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AUSTRALIAN uranium

Downturn: temporary or terminal?

Considerable change has occurred within the uranium industry in recent weeks and months, leading some observers to allege signs of permanent and fundamental transformation. Has the industry turned down permanently? Or will it emerge from its current difficulties the way it found itself in them; driven by international factors and forces largely beyond its control?

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Downturn: temporary or terminal?

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As an entirely export-driven sector, uranium's fortunes are dependent both on global economic factors and global events with no connection to economics, particularly the natural-disaster-caused meltdowns at Fukushima in Japan in March 2011 and the politically driven abandonment of nuclear energy in Germany.

When a disaster such as Fukushima combines with adverse economic circumstances, the uranium sector takes a double hit, beyond those suffered by other energy commodities such as coal or oil; or fundamental materials such as iron ore, copper or aluminium.

The challenges facing the uranium industry may yet have some time to run, possibly 18 months, but most industry participants and observers believe these will pass in the medium term. By the middle of the decade, a period of steady, sustained growth in demand for mined uranium is expected to have been re-established, sufficient to see the establishment of a number of new and expanded mines in Australia.

The factors currently making it difficult to establish a new mine or thrive as an existing uranium production facility in Australia are numerous:

- A general slow-down in the resources sector, with high levels of activity focused on a few, very large, projects
- Reduced demand for uranium, attributable to the slow-down that followed Japan's Fukushima disaster;
- Stockpiling of uranium during recent years by Chinese utilities, especially, seeking to soften the impact on prices of a large number of start-up reactors entering the fuel market and coming on line in a short period;
- Supply overhang and relatively low prices resulting from generally reduced demand;
- Shortage of capital in certain markets and in support of production of certain commodities;
- High labour costs and high general costs in Australia compared with other producers such as Kazakhstan, Namibia, Tanzania, and Niger
- Shortages of appropriately skilled workers, especially for smaller resources and infrastructure projects such as small or medium-sized mines, and
- Relatively higher regulatory hurdles than in some competitor countries.

BHP Billiton's announcement on 22 August that it would not proceed with the expansion of the Olympic Dam mine as the vast new open pit originally envisaged has led some critics to opine that the uranium industry was in decline.

Ignoring BHP Billiton's explanations; ignoring Australia's high cost structure; ignoring the continuing progress made in the development of uranium mining in WA; ignoring the expected growth in the world's nuclear industry, the critics celebrated the postponement of a project that promised thousands of jobs and economic growth in South Australia.

Their professed attachment to prosperity through growth was in tatters.

Does the postponement of the Olympic Dam expansion signal, as the Australian Greens and environment NGOs say it does, that the nuclear industry is dying? Are there no longer the fuel requirements among the world's nuclear utilities to justify bringing on new mine production capacity?
No and no.

In its June 2012 half-year results, Energy Resources of Australia Ltd (ERA), operator of the Ranger mine, said the uranium market remained challenging "with utilities well supplied and post-Fukushima uncertainty remaining". Two of Japan's 50-strong fleet of reactors have been restarted and others may restart later in the year, it said, but the spot uranium price remained flat at around USD 49 – 50 per pound of uranium oxide, with few buyers, and long-term contract prices hovering in the low USD60s per pound.

This prolonged overhang of the Fukushima disaster might look to some observers like it foreshadows the decline of the nuclear industry and of the uranium mines that supply it.

But international and Australian official and industry estimates of medium and long-term nuclear energy demand and uranium fuel supply strongly suggest the doldrums will pass.

The latest edition of the official uranium resources and production 'bible', the 2011 Uranium Red Book published in July 2012, forecasts resumption of demand.

Downturn: temporary or terminal?

"Demand for uranium is expected to continue to rise for the foreseeable future. Although the Fukushima Daiichi nuclear accident has affected nuclear power projects and policies in some countries, nuclear power remains a key part of the global energy mix," says the Red Book.

It points to plans of the Governments of China, India, South Korea and the Russian Federation for new nuclear power stations, although it says "the speed and magnitude of growth in generating capacity elsewhere is still to be determined."

