

Strategic importance of Australia's uranium resources

There is an overwhelming case for acknowledging the strategic value of Australian's uranium resources by overturning outmoded antagonistic attitudes to nuclear power and permitting development of resources in accordance with global market demand.¹

¹ Paladin Resources Ltd, *Submission no. 47*, p. 5.

Key messages —

- Uranium is Australia's second largest energy export in terms of contained energy content.
- Uranium is an immensely concentrated source of energy – one tonne of uranium oxide generates the same amount of energy as 20 000 tonnes of black coal. The uranium produced from just one of Australia's mines each year – Ranger, in the Northern Territory – contains sufficient energy to provide for 80 per cent of Australia's total annual electricity requirements, or all of Taiwan's electricity needs for a year. Olympic Dam in South Australia contains uranium equivalent in energy content to 4.5 times the energy contained in the entire North-West Shelf gas field – 25 billion tonnes of steaming coal.
- While Australia is well endowed with energy resources for its own needs, other countries are not so fortunate. These include developing countries such as China and India. As a matter of energy justice, Australia should not deny countries who wish to use nuclear power in a responsible manner the benefits from doing so. Neither should Australia refuse to export its uranium to assist in addressing the global energy imbalance and the disparity in living standards associated with this global inequity.
- Expanded mining and export of uranium will have economic and other benefits for the nation, the states that permit uranium resources to be developed and the regional communities supporting the mines.
- A proposal to expand Olympic Dam would increase South Australia's Gross State Product by about \$1.4 billion and the number of jobs associated with the mine would increase by about 8 400.
- The value of Australia's undeveloped uranium resources is conservatively estimated at \$32 billion. Restrictions on developing Australia's locked up uranium resources now involve a significantly higher opportunity cost as the price of uranium has trebled since 2003 and is continuing to rise.
- If Australia fails to export uranium and to capitalise on its opportunities, uranium will inevitably be supplied to the market by other countries, including those without Australia's safeguards commitments and other regulatory requirements.

Introduction

9.1 In addition to its greenhouse gas emission benefits, which were discussed in chapter four, evidence presented to the Committee suggested that the strategic importance of Australia's uranium resources derives from the:

- significance of the resource as one of Australia's major energy exports;
- energy security benefits that uranium can provide those countries that choose to adopt nuclear power;
- potential for Australia's uranium exports to assist in addressing the global energy imbalance;
- economic benefits that may be obtained from uranium mining, particularly for state economies and regional communities;
- economic significance of Australia's undeveloped uranium resources; and
- Australia's role as a major uranium exporter in the global nuclear fuel cycle.

This chapter considers each of these points in turn. The potential for Australia's uranium resources to underpin the establishment of domestic fuel cycle service industries is considered in chapter 12.

Energy exports

These resources are of exceedingly great future importance to Australia, being, in terms of energy, equivalent to many billions of tonnes of coal.²

9.2 The strategic importance of Australia's uranium resources derives primarily from its role as one of the nation's major energy exports, particularly given predictions that the world's energy needs will increase by 1.7 per cent annually and double in the period to 2050.³ Moreover, as described in chapter two, the global demand for electricity is forecast by the International Energy Agency (IEA) to grow at an annual rate of 2.7 per cent to 2030, faster than overall energy demand, and is likely to be driven by the industrial modernisation of India and China.⁴ A quarter of the world's projected increase in electricity production to 2030 is expected to

2 Mr John Reynolds, *Submission no. 5*, p. 3.

3 See for example: Submarine Institute of Australia, *Submission no. 21*, p. 4; UIC, *Submission no. 12*, p. 2.

4 Nova Energy Ltd, *Submission no. 50*, p. 1.

occur in China.⁵ The role of Australia's uranium as a significant energy export was recognised in the Australian Government's energy white paper, *Securing Australia's Energy Future*, published in 2004.⁶

