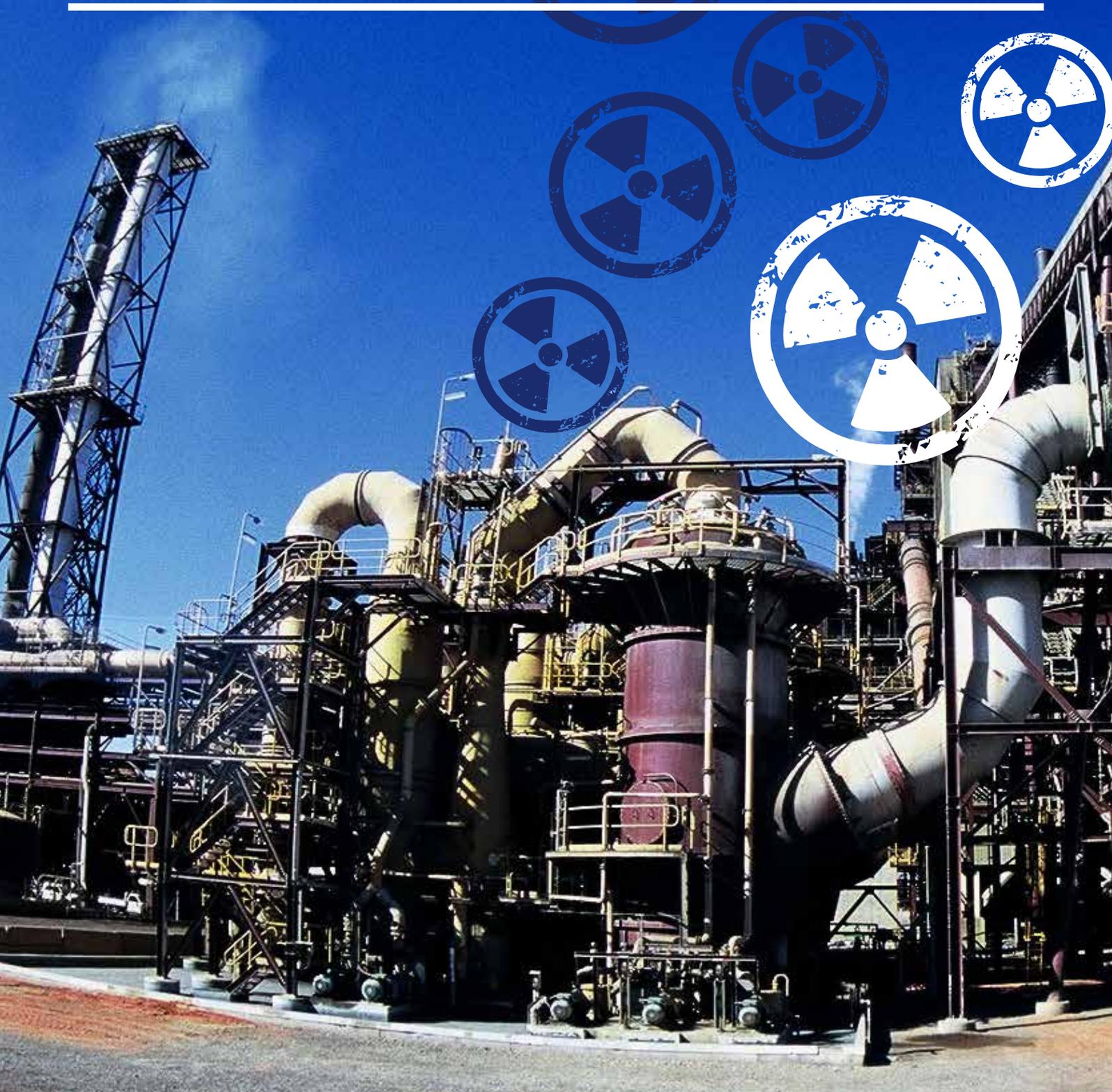


Raising the Standard



Assessing & regulating
uranium in WA

introduction

Uranium is a mineral with unique properties and risks. It causes specific impacts at the mine site and produces a product that inevitably becomes long lived radioactive waste.

The sector lacks social license, is suffering a sustained decline in commodity price and remains actively contested.

The wider health, safety and security concerns related to the uranium sector are well documented and have informed WA Labor's long held policy and platform opposition to the sector.

