
MLI	Mintails	Fair	Fair	\$153m	Sth Africa	gold/uranium tailings	30
MHL	Monitor Energy	Fair	Cheap	\$8m	Kyrgyz	coal hosted uranium/oil	30
WMT	Western Metals	Excellent	Good	\$44m	Tanzania/USA	copper/uranium	31

#### **C. Advanced Explorers**

ACB	A-Cap Resources	Good	Fair	\$43m	Botswana	calcrete/Karoo	32
AEX	Acclaim Exploration	Poor	Fair	\$11m	Sth Africa, Guinea	conglomerate, sandst.	32
AXY	Atom Energy	Fair	Cheap	\$6m	NT. Utah	sandstones	33
AEE	Aura Energy	Good	Good	\$10m	WA, Sweden Niger	calcrete, shales	33
ENR	Encounter Res.	Good	Fair	\$22m	WA	calcretes	34
ERN	Erongo Energy	Fair	Cheap	\$4m	Namibia	granites (alaskite?)	34
FSN	Fusion Resources	Good	Inexpensive	\$32m	NW Qld	volcanic/breccia	35
IPT	Impact Minerals	Good	Cheap	\$8m	WA, Botswana	calcretes	35
MRU	Mantra Resources	Good	Expensive	\$325m	Tanzania	sandstones	36
SIM	Scimitar Exploration	Good	Inexpensive	\$15m	WA, NT	sandstones	37
URA	Uran	Fair	Inexpensive	\$8m	Ukraine	sandstone	38
UEQ	Uranium Equities	Good	Reasonable	\$28m	Australia	various	38
WME	West Aust. Metals	Fair	Fully Priced	\$64m	Namibia	calcretes	39

Promotions/Demotions: From Advanced Explorer up to Potential Producer - African Energy

Additions: Aura Energy, Encounter Resources, Mantra Resources, Scimitar Exploration

**Deletions:** Energy Ventures

## **One Line Summaries**

A-Cap Resources	Expanded JORC result could lead to low grade heap leach production
Acclaim Exploration	Seems to be directionless and uncommitted, as it is now drilling gas wells in the USA
African Energy	Well advanced with Karoo sandstone project in Zambia, but lacking critical mass
Alliance Resources	Results on world-class project improving all the time. Still our favourite for quality.
Arafura Resources	Promising stock on rare earths and phosphate, with uranium as a by-product
Atom Energy	Selling almost at cash backing. It all rests on whether Utah projects have value
Aura Energy	Small WA resource and good exploration initiatives in Sweden and Niger
Bannerman Resources	A market leader with big promises, but still much work to do
Berkley Resources	Good predevelopment projects in Spain, dealing with the right parties
Black Range	Good fundamentals but recent troubles with local environmental lobby in Colorado
Compass Resources	Lead and cobalt project commissioning; waiting on release of uranium resource
Contact Uranium	Abysmal management has wasted money in the past. Can it rebuild from here?
Curnamona Energy	Great exploration team has resulted in early discovery, fast track to trial field leaching
Deep Yellow	Highly priced market favourite focusing on low grade project in Namibia
Encounter Resources	Sizeable but low-grade JORC resource in WA, promising base metals exploration
Energy & Minerals	Significant orebody at Mulga Rock potentially very profitable
Energy Metals	One of the highest grade projects, in the NT – likely takeover target
Erongo Energy	Namibian exploration with smaller resource but is looking like an orphan
ERA	Premier uranium stock, looking for grades to recover in Q3
Extract Resources	Riding the boom of enthusiasm for Namibian plays, but with recent weakness
Fusion Resources	Excellent drill results near Summit suggest orebodies of value in Qld
Greenland Minerals	Very large but exotic resource has many complicating issues, and uranium ban
Impact Minerals	Useful uranium resource in WA being ignored by the market – nickel exploration
Mantra Resources	Great performer in the market, great support base but now waiting for the numbers
Marathon Resources	Continuing to be shunned in the market – management departures
Mintails	Very weak price might be telling us to be cautious on gold/uranium tailings in S.A.
Monaro Mining	Two development projects in the USA, via UKL merger. Extensive exploration
Monitor Energy	Small deposit in Kyrgyz Republic to be drilled - oil and gas the main game though
Paladin Energy	Still underperforming on the production front, but an institutional favourite
Peninsula Minerals	Good projects in Wyoming starting to be appreciated
PepinNini Minerals	Diversifying away from uranium with gold purchase, but problems here
Scimitar Exploration	First JORC resources gives credibility, but small and in WA. Good exploration
Stellar Resources	Diversified explorer with small uranium exposure - iron ore the main focus just now
Summit Resources	Under the guidance of Paladin now, so dancing to its tune - resources substantial
Toro Energy	Failing to get market traction due to main project in WA, but projects elsewhere
Uran	Ukraine looking better but applications rejected in Czech Republic - a hard road
Uranex	Lost some appeal in recent months after board spill - waiting on Tanzania numbers
Uranium Equities	Redefining itself, with NT focus and small high grade deposit
West Aust. Metals	In favour for large low grade project in Namibia, but smaller than BMN, Extract
Western Metals	Copper project in Wales has taken priority over Tanzanian uranium
White Canyon	High-grade low tonnage targets in Utah, USA. Still under IPO price
Wild Horse Energy	Higher flyer now being hammered – good US projects but Hungary lower grade

## **Share Price Movements (14 April to 17 July, 2008)**

The chart of the share price movements shows a more balanced approach than in the April review, with the average movement being -1%. It suggests that rather than being in a bear market for uranium stocks, we are actually in a switching market where investors are restructuring their positions with some selectivity.

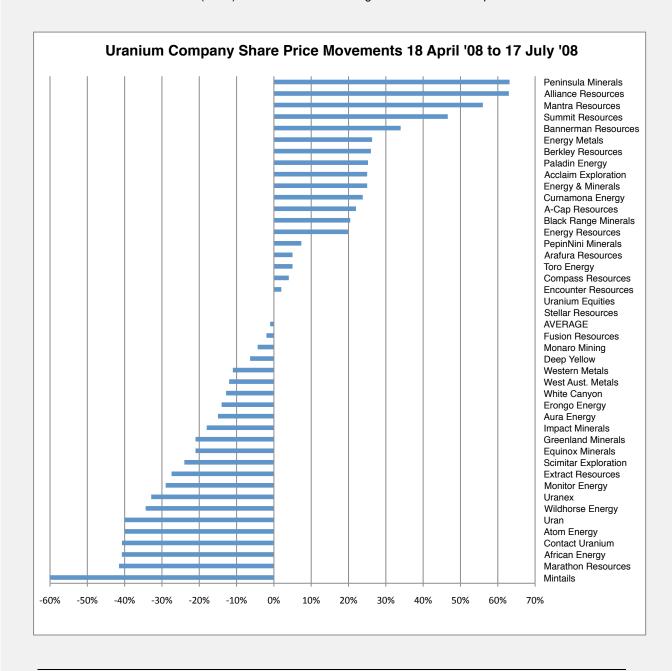
A quick glance shows that the best performing stocks are mostly at the quality end where there are real resources and opportunity to progress to production. Two of our favourites from the previous review were the top two performers.

The top performing stocks were;

- Alliance (+63%) best quality in terms of grade and capital risk, high grade intercepts
- Peninsula (+63%) accumulating high quality lease position in Wyoming and drilling soon
- Mantra Resources (+56%) high profile support with Highland Park deal

The worst performing stocks were;

- Mintails (-61%) concerns about management changes and commissioning delays, Sth Africa
- Marathon (-42%) concern ability to mine in reserves, management changes
- African Energy (-41%) digesting share issue, pre-feasibility study
- Contact Resources (-41%) concerns about management and dubious option issue

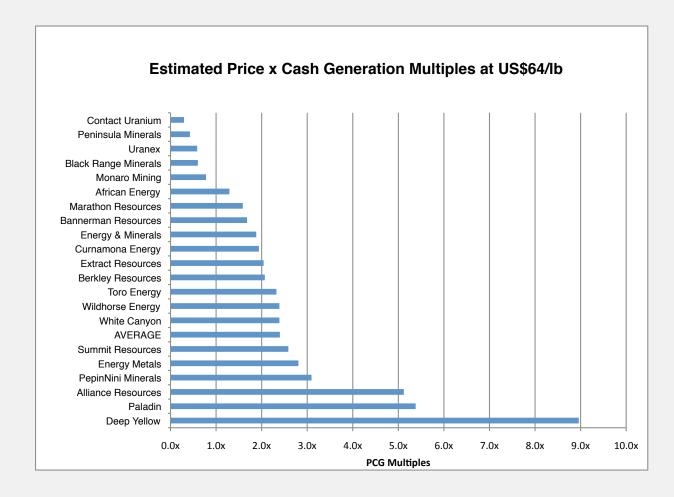


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## **Cash Generation Multiples**

## At US\$64/lb AUD/USD 0.9700

- The uranium price is continuing to trade in our expected range of US\$60-\$80/lb in 2008, after a brief dip to US\$57/lb. We have run our numbers on the latest spot price of US\$64/lb.
- Longer term, given the multitude of low-grade projects that could come on-stream at the higher prices, we
  expect that the uranium price may drop back to US\$50/lb within 3-5 years. Those company that can
  commence production within five years will get the benefits of higher prices. They are the one that will be
  the beneficiaries of the current strength and they will be well positioned to undertake corporate takeovers.
- At US\$64/lb;
  - The average cash generation multiple is 2.4x
  - The cheapest companies, selling on a multiple of <1x, are;</p>
    - Contact, Black Range, Monaro, Peninsula and Uranex. Both Contact and Uranex have had management issues, while Black Range, Monaro and Peninsula operate in the USA, which seems to be misunderstood by the market.
- The most expensive companies, on multiples > 5x are;
  - ➤ Deep Yellow, Paladin and Alliance. Why Deep Yellow should consistently carry such a high rating is a mystery, as it is low grade. Other Namibian stocks trade on ratios around 2x. In the case of Alliance and Paladin the higher ratio reflects the grade and quality of the projects.

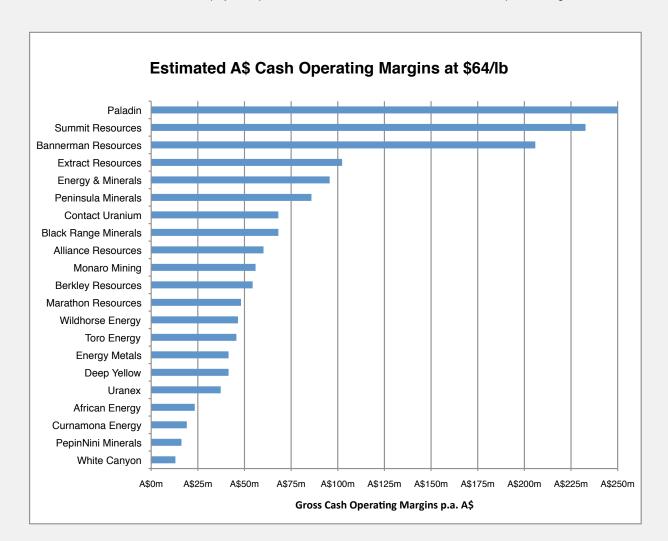


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## **Cash Operating Margins**

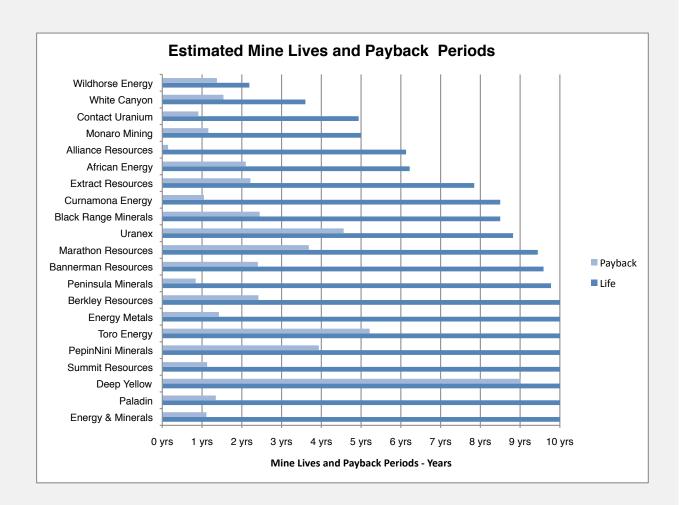
## At US\$64/lb AUD/USD 0.9700

- We prefer to assess companies according to the cash generation potential of their projects, focusing on
  direct cash operating costs rather than NPVs and other more fancy methods. Over-analysis can lead an
  analyst to have an unwarranted sense of certainty when in fact there are many things that go wrong.
  Provided all companies are assessed with the same methodology the signals should be reasonably
  reliable. The test for management is whether or not they can turn the cash flow potential into a profitable
  project.
- The previous page detailed cash flow multiples. This page demonstrates actual cash generation levels based on current market prices for uranium. The magnitude of the cash flow is a pointer to where the big money will go as it seek to achieve a weighting in uranium.
  - > Paladin has the greatest potential, with projected cash flows in excess of \$250m
  - Summit, 82% owned by Paladin, is also a serious company.
  - > Bannerman and Extract are the next two most substantial companies on projected cash flows.
- You need to look at the cash generation estimates and relate them to the capital costs of the projects in order to determine mine payback periods and form a view as to the likelihood of proceeding.



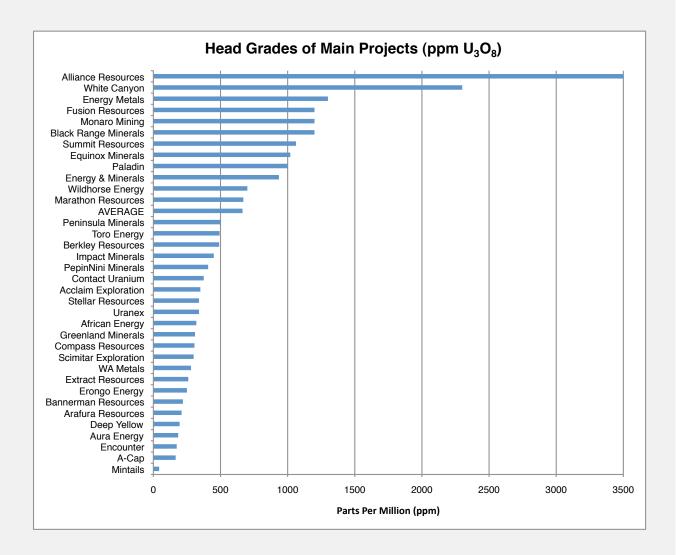
## **Mine Lives and Payback Periods**

- There is usually exploration upside on top of a mine life: The mine life is an important consideration
  in an investment decision, for many reasons. Companies generally prove up enough ore to justify a
  development, as an economic decision, leaving the full definition of the size until a more convenient time
  and usually fundable out of positive cash flow from the mine.
- You want the Mine Life to be at least double the Payback Period: Bankers will look at the mine life as a key indicator as to whether a company can generate enough cash flow, under worst case scenarios, to repay loans. The ratio of the mine life to mine payback is an important measure for this purpose. The chart below shows the payback period in red and the mine life in blue. If the mine life is not at least twice the payback period then the likely funding route will be equity, not debt, due to the higher perception of risk. While it is good to have no debt, consider that the disciplines imposed by banks often lead to conservatism and greater accountability of management; which can't be all bad.
- A suitable Payback Period for uranium stocks is preferaby less than 3 years: A short payback period is a great incentive to develop a mine, as it limits the time the capital is at risk before you recoup your money. If we consider the appropriate payback period, consider that gold mines usually need a payback period of less than two years to warrant development (often due to shorter mine lives). Large copper and base metals projects can often be launched with payback period of 3-5 years provided the mine life is in excess of 10 years. The most impressive company on this chart is Alliance, with only a few months payback. The appropriate period for a uranium mine is probably 2-3 years, at this stage of the cycle. Anything greater will require some refinement, unless it has a mine life in excess of 10 years.



#### **Head Grades**

- The average head grade of all projects is 664 ppm, so projects with 500-1,000 ppm are medium grade, and anything below 500 ppm should be classified as low grade and more highly levered to the uranium price. Anything over 1,000 ppm is high grade.,
- The chart below shows that there is a predominance of low-grade projects. While they have been heavily promoted, most of them will stay in the ground unless the uranium price can stay up above US\$100/lb. If that was to happen, then there would be a flood of new projects and the uranium price would fall back to US\$50/lb. That is why it is unrealistic to be looking for uranium prices exceeding US\$100/lb, except for speculator driven spikes.



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## What the Big End Around Town is Saying About Uranium

At the risk of acknowledging that we do not have a monopoly on the markets, it is worth quoting what the big end of town is saying about uranium i.e. the large international broking houses. For the most part these firms missed the bubble back in 2006/07, through either tardiness or by design as it was obviously a very volatile market.

**International Broker 1** "Uranium remains one of our favourite commodities. We remain positive on the outlook for uranium and have increase our long-term uranium price forecast to US\$50/lb (versus US\$27/lb previously). Our view is underpinned by strong energy values globally over the longer-term in addition to mounting environmental pressures."

International Broker 2 "Uranium Bulls — We remain uranium bulls and expect the spot price to rally further in the remainder of 2008 and into 2009 (US\$110/lb forecast). "

**International Broker 3** "We believe the uranium price has close to bottomed with spot prices halving since 2007 peaks and current prices close to marginal cost of production for newer IPL projects."

International Broker 4 "We believe that high uranium prices will persist for many years (relative to historical levels). In the near term, we believe the continued spot market deficit will help to maintain prices at about the \$100/lb level. As new supply is brought to market in the coming years, we feel that this will be the signal for the spot price to retrace to more sustainable levels. We believe the market will be in surplus by approximately 10 to 19 million pounds in 2010 through 2013; however, we do not believe that this will precipitate a severe downdraft in the spot price as there are likely many buyers for that material (e.g. initial cores, utility inventories, strategic inventories, etc.)"

**International Broker 5** "We believe that world is on the verge of a uranium renaissance, and in our opinion, the financial markets continue to underestimate the potential for a rapid increase in uranium demand going forward. **Potential sector rebound in 2H 2008** – existing producers and Advanced Explorers to benefit"

International Broker 6 "In our opinion, the spot market will remain volatile for the near term. Current weakness reflects market concerns towards the US Department of Energy placing secondary uranium on the market in 2008, and is likely to continue as the industry progresses into the seasonally soft northern-hemisphere summer, before stronger trading expected towards the end of the calendar year. However, we acknowledge that the spot uranium price will remain sensitive to production disruption catalysts, with the potential for significant escalations to spot prices, as witnessed in 2007.