- 9.3 Uranium currently comprises just over 40 per cent of Australia's total energy exports in terms of contained energy content – second only to black coal. In 2004–05, Australia's uranium exports represented the energy equivalent of 5 287 petajoules, compared to 6 595 for coal, 555 for crude oil, 576 for liquid natural gas (LNG) and 73 for liquid petroleum gas.⁷
- 9.4 As noted in chapter four, uranium is an immensely concentrated source of energy: nuclear fuel from one tonne of uranium oxide (U₃O₈) can produce 40 000 megawatt-hours of electricity, containing the same amount of energy as 20 000 tonnes (t) of typical black coal, 80 000 barrels of oil or 13 million cubic metres of gas.⁸ Each kilogram of U₃O₈ produces 500 000 megajoules (MJ) of heat in a conventional reactor, compared with 39 MJ for gas, 45 MJ for oil and 10–30 MJ for coal – that is, uranium contains some 10 000 times more energy per kilogram of fuel than traditional fossil fuel sources.⁹
- 9.5 The energy benefits of the uranium produced from the three existing Australian uranium mines are demonstrated by the following:
- the current economically-recoverable uranium at Olympic Dam has 4.5 times the amount of energy contained in the entire Northwest Shelf Gas Project – the equivalent of 25 billion tonnes of steaming coal;¹⁰
 - annual production from the Beverley mine produces the same amount of energy as 16 million tonnes of coal and will generate electricity sufficient for more than four million people per year;¹¹ and

5 IEA, *World Energy Outlook 2004*, OECD/IEA, Paris, 2004, p. 193.

6 Energy Task Force, *Securing Australia's energy future*, Commonwealth of Australia, Canberra, 2004, p. 46, viewed 30 May 2006, <http://www.dpmmc.gov.au/publications/energy_future>.

7 K Donaldson, *Australian energy consumption and production, 1974–75 to 2004–05*, Australian Bureau of Agricultural and Resource Economics, Canberra, 2006, viewed 15 June 2006, <<http://www.abareconomics.com/interactive/energy/index.html>>. See also: Minerals Council of Australia (MCA), *Submission no. 36*, pp. 1, 8; John Reynolds, *loc. cit.*; Department of the Environment and Heritage (DEH), *Submission no. 55*, p. 5.

8 Mr Alan Eggers (Summit Resources Ltd), *Transcript of Evidence*, 3 November 2005, p. 2; UIC, *op. cit.*, p. 10; Paladin Resources Ltd, *Submission no. 47*, p. 4; AMP Capital Investors Sustainable Funds team (AMP CISFT), *Exhibit no. 65, The nuclear fuel cycle position paper*, p. 13. Areva estimated that half a tonne of enriched U₃O₈ would produce as much energy as would 50 000 t of coal: Areva, *Submission no. 39*, p. 7.

9 UIC, *op. cit.*, pp. 3, 10; Professor Leslie Kemeny, *Exhibit no. 43, Pseudo-science and lost opportunities*, p. 54.

10 UIC, *op. cit.*, pp. 2–3, 10–13. See also: UIC, *World Energy Needs and Nuclear Power*, UIC, Melbourne, July 2002, viewed 3 June 2005, <www.uic.com.au/nip11.htm>.

- annual production from the Ranger mine, of over 5 000 t U₃O₈, is sufficient in terms of contained energy to supply over 80 per cent of Australia's annual electricity requirements, or to power Taiwan in its entirety for a year.¹²

Further, Australian uranium was used to generate 3.6 per cent of the USA's total electricity in 2004 and generates approximately two per cent of the world's entire electricity production from all sources – an immense amount of energy.¹³

- 9.6 Summit Resources proposes to produce some nine million pounds of U₃O₈ per year from its Mt Isa deposits and this would be sufficient to supply ten, 2 000 megawatt power stations – equivalent to replacing 76 million tonnes black coal (which would produce 160 million t of greenhouse gases).¹⁴
- 9.7 The International Ministerial Conference, *Nuclear Power for the 21st Century*, held in March 2005, affirmed the strategic importance of nuclear energy in meeting growing energy needs in an environmentally responsible manner.¹⁵
- 9.8 As discussed in chapter two, nuclear power currently supplies 16 per cent of the world's electricity and nuclear capacity is expected to increase. However, the International Energy Agency (IEA) predicts that the share of nuclear power in total electricity generation will decline in the medium to longer term (to 12 per cent by 2030).¹⁶ This prediction is based on a scenario in which existing plants will close on schedule, and that no new plants are built beyond those already under construction or firmly planned. In contrast, the International Atomic Energy Agency (IAEA) has published a forecast in which nuclear power generation increases 2.5 times by 2030 to account for 27 per cent of world electricity generation, and for nuclear power output to quadruple by 2050.¹⁷
- 9.9 It was argued that regardless of the forecast for nuclear power adopted, uranium remains one of the nation's most important and strategic energy and export assets, particularly given that Australia holds a significant

11 Heathgate Resources Pty Ltd, *Exhibit no. 57, Heathgate Resources Pty Ltd – Beverley Uranium Mine*, p. 2.

12 Energy Resources of Australia Ltd (ERA), *Exhibit no. 76, What is it really like to operate a large uranium mine in Australia?*, p. 4.

