

Nuclear Energy Taskforce – findings and outcomes

1. Introduction

Uranium exploration activity, the export price of uranium, and stock prices of uranium industry participants are all surging in Australia in recent times. At the same time major expansions are due for uranium mining, with BHP Billiton's Olympic Dam mine in South Australia proposed for a threefold expansion, and Uranium One intending to move its Honeymoon deposit (also in South Australia) to commercial production in early 2008.

This is also at a time of greater export opportunities for Australian uranium producers, with Australia earlier this year ratifying its bilateral agreement with China,¹ and recent announcements regarding the possibility of a similar deal to 'allow Australian uranium producers to supply Russia's nuclear power industry'.²

¹ Agreement between the Government of Australia and the Government of the People's Republic of China on the Transfer of Nuclear Material, 3 April 2006
² The Honourable Alexander Downer MP, Minister for Foreign Affairs, quoted in Shanahan, D. 'Howard's nuclear strategy to pressure Opposition', The Australian 28 April 2007,
<http://www.theaustralian.news.com.au/prtinpage/0,5942,21634517,00.html>

This frenzy of industry activity is being matched also by legislative and policy activity. The Howard Government has announced an action plan for uranium mining and nuclear energy in Australia, whilst the Australian Labor Party (**ALP**) has dropped its national platform which opposed new uranium mining in Australia. These developments have had a mixed response from the state governments, which retain constitutional powers in relation to mining and energy. Whilst some states have embraced the opportunity for expanded uranium mining, others have maintained their opposition. A more vehement response has emerged from various states in relation to nuclear energy, with various Acts passed or proposed to ban nuclear energy and to hold a public referendum in the event that the Commonwealth government seeks to support the establishment of a nuclear generation installation in the relevant state. Not unexpectedly, talk of a constitutional show down is now on the airwaves.

A key driver for these policy debates is the public embrace of the need to combat climate change and the claims that nuclear energy is an answer to the need to provide reliable clean energy to Australian consumers. This, along with other arguments in favour of nuclear energy and freeing up restrictions on uranium mining in Australia (such as job creation and export opportunities), has come onto the agenda as a result of the *Uranium Mining, Processing and Nuclear Energy Review* report of December 2006³ (the **Switkowski Report**). The Switkowski Report recommendations follow on the heels of two other recent reports, the Report of the Uranium Industry Framework Steering Group⁴ (the **Steering Group Report**) and the House of Representatives Standing Committee on Industry and Resources Report *Australia's uranium – Greenhouse friendly fuel for an energy hungry world*⁵ (the **House of Representative Report**).

2. The Switkowski Report

2.1 Summary

In June 2006, the Federal Government established the Uranium Mining, Processing and Nuclear Energy Review Taskforce (the **Taskforce**) 'to undertake an objective, scientific and comprehensive review of uranium mining, value-added processing and the contribution of nuclear energy in Australia in the longer term.'⁶

The terms of reference for the Taskforce included economic, environment and health, safety and proliferation issues. The Taskforce was chaired by Dr Ziggy Switkowski who,

³ Commonwealth of Australia 2006, *Uranium Mining, Processing and Nuclear Energy – Opportunities for Australia?*, Report to the Prime Minister by the Uranium Mining, Processing and Nuclear Energy Review Taskforce, December 2006 (the **Switkowski Report**)

⁴ Commonwealth of Australia 2006, *Uranium Industry Framework*, Report of the Uranium Industry Framework Steering Group, November 2006 (the **Steering Group Report**)

⁵ Commonwealth of Australia 2006, *Australia's uranium – Greenhouse friendly fuel for an energy hungry world*, Report of the House of Representatives Standing Committee on Industry and Resources, November 2006 (the **House of Representatives Report**)

⁶ Switkowski Report, at 1.

as a nuclear physicist and former Chief Executive Officer of Telstra Corporation, has both extensive commercial experience as well as relevant technical and scientific skills.

The Taskforce released a draft report for public comment on 21 November 2006. The draft report was reviewed by an expert panel and public feedback was also provided. The final version of the report was released on 29 December 2006.

The Report noted that Australia's demand for electricity will substantially increase over the period leading up to 2050, necessitating a substantial overhaul of existing electricity generation and the addition of further capacity.⁷ The Report acknowledged that other nations face similar conditions and that nuclear power has been widely considered as to be an appropriate solution – due to its relative cost competitiveness, low greenhouse gas emissions and stability of cost and supply (in comparison with fossil fuels).⁸

The Report found that nuclear generation could be delivered to the National Electricity Market in approximately 10-15 years.⁹ In fact, deployment of nuclear power starting in 2020 could see 25 reactors producing an estimated one third of the nation's electricity by 2050.¹⁰ Before this can occur, however, issues such as skill shortages and government regulation and policy would need to be urgently addressed.

The Report concluded that Australia had the capacity to increase production and export of uranium and, further, that nuclear power was 'a practical option for part of Australia's electricity production.'¹¹

2.2 Uranium mining and export

The Report states that consultations had revealed support for the expansion of Australian mining and export of uranium.¹²

Australia has 38 per cent of the world's low-cost reserves of uranium and in 2005, Australia's uranium oxide exports earned \$573 million.¹³ Uranium exports are forecast to increase strongly, both from rising prices and rising production, reaching over 20,000 tonnes by 2014–2015.¹⁴ Demand from India, Russia and China will grow and will add to the existing large-scale buyers in the USA, France and Japan.