## **World Nuclear Reactors and Uranium Requirements**

	World N	luclea	ar Pov	er Rea	ctors 2	2007-08	and U	ranium R	equire	ments	
	NUCLEA ELECTRIC GENERAT	CITY	OPEI	CTORS RABLE 2008	CONST	RS UNDER RUCTION 2008	PLA	CTORS NNED 2008	PROF	CTORS POSED 2008	URANIUM REQUIRED 2008
	billion kWh	% e	No.	Mwe	No.	Mwe	No.	Mwe	No	Mwe	tonnes U
Argentina	6.7	6.2	2	935	1	692	1	740	1	740	123
Armenia	2.35	43.5	1	376	0	0	0	0	1	1000	51
Bangladesh	0	0	0	0	0	0	0	0	2	2000	0
Belarus	0	0	0	0	0	0	2	2000	0	0	0
Belgium	46	54	7	5728	0	0	0	0	0	0	1011
Brazil	11.7	2.8	2	1901	0	0	1	1245	4	4000	303
Bulgaria	13.7	32	2	1906	0	0	2	1900	0	0	261
Canada*	88.2	14.7	18	12652	2	1500	3	3300	4	4400	1665
China	59.3	1.9	11	8587	7	6700	24	26320	76	62600	1396
Czech Republic	24.6	30.3	6	3472	0	0	0	0	2	1900	619
Eqypt	0	0	0	0	0	0	0	0	1	1000	0
Finland	22.5	29	4	2696	1	1600	0	0	1	1000	1051
France	420.1	77	59	63473	1	1630	0	0	1	1600	10527
Germany	133.2	26	17	20339	0	0	0	0	0	0	3332
Hungary	13.9	37	4	1826	0	0	0	0	2	2000	271
India	15.8	2.5	17	3779	6	2976	10	8560	9	4800	978
Indonesia	0	0	0	0	0	0	2	2000	2	2000	0
Iran	0	0	0	0	1	915	2	1900	1	300	143
Israel	0	0	0	0	0	0	0	0	1	1200	0
Japan	267	27.5	55	47577	2	2285	11	14945	1	1100	7569
Kazakhstan	0	0	0	0	0	0	0	0	1	300	0
Korea DPR North	0	0	0	0	0	0	1	950	0	0	0
Korea RO South	136.6	35.3	20	17533	3	3000	5	6600	0	0	3109
Lithuania	9.1	64.4	1	1185	0	0	0	0	2	3200	225
Mexico	9.95	4.6	2	1310	0	0	0	0	2	2000	246
Netherlands	4	4.1	1	485	0	0	0	0	0	0	98
Pakistan	2.3	2.34	2	400	1	300	2	600	2	2000	65
Romania	7.1	13	2	1310	0	0	2	1310	1	655	174
Russia	148	16	31	21743	7	4920	10	11960	25	22280	3365
Slovakia	14.2	54	5	2064	2	840	0	0	0	0	313
Slovenia	5.4	42	1	696	0	0	0	0	1	1000	141
South Africa	12.6	5.5	2	1842	0	0	1	165	24	4000	303
Spain	52.7	17.4	8	7442	0	0	0	0	0	0	1398
Sweden	64.3	46	10	9016	0	0	0	0	0	0	1418
Switzerland	26.5	43	5	3220	0	0	0	0	3	4000	537
Thailand	0	0	0	0	0	0	0	0	4	4000	0
Turkey	0	0	0	0	0	0	0	0	3	4500	0
Ukraine	87.2	48	15	13168	0	0	2	1900	20	27000	1974
United Kingdom	57.5	15	19	11035	0	0	0	0	0	0	2199
USA	806.6	19.4	104	99049	0	0	12	15000	20	26000	18918
Vietnam	0	0	0	0	0	0	0	0	2	2000	0
WORLD**	2608	16	439	371,989	36	29,958	93	101,395	218	192,975	64,615
	billion kWh	% е	No.	MWe	No.	Mwe	No.	MWe	No.	MWe	tonnes U

**Operating** = connected to the grid; **Building/Construction** = first concrete for reactor poured, or major refurbishment under way; **Planned** = approvals, funding of major commitment in place, mostly expected in operation within 8 years, or construction well advanced but suspended indefinitely;

Proposed = clear intention or proposal but still without firm commitment. Planned and Proposed are generally gross MWe;

TWh = Terawatt-hours (billion kilowatt-hours), MWe = Megawatt net (electrical as distinct from thermal), kWh = kilowatt-hour 64,615 t U = 76,200 t U<sub>3</sub>O<sub>8</sub>

<sup>\*</sup> In Canada, 'construction' figure is 2 laid-up Bruce A reactors.

<sup>\*\*</sup> The world total includes 6 reactors operating on Taiwan with a combined capacity of 4884 MWe, which generated a total of 39 billion kWh in 2007 (accounting for 19.3% of Taiwan's total electricity generation). Taiwan has two reactors under construction with a combined capacity of 2600 MWe

## **Latest News and Investment Perspective of Individual Stocks**

#### A. PRODUCERS AND POTENTIAL PRODUCERS

Company Comments

#### African Energy

Price 16¢ (-41%)
Mkt Cap \$28m
Quality Sound
Value Reasonable

Investment Perspective: The PFS has confirmed our concerns regarding economics of the Chirundu project, with the Company conceding in a presentation that the project is marginal at these uranium prices. The heap leach process route has enabled capital costs to be half what they would have been with a conventional milling operating, but it will still be difficult for a company capitalised at <\$30m to raise US\$48m, being its share of capex. Even though the shares are reasonable value, on a cash generation multiple of 1.3x, financing of the project will lead to significant dilution. Nevertheless, the Company is well positioned for any rise in the uranium price or improvement in investor sentiment.

AFR released the Pre-Feasibility Study for the 70%-owned Chirundu project on 9/5/08, based on a total indicated and inferred resource of 4,120 t  $U_3O_8$ , comprising Gwabe (4.2 mt at 267 ppm, for 1,121 t  $U_3O_8$ , at depths of 3-29m) and Njame (8.8 mt at 340 ppm, for 3,000 t  $U_3O_8$ ).

The study was based on annual production of 612 tpa  $U_3O_8$  (1.3 mill. lb) over 5-6 years from open pits. Recovery was by acid heap-leaching and ion exchange precipitation. Capital expenditure was assumed to be US\$68m for pre-production costs, with US\$21m in deferred capital i.e. when the Gwabe deposit is mined and treated. Operating costs are estimated to be in the order of US\$30-40/lb, with mining costs being \$2.14/t.

The ore will be stacked at a rate of 2.25 mtpa in a series of cells on a single-lined pad. Comminution tests indicate the ore is very soft, not abrasive and amenable to continuous surface mining at half the cost of a drill and blast operation. It is possible that run-of-mine ore could be directly leach with column tests showing that feed sizes of 20mm and 38mm have similar leaching characteristics.

The uranium bearing minerals – mostly uraninite – is usually liberated or attached to silicates with very little locked in pyrite/silicates. Metallurgical recovery was 85-90% for Njame ores and 70% for Gwabe. The lower recoveries for Gwabe result from 2% calcite in the samples, which is predominantly in the footwall. Careful mining may minimise the amount of this taken to the pads, thereby offering possibilities of better recovery than 70%.

Water will be access from a borefield. Power requirements will be low at 1.2 Mw p.a., and could be supplied by a local utility with a new 45 km line. A new village is required at a cost of US\$3m. The ECPM component is US\$8m.

The latest presentation made by AFR states that the BFS will be finished by the end of 2008, and construction will commence in March 2009. This would enable plant commissioning early in 2010. This is a very fast timetable. Does it include all the time needed for permitting, or is permitting a very rapid process in Zambia?

In March 2008, AFR confirmed the previously announced discovery of sandstone-hosted uranium mineralisation at Chisebuka, in Zambia. Two parallel, open-pittable zones up to 800m in strike have been identified. The better drill intercepts have mostly been 7m with grades of 200-460 ppm, with tighter zones giving better grades in places. This discovery is located 75 km SW of the Njame uranium deposit

In Botswana, AFR has 100% of an exploration project 10 km north of A-Cap's Mokobaesi uranium project. Two programmes of 39 holes on a 400m x 100m grid, and 45 holes on an 800m x 200m grid, have found sandstone-type mineralisation in Karoo sediments. Some assays have started to come through and have demonstrated generally 1-2m intercepts with typical grades being 150-250 ppm, and occasionally larger widths and sometimes grades of 300-600 ppm, with the best being 3m at 821 ppm. This is encouraging, but sub-economic at this point. Many more assays are awaited.

#### Alliance Resources

Price \$1.10 (+63%)
Mkt Cap \$300m
Quality Excellent
Value Excellent

**Investment Perspective:** Four Mile is the most exciting uranium discovery in Australia for the last 30 years. Not only is the contained tonnage significant, with 35,000 t earmarked already and potential for in excess of 50,000 t, but the grade is superb at 2,300-3,500 ppm. This is exceptional given the extent of the orebodies AGS is one of the most outstanding resource opportunities we have seen in many years. It is emerging as a real world-class, low-risk uranium stock selling on excellent fundamentals in a State that encourages uranium mining. We see AGS as one of the lowest risk ways to play the uranium market.

On Stage Three production of 2,000 tpa  $U_3O_8$  at a cash cost of US\$11/lb, AGS's share of production would be 500 tpa U3O, which would generate a cash margin of \$60m p.a., placing the shares on a cash generation multiple of 5.1x with the shares at \$1.10. This is cheap given the quality of the resource and he potential for expansion. (Disclosure: The author and associates own shares in Alliance).

Just to emphasise the high-grade tenor of the project, AGS released some intercepts on 15/7/08, that included 4.2m at 3,600 ppm, 1.5m at 7,000 ppm, 2.2m at 4,300 ppm and 1.6 ppm from Four Mile East.

In its latest detailed update to the market, on 28/4/08, AGS signalled a more aggressive approach to the development of its 25%-owned Four Mile Uranium Project, 550 km north of Adelaide. Rather than applying for a Retention Lease and a field leach trial, Quasar Resources (the Operator) is sufficiently confident in the project to go straight for a Mining Lease. Data to be obtained via a feasibility study will obviate the need for data from a field leach trial. Already, bench scale metallurgical tests from one drill hole has given recoveries of up to 89%, suggesting good amenability to ISL recovery methods – provided permeability is not an issue.

Significantly, the ASX release on 19/5/08, that a Mining Lease had been applied for, also included a strong statement of support from the South Australian Premier. We can expect an efficient processing of the application (or at least as good as we can expect from public servants), which would allow commencement of commercial production after the grant of the Mining Lease, late in 2009. It remains to be seen whether the Company departs from the earlier announced staged ramp up of production, which envisaged Stage One production of 680 tpa (1.5 mill. lb.) from Four Mile East. Stage Two of 1,360 tpa (3 mill. lb.) with the addition of Four Mile West, and Stage Three lifting production to 2,000 tpa (4.5 mill. lb pa) via additional well fields.

The development schedule and capital costs are being greatly enhanced by the proximity of the Beverley uranium mine and processing facilities which are owned by Quasar group companies. Alternatives will be considered in the feasibility study, but two obvious options would be to pipe the pregnant solutions approximately 4 km to Beverley, and an ion exchange plant could be installed at Four Mile and the loaded resin could be trucked to Beverley for elution.

Quasar has up to eight rigs drilling at Four Mile East, in preparation for the release of a resource statement in 3Q 2008. Recently announced holes have continued to impress with high grade intercepts ranging from 1.1m at 13,300 ppm to 7.4m at 3,300 ppm. Detailed drill results have been released by AGS. It was earlier thought that the East deposit was going to be lower grade than the West deposit, which is 3,300 ppm, but the drilling may suggest otherwise. It now appears that there are three units being intersected at depths of 190 to 210m depths, whereas previously we were advised that there was one unit. A 200m x 200m area on the East deposit is being drilled on a 25m grid pattern in preparation for first stage mining. Core holes comprise about a third of the number.

Last year AGS announced a 15,000 t  $U_3O_8$  Four Mile West inferred resource (AGS 25%), at the very high grade of 3,700 ppm, and an Exploration Target Range (pursuant to Clause 18 of JORC) for Four Mile East of 13,500 to 21,500 t  $U_3O_8$  at grades of 2,300 to 2,700 ppm, applying a 500 ppm cut-off grade. This is starting to look conservative.

Another blessing for AGS is the proximity of the Beverley plant, only 4 km away. This will greatly accelerate the development timetable and result in very low capital expenditure, estimated to be \$25m at commencement. The Stage One development would see the commissioning of  $14 \times 6$  well arrays to achieve the targeted production level.

We have adjusted our estimates, basing them on the Stage Three production level, and we have added another \$10m to the capex to account for additional well fields, and increased the estimated operating cost from \$10/lb to US\$11/lb.

#### Bannerman Resources

Price \$2.09 (+34%)
Mkt Cap \$338m
Quality Sound
Value Fair

**Investment Perspective:** Bannerman was one of the favourites in the uranium market last year, providing spectacular returns for shareholders. While the shares are still at healthy levels, having overcome the Opes Prime problems, BMN seems have lost the mantle to Extract Resources, another promising Namibian uranium story.

The next six months will see continuing exploration drilling results which may add to interest, but the serious money in the market will be waiting to see what the final DFS numbers say. This will be the litmus test that will give us a firmer view on value. Until then the shares are likely to perform in tandem with the overall uranium market.

Nevertheless, BMN does promise to be one of the major, new generation uranium producers. It

is one of the few companies with grades of less than 300 ppm that can proceed with confidence, even with lower uranium prices. Our estimates see the stock selling on a cash generation multiple of 1.7x on current economics, with a mine payback of 2.4 years.

BMN's most recent resource statement was made on 30/1/08, when it released a resource figure for Goanikontes of 72 mill. Ibs or 32,700 tonnes  $U_3O_8$ , with BMN's 80% interest amounting to 26,000 t  $U_3O_8$ . This figure was based on 223 RC and 19 diamond holes over a strike length of approximately 2.2 km, to a depth of 300m. There were 136.4 mill tonnes at 197 ppm (26,906 t) in the Inferred category, and 25 mt at 234 ppm (5,853 t) in the Indicated. A 100 ppm cut-off grade was applied, with the resource being kriged on 3m composite samples. An s.g. of 2.65 was used.

Late in June 2008, BMN announced that drilling had finally been completed on Goanikontes' Anomaly A property, and that final resource estimation work was underway (even though the orebody was still open at depth and along strike). The drilling focus is now moving to assess up to 15 other prospects, and, as the Company has stated, it "... marks the commencement of an exciting new exploration phase ...".

The drilling at Anomaly A now totals 441 RC holes for 117,198m and 47 DD holes for 18,123m over a 2.3 km strike length. The updated resource is due in Q3 2008. It will form the basis for Definitive Feasibility Study which is being conducted by GRD Minproc, the same company that completed the EPCM contract for the Langer Heinrich uranium mine, in Namibia. BMN expects that the DFS will be finished during Q1 2009.

The details of the DFS will be keenly awaited by the market. As with all uranium companies, there have been precious few uranium projects with which to draw comparisons on capital expenditure. Whilst BMN has quoted capital costs of US\$467m, including an acid plant costing US\$70m, we have been of the view that this is too low for a 15 mtpa plant – especially given the capital cost inflation being experienced all around the world.

The latest operating cost estimate from the Company is US\$22.79/lb for the high pressure grinding option and US\$25.73/lb for conventional crushing and grinding. Again, inflationary pressures are expected to increase these figures. The Scoping Study did estimate unit mining costs of US\$2/t and all up mining costs of US\$12/t, but these will need to increase given the surging oil prices. Radiometric sorting may enable a reduction in the mass throughput of 23%, which could reduce the costs by US\$2.50/lb (Rossing is trialing the method now).

Acid consumption has been assumed at 26 kg/t (Rossing consumes 20 kg/t). Acid consumption, at 30 kg/t, leads to reagents costing about US\$13/lb or 50% of the processing costs. Movement in acid prices will have a material impact Other parameters that have been assumed to date include a head grade of 220 ppm and a waste to ore ratio of 2:1. Uranium production would be substantial at about 3,000 tpa  $U_3O_8$  (BMN 2,400 t).

#### **Berkley Resources**

Price 94.5¢ (+26%)
Mkt Cap \$102m
Quality Sound
Value Fair

**Investment Perspective:** BKY has a solid uranium presence in Spain. The Scoping Study released by BKY is one of the most informative of any released by uranium companies over the last year, giving a good breakdown of capital and operating costs, and other operating data; full credit to the company for that disclosure. Our initial thought is that the operating cost might be a bit on the low side though, if everything is taken into account.

The news of the co-operation with ENUSA is promising as it opens up a number of possibilities with respect to new development projects and capital cost savings on a processing plant, if the Quercus plant can be recommissioned. It is a teaser at this point, well worded to generate interest, but more concrete information and a firm deal will not be available under the holiday season – suggesting September at the earliest.

Fundamentals look sound with possible cash flow of A\$47m p.a at US\$58/lb, giving a PCG multiple of 2.1x and a mine payback of 2.4 years.

On 16/7/08, BKY advised that it has been selected by ENUSA Industrias Avanzadas S.A. to participate in the preparation of a feasibility study and possible development of that company's uranium mining assets in Salamanca Province, Spain. The assets include non-JORC uranium assets as well as the Quercus processing plant, which has been on care and maintenance since 2003. It is possible that BKY may be able to use this plant for its own, 100% owned projects.

Back in February 2008, BKY released a scoping study based on a JORC compliant indicated and inferred resource of 7,600 t  $U_3O_8$ , and the production of 5,500 t  $U_3O_8$  over a 10 year life. The cash operating cost estimate was \$25/lb. The capital cost estimate was US\$109m, but another \$18.6m is needed for a pre-strip, taking total up-front capital to US\$128m. Major capital components include crushing and grinding capital costs of US47m, and leaching and

ion exchange equipment costs of US\$44m

Other parameters include uranium recovery of 88.8% in 12 hours, acid consumption of 20kg/t of ore and course grind sizes. Alkaline leach will also be considered. The average head grade will be 490 ppm  $U_3O_8$ . A four stage crushing, screening and rod milling configuration will be employed, though SAG and HPGR comminution will be considered. Mining and transport costs will be US\$7.20/lb, processing costs US\$12.66/lb, rehabilitation US\$2.68 lb, and G & A will bring the total to US\$25.02/lb. With the recovered grade estimated to be 435 ppm, or 0.96lb/t, the per lb figures approximate the per tonne costs. Royalties will cost 3% of gross revenue, and marketing costs will be another 3%.

The exploration front has provided some good early results from the <u>Ojaranzo</u> prospect with the first hole returning 23m at 200 ppm from surface, including 2.3m at 650 ppm, and the second hole returning 6.5m at 490 ppm, including 4m at 710 pm, near surface. However, at first glance, these results are not as good as those that were reported from historical trenching and wagon drilling. More extensive drilling at the Gambuta prospect has returned better results than at Ojaranzo. Mineralised zones have been intersected within a 150m wide zone of deeply dipping shears and fractures to a depth of 100m.

Back in November 2007, BKY announced an upgrade of its resource from 7.42 mt at 723 ppm for 5,364 t  $U_3O_8$ , to 13.6 mt at 563 ppm for 7,290 t  $U_3O_8$ , indicated and inferred. The main contributor to the increased tonnage was the Santisad deposit, which added 1,108 t at a grade of 382 ppm. This also helped lower the grade, which fell by 22%.

Mineralisation at the Retortillo deposit (77% of the announced uranium, at 615 ppm) appears to be associated with current and past water tables and carbonaceous shale units, with uranium appearing as torbenite, meta-autunite and pitchblende. Supergene enrichment seems responsible for higher grades. Metallurgical test work has shown that 90% recovery rates should be achievable. Much of the drilling on this deposit is now down to a 50m x 50m grid, extending to 200m x 200m to the SE. The mineralisation averages 15.5m in thickness.

The <u>Santidad</u> deposit (17% of the announced uranium, at 382 ppm) is located 3 km W of Retortillo. It has been tested with 87 RC and DD holes, showing secondary mineralisation over a 1.75 km strike and in widths of 100-200m. It is open in both directions. Visible uranium minerals include autunite and torbernite facies. The average thickness is 12.6m, at an average depth of 8.8m.

Black Range Minerals

Price 5.3¢ (+20%)
Mkt Cap \$33m
Quality Good
Value Excellent

**Investment Perspective**: BLR has been quite aggressive with its Scoping Study numbers, particularly seeing as they are based on an Inferred resource (we have seen an example of the ASX/ASIC rejecting a scoping study on an inferred resource for another company – unjustifiably so in our opinion). If it can achieve these, and overcome any concerns due to the conceptuality aspect, then it certainly seems to offer good value.

Bear in mind though that permitting is still a black hole in the USA. We like a number of the USA-based companies because of the low geopolitical risk and the reliability of past geological data, but permitting timetables may be extensive in some states. This is the one area that needs a little tolerance.

Our estimates table has Taylors Ranch generating cash flow of A\$68m p.a. or 9.6¢ per share to BLR, giving a PCG ratio of 0.6x. The mine payback period has stretched to 2.5 years. BLR continues to look one of the more attractive companies on our list.

News flow from BLR has been constrained in the last month or two due to problems in obtaining local government approval for its drilling program at Taylors Ranch. Approval was finally received on 10/6/08, after a delay of several months. However on 15/7/08, BLR advised that a lawsuit has been issued against the County arguing that the it abused its discretion in awarding the permit. This looks like a spat between the County and an objector and it is unlikely to prevent BLR from carrying out the drilling as planned.

BLR has advanced from its earlier thoughts of a 300-500,000 tpa capacity mine with a statement in the March Qtly Report that its final Scoping Study is targeting the development of a 1 mtpa underground mining operation for annual production of 1,000 tpa  $U_3O_8$ . This is a significant increase. The initial capex estimate is stated at US\$160m and operating costs of US\$34/lb are expected. Mine life would be at least eight years. The ore has been assumed to run at grades of 1,200 to 1,300 ppm. The inferred resource utilised for the study is 8.4 mill. tonnes at 1,200 ppm, using a 750 ppm cut-off grade.

Much of the inspiration for the larger scale has come from the encouragement from the Boyer deposit to the SE of the original Taylors Ranch orebodies. There have been certain assumptions regarding continuity of mineralisation at Boyer, so the target is described as

"conceptual". A room and pillar method would be used to extract a flat-lying body that averages almost three metres in height. A minimal 10% mining dilution figure has been used and ore recoveries are estimated at 77%.

Capital costs can be broken up into US\$62m for the mine development while the 1 mtpa plant would cost U\$100m. A 3,000 t/day operation would cost US\$76/t (including ore processing costs of US\$20/t). Metallurgical recovery of 95% would provide cash costs of US\$34/lb.

Previously, on 29th November 2007, BLR announced a significant increase in its resource at Taylors Ranch project. Using a 250 ppm cut-off grade, the JORC compliant inferred resource is 36.9 mt at 590 ppm for 21,780 t  $U_3O_8$ . Dropping the cut-off to 100 ppm gives a figure of 132 mt at 270 ppm, for 36,000 t  $U_3O_8$ . Given that the orebodies are flat-lying sandstone units at depths of approximately 200m, requiring conventional underground mining techniques, the lower cut-off grade would not be employed.