13 Paladin Resources Ltd, *op. cit.*, p. 5; Mr John Carlson (ASNO), *Transcript of Evidence*, 10 October 2005, p. 17.

14 Mr Alan Eggers, *op. cit.*, p. 2.

15 The Honourable Alexander Downer MP, *Submission no. 33*, pp. 6–7.

16 Australian Bureau of Agricultural and Resource Economics (ABARE), *Submission no. 14*, p. 4.

17 MCA, *op. cit.*, pp. 1, 8.

share of the market in regions where nuclear power is expanding, notably North Asia. For example, China plans to more than quadruple its nuclear power capacity to 40 gigawatts electrical (GWe) (to four per cent of total projected electricity demand) by 2020.¹⁸

9.10 In relation to exports of uranium to China, Cameco noted that the Canadian Government has already negotiated a bilateral agreement for sales of uranium to China and has also exported nuclear reactor technology to that country. Similarly, the US Government has permitted Westinghouse and General Electric to sell their reactor technology to China.¹⁹

9.11 The Australian Nuclear Association (ANA) argued that the size of Australia's uranium resources means that:

It is almost self-evident that if a country owns around 40 per cent of the world's resources, whether it be uranium or nickel or copper, that must have great strategic importance in the world's thinking if that is a material which is an important resource for energy production – in this case, mainly electricity production. Even 25 per cent production of the world's low-cost uranium sold to the world is a very important strategic amount. It is likely that this percentage will increase even more, and therefore it will become even more strategically important to many countries that have invested large amounts of money in putting in place nuclear power programs in their own countries. It is almost self-evident that it must have great strategic importance.²⁰

9.12 As described in chapter three, should the proposed expansion of Olympic Dam proceed, this would double Australia's current national uranium production.²¹ Olympic Dam would also become the world's largest producer, accounting for over 20 per cent of total world uranium production.²²

18 UIC, *op. cit.*, p. 12.

19 Mr Jerry Grandey (Cameco Corporation), *Transcript of Evidence*, 11 August 2005, p. 4.

20 Dr Clarence Hardy (ANA), *Transcript of Evidence*, 16 September 2005, p. 52.

21 Mr Aden McKay (Geoscience Australia), *Transcript of Evidence*, 5 September 2005, p. 3.

22 BHP Billiton Ltd, *Exhibit no. 78, Presentation by Dr Roger Higgins*, p. 3.

Energy security

If international tensions are to be reduced and the prospects of a peaceful global environment enhanced, the importance of national and international energy security cannot be over-emphasised.²³

- 9.13 Secure energy supplies are vitally important, both for industrialised and developing countries. As discussed in chapter four, nuclear power has relatively low operating and fuel costs. These costs are controllable. The price of the electricity produced is relatively insensitive to fluctuations in the uranium price. These features mean that:

... countries that go nuclear have a security of supply. Throughout the lifetime of the plant the fuel cost is not going to change very much, so they can guarantee some values for their electricity costs over that period.²⁴

- 9.14 Mr Jerry Grandey, President of Cameco Corporation, also pointed to the energy security benefits of uranium in an environment where fossil fuel prices are rising and where oil is largely sourced from unstable regions of the world:

Nothing focuses one's attention like \$50 or \$60 oil. Nothing focuses one's attention like having half the US defence budget dedicated to making sure that oil continues to flow. All of a sudden, security of supply – and uranium is quite advantageous in that regard – becomes a tremendous benefit.²⁵

- 9.15 Australia's potential contribution to maintaining a secure supply of energy is related to its geographical location and political stability. As noted by the UIC, vast resources of traditional fossil fuels (more than 60 percent of the world's oil and 40 per cent of its gas) are concentrated in the Middle East – a region where 'historically, political instability has translated into very volatile prices.'²⁶ The MCA concurred with this view, noting that geopolitical tensions have contributed to significant rises in fossil fuel prices, ultimately increasing the price of electricity:

23 Australian Science and Technology Council (ASTEC), *Australia's role in the nuclear fuel cycle – A report to the Prime Minister*, Australian Government Publishing Service, Canberra, 1984, p. 5. Commonly referred to as the 'Slatyer report', after the Chairman of the Council, Professor R O Slatyer.