The Report found that, after 2015, there will be greater uncertainty over both supply and demand. On current forecasts, however, demand will exceed existing capacity. The Report concluded that there is therefore 'an excellent opportunity for Australia to fill the gap'.¹⁵

⁷ Ibid, at 47

⁸ Ibid, at 1

⁹ Ibid, at 2

¹⁰ Ibid

¹¹ Ibid

¹² Ibid

¹³ Ibid, at 24

¹⁴ Ibid

¹⁵ Ibid, at 3

In addition to historically low uranium prices (in contrast to current prices), the Report concluded that there are a number of factors affecting uranium mining that will require urgent attention before this industry can be effectively introduced in Australia. These factors are as follows:

- (a) restrictive government policies regarding land access and uranium transport;
- (b) skills shortages (particularly radiation safety officers and geologists with uranium experience); and
- (c) complex and decentralised regulatory regimes.¹⁶

2.3 Conversion, enrichment and fuel fabrication

The Report notes that uranium oxide is required to be converted and enriched before being ready for fabrication and assembling into reactor fuel. At present, the global market for the conversion, enrichment and fabrication processes is highly concentrated and, while sufficient to meet current market demand, may lack capacity for any future increase in the demand for uranium production.¹⁷

The Taskforce considered that development of domestic capacity to undertake the downstream steps of uranium conversion, enrichment and fuel fabrication could add a further \$1.8 billion of value annually of all Australian uranium production.¹⁸

However, it was noted that high commercial and technology barriers could make market entry difficult. For example, the commercial viability and international competitiveness of new plant would depend on factors such as capital investment cost, operating costs, the ability to competitively access technology, the state of the international market, and access to the required skill base.¹⁹

The Report also stated that current legal and regulatory impediments would need to be removed and nuclear non-proliferation issues addressed. The Report concludes that the combined effect of these market barriers may mean there could be little real opportunity for Australian companies to extend profitably into these areas.²⁰

2.4 Electricity Generation

The Report found that Australian electricity demand will continue to grow strongly until 2050 and, to meet demand, electricity generation will need to increase twofold.²¹ The

¹⁶ Ibid, at 30-31

¹⁷ Ibid, at 37-44

¹⁸ Ibid, at 2

¹⁹ Ibid, at 4

²⁰ Ibid, at 45

²¹ Ibid, at 51-52

Report also found that technology underlying nuclear power was 'internationally proven' and contributed to 15 per cent of global electricity generation.²²

While nuclear power is cost competitive in other countries, the Report states that the low cost of fossil fuel generation in Australia means that nuclear power is likely to be between 20 and 50 per cent more costly to produce. The Report notes, however, that this calculation is based on the absence of a carbon pricing system in Australia.²³

The Taskforce concluded that nuclear power had the capacity to become competitive with fossil fuel-based generation if a low to moderate pricing system of carbon dioxide emissions was introduced. Additionally, private investment in the first-built nuclear reactors may require some form of government support or directive.²⁴

The Report also states that cost of nuclear power is strongly influenced by investor perceptions of risk, which in turn is highly dependent on regulatory policy and the certainty of licensing and construction timeframes. Accordingly, a stable policy environment and a predictable licensing and regulatory regime would be a necessary precursor to the effective development of nuclear power in Australia.²⁵

The Report states that nuclear power was the 'least-cost low-emission technology that can provide baseload power, is well established, and can play a role in Australia's future generation mix'.²⁶

2.5 Radioactive waste and spent fuel management

The Report notes that any system of nuclear power generation in Australia would need to make provision for greater regulation of the disposal of radioactive waste.

The Taskforce found that systems have been developed globally for the safe disposal of varying levels of radioactive waste. The Report also states that many countries are currently exploring the possibility of disposing of high-level waste and that Australia has a number of geologically suitable areas for deep disposal of radioactive waste.²⁷

The Report recommended that expenses associated with disposal (in addition to power station decommissioning) would need to be internalised into the costs of nuclear power.²⁸

2.6 Health and safety

The Report notes that nuclear power did give rise to health and safety concerns due to the ionising radiation associated with uranium. However, international safety standards

²² Ibid, at 97

²³ Ibid, at 55-56

²⁴ Ibid, at 5

²⁵ Ibid, at 56-57

²⁶ Ibid, at 5

²⁷ Ibid, at 63, 71

²⁸ Ibid, at 61

have been established to deal with these impacts and any remaining issues are largely the result of 'legacy problems' (i.e. public perception of events such as Chernobyl).²⁹

The Taskforce found that, as a result of improvements in technology and safety requirements, there were 'significantly lower levels of risk' associated with nuclear power generation.³⁰ The Report also stated that the establishment of an efficient, effective and transparent regulatory regime would ensure that health and safety outcomes are achieved, and would also provide assurance to the public that facilities are being properly managed.³¹

2.7 Environmental impacts

The Report notes that a reduction in greenhouse gas emissions was required to address concerns regarding climate change.³² The Report found that the emission produced by nuclear power were comparable to forms of renewable energy and were more than 10 times lower than emissions from fossil fuel-based power generation (but that air pollution and land use are generally comparable).³³

The Report did note that, depending on the technology used, water use can be significant in uranium mining and electricity generation.³⁴

2.8 Non-proliferation and security

The Taskforce observed that the export of uranium takes place within the network of treaties, institutions and the safeguards inspection regimes comprising the international nuclear non-proliferation regime.³⁵ The Report also states that Australia has the most stringent requirements for the supply of uranium, including the requirement for an International Atomic Energy Agency Additional Protocol, which strengthens the safeguards regime.