#### **Contact Uranium**

Price 8.3¢ (-41%) Mkt Cap \$10m Quality Poor Value Cheap **Investment Perspective:** We have stated that there is strong geological merit in the Corachapi project, but we have consistently expressed dissatisfaction with the corporate management. We have doubts about who really pulls the strings with this company. Is it the board, or parties such as Exchange Minerals? There needs to be much greater transparency evidence that shareholders are not being treated like idiots.

There have been some recent changes to the board with Michael Drew being appointed as an executive director. He seems to have a respectable background, having recently joined from Pan Australian. There has also been a new company secretary appointed. We will need to see more changes before we could justify becoming enthusiastic about this Company. The board needs a total makeover if the market is going to give this company a second chance. It will be interesting to see what SRK study comes up with. (Disclosure: The author and associates own shares and options in Contact).

The most significant development for CTS over the past three months has not come from the field but from the boardroom. In an extraordinarily generous gesture, the board has seen fit to grant Exchange Minerals Ltd, a Dubai-based company, 50 million options over shares. The options will cost  $0.5\phi$  each, and will be exercisable at  $15\phi$  each. Shareholders are being offered an issue of the same option series, on the same terms, on a 1 for 2 entitlement basis, and Exchange Minerals is the underwriter of this entitlement issue. Thus, you can guarantee Exchange will end up with a few more of them. A shareholder meeting has approved the issue to Exchange.

CTS is nearing the completion of a 180 hole drilling program at Corachapi in Peru. In a release to the market on 12/6/08, CTS reported the completion of a 190 HQ diamond drilling program at Corachapi, for 10,741m (average depth 56.5m). It has previously announced a 3.79 mt resource at 1,150 ppm. That figure was based on a zone of autunite mineralisation in a tuffaceous material with a 2.5 km strike, up to 106m in width and 20m in thickness but this was based on only one drill hole, trenching and three adits at 20-40m depth.

It is possible that CTS may go for the heap leach route and aim for a large tonnage low-grade resource. A 2.5 mtpa operation with a head grade of 375 ppm could be possible, with a mine life in excess of seven years. This could enable lower capital costs of about US\$60m. Operating costs could be kept to \$10-15 pt due to the ore being easy to mine – rippable with little or no drill and blast. A project of this scale could produce 750 tpa  $U_3O_8$  at cash costs of approximately US\$24/lb. At recent uranium prices this would give a cash generation ability of approximately \$68m or 28 c a share i.e. a cash generation multiple of 0.3x. These numbers look really good, but they should be viewed as highly speculative.

At its second string project, at Kamushanovskoe in the Kyrgyz Republic, CTS has farmed this out to Pangaea Energy, a UK-based investment group. Panaea can a 37.5% interest by funding US\$1.3m of exploration over the next six months. It can then move to 80% by spending a further US\$0.95m and paying US\$1.75m to CTS.

CTS had previously conducted bulk sampling at Kamushanovskoe, taking five 30 kg samples from pits adjacent to drill holes. The average grade of the samples was 480 ppm. Uranium recovery from the peat ore ranged from 77% to 89%, depending on acid concentrations and temperatures. Snowden calculated an inferred resource of 426 t and an indicated resource of 349 t, all at a grade of 370 ppm, using a zero cut-off grade. Most of the resource is within 5m of the surface over an area  $6.5 \, \mathrm{km} \times 0.5 \, \mathrm{km}$ .

On the basis that CTS could use the Karabalta plant, approximately 100 km by road from site, a treatment rate of 120,000 tpa could see production of 52 tpa  $U_3O_8$  at a cash cost of less than US\$20/lb. The cash flow would be modest at \$10m p.a., but it would be a useful adjunct.

#### **Curnamona Energy**

Price 52¢ (+24%) Mkt Cap \$36m Quality Good Value Fair **Investment Perspective:** We view CUY as one of the more genuine explorers out there, and to date, it is also showing itself to be one of the more successful companies. It now has to prove its ability in the permitting phase of a project.

It is possible that CUY may be looking at a 100-200 tpa  $U_3O_8$  operation if the potential for >2,000 t resource is proved, with cash costs of not more than US\$22/lb. If so, the potential cash flow multiple is 1.9x, with upside from there. The shares show a high degree of volatility on thin volume, with much of this probably relating to speculation on drill results.

It was granted a Retention Lease in early July 2008, clearing the way to the lodgement of a mining and rehabilitation program (MARP).

Exploration in the three months to June concentrated in the northern Yarramba paleochannel lying to the west of the Oban deposit. Drilling of the paleochannel to depths of 120m, over a width of 3 km, was conducted to identify oxidation-reduction boundaries. Uranium was identified in thin sands, proving it to be an active system, but more work is required to identify commercial concentrations.

At Oban, drilling has returned values up to 4,400 ppm within an area of 100,000 m $^2$ . This covers a coarse-grained sandy paleochannel similar to Honeymoon and Beverley. Uranium is being found in the old paleo-strandlines where small swamps formed which later became chemical traps for uranium being transported in groundwater. As at the middle of December, CUY had drilled more than 250 holes. The area of potential mineralisation (defined by the 500 ppm eU $_3$ O $_8$  contour) now exceeds 2 km $^2$ .

CUY plans a five hole array to recover 20-40 t of  $U_3O_8$ . Under Government regulations it will not be able to sell the product until additional approvals are obtained. A modest 40 tpa  $U_3O_8$  operation has been mooted if the trials are successful, with a capital expenditure budget of only \$1m.

#### Deep Yellow

Price 22¢ (-6%)
Mkt Cap \$250m
Quality Good
Value Expensive

**Investment Perspective:** DYL is one of the high profile Namibian uranium plays but it has a way to go to catch up to the resources being quoted by Bannerman and Extract (though EXT hasn't officially announced any resource). The geological environment appears to be rather different and there is still much to learn. We will watch for more detailed technical announcements as they come through.

In the meantime we are sticking to our earlier numbers with our best guess being a 3 mtpa operation that could produce about 500 tpa  $U_3O_8$  at a cash cost of US\$39/lb. At US\$64/lb, this would place the shares on a cash generation multiple of 9x, which would place DYL on the more expensive side of the equation. We need to see evidence that costs can come down from our estimate before becoming too enthusiastic.

In November 2007, DYL announced its first JORC inferred resource for the Tubas project in Namibia, with 77.3 mt at 228 ppm, applying a 100 ppm cut-off. Contained uranium is 17,600 t  $U_3O_8$ . This is very similar to the resource announced earlier, but that wasn't JORC compliant. The resource is located in a 14 x 8 km channel referred to as A Block, which has been drilled on a widely spaced 1,000m x 250m grid. Within this block are B and D Blocks, which have been drilled on 250m x 125m and 200m x 200m grids respectively. The main mineralisation appears to be carnotite. An s.g. of 1.8 was used.

In addition to continuous drilling at Tubas, a trench (a trial pit to a depth of approximately 11m) has been excavated to provide information on mineralisation style and controls, grade distribution, geological controls, mining characteristic, bulk density, disequilibrium and metallurgy. The quarterly report goes into great detail describing the material encountered in the trench, but what we really need to know is how the metallurgy will perform.

In an update to the release in March 2008, when DYL reported wide intersections of low grade uranium in magnetite and altered iron oxide in the north of the Tubas licence, it announced that 15 holes had been drilled to a depth of 100m. It seems that the uranium-bearing zone is located sub-horizontally below a marble cap. High-grade uranium is being found with the iron within broad, lower grade zones. Work is continuing.

Closer to home, in Queensland, DYL has reported two good holes at the Queen Gift prospect; 21m at 893 ppm and 24.4m at 513 ppm. Additionally, a review of historical data has shown the presence of extensive phosphate mineralisation. An early drill hole from the 1960s intersected 4.3m at 14.8%  $P_2O_5$ . Subsequently, DYL has announced a deal with WCP Resources (WCP), whereby that company can earn a 100% interesting DYL's Sherrin Creek phosphate leases by paying \$100,000 cash and issuing \$250,000 worth of shares.

#### **Energy and Minerals**

Price 50¢ (+25%)
Mkt Cap \$180m
Quality Fair
Value Fair

It seems that the farm-out of up to 75% equity in five uranium exploration projects in Queensland, to Dragon Energy Ltd, has not been consummated due to the failure of Dragon to achieve ASX listing by 28th June 2008. This was predicable.

**Investment Perspective:** The IPO was a success but the shares have been drifting since then. We think it will be a difficult stock to trade in the near term due to the limited float, but the value seems reasonable so far with a cash generation multiple of 2.2x. Remember that it is WA-based stock and uranium mining is still banned there.

The geology of Mulga Rock is fascinating. It is truly unique with its booty of minerals, but interestingly it seems that there is not the complexity of metallurgy that you might expect to go with it - at least as far as the uranium is concerned. As it has been described to us, it is a simple mining and metallurgical proposition.

EMA commenced trading on 23/5/08 after a successful IPO that raised \$5m at 40¢ a share. The Company's main asset is the Mulga Rock lignite-hosted orebody in WA, which was the subject of a court case with Uranium Equities.

Mulga Rock was initially discovered by the Japanese company, PNC, in the 1980s. PNC calculated a resource of 46,500 t eU3O8 at 1,100 ppm (pre-JORC), which EMA is touting as the fourth largest known uranium deposit in Australia. Interestingly, EMA is also representing that it contains a million ounces of gold as well as nickel and copper. As if that is not enough, it also claims that there are 0.5bn tonnes of oily lignite containing about 2/3 bbl of oil per tonne.

The project is located 250 km NE of Kalgoorlie, not far from the Tropicana gold discovery of Independence Group. It has had about 2,000 percussion and diamond drill holes and the equivalent of \$30m spent on it (2008 dollars).

Prior to the IPO Company had raised \$7.1m from investors over the past 18 months, including \$5m at 40¢ last October. Litigation has probably consumed about \$4m of this. The first time it has been drilled for uranium, in this cycle and by the current owner, was in February 2008. Six holes were drilled but assays only started to come in after the IPO.

The uranium appears to be concentrated in an unconformity-related, flat-lying deposit within lignite, under approximately 40m of cover comprising easy to mine, rippable sand and clay. The uranium is mostly in a highly soluble hexavalent sulphide phase that is impregnated onto the surface of the organic matter (lignite). It appears to be a supergene (epigenetic) ore system with uraniferous fluid coming up from the depths, through a highly fractured and structurally complex profile.

It is a very saline environment with up to 10-15,000 TDS that keeps the uranium in an unstable state. This means it is very soluble with about 50% of the uranium being water-soluble. A 400 kg sample was taken a few years ago when the mineralisation was being tested for scandium. In the process it was found the uranium recovery was in excess of 95%, with a head grade of 1,200 ppm  $\rm U_3O_8$ . If this was a representative sample it suggests that a simple, low cost recovery circuit could be used e.g. acid leach and SX recovery. Acid consumption is expected to be low, at maybe 20-25 kg/t of ore.

The tabular nature of the orebody, with sharp cut-offs on the top and bottom of the uranium zone, could lend itself to simple strip mining. As an example, the Ambassador orebody is 6 km long and 500m wide on average, with a thickness of 4-5m. The waste to ore ratio would be in the order of 7-8:1, based on the overburden depth of 40m.

Uranium production might initially be 1,000 tpa, giving a long life based on the 46,000 t PNC resource. We have run a few numbers on this basis, assuming a 1.25 mtpa plant costing \$106m, with a head grade of 935 ppm and only 88% recovery. The implied cash cost, on our standard assumptions, is US\$23/lb. This leads to a cash generation multiple of 1.9x, based on an annual cash flow of \$96m. These are clearly acceptable fundamentals.

The only news to hit the market since EMA listed was the assay from the first of a six hole drilling program. The uranium grade was up to 10,878 ppm, but this was only over a width of 20 cm, within a 5.2m intercept of 2,031 ppm. Interestingly there was also 1m at 1% Ni, 1m at 0.4% cobalt and 1m at 0.9% Cu.

#### **Energy Metals**

Price \$0.96 (+26%)
Mkt Cap \$116m
Quality Good
Value Good

**Investment Perspective:** The announcement that it is considering its corporate and development options opens the door to all sorts of suggestions. It is an open secret that the controlling shareholder, Jindalee, would be a seller of its 40% holding at the right price. It seems as Gresham may have been appointed to find a buyer. Maybe it has been appointed to prepare the Company for a bid, which may come from Paladin or Denison. We should all be

on notice that either the Company is in play, or it is about to become so. The PCG ratio of 2.8x is on the higher side while the mine payback period of 1.4 years is good. Bigrlyi should be seen as a high-grade quality project. The rating of EME in the market reflects this, as well as some anticipation of corporate activity. It is only a matter of time.

On 18/7/08, EME announced an in-house update to the scoping study that increased production from 3,800 t to 7,350 t  $U_3O_8$ , increasing the mine life from 8 to 12 years. It assumed a rate of 500,000 tpa, a grade of 1,537 ppm, open pit and underground mining.

At the same time there was a positive announcement regarding the metallurgical test work, showing acid leaching to be an acceptable process with 98% recovery of the uranium within 24 hours, and 94-95% recovery within 8 hours at coarser grind sizes with lower acid consumption. Vanadium recovery was 45% on these parameters. These positive results, on acid consumption being only 40% of what was assumed in the scoping study, are most significant given that acid costs accounted for 70% of the consumables in the early study.

The other factor that will have a positive impact on the revised study is the increase in resources announced on 12 March, 2008, incorporating results from the 274 holes drilled in 2007. The resource increased by 64% to 7.56 mill. tonnes containing 10,594 t  $U_3O_8$  (23.4 mill. lbs) with the inferred grade being 1,250 ppm and the indicated grade being 1,739 ppm  $U_3O_8$ , applying a 500 ppm cut-off grade.

The earlier positive Scoping Study, released in November 2007, demonstrating the potential to produce approximately 500 tpa of uranium oxide, and vanadium, over an eight year mine life. A resource of 4.53 mt at 1,400 ppm  $U_3O_8$  and 0.16%  $V_2O_5$  was used, converting to a mineable resource of 2.728 mt (74% open pit), but these numbers will change to account for the positive drill results referred to above. The capital cost was estimated at \$70m, but this does not include underground development, which commences in year three. Open pits cease in year five. We expect that these numbers will be reassessed to take into account the expanded resource.

Our revised estimates assume a 750,000 tpa operation, costing \$110m in capital expenditure. This could produce 850 tpa  $\rm U_3O_8$  using a head grade of 1,300 ppm. A cash cost of US\$24/lb would see EME earning a cash margin of \$41m p.a. or 34¢ a share, placing the shares on a cash generation multiple of 2.8x. The operation would comprise both open pit and underground workings. The open pits will have a high waste to ore ratio – up to 40:1 – with pits going down to 200m depth. Underground mining will be via up-hole retreating methods. We expect mining could commence in 2011 on Anomaly 4, which contains 57% of the resource.

Most of the money will be made from open pit mining, so future exploration is looking for extensions along strike. The declared resource is calculated to a maximum depth of 300m, but most commonly to 200-250m. The uranium is found in sandstone units as uraninite and some carnotite.

#### ERA

Price \$23.85 (+20%)
Mkt Cap \$4.6bn
Quality Excellent
Value Fair

**Investment Perspective**: ERA shares have been performing well in the market nothwithstanding the overall bear sentiment. We see this as evidence that longer-term institutional money is coming into the sector. It is the most conservative way to play uranium even though on straight fundamentals the shares are expensive. It would be a totally different ball game though, if Jabiluka was brought into the equation.

The sale of Kintyre by RIO for US\$495m, to Cameco and Mitsubishi, give a valuation of US\$6.25lb based on a resource of about  $36,000 \text{ t U}_3O_8$ . If this valuation was applied to Jabiluka, it would amount to \$1.86bn or A\$10-11.00 per share for ERA. Both projects have political issues, but remember that the profit margin on Jabiluka is likely to be much higher due to the grade, so a higher value could be reasonably argued.

ERA's June quarterly, released on 15 July, disclosed a 22% drop in yellowcake production over the previous March quarter, due to restricted access to high grade ore because of water in the pit at the end of the wet season, as forecast earlier. The head grade dropped by 32% to 2,200 ppm, in line with projections. Ore mined was down 18% with some ore being pulled from the low-grade stockpiles, and milled ore was up by 18%.

The September quarter should be much better as higher grade ore ins now being accessed, with the head grade reaching 3,100 ppm at the end of June.

During the quarter ERA spent \$4.2m drilling the Ranger 3 Deeps, down dip from the current pit. ERA drilled 44 holes for 13,275m with some of the better ones being 66m at 3,100 ppm from 385m, 32m at 4,700 ppm from 385m and 26m at 4,600 ppm from 402m. 2D seismic is

been run as an exploration aid and the encouraging results has led to a commitment to use 3D seismic.

ERA sells its uranium under long-term contracts that are of 3-5 years duration. They are hybrid contracts with fixed and spot elements. The average price received has increased from US18.36/lb in 2006 to US\$25.06/lb in 2007. A further improvement is expected this year.

Uranium production comes from a 2.4 mtpa conventional treatment plant employing sulphuric acid to recover 5-5,000 tpa  $U_3O_8$ . An additional, laterite treatment plant is under construction to produce an extra 400 tpa  $U_3O_8$  from low grade stockpiles.

The official mine life has been extended until 2012 following a recent study, with ore treatment scheduled to cease in 2020. However, judging by deep drill results, we should expect further extensions to the pit at a later date, and/or a continuation of mining from underground. The life of the mine should be seen as open ended at this point.

On 1 February 2008, ERA announced its annual reserve statement. The Ranger reserve reconciliation over the year saw  $U_3O_8$  reserves shrink marginally from 50,869 t to 49,671 t. The Ranger resources increased from 43,253 t  $U_3O_8$  at 1,400 ppm to 50,567 t at 1,200 ppm through the usual process of expanding tonnage at the expense of lower grade to reflect improving uranium industry economics. The Jabiluka reserve dropped from 67,000 t U3O8 to 59,000 t, and the resource dropped from 96,000 t U3O8 to 76,000 t, due to the exclusion of some material.

ERA reported a post tax profit of \$76m for the year to 31/12/07, a 74% improvement over 2006. A \$12.9m exchange gain was made from closing currency hedging contracts. Production of yellowcake was 14% higher at 5,412 t of  $U_3O_8$ . According to the annual report, ERA incurred direct cash operating costs of A\$20.25/lb (\$7.50/lb for raw materials and consumables, \$10.36/lb for contractors and employees, \$1.56/lb for royalties and government charges and \$0.83/lb in selling and shipping costs). Interest charges amounted to \$1.18/lb.

We have run some numbers on Jabiluka for the first time, assuming a 1 mtpa operation with a capex of \$200m and a head grade of 4,800 ppm. If cash costs were US\$15/lb, the mine would generate an enormous cash flow of A\$470m p.a. of \$2.46/share. This is a highly political mine so there can be no definitive statements regarding the timing of a development, but it is worth keeping in mind the latent value here.

Extract Resources
Price \$0.90 (-27%)
Mkt Cap \$191m
Quality Good
Value Fully Priced

**Investment Perspective:** After an impressive six month period when EXT was the star performing uranium stock, it has started to back peddle for a while. There have been a number of teasingly interesting announcements but the market is now looking for something more substantial to get its teeth into. We already have the scoping study. We now need the resource statement to back this up. Typically we have seen the first resource statement for most companies disappoint the market and shares come off in price. This is because an official release, according to the JORC Code, is always more conservative than the road show promotion as it takes time to completely drill out a project. EXT may find itself in this predicament. Nevertheless, the longer term outlook is very favourable.

The news flow has been all about the prospectivity of Rossing South in Namibia with releases talking of similar grades to the Rossing mine. In addition, there have been better results from a large high-grade alaskite dyke swarm under alluvial cover. Some of the better intercepts have been 32.7m at 866 ppm, 13.6m at 1,773 ppm, 113m at 486 ppm (including 50.3m at 856 ppm) and 135 ppm at 260 ppm. EXT has now drilled five lines testing 6.2 km of the 15 km target zone. Two particular locations have demonstrated higher grades. Each zone covers 1,200m of strike which has been tested to a depth of 275-290m on 400m line spacing.

Back in October 2007, EXT emphasised the production potential of its Ida Dome alaskite project with the release of a scoping study which assessed the numbers for a 6 mtpa operation with a head grade of 260 ppm, producing 1,300 tpa  $U_3O_8$ . This was estimated to cost US\$211m in capital and operating costs were estimated at US\$29/lb. The study looked at mineralisation to a depth of 100m even though it extends much deeper. An acid leach, ion exchange and solvent extraction process design was assumed. The ability to use radiometric sorting has also been assumed, which reduces the volume through the mill to 4.7 mtpa, lifting the head grade to 320 ppm.