On forming government in March 2017 WA Labor inherited four uranium proposals where assessment and approvals processes were in train.

There are concerns about the integrity and credibility of these processes given that they were fast-tracked by the former state administration in order to facilitate the uranium industry.

WA Labor has subsequently decided to continue with the assessment process for these projects while not accepting any future proposals for consideration.

Continuing to consider the four current projects is different from committing to approve them.

Consideration of these projects should be based on best practice assessment and scrutiny, not seen as a fait accompli simply because they were the beneficiaries of an inherited and deficient assessment regime.

Uranium mining and processing requires dedicated regulatory attention and poses sustained and significant challenges and risks. Given that there is no existing uranium sector in WA it makes sense for WA Labor to actively consider the experience and advice of other jurisdictions when considering uranium sector assessment and regulation in order to apply leading practise.

While no amount of regulation will make uranium mining socially or environmentally acceptable it can reduce the impacts. As a progressive government with a clear no-uranium mining history and policy it is incumbent on Labor to ensure the highest standards or rigour, transparency and public interest.

This briefing paper identifies some of these issues and standards to help inform WA Labor's consideration and approach.



Front Cover: Olympic Dam processing facility 2009: Photo by Jessie Boylan
Inside cover: Rum Jungle (NT) pollution 2007 Photo courtesy Dr Gavin Mudd

leading practice

Uranium mining in Australia has been the subject of a number of reviews and inquiries over many years. Many of these processes have resulted in important recommendations that are directly relevant to the four uranium mines proposed in Western Australia. Regulatory regimes in other jurisdictions should also be examined for examples of leading practice. The following five case studies provides a summary of reports, recommendations and regulations that we believe must inform a review of current regulatory standards for uranium mining in WA.



Olympic Dam mine on fire 2001: courtesy of Dr Govin Mueel.

SA Leading Practice Mining Act Review 2016

The review process made over eighty recommendations in three areas: Benefits for landowners and community - Benefits for business and investment - Benefits for the environment. These include measures to advance:

- Increased transparency
- Independent support for landowners to engage and understand the process
- Funding for legal advice
- Improving public consultation provisions
- Including rights to object for landowners and Native Title holders, prior to granting a range of licenses and leases
- Requirements to notify Native Title holders
- Granting investigative powers to the Department to ensure the Department can enforce compliance with the Mining Act and including environmental prosecutions
- Protecting rights to compensation
- Expanding environmental compliance rules
- Ensuring the Mining Act is consistent with state and federal environmental laws
- New powers to allow full use of compliance tools to ensure rehabilitation to meet environmental outcomes
- New powers allowing assessment of tenements holders ability to meet environmental and rehabilitation criteria
- Introducing a civil offences and penalty regime to ensure compliance action is appropriate and commensurate with the behaviour
- Introduce new provisions to address ongoing non-compliance
- Scoping of the introduction of offences against Directors
- Penalties under the Act to be paid into a fund reserved for rehabilitation

QLD Uranium Implementation Committee 2013

In 2012 the Newman LNP government in Queensland moved to open the door to uranium mining. Part of this process included setting up an Implementation Committee to explore issues related to the sector and steps to address these. The Committee was constrained from any wider consideration of the desirability of uranium mining or its downstream impacts however it still raised some valuable considerations. The election of a state Labor government with a clear anti-uranium platform in February 2015 saw the long standing state policy ban on uranium mining renewed. There are no uranium mines in Queensland.