The Taskforce found that actual cases of proliferation have not involved the diversion of declared materials from safeguarded facilities such as nuclear power plants. It concluded that an increase in the volume of Australian uranium exports would not increase the risk of proliferation of nuclear weapons.³⁶

2.9 Regulation

At present, regulatory arrangements applying to uranium mining operations in Australia are complex and varying. Extensive and at times, duplicative, requirements apply to uranium mining. The Report recommends that a transparent, national regulatory regime would need to be established at an early stage. The regime should be consistent and

²⁹ Ibid, at 72-73

³⁰ Ibid, at 7

³¹ Ibid, at 86-87

³² Ibid, at 92

³³ Ibid, at 97-99

³⁴ Ibid, at 101

³⁵ Ibid, at 105-107

³⁶ Ibid, at 8.

address the health, safety, security and environmental protection outcomes for uranium mining, transportation, radioactive waste management and trade.³⁷

Mining legislation generally differs from state to state, as does related health and safety and environmental legislation. Uranium mining, in particular, is permitted in the Northern Territory and South Australia, prohibited in New South Wales and Victoria and prohibited by policy in Western Australia and Queensland. Those seeking to mine and transport uranium must also comply with various Commonwealth statutes, such as the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (the **EPBC Act**) and the *Nuclear Non-Proliferation (Safeguards) Act 1987* (Cth).

The Taskforce also suggests that mining proposals and operations could be channelled through a single regulator for mine safety compliance. The Report notes that the Council of Australian Governments National Mine Safety Framework Steering Committee is considering the option of having a single national authority for mine safety and this model could be extended to environmental assessment and approvals processes for uranium mining.³⁸

The Report also notes that, at present, enrichment plants, fuel fabrication plants, power plants and reprocessing facilities are all prohibited under the EPBC Act and the *Australian Radiation Protection and Nuclear Safety Act 1998*. These prohibitions would need to be repealed.

The Report considered that Australia would also need to establish an appropriate body to license and monitor the construction and operation of nuclear facilities to ensure high standards in health, safety and environmental performance. Codes and standards would need to be developed in relation to various issues, including nuclear and radiation safety, environmental protection, facility auditing and inspection, civil liability arrangements and waste management.³⁹

The Taskforce also stated that it was likely that skilled professionals would need to be recruited to staff a uranium regulatory regime.⁴⁰

2.10 Research, development, education and training

The Report notes that a substantial increase would be required in public funding regarding nuclear energy related education or research and development, which has historically been low in Australia.⁴¹

The Report recommends that, in addition to expanding R&D and education and training efforts, Australia could seek opportunities for international collaboration and, as a consequence, leverage its nuclear research and training expertise. Similarly, the level of

³⁷ Ibid, at 124-125

³⁸ Ibid, at 129

³⁹ Ibid, at 125

⁴⁰ Ibid, at 125

⁴¹ Ibid, at 128

required professional skill available in Australia is an issue that will also need to be addressed.⁴²

3. Other recent reports

3.1 The House of Representatives Report

The House of Representatives Standing Committee on Industry and Resources commenced its inquiry in March 2005, and delivered its report in November 2006. Its terms of reference required it to have regard to:

- (a) the global demand for uranium;
- (b) the strategic importance of Australia's uranium resources and any relevant industry developments;
- (c) potential implications for greenhouse gas emission reductions from further uranium development and export; and
- (d) the current regulatory environment of the uranium mining sector.

Membership of the Standing Committee consists of ten Members of the House of Representatives, with six Members nominated by the parties that make up the Government and four nominated by the Opposition. The Standing Committee is chaired by the Hon Geoff Prosser, Liberal Member for Forrest, Western Australia.

In relation to Greenhouse gas emissions, the House of Representatives Report notes that:⁴³

- (a) without the current level of nuclear power generation, CO₂ emissions would be 2.5 billion tonnes higher per year;
- (b) nuclear power produces less sulphur dioxide, nitric oxide and particulates than fossil fuelled plants; and
- (c) the amount of carbon produced over the entire nuclear fuel cycle is comparable to wind and solar, and far less than coal, natural gas or oil.

The House of Representatives Report suggests that renewables and energy efficiency alone will not solve the problem of Greenhouse gas emissions, with a reliable mix of low-emission technologies required to address rapidly growing energy demand.⁴⁴ Renewables are criticised for being intermittent, diffuse and for requiring backup generation from conventional baseload sources.⁴⁵ While geothermal, for example, promises baseload contributions, it has yet to be deployed on any scale. The House of Representatives Report states that 'nuclear versus renewables' is not a legitimate debate, rather that for

⁴² Ibid, at 127

⁴³ The House of Representatives Report, at 152

⁴⁴ Ibid, at 179

⁴⁵ Ibid, at 184

baseload power, the debate is 'nuclear versus coal', with nuclear being the more environmentally friendly option.⁴⁶

Arguments that nuclear power has higher capital/construction costs than coal or gas plants are rebutted with the argument that fuel, operating and maintenance costs are lower.⁴⁷ The House of Representatives Report concludes that nuclear power offers three advantages to other baseload energy sources:

- (a) price stability;
- (b) lower operating costs; and
- (c) internalisation of costs such as waste management that are not incorporated in the cost of other electricity sources.⁴⁸