Since the release of that study the exploration results have been justifying the early enthusiasm. The target tonnage of 54-63 mt at 200-300 ppm is starting to look conservative, particularly with respect to grade. Nevertheless, it will be good to receive a JORC resource calculation when it arrives.

Our best guess numbers at this point, using the 6 mtpa scale used for the scoping study on the

#### **Marathon Resources**

Price \$1.17 (-42%)
Mkt Cap \$71m
Quality Fair
Value Fully Priced

Ida Dome, gives EXT a cash generating power of \$102m p.a., placing the shares on a multiple of 2x. This is quite acceptable, but the story could change significantly when more information comes out on Rossing South. It is still early.

**Investment Perspective:** MTN has fallen out of favour and seems to have lost momentum. There have been a number of board changes in recent months with two founding directors – Dr Bogacz and Dr Santich – resigning. It seems like the Company is still trying to recapture the initiative. There is nothing compelling here at present.

On 10/6/08, MTN released an updated resource statement for the Mt Ghee deposit. The contained uranium increased by 11% to 46.1 mt at 651 ppm, for 30,000 t U3O8. A 300 ppm cut-off grade was used. Just as importantly, the incorporation of the data from the additional 27 holes has enabled a better understanding of the mineralisation. At a cut-off of 700 ppm, the resource is 13.3 mt at 1,073 ppm for 14,200 t U3O8.

A scoping study was released last year scoping study released early, assessing the merits of a 1.5 mtpa operation treating 670 ppm ore for annual production of 900 t  $U_3O_8$  and a cash cost of US\$40/lb. In the absence of anything new we are sticking with these numbers as a base case, though there will certainly be changes. On current uranium prices this could generate a cash flow of \$41m p.a., placing the shares on a cash multiple of 2.0x, which is reasonable. However, there has been a fair degree of debate about the Company and it ability to achieve environmental clearances. We have no firm view on this aspect, but it should be noted.

#### **Monaro Mining**

Price \$0.44 (-4%)
Mkt Cap \$42m (post merge)
Quality Good
Value Excellent

**Investment Perspective:** The merger with UKL is a strategically significant move for MRO, showing that it is prepared to acquire attractive corporate opportunities. The combination of the two companies gives a more significant critical mass, greater marketability of shares, strengthened technical and management teams, and a pipeline of projects from near development in the USA through to advanced geological situations in Central Asia and grass roots in Australia and Estonia.

The New York AMEX listing, gives MRO access to a whole new field of potential shareholders, and these shareholders are traditionally longer term players rather than the hot traders the ASX and TSE seems to abound with. The synergy between the US projects and the participation of US capital markets makes for good logic.

Potential earnings from the US projects could lead to cash generation in the order of \$50m on current economics, but the market capitalisation of the merged entity is only \$40m, with over \$7m in the kitty. (Disclosure: The author is a substantial shareholder and director of Monaro).

Shareholders of both MRO and Uranium King met in June and voted unanimously in favour of the merger. As we write the companies are waiting for Federal Court approval of the scheme of arrangement, the court hearing for which has been adjourned until 24<sup>th</sup> July. The other major corporate initiative, the ADR listing in the USA, is progressing with the shares first trading on the Bulletin Board of NASDAQ in July. Documentation is continuing for a Level 2 listing on AMEX in September/October. This will enable capital raisings later in the year, in North America.

The Sinosteel joint venture covering the Kyrgyz uranium assets will provide material benefit on a number of fronts, but particularly culturally and logistically. Sinosteel, with the backing of China National Nuclear Corporation, has access to extensive geological and engineering experience in the uranium sector. The ability to transport drilling rigs over the land border between China and Kyrgyz will address the rig shortage in that country. Familiarity with the styles of geology and an extensive pool of geologists will enable the acceleration of the exploration and development programmes. Sinosteel can earn up to 60% of the Kyrgyz projects in an agreement that focuses on work programmes and achievement of commercial outcomes rather than focus on just expenditure commitments.

UKL has two key projects, which could be brought into production with a 2-4 year time frame. The Apex-Lowboy project in Nevada is a low cost open pittable project, which would see the heap leaching of the low-grade halo around what was previously the largest uranium mine in that State. A scoping study has released parameters that include a 500,000 tpa operation over a three-year period, recovering 600-700 t  $U_3O_8$  from a head grade of 700 ppm, at a cash cost of US\$32/lb, with capital expenditure of US\$22m. We believe the operating cost is overstated in the study, as a heap leach operation is usually low cost. Nevertheless, at current uranium prices, Apex could provide MRO with cash generation of \$18m p.a. or 18¢ per share, commencing in 2 years. Permitting procedures have commenced.

The Rio Puerco mine has not yet had a scoping study conducted on it, but back in the late

1970s, Kerr McGee spent US\$17m fully developing an underground mine. After stoping a few thousand tonnes of ore that company decided to place the mine on care-and-maintenance due to falling uranium prices, and it has sat there ever since. Our best guess on this mine is that it could cost about US\$40m to recommence production, depending on milling facilities. A 500,000 tpa operation could produce 500-600 tpa  $U_3O_8$  at a cash cost of less than US\$35/lb. Cash generation could be in the order of A\$31m for this operation, or  $32\phi$  a share. This would take longer to bring on stream- perhaps 3-4 years. The availability of an existing mill, within trucking distance, may enable this time frame to be kept to a minimum. Negotiations will continue on this front.

UKL recently announced the staking of another 9,000 acres in the Rio Puerco area, giving a revised exploration target of 9,000 t  $\rm U_3O_8$ . Airborne spectrometer surveys have already identified large contiguous anomalies in the area that is along strike from the Rio Puerco mine. Additionally, MRO is involved in grass roots exploration projects in Australia, selected by a proven mine-finding geological team (the key geologist was on the discovery teams for Nabarlek, Cigar Lake and Ernest Henry). It has also commenced applying for licences in Estonia, where historical work has suggested that the alum shales could host uranium values of at least 300-500 ppm with even better molybdenum grades. It seems that these grades could be twice those seen in similar geology, in Sweden.

#### Paladin Energy

Price \$5.81 (+25%)
Mkt Cap \$3.5bn
Quality Excellent
Value Good

**Investment Perspective:** PDN is the preferred institutional uranium stock due to its size and the tradability of the shares. When big money wants to move into uranium, PDN will be the easy option. This can be seen with the appearance of GE Asset Management on the register with 5.03%. There may be more to this than just a portfolio investment though, considering GE's role in electricity generation. Energy is a sector that GE clearly understands. It should be seen a signal to other institutions.

So far PDN has not been able to report a profit. It is an exciting company with huge uranium resources and a proliferation of development projects, but it needs to report bottom line profits to make it worthwhile. It will increasingly come under the scrutiny of fundamental analysts who will look more at results than sentiment. On Langer Heinrich alone, the shares look expensive on a cash flow multiple of about 30x. This will improve on the expansion though. When the other projects are taken into account, coming on over a period of years this improves even further, with a ratio of about 6x. The accurate scenario to focus on though should be the combination of Langer Heinrich and Kayelekera, which would give a ratio of about 10-12x when these projects are optimised. This is not unreasonable when compared with ERA.

It has been 18 months since PDN's first uranium mine, Langer Heinrich, commenced commissioning and it still has not achieved name plate capacity, with the June quarterly, release on 16/7/08, disclosing a 13% shortfall in uranium production when compared with the design capacity. Production was 258 t  $U_3O_8$  when it had previously advised the market that it would produce 320-340 t  $U_3O_8$ . The full year forecast has now been lowered to 1,100 t, down from 1,180 t  $U_3O_8$ .

The average sales price for the March quarter was US\$60/lb, down 10% from the March quarter figure of US\$66/lb.

There has continued to be a problem with the heat exchangers achieving capacity and there have been operator issues with the ion exchange circuit. The precipitation and drying capacity was impeded due to the mechanical failure of centrifuge drive equipment. Nevertheless, mining has reached record rates and will continue to rise as the expansion strategy is implemented. PDN has installed a larger capacity conveyor and expanded its leach heating systems.

The expansion to the 1,680 tpa  $U_3O_8$  level has commenced and is in schedule for completion by the end of 2008, at a cost of US\$50m. The Stage 3 expansion to 2,700 tpa is dependent upon obtaining water supplies from a desalination plant, which may be available from mid-2101. If an agreement is reached, PDN could commence construction of Stage 3 from mid-2009.

According to the public documents, March quarter direct costs of production were US\$5.5m or US\$11.22/lb. The gross profit on operations suggests cash costs of US\$15.89/lb, which provides for a significant margin on the sales price of US\$66/lb. However, finance, exploration and other charges resulted in a loss off of US\$8.4m for the quarter. We are still waiting on detailed data on the June quarter.

PDN has sales contracts covering 7.5 mill lb (3,400 t) of  $U_3O_8$  for delivery between 2007 and 2012. Cumulative production to December 2012 is expected to be 31 mill. lbs, so it has

committed 25% of planned production, probably at prices in the order of US\$50-60/lb.

The development of the 1,500 tpa  $U_3O_8$  Kayelekera project continues according to schedule and within budget, being 54% complete at 30 June. Finance is coming from a US\$167m debt facility from Sociètè Gènèrale. The total capital expenditure estimate is US\$185m.

PDN was successful in its 50:50 joint tender with Cameco for the Angela uranium project in the Northern Territory, which has approximately  $12,000 \text{ t U}_3O_8$  at grades of 1,000-1,300 ppm. Pre-feasibility and feasibility studies are proposed.

The 42.6%-owned Bigrlyi project in the NT is making good progress and is likely to progress to the development stage within a reasonable time frame. See the commentary under Energy Metals in this review. It is likely that PDN will acquire EME's interest either through a sale or via a takeover, as the 40% controlling shareholder of EME has indicated it is willing to negotiate.

In March 2008, PDN raised US\$325m in convertible notes at a 5% coupon, due March 2013. Funds are earmarked for the Langer Heinrich expansion and anything else that makes sense. Total borrowings at 31 March 2008, were US\$568m.

**Peninsula Mining** 

Price 3.1¢ (+63%)
Mkt Cap \$30m
Quality Good
Value Excellent

**Investment Perspective:** PEN has confirmed that its Wyoming target is realistic, at a minimum grade of 500 ppm. It looks like it is sitting on a very profitable project. We have used US\$22/lb in our numbers rather than the US\$15/lb that PEN had in a recent presentation, but the prospective numbers still look excellent with the shares on a prospective cash flow multiple of much less than one. This is one of the best value uranium stocks. Even though we are still waiting on JORC status resources, there is a high degree of confidence coming from historical work by reputable companies. The South African properties add further interest with the recent surveys showing potential for expanded mineralisation. (Disclosure: The author owns options in PEN and is a non-executive director).

PEN announced a revised exploration target at its Lance project in Wyoming, on 7/7/08, after a review by independent consultants World Industrial Minerals (WMO). The new figure is 22,000-31,000 t  $\rm U_3O_8$  at grades of 500-700 ppm. WMO's work correlated mineralised sands and construction of mineralisation outlines over 13 project areas defined by historical drilling. Drilling is planned to commence in September to convert historic mineralisation to JORC status. This is later than the earlier advised May date, due the time it took to secure key ground positions. The acquisitions, announced in May, cover the site of the earlier NuBeth ISL pilot plant and ground where 329 historical holes had intersected mineralisation in vertically stacked roll fronts.

Nuclear Dynamics and Bethlehem Steel previously discovered an extensive system of more than 20 mineralised roll-fronts, drilling more than 5,000 holes over an eight-year period, for a total of 912,000m. The roll-fronts are frequently stacked with up to seven in one location.

According to historical information, one deposit is  $700m \times 600m$  and 3m thick. Another is  $1,300m \times 150m$  and 2m thick. Both show excellent continuity. Intersections of 1,000 to 2,000 ppm are not uncommon. The average grade was 700 ppm. Depths are generally 120-150m. The NuBeth JV initiated an ISL project in 1970 but it wasn't scaled up to full production due to low uranium prices. The ground has sat dormant since then.

It would not be unreasonable to expect a recoverable resource of 10,000 t  $U_3O_8$ , but this needs further work before a JORC resource can be calculated. (PEN says its target is 18,000-27,000 t  $U_3O_8$ , at 500-800 ppm). Something this size could support a 750,000 tpa operation that might involve capital expenditure in year one of US\$70m, with annual increments of \$8m. The operating cost of an ISL operation might be US\$22/lb based on a head grade of 500 ppm. An operation of this size could earn significant profits, generating cash flow of \$86m at current uranium prices, or better than  $7\phi$  a share, placing them on a cash generation multiple of 0.4x

The Company also has six licences covering prospective Karoo sandstone in South Africa. Historical work has demonstrated uranium with Sites 22 and 45 having deposits of 1,100 t and 1,200 t  $U_3O_8$  respectively. These need to be brought up to the JORC status. PEN announced results of a 100m-spaced Fugro airborne radiometric survey in May 2008. New areas of anomalism were identified in all of the six Karoo licences..

PepinNini Minerals

Price 73¢ (+7%) Mkt Cap \$50m Quality Fair **Investment Perspective:** The metallurgical results for the Crocker Well ore are welcome and could assist in bringing down the capital cost of the project, which was rather high at \$170m for a 1.5 mtpa plant. The next step is to see how the drilling changes the perspective of the orebody. On current economics, the shares are amongst the more expensive with a cash

Value Fully Priced

generation multiple of 3.1x and a mine payback period of 3.9 years. The studies will need to improve the figures before we could be enthusiastic.

PNN is obviously feeling very comfortable with its cash balance and its association with Sinosteel. It has paid a 5¢ a share dividend and it has implemented a share buy-back. There is a negative to this though, as it shows that management wants to keep everything tight when the marketability of the shares is already too tight and not for encouraging larger investors who need liquidity. It is off the radar screen of many investors.

The move into gold might be good timing on the outlook for that commodity, but Fortnum sent one public company broke last year. The grade and the quality of the resources need to be treated with scepticism, though they do offer leverage if the gold price takes off from here.

Sinosteel has acquired a 60% interest in PNN's leading uranium project, Crocker Well, for \$28.5m cash. Sino is also committed to spending \$11m on mineral exploration over the next two years. Crocker Well has an inferred resource of 8,908 t  $U_3O_8$ , which an early scoping study says can produce 585 tpa from an A\$160m, 1.7 mtpa plant. PNN is targeting production in 2010, but it is likely to be art least a year longer.

PNN is drilling to verify and upgrade resources to the indicated and measured categories to enable a definitive feasibility study to be prepared. A programme of 130 RC and 16 diamond holes is planned for completion by August 2008.

Metallurgical test work by ANSTO has shown that the ore can be concentrated, as 65% of the ore has a specific gravity of less than 2.7, and this contains only 1.5% of the uranium. This lifts the head grade to the recovery circuit from 828 ppm to 2,356 ppm in the remaining 35% of the ore, which helps limit capital expenditure. Tests have also shown that recoveries improve to 93% levels with heating of the leachant.

Late last year PNN purchased 51% of Eagle Gold Mines Ltd, covering assets in the Peak Hill goldfield of WA, including the 1.2 mtpa Fortnum treatment plant and gold inventories totalling almost one million oz. Eagle plans to recommission the plant to produce 70,000 oz p.a., from mid-2009. However, there has been a problem with funding. On 9/7/08, PNN disclosed that the operating subsidiary has had a Receiver and Manager appointed as a result of not completing a Prepayment Facility Agreement, and there is an ongoing dispute.

In a separate initiative, PNN has acquired four uranium exploration tenements in North Queensland from Australian Gold Holdings Ltd (a company that had been trying to do an IPO). Styles targeted include uranium in phosphate rich horizons, and uranium in shearing and fracturing of graphitic and non-graphitic schists. Gold and base metals targets exist also. Completion of due diligence is required before PNN pays \$150,000 and 900,000 shares.

Summit Resources

Price \$2.80 (+47%)
Mkt Cap \$601m
Quality Good
Value Fully Priced

**Investment Perspective:** The resource statements on Bikini and Skal are useful and the grade is at the upper end of our earlier expectations of 300-500 ppm, but grades in the order of 500 ppm are not exciting with the current uranium price even though the market seemed to like the announcement.

Overall, SMM offers minority shareholders good value at these levels, but as in all minority shareholder positions, it becomes a waiting game without much control over destiny. We are still waiting on the Queensland Government to give its blessing to uranium mining. The shares will probably just perform in-line with the uranium sector, generally.

Baseline environmental studies and metallurgical test work has commenced on SMM's 50%-owned uranium project covering Valhalla and Skal, re-named the Isa Uranium Joint Venture. A budget of \$8m has been approved for 2007/08, including almost 50,000m of drilling in 147 drill holes. The programme is aimed at ensuring that the top 400m of the resource will fall into the measure and indicated categories, as this is the proposed depth of an open pit. Strike extensions will also be tested. A new zone of mineralisation has been found at Skal Far North, 350m NW of Skal North.

On 11/7/08, SMM reported resource estimates for the 100%-owned Bikini and the 50%-owned Skal deposits. Bikini's inferred resource is 10.1 mt at 517 ppm for 5,216 t  $U_3O_8$ . The strike length is 1,100m and it has been identified down to 400m vertical depth. The calculation was based on 58 predominantly diamond holes on an 80m x 80m grid. The orebody is open at depth but it has been fault terminated to the north and south.

Skal's new inferred figure is 7.6 mt at 508 ppm for 3,781 t  $U_3O_8$ , which is an increase in tonnage and a drop in the grade. The resource is located in three zones that are structurally controlled, near vertical southerly plunging shoots with abundant breccia bodies accompanied by intense albite-haematite-chlorite alteration. The resource has been calculated to a depth of

200m but it is open down plunge. The extension to 300m has been drilled but not included in this statement, hence this resource statement is 23% lower in contained uranium. The s.g. has been revised downwards from 2.9 to 2.75.

Resources at the 50%-owned Valhalla deposit stand at 25,800 t  $U_3O_8$ , and Anderson and Watta have 2,100 t  $U_3O_8$  and 1,720 t  $U_3O_8$  respectively.

Assays have been received from the 100%-owned Bikini deposit. Eyeballing these, it seems to be much lower grade at 300-550 ppm in most intercepts, though widths are frequently 10-20m and as large as 50m. The problem though, is that there are very few at less than 200m depths, down hole. Bikini doesn't look like a high priority.

The final wash-up of the takeover bid by Paladin sees that company holding 82% of Summit, with Areva holding 10.4% and others holding 7.6%. Areva is most unhappy with its position, having paid \$126m or \$6.10 a share, as there has not been consummation of the agreement with Summit to allow Areva to market 67% of Summit's uranium production.

SMM has agreed to divest itself of the non-uranium assets, selling an 80% interest in these to MM Mining Plc, whilst keeping a free-carried 20% equity through to the decision to mine. SMM will receive \$9m or the sale, payable over a timetable related to the IPO of MM Mining on a stock exchange. It has also divested itself of the Georgina Basin exploration project.

**Toro Energy** 

Price 21¢(+13%) Mkt Cap \$111m Quality Excellent Value Fair **Investment Perspective:** TOE has a stake in two uranium orebodies but each of them has their issues. Lake Way is one of the most significant calcrete projects in Australia, but it is in WA – a no-go State. Napperby is in the user-friendly Northern Territory but the grade is very low without the large tonnage to supply economies of scale, but there may be some hope for an upgrading judging by the recent announcement. Even though it is a good company, there is little reason to buy it aggressively just yet. It may be that some of the exploration ground in Guinea and Namibia holds more blue-sky appeal. If Lake Way was to proceed to production, the cash generation multiple would be about 2.3x, which is a little on the high side. If Napperby was to factored in the numbers could look much better, but it would need a much higher uranium price.

On 28/4/08,TOE released an update on the drilling at Napperby which demonstrated better grades and widths, giving improved confidence levels. The average grade was 469 ppm, applying a 200 ppm cut-off. The drilling, which took place from September to December 2007, involved 305 holes for 3,200m of drilling. Both auger holes and sonic core drilling were undertaken. Mineralisation was shown to occur in a shallow zone between 3 and 8 metres below the surface in semi-consolidated sediments. A 1:1 waste to ore ratio can be expected with selective mining on mineralised zones. Metallurgical testing is being undertaken and disequilibrium factors are being assessed. A revised ore statement is being prepared.

The initial JORC compliant Napperby inferred resource has been announced as 1.9 mill. tonnes at 360 ppm, for 670 tonnes  $U_3O_8$ . This is from 1 km of the 14 km strike, which Uranerz calculated to have 5-6,000 tonnes. TOE is committed to spend a minimum of \$750,000 p.a. for three years, and can buy 100% of the project for a figure of \$60-80m, based on a formula.