The resumption of Chinese Government approvals of new reactor projects has been a long time coming. The 26 reactors currently under construction in China had already been approved at the time the Fukushima disaster occurred in March 2011. It may be the Chinese program won't resume fully until the end of this year when China transitions to a new Government.

The 'Red Book' says:

By the year 2035, world nuclear electricity generating capacity is projected to grow from 375 GWe net (at the end of 2010) to between 540 GWe net in the low demand case and 746 GWe net in the high demand case, increases of 44% and 99% respectively. Accordingly, world annual reactor-related uranium requirements are projected to rise from 63 875 tonnes of uranium metal (tU) at the end of 2010 to between 98 000 tU and 136 000 tU by 2035.

Secondary supplies in a number of forms cover the supply gap that cannot currently be filled by mined uranium each year. The large part of those secondary supplies is former nuclear weapons material, mostly Highly Enriched Uranium (HEU) which is blended down under an arrangement between the United States and Russian Federation governments from military grade to civil reactor grade materials.

The agreement under which this material is supplied to civil reactors is due to run out at the end of next year and is currently not expected to be resumed.

Although the Fukushima Daiichi nuclear accident has affected nuclear power projects and policies in some countries, nuclear power remains a key part of the global energy mix.

Combined with the expected delays in several large uranium mine projects, the absence of former Soviet Union weapons material is expected to amount to a civilian uranium shortfall of around 13,600 tonnes by 2014.

The resumption of nuclear generation in Japan has been extremely slow, and nuclear may play a smaller role and be phased out early. But overall world uranium demand is expected to double during the coming two decades.

The challenge for the Australian uranium industry is not posed by nuclear decline, Fukushima notwithstanding. The challenge is to become more competitive with other uranium producing countries which have lower cost structures and assessment and approval processes that are less onerous and time consuming and permit greater flexibility and responsiveness to market opportunity than Australia's do.

Mentoring Workshop for members

L-R: Mr Peter Phillips, Jeeomarra McGuire, Mrs May McGuire, Mr Barry McGuire, Tjiirdm McGuire, Michael Angwin (Australian Uranium Association), Brian Reilly (Cameco Australia), Nyaburu McGuire and Mr John McGuire

On 20 July, the Australia Uranium Association held its second Mentoring Workshop for members, on the topic 'Achieving best practice in Indigenous Engagement'.

The workshop provided the opportunity for members to share experiences, information and ideas about best practice engagement with Indigenous communities. Participants also heard from the Minerals Council of Australia about the broader resources industry's engagement initiatives, and were challenged by the National Native Title Council to remain committed to working with Indigenous Australians.

A highlight of the day's program was a traditional Noongar Welcome to Country.

AUA Chairman address to members

In his final address to Members of the Australian Uranium Association more than a year after the Fukushima disaster, outgoing AUA Chairman Rob Atkinson remarked that we can breathe a little easier – but we can't relax too much.

We can identify a range of policy and political changes and actions that would have been impossible if politicians had thought their constituents would strongly oppose them. Those which have occurred since Fukushima include:

- The O'Farrell government's removal of the ban on uranium exploration in New South Wales;
- The seamless continuation of support for the uranium industry in South Australia following a change of Labour Premier;
- The ALP's policy change on India and the completed bilateral treaties with China and Russia;
- The stimulus given to uranium and nuclear power in the draft energy white paper;
- The passage of the low-level waste repository legislation for the Northern Territory, and
- The application in Western Australia of the mainstream assessment and approval processes to the development of the industry.

We can add to this list the decisions by Federal environment ministers to approve uranium projects in line with legislative requirements.

Whatever their personal views or political instincts, environment ministers apply the law. The assessment and approval process to which our industry submits is one of the strongest platforms for our industry's development. I know that we all still think from time to time that the hurdle rate for us is higher than for other commodities and there is evidence we are sometimes treated differently. But the more often we successfully navigate the assessment process, the stronger our case will be.