The report suggests that with sufficient regulatory oversight, the construction of nuclear power plants in Australia should be allowed. The Standing Committee suggests that governments should provide incentives to make nuclear power cost-competitive with coal. The report also recommends governments commence examining best practice licensing and regulatory frameworks to be put in place to facilitate the eventual establishment of nuclear energy and uranium enhancement industries in Australia.⁴⁹

The report argues that high level waste (**HLW**) is easily managed as it occurs in small volumes,⁵⁰ the radioactivity is contained in the spent fuel assemblies, it decays at a predictable rate,⁵¹ and it is amenable to separation, encapsulation and isolation. Further, the cost of managing waste is internalised in the price of nuclear electricity. Nuclear waste is said to be dealt with more explicitly and transparently than many other sources of energy, and the total volume of waste produced is smaller than that of coal-fired power stations. The report suggests that in contrast to nuclear power, wastes from fossil fuel power are not contained or managed and exist in much greater volumes. Additionally, the cost of these externalities isn't factored into the price of electricity, unlike with nuclear power.⁵²

The House of Representatives Report suggests a number of benefits underlying the strategic importance of Australia's uranium resources. Along with the greenhouse gas benefits, the significance of the resource as one of Australia's major energy exports and the potential for Australia's uranium exports to redress the global energy imbalance are some of the many benefits discussed.⁵³ The Standing Committee concludes that nuclear

⁴⁶ Ibid, at li

⁴⁷ Ibid, at 197

⁴⁸ Ibid, at 199-200

⁴⁹ Ibid, at 686

⁵⁰ Ibid, at 255

⁵¹ Ibid, at 238

⁵² Ibid, at 267-268

⁵³ Ibid, 475-480. The full list is set out at Ibid page 475

power is a significant means of addressing the global energy imbalance and one which can provide the energy requirements for developing countries.⁵⁴

It also notes that a failure to develop the uranium industry in Australia will have associated economic costs. If Australia doesn't supply uranium, other countries will meet the demand and probably without the same safeguards placed on Australian exports.⁵⁵ It concludes that developments of new uranium deposits should be permitted and encouraged.⁵⁶

Many issues are raised in relation to the general impediments to the industry, including regulatory inconsistencies across jurisdictions, labour and skills shortage and access to capital.⁵⁷ The principal impediment to the industry's growth is found to be the prohibition on uranium mining in some states and the lack of alignment between federal and state policy.⁵⁸ The restrictions are said to be illogical, inconsistent and anticompetitive and to impede industry investment, with the only beneficiaries being the three existing producers and foreign competitors. The report recommends the lifting of state policies that prevent the development of new uranium mines and the repeal of legislative restrictions on uranium mining and exploration, and that the Council of Australian Governments seek to remedy these impediments.⁵⁹

The report recommends increased funding from the Australian Government to address shortcomings in relation to the regulation of mine closure and rehabilitation.⁶⁰ The report also notes the need to minimise the negative impacts of uranium mining on Aboriginal communities and that Traditional Owners should share in the benefits of a developed industry.⁶¹

The Standing Committee argues that notwithstanding the Chernobyl incident, nuclear power's safety record surpasses that of all other major energy industries.⁶² Exposure suffered by uranium mine workers is said to be less than half the prescribed limit for mine workers, and risks to the public in the vicinity of uranium mines are a small fraction of the prescribed limit.⁶³ To allay any fears, the report recommends a national radiation dose register and a long-term monitoring system be established to monitor worker health.⁶⁴

⁵⁴ Ibid, at 480

⁵⁵ Ibid, at 493

⁵⁶ Ibid, at 499

⁵⁷ Ibid, at 585, 596, 601

⁵⁸ Ibid, at 572

⁵⁹ Ibid, at 584, 604

⁶⁰ Ibid, at 528, 533

⁶¹ Ibid, at 567

⁶² Ibid, at 309

⁶³ Ibid, at 288-290

⁶⁴ Ibid, at 293

The Standing Committee recommends that the Australian Government take steps to strengthen the international nuclear non-proliferation regime, and recommends a number of steps to encourage increased political commitment to non-proliferation.

The report recommends that the public needs to be provided with accurate and objective information about the industry and in particular radiation and radioactive waste management. Public education and advocacy needs to be augmented with both industry and Government playing a role.⁶⁵ A communication strategy is suggested to address areas of poor understanding with information to be provided to political leaders and the media, including in relation to explanation of potential incidents and their impacts.⁶⁶

The Standing Committee also recommends the broadening of the Australian Nuclear Science and Technology Organisation's (**ANSTO's**) research and development mandate so that it may once again undertake physical laboratory studies of aspects of the nuclear fuel cycle that may be of future benefit to Australia. Further, consideration should be given to establishing a university school of nuclear engineering.⁶⁷

3.2 The Steering Group Report

The Steering Group was established by the Minister for Industry, Tourism and Resources, the Honourable Ian Macfarlane MP in August 2005 and comprises senior representatives of the uranium industry, the Commonwealth, South Australian and Northern Territory Governments and the Northern Land Council. The Steering Group reported in September 2006.