On 29/5/08, TOE announced a 20% increase in the Lake Way resource to 25.8 mt at 420 ppm for 10,835 t  $U_3O_8$ . using a 200 ppm cut-off. The status has been upgraded to be 90% in the Indicated category. The upgrade was based on 398 infill and extensional holes and a reduction in the cut-off grade from 300 to 200 ppm, using a uranium price of US\$80/lb. Thus it should not be surprising that the resource is bigger, with the trade-off being a grade which is 27% lower. If the same cut-off grade was used i.e. 300 ppm, the resource would be 16.6 mt at 514 ppm for 18,800 t  $U_3O_8$ . This is actually lower than the 15.5 mt at 580 ppm from March 2006 – so why bother making an announcement of the "increase"? Talk about confusing and misleading releases!

GPR Minproc is continuing to work on the pre-feasibility study for Lake Way, which is now a couple of months late. Processing options being considered include conventional milling with CCD solid/liquid separation, resin-in-pulp recovery and heap leaching. An extensive international exploration program is also being pursued.

Uranex

Price 25¢ (-33%) Mkt Cap \$20m Quality Fair Value Fair **Investment Perspective:** UNX needs a large scale plant at Thatchers Soak to make the low grades work, which will have a high capital cost and will be heavily dilutionary. While the cash generation multiple is low at 0.6x, dilution on financing needs to be considered. The cash costs are on the higher end of the scale and the mine payback period is too long, on our capex estimate. Also, being in WA is of no benefit. The Tanzanian projects may provide more

upside in the near term, but this will be judged when the resource statement comes out. The shares have come back to very low levels from which they could spike if there is good news from the impending resource statements.

According to the March quarterly report, the JORC compliant resource statement for both the Thatcher Soak deposit in WA and the Manyoni C1 project in Tanzania were to be received in the June quarter. We are still waiting at the time of writing.

Thatchers Soak in WA., is UNX's lead uranium project with  $6,000 \text{ t U}_3O_8$ . In December 2007, it reported that a second round of drilling continued to intersect extensive uranium mineralisation based on down-hole gamma logging results. A total of 113 aircore holes were completed (average depth 14m), showing two separate mineralised zones with a combined strike length of over 7 km. UNX reported that 43 of these holes had intercepts greater than 200 ppm eU3O8, using a cut-off of 100 ppm eU3O8 i.e. 38% of the holes, and 56% of the intercepts were 1-2m in thickness.

In the Bahi region of Tanzania, UNX is pursuing a concept of a centralised facility to process ore from a number of regional playa uranium deposits. At the Manyoni C1 deposit. UNX has reported the drilling of 423 holes for 5,512m (average depth 13m) on  $100m \times 200m$  and  $100m \times 400m$  grid patterns. The zone of mineralisation is typically 2-8m thick and it extends beyond the 2,400m zone of drilling. Assays are awaited.

Previously, on 8/3/07, UNX stated that the other Tanzanian project, Bahi C1 calcrete, demonstrated near surface mineralisation over a 1.6 km strike with an average width of 400m. Auger drilling and pitting on a 100m x 200m grid has exposed thicknesses averaging 1.7m with abundant visible secondary uranium mineralisation (probably carnotite). Although selective sampling has returned assays of 1,000-2,000 ppm, a lower grade should be expected as an average. Subsequent work has confirmed the general potential and increased the interpreted area of mineralisation to 13 km². Grid drilling is being conducted now.

White Canyon

Price 17¢ (-13%)
Mkt Cap \$31m
Quality Fair
Value Fully Priced

**Investment Perspective:** WCU has returned positive results from its first drill program with no surprises, good or bad. We are a little disappointed though that it tried to sensationalise the results though, rather than place them in the correct perspective.

So far so good. If it can get the permitting completed in a reasonable time frame it may proceed to becoming a small-scale producer. On current economics a 220 tpa production rate could see cash generation of \$11m p.a., placing the shares on a cash generation ratio of 2.4x, which is on the higher end of the scale. If you then take off the 15% royalty (equal to US\$9/lb, the cash generation drops back to about \$7m and the ratio jumps to 4.5x. it is not cheap.

WCU is an IPO that first commenced trading on 3/3/08, opening at a slight discount to the 25¢ issue price. The IPO raised \$17.5m, but payments to vendors of projects, and costs associated with the issue, left the Company with only \$8m at the point of listing. About \$3m was paid to Golden State Resources Ltd, which also retains a 25% equity in the Company. Another vendor, Michael Shumway, is also a 25% shareholder. WCU is essentially a spinout of the Golden State uranium assets, combined with interests of Michael Shumway. Each of these parties received \$11.4m of vendor paper.

The Company's presentation speaks of the Daneros project with 907 t  $U_3O_8$  of "reserves" within trucking distance of two uranium mills in Utah, USA (one is White Mesa, owned by Denison). The potential is at least double this tonnage. Other projects offering potential include Thompson and Geitus, also in Utah.

On 9/5/08, WCU released drill results from the Daneros deposit. The strike of the deposit was extended to 250m, adding to the size potential by 50%. The headline boasted intervals of 3.4%  $\rm U_3O_8$  and 17% copper. Wonderful, but it was only over 30cm. This is trying to sensationalise a result rather than place it into perspective. Almost every orebody has high-grade components. It is misleading to promote these alone.

Back to the results – intercepts were reported from 13 holes (there were 17 vertical holes drilled, so four were negative or minimal). Ten were drilled within the boundary of the previously drilled envelope. The average width of the 15 intercepts was 105 cm down hole. The average grade was 5,087 ppm  $U_3O_8$ . Removing the exceptional grade intercept, the average comes back to 4,180 ppm. This is consistent with this being a narrow high-grade deposit, but when you mining factors the grade is probably going to be reduced to something in the order of 2,000 ppm. This is consistent with earlier expectations. Another, 20 hole program commenced on 20/5/08.

WCU intends to commence mining in late 2008, with target production of 225 tpa U<sub>3</sub>O<sub>8</sub>. It may be that WCU was referring to the commencement of underground mining, which is something

very different to the commencement of yellowcake production. It takes time to develop an underground mine. Also, does this consider the requisite permitting time and the environmental baseline study.

We have run a few numbers that assume commercial scale production can be achieved in two years time. The narrow, high-grade nature of the mine is likely to limit ore mining to 100,000 tpa. It will be expensive with mining, trucking and toll treating costs almost A\$200 pt, giving a cash cost of US\$37/lb. A 15% royalty will skim off some of the profits.

Wildhorse Energy
Price 42¢ (-34%)
Mkt Cap \$39m
Quality Good

Sound

Value

Investment Perspective: WHE has come back to very low levels in recent weeks – almost back to the IPO price, yet the shares offer reasonable value at these levels based on the scoping study for Bison Basin, with a cash generation multiple of 0.9x – but remember that this is based on exploration potential as opposed to a JORC resource. The market will be looking for validation of the target. The Hungarian and Paraguayan projects add further value but we have not run estimates on potential earnings yet, as it is would be premature. The Bison Basin project, in Wyoming, currently has a JORC resource of 1,056 t  $U_3O_8$  at an average grade of 700 ppm, based on 632 holes. Another 48 holes are being drilled in the current program, to an average depth of 150m. The project covers an ISL mine from the 1980s, which operated for only three months, recovering 27 t of uranium. Previous records suggested a non-JORC compliant resource of 10.5 mill. tonnes at 1,100ppm, for 4,741 t  $U_3O_8$ .

In December 2007, WHE released a scoping study that focused on a 450 tpa  $U_3O_8$  ISL operation at Bison Basin. To some extent this was putting the cart before the horse as it was based on exploration potential that needs to be confirmed by drilling, though it does provide order of magnitude numbers. Initial capex for a stand-alone operation was US\$62m and cash costs were stated as US\$18/lb. Another US\$23m needs to be spent every four years on capital.

Interim results from the 20 hole reconnaissance drilling program on the Caazapà project in Paraguay were released in April 2007. They showed anomalous mineralisation over 30 km $^2$  with core logging giving results of 3.7m at 190 ppm, 2.8m at 200 ppm and 1.3m at 210 ppm eU $_3$ O $_8$ . No depth information was supplied. These results are a little underwhelming, especially as they are lower than the historical results of 400-500 ppm reported by WHE earlier. Is the target of 6-9,000 t U $_3$ O $_8$  still relevant?

In Hungary, WHE has released a JORC compliant resource of 17 mt at 800 ppm, for 13,600 t  $U_3O_8$  based on 128 drill holes, at <u>Pècs</u>. An underground mine is under consideration to recover uranium from Permian sandstones. At <u>Bàtaszek</u> there is a roll front over 3 km with 89 drill holes in it, with grades of 100 to 700 ppm. WHE describes this as a conceptual exploration target with possibilities for ISL recovery. Drilling commenced here in February 2008. It will initially verify past drilling results, focusing on the central area at depths of 140-200m.

On 19/6/98, WHE announced the completion of confirmatory drilling on the <u>Dinnyeberki</u> Hungarian project. Unfortunately the integrity of the report was compromised by a headline of a 1.74% peak grade, which is just too selective to be taken seriously, but that aside the average grade at Dinnyeberki was 1,300 ppm between 37.6m and 40.9m. This (single?) hole confirms the grade achieved in the 1980s from a 41 holes program drilled into a lens approximately 70m in diameter, 1-4m thick, at a vertical depth of 40m. There was no strike length given for the lens, but on the available information it seems small.

Another confirmatory drilling report was released on 2/6/08, this time for Bàtaszek. Four holes returned intercepts grading 100-840 ppm for intercepts of 0.6-2.5m, at depth of 151-228m vertical

On 10 August 2007, WHE announced a new project in Hungary that will be looking to recover uranium from coal ash at Ajka. Dumps of coal ash totalling 20 mt have been sampled to show grades of 94-152 ppm  $U_3O_8$ . Test work on the recoverability of the uranium is being undertaken with the possibility of production in 2009, if the tests are positive. The JV partner, Sparton Resources, has experience in secondary source extraction in China but it appears that this has not yet progressed to commercial production.

#### B. URANIUM AS A BY-PRODUCT OR SECONDARY PROJECT

Company Comments

#### **Arafura Resources**

Price 79¢ (+5%) Mkt Cap \$124m Quality Good Value Fair **Investment Perspective:** There is no doubting that Nolans is a significant project of merit. The numbers as released by the Company look impressive. However, it needs to be classified as a rare earth company, not a uranium stock. More recently it has been acknowledged for the phosphate, which is becoming increasingly attractive to investors.

This is a company for long-term investors rather than short-term traders. It may be a very successful producer in due course, but there are still many hurdles to overcome, including the high capex which must lead to significant dilution along the way, whether by share issues or the introduction of a joint venture financing partner. The advent of the bear market makes the project even more daunting for a junior company – but it is big enough for investment bankers to charge aggressive fees if they choose to run with it.

The Pre-Feasibility Study ("PFS") for Nolans calculated a NPV of A\$1.1bn (post tax) with 83% recovery, being the best-known recovery for any rare earth deposit. Phosphate recovery was calculated at 80% (all on bench scale tests). The capex is estimated at A\$\$750m and annual operating costs at A\$\$350m, comprising \$250m operating and \$100m transport costs. This works out to be \$312 pt of ore mined and processed, and \$200 pt for transport. The 800,000 tpa of ore mined, at a waste to ore ratio of about 2:1, will be upgraded through on-site concentration, which will reduce the tonnage to 500,000 t and lift the rare earth grade from 3.1% to 5.8%.

A length ramp-up period of three years was calculated, at 50%, 75% and 100% capacity utilisation for each year, respectively. Full production is scheduled for 2013, six years away. The average resource grade used was 3.1% REO, 14% P2O5 and 213 ppm U3O8.

Production volumes used were rare earths 20,000 tpa (US11,600/t), phosphoric acid 150,000 tpa (US\$400/t), calcium chloride 400,000 tpa (US\$100/t) and uranium oxide 150 tpa (US\$100/lb). The revenue share of uranium is only 9% on these numbers, relegating its significance to that of a by-product. The next step for ARU is the Definitive Feasibility Study, to improve upon the +-30% accuracy of the PFS. Bateman Litwin has been appointed to manage the feasibility study, which will cost US\$18m for the engineering design, followed by a US\$4m costing and valuation stage.

Since the release of the PFS, ARU has announced the test work has shown the mineralisation is receptive to heavy media separation. Additionally, the low-grade fines are amenable to flotation. The combination of heavy media and flotation work will enable rejection of 40% of the tonnage and give a EEO head grade of >6%, which is better than the 30% rejection level assumed in the PSF. It should help contain capital costs.

Phosphate acid recovery is exceeding 80% in test, and the Nolans phosphate qualifies as a premium product. ARU plans to produce 150,000 tpa, which would earn revenue of US\$210m p.a. at recent prices of US\$1,800 pt. This is more than four times the figure assumed in the PFS.

#### **Compass Resources**

Price \$1.75 (+4%)
Mkt Cap \$227m
Quality Excellent
Value Sound

**Investment Perspective**: CMR has been concentrating on the Browns Oxide Project, saying almost nothing about the uranium. Back in March 2007, it released some broad numbers – too broad to be able to build any meaningful analysis. We have not changed any of our numbers from the ones used in the previous research; capex \$150-200m, 2 mtpa, cash costs US37/lb, grades 360-460 ppm?

CMR shares have been carried down with the lead price. The uranium project is still speculative at this point as we do not know what the resource is yet. If we assume that there is a 10 mt resource at 360 ppm, a 2 mtpa plant could produce about 600 tpa  $U_3O_8$ , at a cost of US\$33/lb. This would supply a cash margin of \$42m p.a., placing the shares on a multiple of 5.7x on uranium alone. The mine would not go ahead on our numbers without some significant savings on capital cost, which may be possible due to the proximity to the Browns Project.

CMR has title to the historical Rum Jungle leases containing the Mt Fitch uranium mineralisation in carbonate rich and breccia rocks with a 100m thick central zone that thins on the extremities. Elsewhere on the leases, the Kylie prospect has been giving positive signs for unconformity style mineralisation.

On 19 March 2007, CMR stated that a 2 mtpa operation at Mt Fitch gave a NPV of \$276m at

US\$90/lb, based on a preliminary scoping study. In the Chairman's address at the 2007 AGM, CMR predicted annual revenue of \$116m and a NPV of \$68m at a uranium price of US\$60/lb, and \$219m p.a. and NPV of \$429m at US\$113/lb. Uranium production would be in the order of 2,200 tpa. (Working this through ... the numbers just don't add up. If you multiply 2 mtpa x 400 ppm you only get 800 tpa U<sub>3</sub>O<sub>8</sub>. CMR would need to have a head grade of at least 1,100 ppm to get close).

There has been almost nothing said of the uranium project since then, probably due to the focus on developing the Browns Oxide lead and cobalt project. The Annual Accounts, released in March 2008, did say that Hellman Schofield was re-estimating the uranium resource. The latest on this has been a statement that it will be released before the end of July, 2008.

The main project of CMR is the Browns Oxide Project. The latest update to the market, in mid June, disclosed that commissioning was underway and the first ore was fed to the mill on 31 May. It has also reported that the joint venture with Hunan Nonferrous Metals Corporation (HNC) is now fully operational, according to which HNC has paid \$72m of the capex and 50% of the production cost in return for 50% of the production. HNC is also paying for 100% of the cost of the Browns Sulphide feasibility study, and then 100% of the capex and 50% of the production costs for 50% of the product.

#### **Equinox Minerals**

Price \$3.94 (-21%)
Mkt Cap \$2.5bn
Quality Excellent
Value Good

**Investment Perspective:** The uranium circuit will be useful and at current uranium prices. On forecast costs EQN will receive an additional \$91m p.a. in gross cash flow, equal to 14 c a share. Given the share price is around \$4.10, the fundamentals of the stock will continue to swing around the copper operation, not the uranium. (It is interesting to note though, the very high capital costs for a 1 mtpa uranium plant. This is surprising given the existence of infrastructure already. We would hope this is a conservative overstatement).

EQN is a major new copper producer, commissioning the 20 mtpa Lumwana plant in Zambia, to recover 169,000 tpa of copper in concentrate. Uranium will be a valuable by-product from the Malundwe and Chimiwungo pits.

On 29 April 2008, EQN released the results of its uranium feasibility study, which involved the drilling of an additional 170 holes. At a 100 ppm cut-off grade, the indicated and inferred resource is 10.8 mt at 690 ppm for 7,526 t  $U_3O_8$  (16.5 mill. lb). There are 15,900 t Cu associated with the uranium, at 0.33% grade. This resource has been tightened up, within a pit design, resulting in 5.7 mt at 1,039 ppm  $U_3O_8$  and 0.73% Cu. Potential exists for increases from ongoing exploration.

The uranium rich ore will be mined concurrently with the copper ore, and stockpiled for a dedicated uranium recovery circuit that will involve conventional milling and flotation to produce a copper concentrate. The flotation tailings will then report to a uranium leach circuit comprising acid leach, solvent extraction, precipitation and calcination to produce yellow cake. A 1 mtpa plant is proposed to recover 900 tpa  $U_3O_8$  and 15,000 tpa of copper concentrate. Uranium recoveries are estimated at 93%, and copper recoveries 80%.

EQN has estimated plant and infrastructure costs of US\$151m, with contingency, mining and other taking total capital costs to US\$200m. This works out at \$16/lb before copper credits, and \$11/lb net of copper credits. Construction could start by September 2009, to enable production in mid 2010.

#### **Greenland Minerals**

Price 52¢ (-24%) Mkt Cap \$161m Quality Fair Value Expensive **Investment Perspective:** Kvanefjeld represents a substantial resource on the uranium alone, but the combination with other elements serves to complicate the project. To call it exotic would be an understatement. It is a very difficult project to get one's head around. You can imagine the bankers rolling their eyes at the idea of a "new commodity". It is normal for exotic projects like this to be on the shelf for a long time before they are developed, if at all.

We haven't run any numbers on Kvanefjeld as there are too many uncertainties. Even if GGG can circumvent the prohibition on uranium mining in Greenland, it will be a very expensive project to develop. Consider the \$800m price tag for Nolans in the Northern Territory, another rare earth project with uranium.

As interesting as it is geologically, it will be a long road to commercial development. Not only will the complexity of the geology and associate metals provide metallurgical issues, but so will the marketing of the products. Logistic may be an issue, as will politics and finance. The market capitalisation has a great deal of expectation built into it, which will be difficult to sustain in the long term.

GGG has purchased a 61% interest in the Kvanefjeld multi-metal deposit, in Greenland, for \$3m cash and 100 mill. shares and 100 mill. options. It can move to 90% ownership for another \$10m in cash/shares, then to 100% with a cash payment of \$50m.

At the time of acquisition, historical exploration at Kvanefjeld had identified approximately  $43,000 \text{ t U}_3O_8$  of uranium at a grade of  $340 \text{ ppm U}_3O_8$ , applying a 250 ppm cut-off (non JORC), based on 11,852 m of drilling. In 1979/80, 20,000 tonnes of material were excavated via adits at an average grade of 365 ppm. The uranium is associated with rare earths, lithium, beryllium and zirconium. Uranium in Kvanefjeld is estimated to comprise 20-40% of the value of the resource.

A revised resource statement was released on 2/5/08, dramatically increasing the inferred resource to 338 mt at 310 ppm for 103,996 t  $U_3O_8$ , applying a 150 ppm cut-off grade. A 250 ppm cut-off grade results in 238 mt at 400 ppm for 83,661 t  $U_3O_8$ . In addition there is a rare earth tonnage of 988,000 t and 1.3 mt of sodium fluoride. The resource was calculated with a 3D ordinary kriging model and validated on section and in plan.

Mineralisation occurs in a flat lying intrusive complex and is associated with altered lavas, hydrothermal veins and pegmatites. Most of the uranium is contained in steenstrupine, a uranium-thorium bearing rare earth phosphphosilicate, and uranothorite, cerite and vitusite.

Artificial sodium fluoride (NaF) sells for US\$900/t. It is used in control of dental decay by inclusion in toothpaste and dental rinses, pesticides and in the aluminium industry. Natural NaF is potentially a new commodity if markets can be found.

A mine plan was devised back in 1980, to treat 4.2 mtpa for 1,500 tpa of  $U_3O_8$ . The waste to ore ratio was 2.3:1 and the minable resource was 55 mt. However, it did not proceed due to unfavourable economics at the time.

#### Mintails

Price 22¢ (-61%) Mkt Cap \$153m Quality Fair Value Fair **Investment Perspective:** MLI's share price has been treated particularly harshly in the market recently, notwithstanding the strength in the gold price, which should have been supportive. It seems to suggest something isn't right. Management changes have been announced and a detailed release was made on 18/7/08, trying to rebuild confidence.

MLI is a stock that is going to be driven by gold production and gold prices rather than uranium, but it will still be a respectably sized uranium producer. Some caution is probably warranted though in the lead up to commissioning.

MLI is involved in two joint ventures in South Africa to recover gold and uranium from tailings dams. MLI has 100% of the first one, WERGO, announced in April 2007. The second one is the ERGO Mines JV with DRD Gold (MLT 50% pre-BEE equity).