- *The Queensland Government should ensure a coordinated approvals process for uranium mining by referring all proposals to the Coordinator-General's 'coordinated project' process (this policy should be reviewed after an initial period).*
- *A whole-of-government Uranium Mining Oversight Committee (UMOC) should be established to oversee uranium mining implementation, operation and rehabilitation.*
- *An independent 'specialist advisor' with expertise in managing environmental performance of uranium mining such as the Australian Government's Supervising Scientist Division (SSD), should conduct compliance and performance audits.*
- *A Uranium Mining Stakeholder Committee (UMSC) should be established that is supported by the UMOC, representing local governments and communities, Indigenous communities, industry, environment and natural resource management groups.*
- *The Queensland Government should establish an inter-state committee to oversee and harmonise transport and logistics associated with uranium, including mutual recognition of transport licences.*
- *The Queensland Government should facilitate the use of existing ports (Darwin and Adelaide) and shipping lanes for uranium export. A Memorandum of Understanding (MOU) should be developed between Queensland's transport regulators regarding transport compliance inspections.*
- *A new MOU should be established between relevant regulatory agencies to ensure clear roles and responsibilities with regard to the oversight and administration of the uranium industry in Queensland, and to foster cooperation and sharing of expertise.*
- *Specific mine safety and health guidance documentation must be developed to ensure best standards are maintained at all stages of uranium exploration, mining, and ore milling and processing.*
- *Radiation safety regulators must develop and implement guiding principles for emergency response, and conduct education and training for emergency workers.*
- *Environmental model conditions specific to uranium mining must be developed. These conditions must focus on achieving positive environmental outcomes rather than prescriptive measures.*
- *Rehabilitation guidance material must be reviewed with particular consideration to the need for rehabilitation goals, objectives and completion criteria specific to uranium mining.*
- *The Queensland Government should implement a training and business development initiative in the form of a trust arrangement with a government funding contribution to assist Indigenous Queenslanders access benefits from uranium mining.*
- *The Queensland Government should apply a 5 per cent royalty regime to uranium, but also investigate use of a higher rate once the price of uranium reaches a certain higher threshold. (* note WA already has a 5% royalty regime - except for Yeelirrie which is 3.5% under the Yeelirrie State Agreement Act).*



WA Uranium Advisory Group 2012

The uranium advisory group was established by the then Minister for Mines and Petroleum Norman Moore through the Department of Mines and Petroleum to benchmark WA regulations with World's Best Practice. The former Minister promised *"best practice regulation will govern any future uranium mining."* The group, led by the University of WA and CSIRO, reviewed WA's regulations against world's best practice and found significant gaps. It made recommendations to improve transparency, ensure broad public consultation, review OH&S legislation, consider cumulative impacts and more. The Group made specific recommendations about tailings management:

"Recommendation 9 - The 1999 Tailings Storage Guidelines and related documents should be completely revised to produce a World Best Practice Guidelines document that integrates all aspects of the management of uranium mining wastes. It is recommended that the (updated) 1999 Guidelines be comprehensively revised to produce a separate Guidelines document specific to the management of uranium mining wastes."

The 1999 guidelines were updated in 2015 but do not include an outcome based approach as recommended by the UAG. These guidelines make no mention of uranium or radioactive materials.

The Advisory group made the following comments about risk based and outcomes based regulations in reference to tailings:

"There is an uneven commitment to and interpretation of risk-based assessment across agencies. The occupational health and safety regulatory framework should be risk-based, in line with World Best Practice and stated policies of major mining companies. Environmental health should also be regulated using a risk-based approach."

"While it is generally recognized that an outcomes-based approach is desirable, the regulations do not yet reflect this approach. The DMP should work towards standardizing all mining regulations to use an outcomes-based approach."

The revised tailings guidelines are heavily weighted to risk based assessment. In so doing there is no mention of uranium or radioactive tailings or specific outcomes for managing radioactive tailings. This should be revised before the DMP assesses any uranium tailings management plans. The integrity of the process would also be strengthened if there were requirements for transparency and consultation during the assessment process for tailings management.



Uranium core samples Wiluna

ECITA Senate Inquiry into the adequacy of federal regulation of Jabiluka, Ranger, Beverley and Honeymoon uranium mines - 2003

The committee made 25 recommendations for the Northern Territory and South Australia, with many more specific recommendations made for regulating individual mine sites. These recommendations include (in summary):

- Groundwater protection and quality limits
- Increased monitoring of groundwater impacts
- Compliance with water quality limits
- Independent monitoring
- More systematic approach to collecting and analysing data
- Public release of all data relating to incidents
- An increased role in the Federal Government in assessing and regulating
- Confidentiality clauses to protect anonymity of concerned individuals
- Improved consultation and communication with stakeholders
- Independent inspection program of stockpiles and prevent discharge from runoff

Recommendations worth considering include:

- *The Committee is of the view that uranium mining presents unique hazards and risks to both human health and the environment. Accordingly, its regulation at both the Commonwealth and State levels should be primarily the responsibility of environment agencies rather than agencies whose principal concern is with the advancement of mining interests (para 3.94).*
- *The Committee recommends that all serious leaks and spills be investigated by Environment Australia and that minor leaks and spills be scrutinised by South Australia's Chief Inspector of Mines in collaboration with EA. Given that different regulatory requirements attach to different categories of incidents, the Committee also recommends that the definitions as to categories of incidents be the subject of public consultation and be publicly available. A regulatory response, publicly available, should be provided following the investigation of an incident (para 3.109).*
- *The Committee recommends that, owing to the experimental nature and the level of public opposition, the ISL mining technique should not be permitted until more conclusive evidence can be presented on its safety and environmental impacts. Failing that, the Committee recommends that at the very least, mines utilising the ISL technique should be subject to strict regulation, including prohibition of discharge of radioactive liquid mine waste to groundwater, and ongoing, regular independent monitoring to ensure environmental impacts are minimised. (*fortunately none of the four proposed mines in WA are ISL - but it should be noted that ISL mining permanently pollutes groundwater with radioactive waste materials.)*
- *Fund and establish a culturally-appropriate forum for Traditional Aboriginal Owners and other local Aboriginal people to monitor and commission independent research in relation to social and environmental impacts of mining operations and to develop policy recommendations in response to the findings.*

"a pattern of underperformance and non-compliance can be shown. The Committee also identified many gaps in knowledge and found an absence of reliable data on which to measure the extent of contamination or its impact on the environment."

Environmental Requirements of the Commonwealth of Australia for the Operation of Ranger Uranium Mine 1999

The Ranger uranium mine in the Northern Territory's Kakadu region is Australia's longest running uranium operation and is required to finish all mining and mineral processing by 2021. Ranger uranium mine is subject to a number of environmental conditions issued under s41 of the Atomic Energy Act 1953 that must be "consistent with the following primary objectives":

- maintain the attributes for which Kakadu National Park was inscribed on the World Heritage list;
- maintain the ecosystem health of the wetlands listed under the Ramsar Convention on Wetlands (i.e. the wetlands within Stages I and II of Kakadu National Park);
- protect the health of Aboriginals and other members of the regional community; and
- maintain the natural biological diversity of aquatic and terrestrial ecosystems of the Alligator Rivers Region, including ecological processes.

There are two important conditions for post mine closure outcomes that should be considered:

- Subject to subclauses 2.2 and 2.3, the company must rehabilitate the Ranger Project Area to establish an environment similar to the adjacent areas of Kakadu National Park such that, in the opinion of the Minister with the advice of the Supervising Scientist, the rehabilitated area could be incorporated into the Kakadu National Park.
- Final disposal of tailings must be undertaken, to the satisfaction of the Minister with the advice of the Supervising Scientist on the basis of best available modelling, in such a way as to ensure that:
 - (i) the tailings are physically isolated from the environment for at least 10,000 years;
 - (ii) any contaminants arising from the tailings will not result in any detrimental environmental impacts for at least 10,000 years; and
 - (iii) radiation doses to members of the public will comply with relevant Australian law and be less than limits recommended by the most recently published and relevant Australian standards, codes of practice, and guidelines effective at the time of the final tailings disposal.

uranium mine rehabilitation

Along with an urgent need for improved operational performance and scrutiny there is a real need for concerted legislative efforts to address the issues of sub-standard rehabilitation and poor post closure monitoring and mitigation across the Australian uranium sector.

No former uranium mine in any jurisdiction in Australia has been successfully rehabilitated. Along with an urgent need for improved operational performance and scrutiny there is a real need for concerted legislative efforts to address the issues of sub-standard rehabilitation and poor post closure monitoring and mitigation across the Australian uranium sector. This planning needs to happen from the beginning of any project.

Action is needed to address the long-term impacts of the Australian uranium sector in a way that does not allow cost shifting from mining companies to the public purse – now or in the future.

In Western Australia the Mining Rehabilitation Fund (MRF) introduced a levy system in place of mine closure bonds. The levy system does not provide adequate incentive for rehabilitation and has already seen new abandoned mines sites. The new system has also seriously reduced the State's capacity to meet the liability of mine rehabilitation due to the refunding over \$1 billion in bonds in exchange for \$93 million held in the MRF.

Uranium mine rehabilitation is complex and notoriously costly. The rehabilitation of Rio Tinto's Ranger uranium mine in Kakadu is set to cost over \$600 million. Smaller companies like Toro Energy and Vimy Resources who only have WA uranium projects may not have the capacity to meet comprehensive rehabilitation costs.