The Steering Group's terms of reference required the Steering Group to recommend actions aimed at:

- (a) increasing Australia's international competitiveness and facilitating increased exploration, mining and export of Australia's uranium resources;
- (b) ensuring a consistent, effective and efficient regulatory regime for uranium mining in Australia; and
- (c) fostering broader community understanding and acceptance of the economic and social benefits from having a safe, secure, efficient and highly productive Australian uranium mining industry.⁶⁸

These overall objective of the Steering Group was to arrive at conditions conducive to:

A sustainable, safe, secure, socially and environmentally responsible uranium industry, making a growing contribution to Australia and the world's energy supply

⁶⁵ Ibid, at 618-620

⁶⁶ Ibid, at 624

⁶⁷ Ibid, at 686-687

⁶⁸ The Steering Group Report, at 11.

*well into the 21st century and assisting in reduced global greenhouse gas emissions.*⁶⁹

The scope of the Steering Group was limited to the exploration, mining, milling and transport of uranium. Other aspects of the uranium cycle such as nuclear power generation and the storage of nuclear waste were not considered by the Steering Group.

The report notes that the major challenges to a sustainable Australian uranium industry arise from the processing, use and disposal of products derived from uranium, which is extensively transformed following its export from Australia. The associated community concern and political restrictions are obstacles to industry growth. Uranium stewardship is mooted as a useful way to address these impediments, demonstrating the regulation provided by bodies such as the International Atomic Energy Agency (**IAEA**) and the Australian Safeguards and Non-Proliferation Office (**ASNO**) for the risks uranium presents through its value chain. The report states:

*While the Australian mining industry's primary focus is on its direct responsibilities for continually improving the environmental and social performance of its mining operations, a uranium stewardship platform provides the industry with the capacity to engage in the global lifecycle of uranium use and management by influencing the actions of other stakeholders. Where uranium stewardship is demonstrably effective, this mitigates the need for additional regulatory controls or compliance measures (licence conditions).*⁷⁰

In this context, the Steering Group recommends that the Australian uranium industry establish a uranium stewardship platform as the basis for its engagement with the global uranium stewardship programs currently being developed by the World Nuclear Association.⁷¹

The Steering Group Report notes that current domestic uranium production levels do not reflect the abundance of uranium in Australia, in spite of the economic strength, social stability and intellectual capital of the country. The report identifies the following issues behind this, in addition to the currently unfavourable political climate:⁷²

- (a) the shortage of radiation safety and protection officers. The report recommends the development of a course to train students to fill these roles and a marketing and recruitment strategy to attract suitable persons;
- (b) the shortage of 'competent persons', as defined in the Joint Ore Reserves Committee (**JORC**) code (part of the ASX listing rules), to report uranium exploration results, and difficulties in measuring and reporting proven and probable uranium ore reserves under the code for in situ leach operations.

⁶⁹ Ibid, at 12.

⁷⁰ Ibid, at 27

⁷¹ Ibid, at 28

⁷² Ibid, at 29-30

The Steering Group recommends that a paper be developed on all aspects of the measurement and reporting of uranium resources and reserves under the JORC code; and

- (c) the various factors which increase the cost and difficulty of transporting uranium including public attitudes, inconsistent and excessive regulation of transportation of uranium products, shipping arrangements and security measures. The report recommends the establishment of a single body to oversee a national approach to domestic uranium transport and that State and Territory regulatory requirements over and above the Australian Radiation and Nuclear Safety Agency (**ARPANSA**) Code of Practice be eliminated. Further, Government and Industry should develop a strategy to address denial of shipping internationally.

In relation to regulation of the uranium industry in Australia, the Steering Group identified as a major problem the lack of a consistent national approach. The Report notes that a robust regulatory system must be flexible to economic, environmental and social changes. The Steering Group set out a number of options to be considered in this regard:

- (a) a non-legislative approach (e.g. codes of practice) as a method to develop a nationally consistent regime. Such an approach would need to be outcome focused to encourage the industry to determine the most efficient means of achieving compliance;⁷³
- (b) the articulation of general guiding principles for uranium industry regulation could contribute to improved and more consistent regulation;⁷⁴
- (c) to overcome difficulties with the dual Commonwealth and state mining and environmental regulatory regimes, the development of arrangements to provide for a coordinated and transparent role for the Australian Government in discharging its responsibilities under the EPBC Act, in consultation with State and Territory governments which will retain responsibility for the day to day regulation of uranium mining;⁷⁵
- (d) co-ordination between multiple government agencies that must be dealt with by uranium mine operators should be improved. In addition, the streamlining of the current reporting requirements would reduce the burden on the industry;⁷⁶

⁷³ Ibid, at 37

⁷⁴ Ibid, at 38

⁷⁵ Ibid, at 39

⁷⁶ Ibid, at 40

- (e) a single storage area for the health records of uranium industry workers should be created, rather than the individual registers maintained by employers and State and Territory governments;⁷⁷ and
- (f) a consistent royalty framework should be introduced for the Northern Territory to replace the current project-by-project basis on which royalty arrangements are currently made.⁷⁸

The Steering Group identified a range of formal and informal processes through which the uranium industry currently engages with relevant indigenous stakeholders. Several options are presented for improving relations between industry participants and traditional owners:⁷⁹

- (a) the establishment of shared high-level aspirational principles for engagement with local Indigenous communities, in contrast to the current arrangements which differ from mine to mine;
- (b) the development of a culturally appropriate and accessible science-based information package (by the Australian, State and Territory governments in association with industry) to increase knowledge and awareness among Indigenous communities;
- (c) improved co-ordination and accessibility of relevant government programs and services to assist the implementation of land access agreements that provide for sustainable employment and business development opportunities;
- (d) more effective targeting of assistance through an increased understanding of Indigenous skills and capacities; and
- (e) input to the current and imminent reforms of the native title system, the *Aboriginal Land Rights (Northern Territory) Act 1976* and heritage protection.