The WERGO project has 323 mt of tailings containing 13,700 t  $U_3O_8$  and 2 mill. oz of gold. Phase 1, due to commission in October 2009, will treat 9.6 mtpa to recover 450 tpa of  $U_3O_8$  and 60,000 oz p.a. of gold. Cash costs of US\$7.30/t have been forecast, which work out at about US\$500/oz of gold produced. Phase 2, scheduled to be commissioning in 2011, boosts throughput to 20 mtpa for 680 tpa  $U_3O_8$  and 90,000 oz p.a. of gold. Mintek has conducted test work that suggests uranium recovery rates in the range of 70-86%. The uranium rich slurry will be toll-treated by Nufcor. However, given the strength of the gold price, MLI has elected to focus on the higher-grade gold content of the sands tailings first. Continuing delays have pushed back estimates of uranium production from early 2009 until late 2009.

On 4/7/08, MLI announced that it had reached an agreement with Kemix for the design and supply of the WERGO resin-in-pulp plant. The solvent extraction plant has been awarded to Bateman Litwin, for a cost of US\$5.4m. (Does this mean the Nufcor deal is redundant?).

The ERGO JV has a massive 1.7bn of tailings. Phases 1 and 2, involves the refurbishment of a CIL circuit and the treatment 7.2 then 14.4 mtpa to recover 42,000 oz then 80,000 oz p.a. of gold at a cash cost of R18/t (US\$540/oz). No uranium will be produced in the first two phases. Phase 3, will see capacity lift to 30 mtpa for 300 tpa  $U_3O_8$  and 150,000 oz p.a. of gold (and sulphuric acid production of 855,000 tpa).

The measured mineral resource for the Elsburg Complex has been released as 171.6 mt at 0.3 gpt gold, for 1.67 mill. oz. The tailings need to be assessed for the uranium content. These tailings represent only 10% of the material available to the JV.

An agreement has also been signed with the Nuclear Fuels Corporation of South Africa (Nufcor) for the purchase and toll treatment of uranium rich slurries. Other dumps are being investigated for acquisition, which could lift the total to 800 mt.

#### **Monitor Energy**

Price 1.2¢ (-29%)
Mkt Cap \$8m
Quality Fair
Value Cheap

**Investment Perspective:** MHL is has been a favourite stock for day traders, often moving in large percentages on very high volumes – but that aspect of the stock market has taken a back seat for a while. Its main game is the oil and gas interests in the Kyrgyz Republic, which are now to be fully funded by the joint venture partner. The uranium interests are small at present but interesting. MHL is a cheaply priced energy stock. (Disclosure: The author and associates owns options in MHL).

MHL is essentially an oil company with four licences in the Kyrgyz Republic, but also with 50% of an interesting uranium project in the same country, named East Kokmoinok. An historic Soviet resource of 770 t U is located at Kashkasu and awaits confirmation and conversion to JORC status. The Soviet work comprised a shaft to a depth of 160m and 800m of drives. The uranium mineralisation is hosted within coal horizons of the Jurassic sedimentary strata. The mineralised coal seams vary in width from 4.2-6.6m and the grade is typically 300-2,000 ppm, with an average being close to 1,400 ppm. Lower grade mineralisation is associated with sandstones and siltstones adjacent to the coal. There have been historical uranium mines in the same uranium field at Turakavak, Agulak, Sashytash deposits.

MHL paid US\$230,000 to acquire a local company that held a 97.5% interest in East Kokmoinok, then sold a 50% interest to Leopard Minerals at cost price. Ongoing exploration costs are shared 50:50 between the two companies. Drilling was scheduled for the December quarter of 2007, but inclement weather and contractor issues have pushed back the timetable.

The oil projects have been farmed out to Medina Group Ltd, a specialist oil and gas investor based in Hong Kong. Medina is to spend US\$13m on exploration to earn 85%. Note that Medina has to fund mobilisation and demobilisation costs on its own account, in addition to the US\$13m. This could be worth quite a few million dollars more to MHL.

#### **Western Metals**

Price 7.1¢ (-11%) Mkt Cap \$44m Quality Excellent Value Good **Investment Perspective:** WMT has proved that it has significant uranium bearing structures in Tanzania. It is now in the processes of qualifying what it has. Whilst there are some high-grade zones, the significance of these in a mining situation may not be enough to lift the average above 500 ppm. By the end of this year we should know better whether there is a consistent structure that may be mineable, as opposed to ground with plenty of good trench and drill results. Making it all hang together in a mineable orebody is what it is all about.

The diversification into the copper/zinc project in Wales is likely to see WMT graduate to the status of a legitimate miner faster than one could expect with the Tanzanian uranium projects, but it requires a different perspective. The Company will now have to demonstrate that project's economics to the market, as it will consume all of its cash, and some.

WMT was clearly a uranium stock up until 10th April 2008, when it announced a deal to buy 100% of the Parys Mountain copper-zinc project on Anglesey, off the coast of Wales. WMT will have a 120 day due diligence period to consider the transaction, which will cost \$7.6m in cash and shares initially, then \$21.5m on the completion of a bankable feasibility study or the expiration of three years, whichever is sooner. WMT estimates that a feasibility study will cost it \$12-15m over the next two years.

Parys was been a sizeable copper producer in the past, yielding more than 300,000 tonnes of metal before closing about 100 years ago. Modern exploration and development to the value of \$39m has already been performed, and approvals are in place for a 350,000 tpa operation.

In another transaction, WMT has sold its 60% interest in the Zeehan tin project in Tasmania for shares and cash worth \$1.2m, to Stellar Resources. Stellar is planning to spinout its tin assets in an IPO.

WMT's main uranium interests continue to be in Tanzania, where it is farming into projects held by Uranium Resources plc, earning a 60% equity. It is targeting the same formation that hosts Paladin's Kayelekera project, which has a resource of 13,360 t  $U_3O_8$ . Also, it has a JV to acquire ground in the USA where it is funding the acquisition to earn 52%. Not much has come from this to date.

In August 2007, WMT confirmed sandstone-hosted uranium mineralisation over a 2 km trend following a 1,648m RC programme at the Mtonya project in Tanzania. This added to the positive results achieved earlier, from other locations along a 7 km trend. Final assays for the Phase Two drilling, comprising 40 RC holes, were detailed in the September quarterly report. Many of the intercepts were narrow (1-2m), and many of these were only 100-200 ppm. Occasionally there were higher assays, but statistically they probably haven't lifted the tenor above low to modest grade status. Separately, trenching of the Grandfather prospect gave assays as high as 1.2m at 7,723 ppm, 2,393 ppm and 4,773 ppm. At this point is would be fair

to suggest this is selective surface enrichment, but only drilling will confirm or dispute this view. Final assays for the 40-hole program on Mtonya were reported in November 2007. Seven of nine holes returned grades in excess of 100 ppm, and three had grades exceeding 300 ppm. Intercepts were generally 3-6m. Deeper holes at Moysten returned interval less than 4m but as high as 1,140 ppm.

#### C. ADVANCED EXPLORERS

Company Comments

#### **A-Cap Resources**

Price 39¢ (+22%) Mkt Cap \$43m Quality Good Value Fair **Investment Perspective**: The attraction with ACB lies in the very extensive dimensions of its resource, albeit at a low grade. At worst is may be seen as a marginal low-grade producer with great leverage to a higher uranium price. At best, it may have potential for a very large and profitable heap leach operation with a long life, depending upon metallurgy and other parameters. Even though there hasn't been a high-grade zone identified, the increasing tonnages add to the development options. The shares have offered good trading opportunities with high volatility.

On 8/7/08, ACB released an updated table of inferred resources at its 80% owned Mokobaesi project in Botswana. The headline says a 390% increase in the resources, which is very positive, but it still leaves some questions to be answered. The tonnage is up by 330%, demonstrating the extensive nature of the mineralisation, and a positive reconciliation from down-hole logging has enabled a 13% increase in grade. Resources were calculated employing an ordinary kriging model using 2m downhole composites. The Mokobaesi and Kraken areas were drilled out on a 200m x 50m grid with minor infilling on a 50m x 50m grid. The Gorgon prospect was drilled on a 200m x 200m pattern. The upper cut was lifted from 500 ppm to 800 ppm due to a positive bias of chemical assays over probe readings.

You can pick and choose what the resource is depending upon the cut-off grade you want to apply. If you are happy with a resource grade of 158 ppm then you end up with 44,690 t  $U_3O_8$ . If you think you need > 200 ppm to have an economic mine then the tonnage falls to 14,560 t  $U_3O_8$ . Previously we ran our numbers on a head grade 160 ppm, which is about as low a grade you could hope for with a heap leach operation. Using the same cut-off grade of 125 ppm, the new resource on similar terms is 231 mill. tonnes at 166 ppm, for 38,380 t  $U_3O_8$ .

The scoping study that was due out in June has now been delayed until sometime in Q3 2008. The critical feature we will be looking for is the metallurgy and the amenability to heap leaching, which would be necessary if the 166 ppm head grade is applicable. ACB will need to consider the three types of mineralisation;

- Calcrete hosted vanadates in the top 2m (8 mt at 176 ppm for 1,410 t U<sub>3</sub>O<sub>8</sub>)
- ii. Karoo secondary mineralisation in fractures and coating bedding planes within the finer mudtaones/shale, as vanadates such as carnotite and Francevellite (78 mt at 172 ppm for  $13,490 \text{ t U}_3O_8$ ), and
- iii. Broad strata bound Karoo primary mineralisation within fine-grained sandstones and mudstones, typically coffinite and uraninite (150 mt at 161 ppm for  $24,120 \text{ t U}_3O_8$ )

If there are going to be any issues with heap leachability it is more likely to be with the primary mineralisation, which is lower grade and the bulk of the resource. As the total tonnage increases ACB improves its chances for a conventional milling operating, though on a smaller resource.

If we increase capacity from a 4 mtpa heap leach mine to 6 mtpa, on a 166 ppm head grade, at a capital cost of A\$100m (up \$20m) and operating costs of US\$13-14/t, and metallurgical recovery of 80% for 800 tpa  $U_3O_8$ , the costs per pound would be US\$50/lb. Gross cash flow would be A\$25m p.a., placing the shares of cash generation multiple of 2.8x, pre-dilution for capital expenditure. Whilst this is on the high side given the early stage of the project, when compared to other potential producers, there would be the potential to double the throughput due to the large resource.

#### **Acclaim Exploration**

Price 1.5¢ (+25%)
Mkt Cap \$11m

Quality Poor

Value Fair

**Investment Perspective:** AEX has released one report to the market on the exploration well in Texas since the commencement of drilling. That was on 15/7/08, stating that target depth had been reached and there was only a small amount of gas recorded on the logs. Nevertheless the operator has recommended testing and completion of a 15 foot oil sand encountered at depth of 7,800 feet. In our view the disclosure on this well has been woefully inadequate. Shareholders must be feeling very ill informed.

We have no idea what is going on with AEX. Does it want to be a uranium stock or a gas stock? The lack of news flow is abysmal; talk about treating shareholders like mushrooms! Even though the stock looks cheap based on the uranium resources it has disclosed we must caution investors about placing much faith in them.

AEX has sat on the Denny Dalton resource figure of 31 mt at 350 ppm  $U_3O_8$  and 2.5 gpt gold for well over a year now without any revision, notwithstanding the drilling of 44 diamond holes

and 27 RC holes. The average depth of these holes was 56m for the diamond drilling and 33m for the RC holes. The purpose of the programme was stated to be the confirmation of previous work, to test for extensions and to gain a better understanding of the conglomerate geology.

Of the 71 holes, 48 intersected the MCR. In 11 holes the MCR was poorly developed and in 10 it was absent. Gold values were shown to be highly skewed, which is normal in conglomerates, but the uranium was even more skewed. The complexity of the geology and grade distribution, as shown by the drilling, now means that a 50m x 50m grid is required. Another drill program is being prepared.

AEX previously reported that it is assessing opportunities in Guinea. However, it is reassessing this initiative given the delays it has been experiencing in the formal granting process.

In a move that came completely out of left field, AEX has embarked upon gas exploration in Texas with the commencement of a 14,000 foot well to test a 30-50 BCF target in May 2008. AEX has a right to earn up to a 25% WI. There has been no news since that release.

#### Atom Energy

Price 6¢ (-40%) Mkt Cap \$5m Quality Fair Value Cheap **Investment Perspective:** AXY has come back to a very low market capitalisation, at or about the same as its cash backing. This means the market has no interest in its properties and it is being ignored. That in itself is enough to say that the shares must be cheap at these levels. There doesn't seem to be any great expenditure commitment at this point, so the cash of \$7m should hold it in good stead for a while.

The board and executive changes have an opportunity to rebuild the Company. It may be that the Utah projects will generate some interest, or the NT projects will provide exploration news. This is one for the punters who take the view that it can't go any lower, and are prepared to be patient until new news comes along. (Disclosure: The author and associates owns shares in Atom).

AXY commencing trading on 26 June 2007, after an IPO that raised \$10m at a price of  $30\phi$ . The flagship project was Cleo in the NT, 175 km SE of Darwin. Cleo had pre-resource mineralisation of 740 t  $U_3O_8$  at a grade of 1,200 ppm. It was previously explored by Total, but that company came up with its estimate using radiometric logging that focused on high-grade narrow intercepts.

On 26/3/08, AXY released a revised, inferred resource at Cleo of 1.4 mt at 304 ppm. This was a significant downgrading of the resource to 430 t  $U_3O_8$  and effectively puts paid to any possibility of a commercial project in the near term, though there are depth extensions below 60m to consider.

AXY has a number of other grass roots exploration projects in the NT, and it has been acquiring more ground. There is nothing compelling about these yet.

AXY has closed the deal on the Utah interests, issuing 5.8 mill. shares to take 100% ownership of Mustang Energy Ltd. This gives AXY an option to acquire a 100% interest in the Shootaring Mountain project (exercise US\$250,000 in cash, US\$350,000 in shares), and initially 50% of Green Dragon and Bull Mountain with the ability to go to 100%.

The Utah ground is prospective for small, high-grade sandstone and conglomerate hosted uranium orebodies. Typical small-scale mining in previous cycles saw impressive grades, but it might be more realistic to be seeking 1,000-3,000 ppm grades today, with individual orebodies being in the range of 200-400 t  $U_3O_8$ . The availability of Denison's White Mesa mill at Blanding some 200 km away by sealed road may provide the opportunity for toll treating ore. Further, Uranium One's Shootaring mill is only 20 km away from some of AXY's leases (but that is in the process of being permitted for recommissioning).

The Company appears to be going through a transition at present, with both the Chairman (Lindsay Colless) and Managing Director (David Hamlyn) resigning, as has the CFO and Mike Schwabe, a non-executive director. Thomas Cahill has been appointed acting chairman and Robert Cleaver has been appointed a non-executive director.

#### **Aura Energy**

Price 22.5¢ (-15%)
Mkt Cap 10m
Quality Good
Value Good

**Investment Perspective**: AEE is a very active exploration company that has picked some interesting ground, particularly in Sweden. While it does have the small calcrete resource in WA, the future of the Company lies more with the exploration licences. The joint venture with Mega, in the Gunbarrel Basin is particularly attractive as this is a productive environment that has received only sparse attention to date.

AEE is a dedicated uranium exploration company that started with ground in Australia and has since acquired a promising alum shale project in Sweden. Recent drilling has confirmed up to

130m thick radiometrically anomalous shale in four of the first holes drilled in the Storsjon project, not far from where the Canadian company, Continental Precious Minerals, has reported an inferred resource of 214,000 t  $U_3O_8$  on the Viken licence. AEE has reported 70m at 204 ppm  $U_3O_8$ , 0.34%  $V_2O_5$  and 429 ppm  $MoO_3$  from its first drill hole.

The alum shale in Sweden typically shows grades of 100-300 ppm  $U_3O_8$ , 0.13-0.6%  $V_2O_5$  and 250-600 ppm  $MoO_3$ . Small scale commercial production in the 1960s initially only recovered 60% of the uranium, but by the time the operation shut down the recovery rates were starting to exceed 80% of the uranium.

On the Virka licence, also in Sweden and 45 km SE of the Pleutajokk uranium deposit, historical drill core has been re-assayed and returned intervals of 17m at 707 ppm, 9m at 396 ppm, 12m at 380 ppm and 24m at 231 ppm  $U_3O_8$ . These are good widths at modest grades (we take exception to the Company's release, which described them as "spectacular", which is misleading).

AEE has been pursing an African initiative in alliance with Global Coal Management, an AIM listed company. The alliance is managed by AEE with funding provided by both companies. GCM will fund exploration on projects generated by the alliance with AEE retaining the right to a 30% interest. GCM took a placement in AEE of 5.56 mill. shares at 29¢, injecting \$1.6m in May 2008.

As part of the initiative licence applications have been lodged in Niger, for ground near the Air Massif. This ground is 200-300 km from the existing uranium mines in the Tim Mersoi uranium province and has not previously been explored for uranium.

AEE does have a small carnotite uranium resource at Wondinong in WA, having announced 6.5 mt at 185 ppm for 1,180 t  $U_3O_8$  in the inferred category, using a 150 ppm cut-off grade. The tonnage almost quadruples if the cut-off grade is reduced to 100 ppm, but the contained uranium of 3,160 t  $U_3O_8$  is only 140 ppm. It is clearly uneconomic at these uranium prices even if there was no ban in WA. Cash costs might be in the order of US\$80/lb based on our default cost parameters.

The Wondinong resource is hosted in mixed clay lithologies rather than cavity riddled calcrete within a semi-continuous mineralised layer above and often separated from the water table. The clay may present metallurgical problems though, if the Yeelerie experience of WMC is anything to go by.

Ground is held in the Gunbarrel Basin in WA, a region known to host uranium mineralisation at Mulga Rock an Ponton. AEE's ground is joint ventured with Mega Uranium, which can earn 50% by spending \$3m, then up to 70%. Reconnaissance drilling has returned narrow widths of anomalous uranium.

#### **Encounter Resources**

Price 31.5¢ (+2%)
Mkt Cap \$22m
Quality Good
Value Fair

**Investment Perspective**: ENR has done well establishing a sizeable calcrete resource, but the grade is one of the lowest around. It would certainly be uneconomic at recent uranium prices. Add this to the observation that calcrete metallurgy can be difficult, and the location in WA, and you can imagine it remaining in the ground for a long time, unless it could sell the ore or toll treat it in someone else's plant.

ENR announced its first JORC resource on 10/7/08, with an inferred resource of 27.6 mt at 174 ppm for 4,809 t  $U_3O_8$  at the 80%-owned Hillview calcrete project, 50 km SE of Meekatharra in WA. A 100 ppm cut-off grade was used. If the cut-off is lifted to 150 ppm, the resource becomes 22.7 mt at 181 ppm for 9,000 t  $U_3O_8$ . The Block Ordinary Kriging method was employed, with the calculation based on data from 133 vertical aircore holes drilled on a nominal 400m x 100m spacing. Chemical analysis and down hole gamma logging analysis were employed. Gamma logging appear to have underestimated the grade by about 20%.

The main mineralised zone is 7 km x 1.4 km with an average thickness of 3.15m. It is a flat lying and internally consistent, laying at shallow depths. An s.g. of 2.0 was applied. Metallurgical test work is underway.

In a recent presentation given by the Company, we were more impressed with the non-uranium exploration projects in the portfolio. Large scale, drill ready zinc-copper-lead-silver targets have been defined in the Tchintabky Well and Pingandy Creek projects in the Bangemall Basin in WA. Drilling of Tchintaby Well by CRA in the mid 1980s encountered low grade mineralisation over an area 8 km x 5 km, with drilling typically hitting 10-15m at 0.5-1% Zn with copper and silver. ENR is targeting SEDEX zinc mineralisation similar to Century. Drilling will commence in August 2008.

At Pingandy, 80 km S of Paaraburdoo, ENR has defined gravity anomalies down plunge and

#### **Erongo Energy**

Price 7.4¢ (-14%) Mkt Cap \$4m Quality Fair Value Cheap along strike from Pasminco's drilling, which hit low grade zinc. It is planned to drill these in August 2008 as well.

**Investment Perspective:** ERN's share price continues to trade at basement prices, unaided by any meaningful news flow. Being in Namibia hasn't helped the market image of this stock. At current levels it is prices as a shell.

We are sticking with our earlier numbers on a 2 mtpa operation that suggest cash costs of > US\$50/lb for 450 tpa U<sub>3</sub>O<sub>8</sub>, which would be uneconomic when capital costs are considered. The best hope for ERN shareholders is that it is recognised as being highly levered to the uranium should it recover. Alternatively, the Company might reinvent itself with another deal.