We also need to resist the temptation to become too precious about our industry. We are treated differently as a result of our product and its use in nuclear reactors, which is indeed quite unique. We need to address our stakeholders' concerns and work to shift them slowly and surely to a better understanding. A better understanding will simply not occur if stakeholders' genuine fears and concerns, whether they arise through perceptions or ignorance, are not, first, fully acknowledged and secondly comprehensively dealt with.

The improving environment is partly due to things we have done, a collective effort by the Members of the Association and the Association's Executive. That collective effort has seen us identify direct engagement with political opinion leaders and building relationships with, among others, ARPANSA, ASNO and the countries' resources departments as crucial achievements. In some ways, this has been what in the past some have labelled as the long march though the institutions, institutionalising our ability and willingness to listen, engage and influence. That, in fact, is a mainstream and legitimate political endeavour that trade unions, NGOs and our peer organisations and others all engage in and which we do much more successfully now.

Very significant changes have occurred in Australia's 'uranium politics' over the past year; and have occurred in a year in which the pressure on the nuclear industry was huge and the opportunities for our critics to wind back the progress we made were plainly evident.

We should reflect on why this has been so.

One reason is, I believe, that the issue of Uranium for Australians has been overestimated. Uranium has appeared to be an elite issue, not a popular one. This does not mean that it is not capable of being turned to political advantage; and we have seen many examples of that. Without a doubt we still have the very important task ahead of us of continuing to consolidate our social licence. But I do think it does mean we can be more confident that our case can be delivered on its merits without being overly defensive.

It is very important to acknowledge the strong bipartisan support we have.

The widening political support for our industry is something we should acknowledge, value, cherish and build upon. Make no mistake. We are not owed anything by the politicians who have supported us. We will be judged completely by what we do and how we behave. Trust and confidence is difficult to gain but very easy to lose. While the last few years have given us cause for optimism, we have to continue to take the time to diligently build our social licence, to be patient and to gain trust through everything we do. Our industry cannot afford to take shortcuts as it will affect all of us.

The changes of the last few years have positioned the industry for growth. With a political and stakeholder environment that is more open to us than ever before, there is an opportunity to consolidate the gains we have made.

In my view, two principal challenges stand out.

One is to keep improving our operational performance. Nothing will set us back more than operational failures that give opportunity to our critics, damage the enthusiasm of our supporters and weaken the trust of our stakeholders. Any incident can damage. No uranium company in Australia should be unaware of these vulnerabilities and no uranium company should fail to adopt our Code of Practice.

The second challenge is to continue to build our stakeholder relationships, especially our Indigenous stakeholder relationships. Trust is crucial. Our behaviour and demonstrated actions are crucial to trust. Our political supporters have high expectations of us in this area.

We compliment this through our Indigenous Leadership Scholarship program, now in its second year and with four Scholars. We need to make sure that we meet the commitment we set to provide mentoring and vacation employment for our Scholars. We have also agreed to set targets for Indigenous economic participation in our industry and we will be following up those initiatives to measure how the industry is performing.

Our Indigenous Dialogue Group has set the aim of the uranium industry being the exponent of 'best practice'. We have made progress. And we will be seeking to build on that.

Thankyou

WA's first uranium mine
a step closer

Several developments have taken Western Australia closer to having its first uranium mines.

The State Government has completed reviewing appeals against a recommended environmental approval for Toro Energy's Wiluna Uranium Project.

Environment Minister Bill Marmion has announced tougher conditions as a result of assessing appeals that have been received against the recommendation by the State's environmental agency, the Environmental Protection Authority (EPA) that Toro's project should be approved and allowed to proceed.

This milestone is significant as it makes Wiluna the first uranium project in WA to receive this level of recommendation since the current WA Government overturned the State ban on uranium mining in November 2008.

Shortly before the Minister received the report on the Toro appeals, Canadian owned Cameco agreed to pay BHP Billiton Ltd $US430m for its Yeelirrie uranium deposit, giving it the two biggest uranium assets in WA.