The report notes that to date, the Australian uranium industry has not appropriately communicated the benefits of uranium mining and the risk management strategies that are in place. The role of the media and the potential for emotive content is recognised as an obstacle to the communication of accurate information about the uranium industry.⁸⁰ The report notes the need for factual information from credible sources for informed debate and says the uranium industry's role in this is in addition to that of the media and educational institutions. A number of approaches are suggested for developing a communications strategy, including the demystifying of the uranium process through easy-to-understand information, emphasising the low level of risks, and emphasising the

⁷⁷ Ibid, at 41

⁷⁸ Ibid, at 42

⁷⁹ Ibid, at 44-47

⁸⁰ Ibid, at 50

significant benefits of Australian uranium mining to the country.⁸¹ The Steering Group recommends that industry collaborate on the development of a multi-faceted communications strategy through community engagement, the education system and relations with the media.⁸²

4. Policy and Legislative Responses

The recommendations of the Switkowski Report, the House of Representatives Report and the Steering Group Report have prompted swift and strong reactions. The Howard Government has sought to embrace the recommendations, with a four stage action plan. Various State Labor Governments have sought to ban nuclear powered generation, whilst at the same time the Federal ALP policy platform of no new uranium mines has been reformed.

4.1 Prime Minister's Action Plan

The Howard Government has sought to forge ahead with commitments, identified in the Switkowski Report, to free up restrictions on uranium mining, overturn the Commonwealth prohibition on the approval of nuclear power plants and similar facilities,⁸³ and to remove overlapping regulation of the industry. The Prime Minister has announced a four stage action plan to map out a way forward for:

- (a) an appropriate nuclear energy regulatory regime – including those to govern any future potential nuclear energy facilities in Australia;
- (b) skills and technical training to address any identified gaps and needs to support a possible expanded nuclear energy industry;
- (c) enhanced research and development; and
- (d) communications strategies so that all Australians and other stakeholders can clearly understand what needs to be done and why.⁸⁴

The Prime Minister has instructed relevant departments to commence work immediately, with a view to taking a submission to Cabinet in September 2007, and work plans being implemented in 2008.

The extent to which the Federal Government can impose these changes on the states will obviously be subject to the Commonwealth's constitutional powers. The Commonwealth capacity to rely on its corporations power has been buoyed by the recent High Court WorkChoices decision⁸⁵. Alternatively, the Commonwealth could base its moves on the

⁸¹ Ibid, at 51

⁸² Ibid, at 52

⁸³ EPBC Act section 140A

⁸⁴ The Honourable John Howard MP, Prime Minister of Australia, Media Release 'Uranium Mining and Nuclear Energy: A Way Forward for Australia', 28 April 2007

http://www.pm.gov.au/media/Release/2007/Media_Release24284.cfm

⁸⁵ *New South Wales v Commonwealth* (2006) 231 ALR 1

foreign affairs power, relying on treaty commitments such as the Nuclear Non-Proliferation Treaty (**NPT**) requirement that all parties facilitate the fullest possible exchange of equipment, materials and scientific technology for the peaceful uses of nuclear energy.⁸⁶ Recent suggestions indicate that the Federal Government has already sought legal advice in relation to its prospects.⁸⁷

4.2 ALP National Policy Platform

The national ALP platform on uranium, released in April 2007, has substantially changed.⁸⁸ Gone is the commitment to prevent the development of any new uranium mines and to allow the export of uranium only from existing mines. In place of these there are new pledges to improve various safeguards. Domestic safeguards include compulsory industry participation, backed by an independent register, for regular health checks and monitoring of industry workers. Diplomatic moves to improve international mechanisms to safeguard uranium exports are also proposed, including the re-establishment of the Canberra Commission to drive Australia's ability to influence international opinion on these issues. New policies in this respect focus particularly on:

- (a) strengthened export controls;
- (b) appropriate responses and penalties for nuclear proliferation and other violations of treaty commitments;
- (c) limiting processing of weapon usable material;
- (d) tightening controls over export of nuclear material and technology;
- (e) mandating adherence to the Additional Protocol to the Nuclear Non-Proliferation Treaty (the **NPT**)⁸⁹ as a condition of supply;
- (f) developing an international guarantee of nuclear fuel supply to states forgoing sensitive (presumably weapons-related) nuclear technologies;
- (g) encouraging all states to join the NPT and revising the NPT to impose penalties for state which withdraw from it; and
- (h) adequate resourcing and strengthened authority for the International Atomic Energy Agency.

Importantly, the ALP policy does not mandate that state ALP Governments remove policy and legislative restrictions on uranium mining. This is arguably inconsistent with ensuring

⁸⁶ Treaty on the Non Proliferation of Nuclear Weapons 1970 Article IV paragraph 2

⁸⁷ Nicholson, B. and J. Topsfield. 'Canberra's nuclear power play against states', *The Age*, 29 May 2007, <http://www.theage.com.au/news/national/canberras-nuclear-power-play-against-states/2007/05/29/1180205250347.html>, Senator Chris Evans Media Statement 'Howard Plans to Override States on Nuclear Power', 29 May 2007, <http://www.alp.org.au/media/0507/msrese290.php?print=on>

⁸⁸ ALP National Conference 28 April 2007 Amendment 134A – Chapter: 5 – Paragraph 85, 86, 87. Mover: Kevin Rudd – Seconder: Mike Rann.