ERN is targeting intrusive-style granite-hosted uranium orebodies in Namibia. It released an update on 4/1/08, with results from another 20 holes drilled to test the extensions up to 2 km from known mineralisation at Area 1. This brings the total to 70 holes drilled at Area 1, establishing an area of 1,000m x 1,000m to depths of 100m. Within this lies a higher-grade zone measuring 1,000m x 300m. The most recent 20 holes demonstrated only lower grade mineralisation and narrower widths. The implication is that they do not extend the zone of potentially economic mineralisation to any great extent.

The tenor of the intercepts in the main zone suggest that we could be looking at a grade of 200-300 ppm, with perhaps some smaller quantities in the range of 300-400 ppm. If we assume an average thickness of 25m we could be looking at up to 50 mt of mineralisation. If the average grade was 250 ppm there could be a resource of 12,500 t U3O8. We will need to wait and see what the company calculates.

Spitzkoppe is another uranium exploration project located 25 km east of the Erongo Granite project. The target here is secondary calcrete-hosted mineralisation as well as granites. A 92 hole drill programme has tested three zones of calcretes but only low grades were encountered (<60 ppm). Other zones need to be tested.

ERN has drilled six auger holes into the Koichab mineral sands project in Namibia to test for heavy minerals. An aircore drilling program is now planned to test the primary target zones.

#### **Fusion Resources**

Price 66¢ (-2%)
Mkt Cap \$31m
Quality Good
Value Sound

**Investment Perspective:** FSN has good quality projects in the right geological environment in NW Queensland. It seems reasonably assured of at least one orebody, based on drill results to date. Speculative numbers on a 750,000 tpa operation, with a head grade of 1,200 ppm and cash costs of US\$25/lb, could lead to cash generation of \$71m or 126¢ a share, pre-dilution for finance. The CG ratio is a low 0.5x. These are very good starting numbers. We will now have to see if a JORC resource can be calculated to justify these assumptions. There is one problem though; it is in Queensland.

FSN has a portfolio of uranium exploration targets in NW Queensland, contiguous and to the north of Summit's leases. Others are located south of Summit's Anderson licence, and more SE of Mary Kathleen.

On 17/1/08, FSN reported some very good drilling results from the Duke Batman prospect. The best intercept was 29m at 7,450 ppm, including 11m at 16,173 ppm. Mineralisation is traceable from the surface to 200m in depth, over a 700m strike length, open in both directions and at depth. The prospect is on the 100%-owned Valhalla North Project in NW Queensland, 45 km north of Summit's Valhalla uranium orebody. Additional drill results were released on 6 March, 2008, showing thick mineralisation from shallow depths down to 200m. Many intercepts were in excess of 1,000 ppm. Subsequent drilling has continued to show similar results with the strike length being extended to 800m.

Drill results were released for the Honey Pot prospect on 9/7/08, 16 km NE of Duke Bateman, confirming mineralisation over a 1.6 km strike length. Assays from the best five of the 25 holes included intercepts grading in the range of 1,100-1,350 ppm over widths of 5-17m, generally between 50m and 150m depths.

Placing it in perspective, it seems reasonable to suggest that FSN will have a "Summit-style" orebody with an average grade of maybe 1,200-1,600 ppm. While there are some good headline intercepts of high grade, there are also many intercepts less than 5m at grades 400 to 800 ppm. If it continues to shape up like Valhalla, FRS might be looking at 10-15,000 t of contained uranium.

In May 2008, FSN announced a newly discovered epithermal vein system at Tate River in

#### **Impact Minerals**

Price 11.5¢ (-18%)
Mkt Cap \$8m
Quality Good
Value Cheap

Queensland, 200 km W of Cairns. The initial discovery vein has a strike length of 250m and a width of up to 10m, within a system that runs for 8.5 km. Sovereign Metals is earning 50% by spending \$1.45m over two years, at which point FSN can contribute or dilute.

**Investment Perspective:** IPT has a useful foothold in the uranium business with its share of resources being 1,800 t U3O8 at 450 ppm. Depending upon politics and economics, and metallurgy, this might progress to development at some point. The shares are cheap at these levels when you consider it is much more than just an exploration hopeful. We see the Quinns Lake nickel exploration project as potentially very exciting due to its analogy with Sudbury. It is one to watch closely. IPT should be seen as a multi-metal stock with uranium, nickel and gold exploration projects.

A quick run of the project economics suggest that Nowthanna could make money at these prices, but the mine payback is too long. Also, the join ownership will be an impediment to mine development AND it is W.A.

In an IPO that commenced trading on 29 November 2006, Impact raised \$5m (25 mill. at  $20\phi$ ). It has a worthwhile asset in Nowthanna, which has a total size of 10.4 mt at 450ppm, for 4,680 t  $U_3O_8$ . However, the ownership is convoluted with Impact owning only 3.92 mt of this i.e about 40% of the deposit. Its nickel exploration has excellent potential for Sudbury-style mineralisation.

On 26/6/08, IPT released results of an infill drilling program at Quinns Lake, which is what the Company has called its portion of Nowthanna. The results were amongst the best grades achieved from the deposit in widths of 3-4m, pointing to the possibility of an upgrade.

A new paleochannel has been identified at Yarrabubba, near Quinns Lake. This has dimensions of 40 km x 1 km and is prospective for calcrete-hosted uranium.

In December 2007, IPT announced an African initiative, applying for uranium exploration licences in Botswana. This ground is considered prospective for near surface uranium deposits. IPT increased its interest to 100% in July 2008 by issuing two million shares.

The ground covers 350 km of strike extensions of rocks that host uranium mineralisation near the town of Serule, where ACB has announced a substantial uranium resource at Mokobaesi. Airborne radiometric surveys have identified about 20 areas of interest, covering Karoo sediments, calcretes and salt pan sediments.

On 26/4/07, IPT announced an application for licences in the Drummond Basin, Qld. Named Pebble Creek, the 7,000 km2 covers roll front and structurally controlled uranium targets as well as paleochannels. Previous rock chip sampling has returned 1,000 ppm.

In a significant development announced 15/7/08, IPT has entered into a strategic alliance with Impala Platinum to explore for nickel and platinum deposits in South Africa. Impala will fund project generation activities for the first two years, at US\$400,000 p.a., in return for a first right of refusal. It must spend US\$1m on any project it chooses, before it can withdraw, then another US\$1m will earn it a 50% interest.

Interestingly, Leon Pretorius announced a substantial shareholding position on 17 June 2008, with 4.57 mil. shares equal to 6.28% of the issued capital. Dr Pretorius is the MD of Deep Yellow.

## Mantra Resources

Price \$2.80 (+56%)
Mkt Cap \$325m
Quality Good
Value Expensive

**Investment Perspective:** Although MRU does not yet have any sort of resource announced to the ASX yet, its level of activity and the commissioning of a scoping study suggests that one is not far away. Its market capitalisation also commands attention. Given the uranium bubble has come and gone MRU has been a spectacular performer in recent months, with a fully diluted market capitalisation well in excess of \$300m.

Of the Tanzanian companies, which includes Uranex and Western Metals, MRU has been the most aggressive in the pace of its drilling and it is therefore the most advanced. Judging by the people involved and the work to be undertaken, this scoping study will be more project specific than many others we have seen in the sector.

lan Middlemas has been a successful promoter of many companies over recent years with one of his noticeable attributes being well-engineered exit strategies for both himself and his shareholders. This time around it is a little different. It is not a straight takeover – at least not yet. It has been the introduction of some strong shareholders and directors to the board with the Mavuzi Resources merger and the strategic alliance with Highland Park. The spotlight is very much on MRU now and with it, pressure to come up with the numbers to justify the large price tag. We have not speculated on fundamental value in our tables yet as there has been

#### insufficient information to do so responsibly

MRU is a new entrant to the review. It first traded on the ASX on 9/10/06, with an IPO that raised \$6.4m with an entitlement to OmegaCorp Ltd shareholders. The lead project was the Mkuju River uranium prospect in Tanzania, with sandstone hosted roll-front uranium targets in the Karoo sediments. Historical exploration had intersected 0.15m at 2,400 ppm in a salt exploration program in 1953. Carnotite had been identified in calcretes which were assayed at 130-471 ppm.

MRU has made rapid progress in less than two years with a major step forward being the merger with Mavuzi Resources in March 2008, bringing an extensive African exploration portfolio and a credible management team. The merger terms were 1 MRU share for every 3 Mavuzi shares, valuing Mavuzi at approximately \$19m at the time.

Drilling on the Mkuju River project has confirmed thick, high-grade zones of sandstone-hosted uranium mineralisation. The March quarterly reported that 80% of the 71 holes drilled on the Anomaly MNS, on a 100m x 100m grid, had intersected significant mineralisation with many of them hitting multiple zones. Some of the better intercepts were 15m at 1,582 ppm, 12m at 1,268 ppm, 2m at 3,570 ppm and 3m a t 3,120 ppm. The uranium mineralisation is preferentially hosted within sandstone and gritty/conglomeritic sandstone horizons capped by finer grained claystone units. These are typical for their style and similar to Paladin's Kayelekera deposit. The mineralisation lies within an area 1,100m x 700m, open to the NE and to the south. MDM Engineering has been appointed to carry out a scoping study. A 15,000m RC/aircore drilling program at the Nyota prospect commenced in January.

In another Tanzanian project, Mnamba Bay, in the SW of Tanzania, an airborne radiometric survey and follow-up drilling has confirmed the presence of sandstone-hosted mineralisation at surface within a 4 km x 1 km corridor. Further work this year will seek to firm up drill targets to be tested in 2009.

MRU hold licences in the Mavuzi project in Mozambique. The original licences have prospectivity for uranium while recently granted licences show potential for gold and copper. A number of other licences have recently been awarded, giving MRU an extensive land position.

Uranium exploration permits are also held in northern-central Malawi. At <u>Chikangawa</u>, ground radiometrics have confirmed a 6 km x 4.5 km nepheline syenite body known to host alkali intrusive-related uranium-niobium-tantalum mineralisation. Soil sampling and trenching have been providing positive results to date. <u>Chintheche</u> is showing promise for vein-style uranium mineralisation.

MRU would be one of the more corporately astute uranium companies, evidenced by the alliance with Highland Park S.A., which has become a strategic investor in MRU. Key investors in Highland Park include former executives of the Toronto-based LionOre Mining International Limited, which was acquired in 2007, by Norilsk Nickel for US\$6.3bn. MRU place 12 mill. shares at \$2.00 to Highland Park, raising \$24m., along with 4 mill. listed and 6 mill. unlisted options exercisable at 20# and \$2.20 respectively. If they were all exercised it would give Highland Park a 19% holding in MRU.

#### **Scimitar Exploration**

Price 30¢ (-24%)
Mkt Cap \$15m
Quality Good
Value Cheap

**Investment Perspective:** We have viewed SIM as a credible exploration company for some time, with good addresses for its portfolio of Australian exploration projects. It has been a last minute entry into this review with the announcement of its first JORC-compliant resource. While this resource gets SIM a seat at the table, it is low grade, it is still modest in size and it is in WA.

However, there is a possibility that it may be amenable to ISL recovery methods, which would place it is a similar technical position as CUY's Oban deposit which is advancing to the trail leaching stage. At current uranium prices Benet Well does not have enough fat in it to justify development. A higher uranium price is needed. Nevertheless, the shares are very cheap at these prices.

On 9/7/08, SIM announced its first JORC inferred resource with 7.2 mt at 296 ppm for 2,200 t  $eU_3O_8$  at the 100%-owned Yanrey project in the Carnarvon Basin of W.A. A 250 ppm cut-off grade results in a resource grade of 394 ppm and 1,400 t  $eU_3O_8$ .

The resource was modelled using 3D kriging, utilising data from 174 air core holes, 8 diamond holes and 8 mud rotary holes. Drill spacing varied from 50m to 100m across strike and 100m along strike. Down hole gamma logging provided most of the assay data. Disequalibrium analysis indicated that gamma radiation logging underestimated the true content by approximately 7.6%. An s.g. of 1.74 was applied. Porosity of the sandstone was recorded at an

average of 34% and good permeability indicates possible suitability for in-situ leachability.

The deposit, named Bennet Well, is located within an area of  $1.2~\text{km}^2$ . A further  $12~\text{km}^2$  is open for exploration in the immediate area, with the Bennet Well paleochannel open to the north and the west. Deposit is located in Mesozoic sediments that are prospective for sandstone-hosted roll-front uranium, as evidenced by Paladin's Manyingee deposit with a published indicated resource of  $8,080~\text{t}~\text{U}_3\text{O}_8$  at 1,000~ppm and 2,810~ppm at  $500~\text{ppm}~\text{U}_3\text{O}_8$  in the inferred category.

It is very early days with regards to economics, but if we assumed a 1.0 mtpa ISL operation, there could be a seven year mine life producing 210 t  $\rm U_3O_8$  p.a. applying a 70% recovery rate. Cash operating costs are uncertain, but if we look at scoping studies released for companies like Peninsula and Wild Horse who have ISL projects in the USA, they are talking about cash costs of US\$18.50/lb for 700 ppm and US\$22/lb for 500 ppm projects respectively (PEN have actually said US\$15/lb, but we have raised the number). A figure of US\$30/lb could be used for Bennet Well. This would place SIM on a cash flow multiple of 1.4x, which is good value, but the capex of \$65-\$70m would be difficult to finance with a current market capitalisation of less than \$20m. A mine payback period of 4-5 years is too long to be able to attract debt finance.

Since the release of the resource, SIM has brought out another release to say it has extended the mineralisation at Bennet Well to the west where another branch of the paleochannel is being drilled. A guick eyeball of the intercepts suggests the grades will be similar.

Uranium prospects are also held in the Amadeus Basin in the NT, south of the Angela and Pamela deposits. Drilling is about to recommence here. Assays are awaited from an aircore drilling program on the Eclipse property, near the (New Well) Napperby calcrete deposit held by Deep Yellow and Toro.

Other projects in the exploration portfolio include iron ore potential north of Southern Cross in WA, where 400m of banded iron formations have been mapped. Assays at surface have been typically 40-60% Fe.

Uran
Price 15¢ (-40%)
Mkt Cap \$8m
Quality Fair
Value Inexpensive

**Investment Perspective:** URA is operating in a very difficult geopolitical region. The countries have left Communism behind, but the administrative and judicial functions still lack transparency. It would be unwise to go into these countries expecting fair play and administration by the rules – even if we could figure out what the rules are. It is just too hard. The market is telling us that it is not interested in waiting for this to be sorted. The Czech Republic looks like it will take some time.

There does seems to be some progress in the Ukraine though, with URA finally getting access to the data. We await more information both on the technical front and the dealing front. It seems like URA will get a 50% equity, but we are not certain. The shares may be good value at these very low prices, but it is too hard to call when it comes to the FSU.

At this point Uran's main projects seem to be Surskoye and Gurevskoye in the Ukraine. Early in April 2008, it was announced that Government approval had been granted for URA to proceed with a feasibility study on these. These projects have been described as being ISL amenable, at depths of 50-70m and with thickness of 0.5-4m and 10-12m respectively. Nearby mines have had lives of four years and experienced 80% extraction rates.

The review and translation of the technical data for the Novogurevskoye has commenced. This deposit was discovered in 1965, and it was drilled on a 200m x 100m grid between 1978 and 1982, with some infill drilling on 200m x 50m. URA has quoted an exploration target of 3,500-4,500 t  $\rm U_3O_8$  based on the previous drilling. The Main deposit occurs over a 9 km strike length, ranging in width from 200 to 900m. Uranium occurs in the upper carbonaceous claysand packages in thicknesses of 1 to 22m, averaging 12m. The depth of mineralisation averages 50m.

The Shirokolanovska deposit is oval-shaped, covering a 2.2 km strike, with widths of 200 to 700m. Uranium mineralisation occurs as coffinite and uraninite in carbonaceous-clay material. The mineralised zone averages 10m in thickness at depths of 60-70m.

The Surskoye deposit was discovered in 1962 and pattern drilled on a 200m x 100m grid between 1968 and 1971. The exploration target is 2,500-3,000 t  $U_3O_8$  based on that drilling. The mineralisation is generally 1-3.5m thick and up to 700m in width, in organic sandy sediments over a 3.5 km strike at Chervonoyarsk and 5 km at Grushevsk.

Uran has lodged applications over the Osecna and Plouznice uranium projects in the Liberec district of the Czech Republic, and revised applications over the Veznice, Jamne and Polna deposits in the Brzkov district. The Liberec projects comprise mineralisation in sandy

sediments with grades reported to be in the range of 400-1,200 ppm. In an ASX release, URA quoted a local businessman, stating that there is in excess of 120,000 t  $U_3O_8$  in the area. However, the Czech situation is becoming confused. It appears that URA's applications have been rejected on environmental grounds so URA has lodged appeals.

URA has lodged applications for licences in Bulgaria. Our research into that country has told us that the government is preparing to place a number of old ISL mines on the market, but legislation is needed for this to happen. These would likely be high cost mines at US\$40-50/lb. Perhaps Uran will try and get some of these.

**Uranium Equities** 

Price 15¢ (+0%) Mkt Cap \$28m Quality Good Value Reasonable **Investment Perspective**: UEQ has been rationalising its holdings recently, shedding a number of WA licences to concentrate on more geopolitically friendly places such as the NT and South Australia. It has some good ground in the NT, particularly the N47 project with Cameco. If it can work this up to a more defined, larger body it could be a sweet mine. The cash balance of approximately \$16m holds it in good stead at present.

UEQ's most interesting project seems to be the N47 prospect in the NT where it had an intercept of 22m at 3,600 ppm from a depth of 114m. A second hole has recorded 28m at 1,250 ppm from 88m depth and 21.7m at 3,060 ppm eU $_3$ O $_8$  from 129m (gamma logging results). These were drilled SE of the Nabarlek uranium mine. Mineralisation occurs as sooty pitchblende and secondary uranium in fractures and veins sub-parallel to the sandstone contact. UEQ is earning a 40% interest from Cameco.

If these were the first holes in the target one would get very excited. However, it was drilled previously and it has been subject to a number of interpretations with the current status being that the geologists don't know what to make of it just yet. The data base includes 55 mineralised intercepts greater than 350 ppm in 24 drill holes. Another four holes are planned by Cameco, the operator, to try and get a better grip on what is there. It looks like a very good project but the size has to be determined. On 26/6/08, UEQ announced that drilling had recommenced.

Exploration at Narraweena in Queensland, near the Ben Lomond uranium deposit, has located airborne radiometric anomalies. Surface exploration has achieved high-grade grade grab samples up to  $1.39\%~U_3O_8$ . Systematic sampling and geological is planned in order to determine drill targets.

UEQ has recently acquired the old Nabarlek mine lease which previously produced 11,000 t  $U_3O_8$  at 1.84%  $U_3O_8$ . UEQ also has a 16.7% equity in Urtek LLC, with the ability to move to 90% by funding up to US\$15m. Urtek is developing a process for the extraction of uranium from wet phosphoric acid streams from phosphate rock.

West Australian Metals

Price 19¢ (-12%)
Mkt Cap \$64m
Quality Fair
Value Reasonable

Investment Perspective: Of the main players in Namibia, apart from Paladin, WME seems to be fourth in the pack behind Bannerman, Deep Yellow and Extract, but ahead of Erongo. If we use a 2.5 mtpa heap leach operation as the base case, the project offers an acceptable payback period of 1.5 year. The mine life is 9.7 years. The 80% share of cash flow of A\$41m p.a. places the shares on a respectable cash generation ratio of 1.7x. The Company is constantly talking about a much larger resource potential. If this eventuates then a different production scenario would need to be considered.WME has reported its first inferred mineral resource for the Marenica uranium project (80% owned) in Namibia, announcing 32 mt at 213 ppm, to a depth of 40m, for 6,800 t  $U_3O_8$  (cut-off grade 110 ppm). This was about 20% lower than expectations in the market place with respect to tonnage, though the grade was as expected. If a cut-off grade of 150 ppm is used, the resource becomes 17 mt at 281 ppm, for 4,700 t  $U_3O_8$ . It appears that radiometric logging may have been over-estimating the grade by about 20% when compared to chemical assays. A specific gravity of 2.3 was used.

A revised resource statement is due out by the end of July 2008, and drilling has commenced to close up the spacing from a 600m x 200m grid to 300m x 200m.

In an update released on 11 April 2008, WME reported that drilling had extended the mineralisation by 600m along strike and a revised resource estimate would be announced by mid-2008. The release talked of a thickening of mineralisation and the potential for bulk mining and heap leaching.

On 26/6/08, WME announced initial reconnaissance drill results of an alaskite target at the Phillipus Zone. Describing it as a "discovery", the best holes reported included 29m at 123 ppm, 7.8m at 121 ppm, 5.3m at 128 ppm and 4.4m at 130 ppm. WME emphasised that it was a boost to have this type of mineralisation, in addition to the paleochannel style already reported, the reality is that these grades are very low and come in a poor second behind drill

results released by the two lead alaskite explorationists, Bannerman and Extract.