This is the current situation with Paladin Energy which over the past decade has gone from a market darling to administration, with significant rehabilitation liabilities and uncertainty at its operations in Africa. Should a comparable situation occur in WA it would be the WA taxpayer that would bear the burden and cost for rehabilitation.

A particular concern is the unresolved issue of future management of hazardous uranium tailings. All uranium mining operations produce large volumes of long lived radioactive wastes (tailings) which need to be contained and controlled on site to reduce the risk of polluting ground and surface water. These tailings contain around 80% of the radioactivity of the original ore body and, post mining, are far more mobile and bio-available. A material that was formerly geologically cocooned is now available for dispersal in wind and water.

Tailings pose a long-term human and environmental hazard. A 1997 Senate Inquiry into uranium mining and milling viewed "tailings management as amongst the most serious challenges facing uranium miners and, indeed, the entire nuclear energy industry in the future. It will also continue to be a major preoccupation for regulators and scientists as well".

All of Australia's current and former uranium mines are in urgent need of attention and improvement and it is essential that rehabilitation planning and provision be made from the start of the mining assessment process. It is prudent that WA Labor take effective and early steps to reduce the chances of future adverse environmental and fiscal outcomes.

A 2003 Senate Inquiry into the adequacy of federal regulation of the Australian uranium industry found a "pattern of underperformance and non-compliance" and identified "many gaps in knowledge" and an absence of "reliable data on which to measure the extent of contamination or its impact on the environment". It concluded that changes were necessary "in order to protect the environment and its inhabitants from serious or irreversible damage".

WA Labor now has both the ability and the responsibility to begin this process of change. Securing the full cost of rehabilitation through 100% mine closure bonds is the most assured way to ensure that the funds are available to adequately remediate sites and provides a meaningful incentive for companies to fully comply with rehabilitation obligations and expectations.

regulating tailings

The following resolution was passed in the Legislative Council, on the 23rd May 2012, but has never been implemented.

That this house recommends, should the government proceed with its intention to license uranium mining in Western Australia, the government adopt equivalent or better environmental management regulatory requirements for any future uranium mine in Western Australia as exists under Commonwealth and Northern Territory legislation for the operation of the Ranger uranium mine in the Northern Territory with regard to the disposal of radioactive tailings, including the requirements that —

- (a) the tailings are physically isolated from the environment for at least 10,000 years; and*
- (b) any contaminants arising from the tailings do not result in any detrimental environmental impacts for at least 10,000 years.*



recommendations

Uranium tailings and rehabilitation

- Update the "Guidelines for Preparing Mine Closure Plans 2015" and the "Mining Rehabilitation Fund Regulations 2013" to include requirements for uranium mine rehabilitation including that all uranium mines will be required to have mine closure bonds that are 100% of the cost of mine closure and that the cost of closure be reviewed and bonds adjusted annually
- These guidelines should be updated to include outcomes and completion criteria specific to uranium mining
- Include specific requirements for the management of uranium mine tailings in the "Tailings storage facilities in Western Australia 2015 Tailings Guidelines Code of Practice" and "Managing naturally occurring radioactive material (NORM) in mining and mineral processing guideline 2010" to include the requirement that uranium mine tailings must be physically isolated from the environment for no less than 10,000 years, consistent with existing leading federal standards and requirements
- Require the full rehabilitation of previous uranium exploration sites. (*During the 8 years of the Barnett Government there were over 250 drilling programs for uranium in WA. Each site has a radiation risk associated with it. Each site should be rehabilitated to ensure the environment and public are secure from the risk of radiation exposure).

Water

- Develop enforceable measures to protect groundwater aquifers from pollution, contamination or depletion by industrial activities - consistent with WA Labor platform
- The same water quality protections, standards and contamination limits that are applied to Priority 1&2 Public Drinking Water Supply Areas (PDWSA's) should be applied to all groundwater aquifers which are used for drinking, cultural and spiritual use, stock watering or agriculture (or which could potentially be used for those purposes in the future) or which are required for the maintenance of groundwater dependent or groundwater sensitive ecosystems
- Develop strict water quality monitoring and reporting requirements and independent review of data and monitoring methods
- Grant Government agencies powers to investigate and enforce compliance with conditions
- Prohibit the release of contaminated water into surface and groundwater
- Where there is no Regional Groundwater Management Plan (eg. Goldfields/ Northern Goldfields/ East Murchison - where the proposed Mulga Rock, Wiluna and Yeelirrie uranium proposals are) require the proponents to provide information on aquifer capacity, recharge rates, environmental allocation needs and future uses for assessment when considering water license allocation.