⁸⁹ *Treaty on the Non-Proliferation of Nuclear Weapons* 5 March 1970

(subject to the safeguards) broader global availability of uranium for peaceful purposes, which appears to be the intent of the policy referred to at paragraph (f) above.

4.3 State Government responses and initiatives

On the face of current public statements, the revised ALP position will have immediate practical consequences only for South Australia, where Premier Rann (the seconder of the national platform policy amendment) has embraced the prospect of new uranium mines, claiming 'The Labor Party's policy now looks forward rather than looking back'.⁹⁰

Western Australia remains implacably opposed to uranium mining, having taken this as a policy to the last state election, on the grounds that to do otherwise would open the way for that state to become a nuclear waste dumping ground (which is currently the subject of legislative prohibition⁹¹).

A recently introduced private member's bill in the Western Australian Parliament, to create an offence for the mining of uranium under the *Mining Act 1978 (WA)*,⁹² is intended to test that State Government's resolve on the issue.

In the run up to the April national ALP Conference there were mixed signals emanating from Queensland. A report commissioned by the Queensland Government found that uranium mining posed no economic threat to that State's coal industry,⁹³ however more recent statements by Premier Beattie indicate that the state prohibition on grants for uranium mining and processing will stay in place for now.⁹⁴

Existing legislation in New South Wales and Victoria bans uranium prospecting and mining and nuclear generation facilities (with an exemption covering the Lucas Heights nuclear research reactor in New South Wales).⁹⁵ Similar bans are proposed in Tasmania.⁹⁶ Queensland has recently passed legislation to prohibit the construction or operation of:

- (a) a facility for converting uranium ore to enable its enrichment;
- (b) a facility for enriching nuclear material;
- (c) a facility for transforming nuclear material for use as a fuel in a nuclear reactor;
- (d) a nuclear reactor, whether or not designed for generating electricity; and

⁹⁰ The Honourable Mike Rann MP, Premier of South Australia, quoted in 'States give mixed responses to nuclear announcements', ABC Online, 29 April 2007, <http://www.abc.net.au/news/newsitems/200704/s1909143.htm>

⁹¹ *Nuclear Waste Storage and Transportation (Prohibition) Act 1999 (WA)* sections 7 and 7A; see also *Nuclear Waste Storage Facility (Prohibition) Act 2000 (SA)* sections 8 and 9

⁹² *Uranium Mining (Implementation of Government Commitments) Bill 2007 (WA)*

⁹³ 'Beattie backflip on uranium', The Courier Mail, 23 March 2007,

<http://www.news.com.au/couriermail/story/0,23739,21432894-3102,00.html>

⁹⁴ <http://www.planetark.com/dailynewsstory.cfm/newsid/41613/story.htm>

⁹⁵ *Uranium Mining and Nuclear Facilities (Prohibitions) Act 1986 (NSW)*; *Nuclear Facilities (Prohibitions) Act 1983 (Vic)*

⁹⁶ *Uranium Mining and Nuclear Facilities (Prohibitions) Bill 2006 (Tas)*

(e) a reprocessing plant.⁹⁷

The *Nuclear Facilities Prohibition Act 2007* (Qld) also includes a referendum trigger if the Commonwealth seeks to support or allow the construction of a nuclear facility in that state.⁹⁸ A bill to introduce a similar trigger in Victoria legislation recently failed in that state's upper house.⁹⁹ There is currently a Private Member's Bill before the South Australian Parliament to prohibit the construction or operation of a nuclear facility in that state.¹⁰⁰ Whilst the South Australian Premier had previously announced his intention to bring in such legislation, this Bill is inconsistent with the Premier's proposal for a referendum trigger similar to that introduced in Queensland,¹⁰¹ in that it provides only for a Parliamentary Committee to consider the impact a nuclear facility supported by the Commonwealth would have on the environment and socio-economic well-being of South Australia.¹⁰² The Premier of Western Australia has announced legislation to ban nuclear facilities and a referendum trigger will be introduced into the Western Australian Parliament in June 2007.¹⁰³

The purpose of the *Nuclear Facilities Prohibition Act 2007* (Qld), to 'protect the health, safety and welfare of the people of Queensland',¹⁰⁴ is also noteworthy. This purpose (which is similar to that of the existing New South Wales and Victorian legislation and Tasmanian Bill)¹⁰⁵ presupposes the science and status of environmental and health and safety technological advances in a way that is contrary to many of the findings of the various reports covered in sections 2 and 3 of this paper.