BHPB had shelved Yeelirrie, which is now much more likely to be developed as a mine in the hands of Cameco, which has uranium assets approaching a billion dollars in value in WA with Yeelirrie and its Kintyre property in the Pilbara (jointly owned with Mitsubishi Development).

Brian Reilly, Cameco's managing director in Australia, says he expects the Kintyre project will start out on the same path to environmental approval as the Toro Wiluna project late this year.

As the first project to be assessed in WA since the ban on uranium mining was lifted, Toro's Wiluna project has set the benchmark for all other projects to follow. Uranium mining should be able to stand up to assessment and review based on merit, evidence and science; the EPA's recommendation that the Wiluna project be approved is further evidence that the uranium industry is able to satisfy rigorous assessment criteria.

There has been significant public interest surrounding the Wiluna uranium project. In making its recommendation to the Minister for the Environment, the EPA assured the public that the 'highest level of scrutiny' had been applied and that the environmental impacts of Toro's proposal had been 'meticulously examined' by the EPA board.[1]

The EPA said it had assessed all aspects of the Wiluna project proposal and was confident the mine 'could meet the EPA's objectives for key environmental factors, including radiation management, transport, mine closure and rehabilitation, groundwater and water supply, surface water, air quality, flora and vegetation, fauna and habitat and Aboriginal heritage'.[2]

The Wiluna project approval is subject to eight (8) environmental conditions set by the EPA, including key conditions relating to flora and fauna protection. The EPA decided it was not necessary to recommend additional conditions in regards to radiation management activities and transport under the *Environmental Protection Act 1986*, given that it considers 'the existing regulatory framework provides a comprehensive legislative system for the regulation of the uranium mine and transport of uranium oxide concentrate'.[3]

Toro Energy plans to transport its product by road from the Wiluna mine site to the WA border for rail and/or road transport to South Australia for export. In its report, the EPA noted that monitoring of exposure to radiation along the transport route should be carried out and that 'the most effective way of achieving this would be by monitoring the exposure to transport personnel such as drivers, who are the most exposed people along the transport route.'[4]

The EPA recommendation is a significant step forward in the project approval process; however, substantial work still remains. The EPA decision is subject to a two-week public appeal period and there are further decisions of the State Government and Commonwealth that need to be made before the project can go ahead, including final approval from the Minister Bill Marmion, and Federal Government approvals.

WA's first uranium mine a step closer

Background

Toro's flagship Wiluna project is approximately 520km north of Kalgoorlie in central WA. It comprises uranium in two shallow calcrete deposits: Centipede and Lake Way. It is expected the mine will operate for 14 years (including construction, operations and closure) with an annual production of 1,200 tonnes uranium oxide concentrate.

Western Australia has known resources of more than 207,000 tonnes of uranium oxide in about 30 deposits.[5]

Mining uranium in WA was prohibited under the policy of the former Labor State Government from June 2002 to September 2008. During this period, an administrative ban was applied to uranium mining applications.

The current Liberal State Government, led by Colin Barnett, revoked the ban on 17 November, 2008. Toro's Wiluna project is currently the most advanced project in WA in terms of assessment and approvals processes.

The WA Labor party continues to maintain its opposition to uranium mining in WA, however in recognition of sovereign risk issues has conceded that, should it win office at the next State election, 'any mines that have been granted final State approval allowing construction would be permitted to proceed to open, operate and export their products in the same manner as other mining ventures.'[6] WA Labor would not approve any new uranium mines.

The next WA State election is scheduled for March 2013.

This milestone is significant as it makes Wiluna the first uranium project in WA to receive this level of recommendation since the current WA Government overturned the State ban on uranium mining in November 2008.