Transparency, consultation and accountability:

- Improve public notification process for informing public and communities about developments and public consultation
- Include public consultation and appeal rights into the assessment process within the DMP and other agencies. Two key concerns with uranium mining are tailings management and mine closure - both these areas are assessed by the DMP and currently do not have measures for public consultation before approval
- The public must have access to all proponent information about the nature of the mining operating and its environmental impacts. This must include real time public reporting of all environmental monitoring information including groundwater monitoring, air quality monitoring, etc.
- Give Government agencies powers to investigate and enforce compliance with environmental and other conditions
- Give Government agencies powers to assess company's past performance and current and future financial and technical capacity to meet operating conditions and rehabilitation obligations
- Funding for independent scientific review for affected communities
- Funding for community legal advice (eg. Environmental Defenders Office)
- Introduction of offences against Directors for non compliance or abandoning mines
- Create a stakeholder reference group for each proposed mine to track the development and operation of each mine - representing local governments and communities, Indigenous communities, industry, environment and natural resource management groups.

Aboriginal Rights and Cultural Heritage

- Amend the Aboriginal Heritage Act to grant additional rights to Native Title holders to refuse the granting of a section 18 or 19 permits (to remove or destroy Aboriginal heritage sites).
- Include requirements for mining companies/ developers to consult with Aboriginal communities who may be affected by a project whether or not community members are a Native Title holder and whether or not there are Native Title interests. (For example some communities have formed in areas that are not traditional lands for those peoples - but those communities may have learnt the cultural stories for that area and continue to practice lore and culture in that area. These areas though not traditional lands, may hold a special cultural significance and therefore those communities should have rights to consultation over the future of those lands.
- Introduce Traditional Owner veto rights consistent with the WA Labor 2015 resolution which recognises the ongoing relationship Aboriginal people have with land, the value of this relationship in restoring the environment
- UN Declaration on the Rights and Interests of Indigenous Peoples includes the principle of Free, Prior and Informed Consent (FPIC) as the appropriate standard that should be applied to all decisions or activities that impact on occupied Aboriginal Lands. This principle should be reflected in legislation and regulations for uranium mining as a pre-requisite before any mining can occur, or any further approvals granted.

Training and OH&S

- Develop standardised radiation safety & emergency response training and require all radiation workers or emergency response workers to complete training by an accredited trainer
- Develop guidelines for implementing Radiation Management Plans.

conclusion

On winning government in March 2017 WA Labor ended two terms of conservative rule that vigorously promoted WA's uranium sector, yet failed to deliver one project. In its last days the former Barnett government fast-tracked state approvals in response to the threat of an incoming Labor government hostile to uranium mining. This irresponsible approach placed Labor in an invidious position.

Despite stated reservations from Premier McGowan and Mines Minister Johnston, deep concern from other Labor politicians, branches and affiliates and opposition from civil society groups, WA Labor has sought to deal with this Barnett era pre-deployed policy bomb by rejecting any future uranium applications while allowing the four projects currently under assessment and licensing to continue this process.

Continuing to consider these projects is fundamentally different to accepting their approval or advance. WA Labor inherited these projects on the basis of a previous governments compromised and contested policy and process. They must not be allowed to be further advanced in the same fashion.

One of these projects, Yeelirrie, is the subject of active legal challenge and all others remain actively contested. The experience of uranium mining in other Australian jurisdictions – and the case of Perth based Paladin Energy in Africa – provides a strong rationale for a cautionary approach.

As Yvonne Margarula, the senior Traditional Owner of the Mirarr people of Kakadu who have the longest lived direct Aboriginal experience of uranium mining said, 'none of the promises remain, but the problems always do'.

This paper seeks to identify some of these problems to help inform WA Labor's consideration of an approach that ensures the highest standards of protection and public interest. WA Labor may have had little choice about inheriting these projects but it has every choice, capability and responsibility in relation to the degree of rigour, transparency and consistency with leading assessment and regulatory practice under which they are now considered.

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*Assessing and regulating uranium in WA
Background paper – October 2017*



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