We have assumed that the high grade option will be preferred, and, assuming that heap leach characteristics are proved, as 2.5 mtpa operation could produce 595 tpa  $U_3O_8$  at a cash cost of about US\$26/lb, assuming a capital cost of A\$77m. Studies will have to be undertaken, but this can be used as a ballpark figure.

Drilling has suggested there is potentially a large and untested area of uranium-bearing paleodrainage lying beneath the sand cover in the eastern area. There has also been a 1m intercept at 617 ppm, demonstrating uranium in the outlying basement rocks.

**Disclosure** The author is a director of BGF Capital Group Pty Ltd. Where he has interests in shares covered in this review it is stated in the individual company sections.

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<b>ASX Listed Uranium Co</b>	ompanies	- Produce	ers and Po	tential Pro	oducers					l l	/larket ar	nd Capital	<b>Statistics</b>
21-Jul-08												AUD/USD	0.9700
Company	Code	Share	Price	Rise	Mkt Cap	italisation	Cash	Resource	Issued	Capital	Opt. D	etails	Cash
					diuted	US\$/lb	Costs	Mill. lbs	Shares	Opt/Ctg	Expiry	Strike	Last Qtly
		17-Jul-08	18-Apr-08	Change	A\$m	U <sub>3</sub> O <sub>8</sub>	US\$/lb	U <sub>3</sub> O <sub>8</sub>	mill.	mill.			\$m
Producers													
Energy Resources	ERA	\$23.85	\$19.90	20%	\$4,548m	\$8.49/lb	\$19.64	519	190.7	0	0	0	\$20m
Paladin Energy	PDN	\$5.81	\$4.64	25%	\$3,562m	\$18.58/lb	\$16.00	186	613	19	Jan-09	450¢	\$300m
Potential Producers (W	/here Ura	nium is the	e Primary I	Focus)									
African Energy	AFR	16¢	27¢	-41%	\$28m	\$3.92/lb	\$40.00	6.9	174	14.3	Jun-12	25¢	\$8.5m
Alliance Resources	AGS	110¢	67.5¢	63%	\$300m	\$36.60/lb	\$11.00	8.0	273	8	Oct-10	160¢	\$27m
Bannerman Resources	BMN	209¢	156¢	34%	\$338m	\$5.68/lb	\$25.00	57.8	146	20	Aug-08	40¢	\$21m
Berkley Resources	BKY	94.5¢	75¢	26%	\$102m	\$5.84/lb	\$27.00	16.9	104	16	Various	70¢	\$21m
Black Range Minerals	BLR	5.3¢	4.4¢	20%	\$33m	\$0.63/lb	\$34.00	50.3	604	106	Feb-11	4.5¢	\$12m
Contact Uranium	CTS	8.3¢	14¢	-41%	\$10m	\$0.87/lb	\$24.00	9.6	122	122	Jun-08	15¢	\$2m
Curnamona Energy	CUY	52¢	42¢	24%	\$36m	n/a	n/a	n/a	66	5	Jun-10	25¢	\$9.0m
Deep Yellow	DYL	22¢	24¢	-6%	\$250m	\$6.18/lb	\$39.88	39.2	1109	44	Dec-07	8.5¢	\$61m
Energy & Minerals	EMA	50¢	40¢	25%	* \$180m	\$1.71/lb	\$23.07	101.8	360	0	-	-	\$6m
Energy Metals	EME	96¢	76¢	26%	\$116m	\$8.99/lb	\$24.00	12.5	117	4	Jun-10	10¢	\$7.9m
Extract Resources	EXT	90¢	124¢	-27%	\$191m	n/a	\$29.36	n/a	213	20	Mar-09	100¢	\$32m
Marathon Resources	MTN	117¢	200¢	-42%	\$71m	\$1.04/lb	\$40.45	66.0	61	5	Jun-11	118¢	\$7m
Monaro Mining	MRO	44¢	46¢	-4%	\$42m	\$6.84/lb	\$32.00	6.0	91	8	May-10	20¢	\$9m
Peninsula Minerals	PEN	3.1¢	1.9¢	63%	\$30m	n/a	\$22.00	n/a	961	218	Jun-10	10.0¢	\$6.0m
PepinNini Minerals	PNN	73¢	68¢	7%	\$50m	\$16.08/lb	\$35.05	7.5	68	1	Dec-07	138¢	\$23m
Summit Resources	SMM	280¢	191¢	47%	\$601m	\$13.86/lb	\$20.17	42.1	206	9	Oct-05	10¢	\$5m
Toro Energy	TOE	21¢	20¢	5%	\$104m	\$2.61/lb	\$37.36	38.6	495	11	Mar-11	31¢	\$16m
Uranex	UNX	25¢	36.5¢	-33%	\$20m	\$1.50/lb	\$36.59	13.2	83	6	ctg	63	\$13m
White Canyon	WCU	17¢	19.5¢	-13%	*31m	n/a	\$38.00	n/a	183	0	-	-	\$8m
Wildhorse Energy	WHE	42¢	64¢	-34%	\$39m	\$1.17/lb	\$18.50	32.4	93	8	Sep-09	50¢	\$12m

	ers - Project Econo	mics and	Cash Flow E	stimates			BGF Estim	ates					Spot Uran		US\$64/lb
21-Jul-08	Dit	F	D	Disast	0	0	D II	11	0	0		14 .	- · ·	AUD/USD	0.9700
Company	Project	Equity	Resource	Plant	Capital	Capex	Prod'n	Head	Cash	Cash		Margin	Price/	Mine	Mine
			t U <sub>3</sub> O <sub>8</sub>	Capacity	Cost	Per T	tpa	Grade	Costs	Margin		Per Share	Cash	Life	Payback
				mtpa	A\$m	Capacity	$U_3O_8$	ppm	US\$/lb	US\$/lb	A\$ p.a.	¢/share	PCG	years	years
African Energy	Chirundu	70%	4,480	2.25	\$70m	\$31	612	320	40.00	24.00	\$23m	12.4¢	1.3x	6.2	2.1
Alliance Resources	Four Mile West	25%	14,430	0.70	\$35m	\$50	2,000	3700	11.00	53.00	\$60m	21.5¢	5.1x	6.1	0.1
Arafura Resources	Nolans	100%	3,906	0.80	\$750m	\$938	150	210	By-produc	t of rare ea	rths				
Bannerman Res.	Goanikontes	80%	32,764	15.00	\$619m	\$41	2,904	220	25.00	39.00	\$206m	124.4¢	1.7x	9.6	2.4
Berkley Resources	Salamanca	100%	7,657	1.50	\$132m	\$88	647	490	27.00	37.00	\$54m	45.7¢	2.1x	10.1	2.4
Black Range	Eagle	50%	2,128	1.50	\$128m	\$85	258	196	39.88	24.13	\$7m	1.0¢	5.3x	7.0	9.0
<b>J</b> .	Mt Taylor	100%	10,000	1.00	\$167m	\$167	1,000	1200	34.00	30.00	\$68m	9.6¢	0.6x	8.5	2.5
	Company		,		*	*	1,258				\$75m	10.6¢	0.5x		
Compass Resources	Mt Fitch	100%	6,588	2.00	\$150m	\$75	2,200	306	37.36	26.64	\$133m	97.4¢	1.8x	2.5	1.1
•				2.50	\$62m			375	24.00	40.00	\$68m	28.0¢	0.3x	4.9	0.9
Contact Uranium	Corachapi Kamushanovskoe	100% 100%	4,359 769	0.12	\$10m	\$25 \$83	750 51	480	18.00	46.00		28.0¢	3.8x	12.9	1.9
	Total Contact	100 /6	709	0.12	φισιι	φου	801	400	10.00	40.00	\$5m \$73m	30.1¢	0.3x	12.5	1.5
Curnamona	Oban	100%	2,000		\$20m		200		22.00	42.00	\$19m	26.8¢	1.9x	8.5	1.0
Deep Yellow	Tubas	100%	17,779	3.00	\$255m	\$85	516	196	39.88	24.13	\$28m	2.5¢	9.0x	29.3	9.0
Energy & Minerals	Mulga Rock	100%	46,200	1.25	\$106m	\$85	1,029	935	23.07	40.93	\$96m	26.6¢	1.9x	38.2	1.1
Energy Metals	Bigrlyi	53.7%	10,584	0.75	\$110m	\$147	850	1300	24.00	40.00	\$41m	34.2¢	2.8x	10.6	1.4
Energy Resources	Ranger	100%	100,238	2.40	n/a	n/a	5,500	3200	20.37	11.63	\$145m	76.2¢	31.3x	15.5	n/a
3,	Jabiluka	100%	135,400	1.00	\$200m	\$200	4,500	4800	15.00	49.00	\$501m	262.7¢	9.1x	25.6	0.4
Extract Resources	Mi Ida	100%	12,000	6.00	\$227m	\$38	1,300	260	29.36	34.64	\$102m	44.1¢	2.0x	7.8	2.2
Marathon Resources	Mt Gee	100%	10,000	1.50	\$178m	\$118	900	670	40.45	23.55	\$48m	73.8¢	1.6x	9.4	3.7
Mintails	Wergo (Stages 1+2)	100%	13,745	20.00	\$89m	\$4	680	43	15.00	49.00	\$76m	9.9¢	2.2x	17.2	1.2
	Ergo (Stage 3)	50%	,	30.00	\$57m	\$2	300	40	15.00	49.00	\$17m	2.2¢	10.0x		
							980				\$92m	12.1¢	1.8x		
Monaro Mining	Apex-Lowboy	100%	700	0.50	\$23m	\$45	280	700	32.00	32.00	\$20m	20.5¢	8.5x	2.1	1.1
	Rio Puerco	100%	2,000	0.50	\$41m	\$82	<u>540</u>	1200	35.00	29.00	<u>\$36m</u>	35.9¢	4.9x	5.0	1.2
							820				\$56m	56.4¢	0.8x		
Paladin Energy	Langer Heinrich	100%	47,856	1.50	\$95m	\$63	1,320	1000	15.89	48.11	\$144m	22.8¢	25.4x	30.8	0.7
	Kayelekera	85%	11,376	1.60	\$191m	\$119	1,302	925	23.30	40.70	\$120m	19.1¢	30.5x	7.4	1.3
	Manyingee, WA	100%	10,880	1.50	\$128m	\$85	898	680	28.86	35.14	\$72m	11.3¢	51.2x	10.3	1.8
	Oobagooma	100%	9,950	1.00	\$85m	\$85	898	1020	21.14	42.86	\$87m	13.8¢	42.0x	9.4	1.0
	Valhalla plus	82%	33,812	2.50	\$263m	\$105	2,338	1063	20.17	43.83	\$233m	36.9¢	15.8x	12.3	1.1
	Angela	50%	12,000	1.00	\$105m	\$105	<u>380</u>	432	34.50	29.50	\$25m	4.0¢	144.1x	26.8	4.1
D : 1.15	(assumes 100% of SM		10.000	0.75	470	000	6,755	500	00.00	40.00	000	108.0¢	5.4x	0.0	0.0
Peninsula Minerals	Lance	100%	10,000	0.75	\$72m	\$96	900	500	22.00	42.00	\$86m	7.3¢	0.4x	9.8	0.8
PepinNini Minerals	Crocker Well	40%	8,544	1.72	\$160m	\$93	618	408	35.05	28.95	\$16m	23.6¢	3.1x	12.2	3.9
Summit Resources	Valhalla	100%	33,812	2.50	\$263m	\$105	2,338	1063	20.17	43.83	\$233m	108.3¢	2.6x	12.7	1.1
Toro Energy	Napperby	100%	5,688	2.00	\$170m	\$85	539	306	37.36	26.64	\$33m	6.4¢	3.3x	9.3	5.2
	Lake Way Total Toro	100%	8,996	1.50	\$130m	\$87	651 1,189	493	33.11	30.89	<u>\$46m</u> \$78m	9.0¢ 15.5¢	2.3x 1.4x	12.2	2.8
Uranex	Thatchers Soak	100%	6,000	2.00	\$170m	\$85	598	340	36.59	27.41	\$78III \$37m	41.8¢	0.6x	8.8	4.6
White Canyon	Daneros	100%	900	0.10	\$20m	\$200	220	2300	38.00	26.00	\$13m	7.1¢	2.4x	3.6	1.5
Wild Horse	Bison Basin	100%	1,120	0.10	\$64m	\$71	450	700	18.50	45.50	\$47m	46.0¢	0.9x	2.2	1.4
	Pècs	100%	13,600	0.00	ΨΟΤΙΙΙ	Ψ11	100	, 00	10.00	10.00	ΨΥΤΠΙ	10.00	0.01		1.7
	. 500	.0070	. 5,000												

ASX Listed Uranium   21-Jul-08	Oompam	CS - Auve	iliceu Ex	Jioration	and Oran	lulli as sec	Officially 1 Of	Jus	iviai	ket and (	JD/USD	0.9700	
Company	Code	Share P	rice	Rise	Mkt Ca	pitalisation	Resource	leeued	Capital	Opt. Details		Cash	
	-	J			Diluted	US\$/lb	Mill. lbs		Opt/Ctg	Expiry	Strike	Last Qtly	
		17-Jul-08	18-Apr-08	Change	A\$m	U3O8	U3O8	mill.	mill.	Expii y	Olitic	\$m	
Advanced Explorers			<u> </u>		<u> </u>								
A-Cap Resources	ACB	39¢	32¢	22%	\$43m	\$0.49/lb	84.583 (i)	110	3.2	Nov-09	40¢	\$9.6m	
Acclaim Exploration	AEX	1.5¢	1.2¢	25%	\$11m	\$0.42/lb	24.299 (i)	701	164	Jun-10	4¢	\$1.5m	
Atom Energy	AXY	6¢	10¢	-40%	\$5m	\$5.56/lb	0.948 (i)	91	63.9	Jun-10	37.5¢	\$7.7m	
Aura Energy	AEE	22.5¢	26.5¢	-15%	\$10m	\$3.82/lb	2.601 (i)	43	24.3	Dec-08	20¢	\$1.9m	
Encounter Resources	ENR	31.5¢	31¢	2%	\$22m	\$2.47/lb	8.479 (i)	69	1.9	Various	55¢	\$5.5m	
Erongo Energy	ERN	7.4¢	9¢	-14%	\$4m	\$0.17/lb	22.040	51	30	Apr-09	20¢	\$3.0m	
Fusion Resources	FSN	64¢	65¢	-2%	\$31m	n/a	n/a	49	7	Dec-09	110¢	\$18.9m	
Impact Minerals	IPT	11.5¢	14¢	-18%	\$8m	\$0.79/lb	10.315 (i)	73	0.5	Dec-10	25¢	\$3.0m	
Mantra Resources	MRU	280¢	180¢	56%	\$325m	n/a	n/a	80	39.3	Jun-09	20¢	\$27.5m	
Scimitar Exploration	SIM	30¢	39.5¢	-24%	\$15m	\$3.01/lb	4.849 (i)	50	9.3	Nov-08	75¢	\$2.8m	
Stellar Resources	SRZ	15¢	15¢	0%	\$11m	\$1.25/lb	8.816	76	5	Dec-08	30¢	\$3.7m	
Uran	URA	15¢	25¢	-40%	\$8m	n/a	n/a	51	49	May-09	18¢	\$3.4m	
Uranium Equities	UEQ	15¢	15¢	0%	\$28m	n/a	n/a	189	29	Various	35¢	\$16.5m	
West Aust. Metals	WME	19¢	21.5¢	-12%	\$64m	\$4.11/lb	14.987 (i)	297	51	Aug-08	5¢	\$2.5m	
Potential Producers - U		a By-Prod	ŕ				0.0	157	0	lum 00	119¢	<b>#10</b>	
	ARU		75¢	5%	\$124m	\$13.99/lb	8.6		6	Jun-08		\$16m	
Compass Resources	CMR EQN	175¢ 394¢	168¢	4% -21%	\$227m \$2,573m	\$24.92/lb \$150.91/lb	8.8 16.5	130 566	7 87	Various	220¢	\$27m	
Equinox Minerals Greenland Minerals	GGG	594¢	500¢ 68¢	-21%	\$2,573III	\$0.68/lb	229.3	193	190	Apr-10	20¢	\$28m	
Mintails	MLI	22¢	57¢	-61%	\$153m	\$4.85/lb	30.6	695	68	Various	35¢	\$61m	
Monitor Energy	MHL	1.2¢	1.7¢	-29%	\$8m	\$8.71/lb	0.849	635	23	Dec-01	5¢	\$1.0m	
Western Metals	WMT	7.1¢	8¢	-11%	\$44m	ησ.7 1/10 n/a	n/a	621	147	Various	30¢	\$30m	
	VVIVII	7.14	ΟĻ	-11/0	ψ <del>44</del> 111	: 11/a	II/a	021	14/	various	30¢	φουπ	

<b>ASX Listed Uraniun</b>	Companies	- Adva	nced Exp	loration a	and Uran	ium as S	Second	ary Foc	us					Spot	Uraniun	n Price	US\$64/Ib
21-Jul-08															A	JD/USD	0.9700
Company	Project	Equity	Resource	Plant	Capital	Head	Rec.	Method	Capex	Prod'n	Cash	Cash	Cash M	argin	Price/	Mine	Mine
			t U₃O <sub>8</sub>	Capacity	Cost	Grade	Rate		Per T	tpa	Costs	Margin	A\$ p.a.	¢/share	Cash	Life	Payback
				mtpa	A\$m	ppm			Capacity	U <sub>3</sub> O <sub>8</sub>	US\$/lb	US\$/lb	Co. Equ	uity	PCG	years	years
										100%							
A-Cap Resources	Mokobaesi	80%	38,377	6.0	\$120m	166	80%	HL	\$20	796.8	43.00	21.00	\$30m	26.9¢	1.5x	38.5	3.2
Acclaim Exploration	Denny Dalton	74%	11,025	1.0	\$88m	350	90%	Mill	\$88	315	35.29	28.71	\$15m	1.8¢	0.9x	31.5	4.3
Atom Energy	Cleo	100%	430	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-
Aura Energy	Wondinong	100%	1,180	1.0	\$88m	185	90%	Mill	\$88	167	83.70	-19.70	-\$7m	-11.1¢	-	6.4	-
Encounter Resources	Hillview	80%	4,809	2.0	\$175m	174	85%	Mill	\$88	296	90.20	-26.20	-\$14m	-7.4¢	-	13.8	-
Erongo Energy	Erongo	90%	10,000	2.0	\$175m	250	90%	Mill	\$88	450	57.00	7.00	\$6m	7.9¢	0.9x	20.0	24.5
Fusion Resources	Valhalla North	100%	10,000	0.75	\$66m	1,200	90%	Mill	\$88	810	25.00	39.00	\$72m	127.6¢	0.5x	11.1	0.9
Impact Minerals	Nowthanna	40%	4,680	1.0	\$88m	450	90%	Mill	\$88	405	23.22	40.78	\$15m	20.5¢	0.6x	10.4	2.3
Scimitar Exploration	Bennet Well	100%	2,200	1.0	\$67m	300	70%	ISL	\$67	210	30.33	33.67	\$16m	27.0¢	1.1x	7.3	4.2
Stellar Resources	Warrior	30%	4,000	1.0	\$88m	340	90%	Mill	\$88	306	36.88	27.12	\$6m	7.0¢	2.2x	11.8	4.6
Uran	-	-	-	-	-	-	-	-		-	-	-	-	_	-	-	_
Uranium Equities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West Aust. Metals	Marencia	80%	6,800	2.5	\$75m	280	85%	HL	\$30	595	25.71	38.29	\$41m	11.9¢	1.6x	9.7	1.5
By-Product Produc	cers																
Compass Resources	Mt Fitch	100%	4,000	2.0	\$170m	360	85%	Mill	\$85	612	33.78	30.22	\$42m	30.7¢	5.7x	5.6	4.0
Equinox Minerals	Lumwana	80%	7,500	1.0	\$206m	1,020	93%	Mill	\$206	949	11.00	53.00	\$91m	14.0¢	28.2x	7.4	1.8
Greenland Minerals	Kvanefjeld	61%	103,996			310											
Mintails	Wergo	100%	13,700	9.6	\$89m	43	75%	Mill	\$9	310	11.00	53.00	\$37m	4.9¢	4.5x	33.2	2.4
Assumptions																	
This category is much mor	e speculative as so	coping st	udies have n	ot been run.	We have ta	aken guess	timates o	f potential	economics,	if a minea	ble resourc	ce is proven	١.				
Cash operating costs at 1,	000 ppm		US\$19/lb	Milling													
			US\$10/lb	Heap Lead	ch	US\$13/lb	ISL										
Cost variance per ppm			US\$.02/lb														
Default Capex /tonne capa	city (o/p)		US\$85m	Milling		US\$65m	ISL										
			US\$25m	Heap Lead	ch												
			\$85.0m														
Spot Price			US\$64/lb														