[1] Environmental Protection Authority (EPA) Media Statement "WA's first uranium mine recommended for approval"; 21 May 2012.
[2] Ibid
[3] Report and Recommendations of the Environmental Protection Authority; Wiluna Uranium Project, Toro Energy Limited; Report 1437; May 2012; Section 6 (p51).
[4] Ibid, Section 4.2 (p25)
[5] Department of Mines and Petroleum website; Uranium in WA; http://www.dmp.wa.gov.au/9997.aspx; accessed 06/02/2012.
[6] WA Labor Media Statement "WA Labor announces major changes in policy direction"; 24 January 2012; http://walabor.org.au/news/2012/01/24/wa-labor-announces-major-changes-in-policy-direction; accessed 06/06/2012.

The Australian National Radiation Dose Register

The Australian uranium industry has actively supported the establishment of the Australian National Radiation Dose Register since its inception in 2010. Here, Sarsha Collett, Manager of the register, explains how it works and maps its progress.

The Australian National Radiation Dose Register (ANRDR) provides benefits to both uranium workers and the uranium mining and milling industry alike. For workers, it provides assurance that radiation dose records are maintained and retrievable into the future, including when companies cease to operate. It allows the tracking of a worker's radiation dose throughout their career in the Australian uranium mining and milling industry, to assess compliance with occupational dose limits, including in situations where a worker moves between different operations or between jurisdictions. Workers can request a report of their radiation dose history; this report will contain all past doses received while working in the uranium mining and milling industry in Australia, and while registered with the ANRDR. Dose information can be requested by completing a form provided on the ARPANSA website. This service is provided free of charge by the Australian Government.

For mine operators, the information contained in the ANRDR will assist in informing better work practices and improve safety for occupationally exposed individuals in Australia. ARPANSA intends to publish annual reports which will include statistical analysis of the data held within the database. The format of these reports is yet to be decided, however the ANRDR can provide statistics on average and maximum doses, broken down by year and quarter, worker category, worksite, operator and industry. The report will provide useful industry-level statistical data on radiation doses received by uranium workers, which will assist in the optimisation of radiation protection. The ANRDR will also facilitate reporting of statistical data to international bodies such as the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and make possible comparisons on the overall radiation safety performance of the Australian uranium industry against other countries.

The register ensures the longevity of records beyond the working life of a uranium mining operation, so that records remain available to workers. The ANRDR has been open to receive dose records from uranium mining and milling operators since 1 July 2010. Radiation dose data is uploaded to the ANRDR by uranium mine operators through a secure web portal and worker records are held in compliance with the requirements of the *Privacy Act 1988*. The ANRDR currently holds the radiation dose records of uranium workers from Olympic Dam, Beverley and Ranger mines, with over 24,000 workers registered from the uranium industry.

The success of the ANRDR is largely due to the cooperative arrangements between Government and mine operators. Development and implementation of the ANRDR has been strongly supported by the uranium mining and milling industry.

However implementation of the ANRDR was not a simple and straightforward process. As the legislation for radiation protection, mining, and privacy is different in every State and Territory, the approach for obtaining dose data from mine operators was individually managed for each jurisdiction.

In South Australia, each mine operation's Radiation Management Plan (RMP) was amended to require the mine operator to report dose records to the ANRDR, at the request of the State regulator.

In the Northern Territory, amendments were made to the *Radiation Protection Act*, requiring a mining site to monitor workers for radiation, keep records, and to provide those records to ARPANSA for inclusion in the ANRDR.

It is anticipated that any privacy concerns raised by future expansion to other jurisdictions can be solved by following the examples set by South Australia and the Northern Territory.

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Future of the ANRDR

ARPANSA's short-term goal is to implement the ANRDR for all currently operating uranium mining and milling operations. The Agency is currently investigating options for future expansion of the ANRDR to cover other occupationally exposed workers. Given that the existing database has been designed for the uranium mining industry, expansion to cover other forms of mining and processing of radioactive ores is a potential first, readily achievable step in this direction. Ultimately, expansion of the ANRDR to cover all occupationally exposed workers in Australia would be a desirable outcome and would ensure that the operation of the ANRDR is consistent with the best practice implementations of the more established national dose registers in Canada and Europe.

Information about the dose register is at www.arpansa.gov.au/services/index.cfm