4.4 Other responses

The IAEA Deputy Director-General recently commented that:

*Australia would have the technology level, you would have the kind of good governance, you would have the kind of regulatory infrastructure (necessary for nuclear power).*¹⁰⁶

⁹⁷ *Nuclear Facilities Prohibition Act 2007* (Qld) section 7

⁹⁸ *Nuclear Facilities Prohibition Act 2007* (Qld) section 21

⁹⁹ *Nuclear Activities (Prohibitions) Amendment (Plebiscite) Bill 2007* (Vic)

¹⁰⁰ *Nuclear Facility (Prohibition) Bill 2007* (SA)

¹⁰¹ The Honourable Mike Rann MP, Premier of South Australia, 'Nuclear power go-ahead will trigger a State referendum' Media Release, 6 March 2007,

<http://www.ministers.sa.gov.au/news.php?id=1313&print=1>

¹⁰² *Nuclear Facility (Prohibition) Bill 2007* (SA) section 13

¹⁰³ The Honourable Alan Carpenter MLA, Premier of Western Australia "WA to remain nuclear free: Premier", Media Statement, 3 June 2007,

<http://www.mediastatements.wa.gov.au/media/media.nsf/0c079b992e7e607a48256a5a0016e16b/72883634e2fb4636c82572f10009c25b?OpenDocument>

¹⁰⁴ *Nuclear Facilities Prohibition Act 2007* (Qld) section 3

¹⁰⁵ *Uranium Mining and Nuclear Facilities (Prohibitions) Act 1986* (NSW) section 3; *Nuclear Facilities (Prohibitions) Act 1983* (Vic) section 3; *Uranium Mining and Nuclear Facilities (Prohibitions) Bill 2006* (Tas) section 3

¹⁰⁶ Professor Werner Burkart, quoted in 'Australia ready for nuclear: IAEA', *The Sydney Morning Herald*, 20 April 2007, <http://www.smh.com.au/news/National/Protesters-target-Sydney-reactor-opening/2007/04/20/1176697036177.html>

There has already been suggestions of private sector interest in building nuclear generation facilities, such as the rumoured plans in February 2007 of businessmen Robert Champion de Crespigny, Hugh Morgan and Ron Walker.

However, some competing industry participants have been critical of the various reports' recommendations, such as Mr Paul Anthony of AGL Energy commenting that nuclear power plants were uninsurable and that 'nobody has really effectively sorted out the long-term, tail-end costs of holding redundant nuclear stations for the next 300 years.'¹⁰⁷

Environmental groups have given the reports a mixed reaction. Some green groups argue that the climate change benefits of nuclear power must be 'weighed up against an industry that relies on a fuel that will eventually run out; that generates toxic, long-lasting waste, both when the ore is mined and when the yellow cake is produced; and that contaminates water and soil.'¹⁰⁸

Australian of the Year for 2007 Professor Tim Flannery opposes domestic use of nuclear material for electricity generation, claiming:

Here in Australia I believe nuclear power makes absolutely no sense because we have an embarrassing richness of renewable energy resources.¹⁰⁹

However, Flannery acknowledges that for other parts of the world such as China, the east coast of the US and parts of Europe:

It's the lesser of two evils and for that reason I refuse to condemn uranium mining in Australia.

Others, such as Professor James Lovelock, have described the risks of nuclear energy as being wildly exaggerated, and that 'It would seem better for Australia to use nuclear energy than to burn carbon fuels, but the urgency may be less (than in countries with large populations).' ¹¹⁰

5. Conclusion

The Switkowski Report found vast potential for broadened uranium mining and a new nuclear energy industry in Australia. The report argues that such developments are desirable due both to the economic benefits they would bring, and the potential contribution substituting nuclear for other sources of energy would make to combating

¹⁰⁷ Mr Paul Anthony, quoted in Gluyas, R. 'Reactors are uninsurable, gas chief warns', *The Australian*, 23 April 2007, <http://aap.newscentre.com.au/minter%5Fenergy/070423/library/agl/15210713.html>

¹⁰⁸ Frew, W. 'Green energy be damned', *The Sydney Morning Herald*, 3 March 2007, <http://www.smh.com.au/news/environment/green-energy-be-dammed/2007/03/02/117233885190.html>

¹⁰⁹ Professor Tim Flannery, quoted in 'Tim Flannery awarded Australian of the Year', ABC Science Online, 26 January 2007, <http://www.abc.net.au/science/news/stories/2007/1834059.htm>

¹¹⁰ Professor James Lovelock, quoted in Starick, P. 'Green leader backs nuke power', *The Advertiser*, 3 April 2007, <http://www.news.com.au/adelaidenow/story/0,22606,21493120-5006301,00.html>

Greenhouse gas emissions. However to achieve these outcomes significant reforms are required to Australia's regulatory arrangements, across all stages of the nuclear life-cycle.

These findings follow on the heels of the Steering Group Report, which involved representatives of various governments together with the Northern Land Council, and the House of Representatives Report, which involved members of both the Federal Government and the Opposition. These reports made similar findings in relation to the benefits of uranium mining and, where relevant under their terms of reference, nuclear energy. In addition, these reports emphasised the importance of clear communications and education strategies so that the public could engage in an informed debate, and enhanced opportunities for stakeholders such as traditional owners.

At the Federal level, both sides of politics have reacted with significant policy reform announcements. The Howard Government is committed to implementing an action plan, based in part on the Switkowski Report recommendations, in 2008. In response, state Labor Governments have come out strongly against domestic nuclear generation, including the extension of the legislative prohibitions already existing in New South Wales and Victoria into other states. Speculation is brewing about an impending constitutional stoush between the Commonwealth and the states on these issues.

The Federal ALP's abolition of its long-standing 'no new mines' policy has produced varied reactions amongst state Labor Governments, with two of the three resource rich states maintaining their policies which block the grant of mining tenements for uranium. Nevertheless, given the timeframes involved in proving up resources, obtaining an appropriate skill base, raising the necessary funds, and prospects of political change or change-of-mindset, the policy hiatus is by no means stalling uranium exploration in Australia, which is continuing at a frenzied pace.