24 Dr Ron Cameron (ANSTO), *Transcript of Evidence*, 13 October 2005, p. 9.

25 Mr Jerry Grandey, *op. cit.*, p. 17.

26 UIC, *op. cit.*, p. 9. See also Mr Ian Hore-Lacy, *op. cit.*, p. 89.

These price increases, representing 50% for oil, 100% for coal and 50% for natural gas in Europe, and 100% in the United States, have pushed electricity prices up by 15% to 20% on average.²⁷

- 9.16 In contrast, uranium is plentiful in many regions around the world (notably, North America, Europe, Africa and the Asia-Pacific) and that, therefore, 'in the event of interruption to production in one region, the impact on the entire market would be much less severe than for oil or gas.'²⁸
- 9.17 DEH also noted that countries expanding the use of nuclear power are doing so 'generally, for reasons wider than greenhouse gases. It is generally to do with having a secure energy supply and having a wide variety of supplies to protect energy security.'²⁹
- 9.18 The MCA noted that energy demand will grow as China and India continue to develop.³⁰ It was suggested that the demand for Australian uranium would intensify, as China and India increasingly look to uranium to provide a secure source of energy.³¹
- 9.19 Australia, by virtue of its abundant uranium resources, could therefore make a significant contribution to the security of global energy supplies by being a reliable, long-term uranium supplier.³²

Global energy imbalance

- 9.20 A number of submitters highlighted, with concern, the global energy imbalance. For instance, Arafura Resources noted that:

... power generation and consumption is heavily skewed toward developed countries. Of all the electricity generated across the world 75% is consumed by developed and industrialised countries while the remaining 25% is used in underdeveloped or developing countries. But demand by developing countries for power generation is constantly increasing as they look to improve their domestic economies through industrial development.³³

27 MCA, *op. cit.*, p. 3.

28 UIC, *loc. cit.*

29 Mr Barry Sterland (DEH), *Transcript of Evidence*, 10 October 2005, p. 14.

30 MCA, *op. cit.*, p. 8.

31 *ibid.*

32 ASTEC, *loc. cit.*

33 Arafura Resources NL, *Submission no. 22*, p. 2.

- 9.21 Information published by the IEA states that 1.6 billion people worldwide currently have no access to electricity and the demand for electricity from developing countries is expected to more than triple by 2030.³⁴
- 9.22 The Director General of the IAEA, Dr Mohamed ElBaradei, has noted the importance of nuclear energy in correcting the imbalance of energy availability between developed and developing countries:
- Per capita electricity consumption in Ghana is only about 300 kilowatt-hours per year, and in Nigeria it's closer to 70 kilowatt-hours per year ... Contrast that with France, where per capita consumption is over 7300 kilowatt-hours per year ... slightly less than the OECD average of 8000 kilowatt hours per year, and well below the consumption rates, for example, in Scandinavian countries.³⁵
- 9.23 The Uniting Church (Synod of Victoria and Tasmania) submitted that there is a need to re-examine 'the glaring differences in the use of energy in the wealthier and poorer parts of the world.'³⁶ Notwithstanding this concern, the Uniting Church did not accept that nuclear energy is necessarily the solution to the global energy imbalance.³⁷
- 9.24 The MCA observed that Australia is endowed with 'significant, diverse and high quality energy resources'.³⁸ Australia's own energy needs are well catered for as the country possesses 'some 800 years supply of lignite in Victoria, some 290 years supply of black coal in Queensland and NSW and large natural gas resources.'³⁹ Other countries, however, are not so fortunate and must import fuel to meet their electricity generation requirements. Among these are developing Asian countries, notably China.⁴⁰
- 9.25 Evidence presented to the Committee stated that China intends to meet at least part of its growing demand for energy through a significant expansion of the use of nuclear power. As noted above, China is planning a fivefold increase in nuclear capacity to 40 GWe by 2020. The expansion will require the construction of two nuclear power plants every year over

34 IEA, *loc. cit.*; IEA, *CO₂ Emissions from Fuel Combustion 1971–2003*, IEA/OECD, Paris, 2005, p. xvii.

35 Dr Mohamed ElBaradei, *Nuclear Power: Preparing for the Future*, IAEA, Paris, 21 March 2005, viewed 19 May 2006, <<http://www.iaea.org/NewsCenter/Statements/2005/ebsp2005n004.html>>.

36 Uniting Church in Australia (Synod of Victoria and Tasmania), *Submission no. 40*, p. 6.

37 *ibid.*

38 MCA, *op. cit.*, p. 10.

39 *ibid.*

40 *ibid.*; Mr Ian Hore-Lacy, *op. cit.*, p. 89.

the period.⁴¹ India is currently constructing eight nuclear power plants and intends to triple nuclear generating capacity to 20 GWe by 2020. India intends that by 2050 nuclear power will contribute 25 per cent of the country's electricity – a hundredfold increase on 2002 nuclear generating capacity.⁴²

9.26 Arafura Resources argued that the global energy imbalance has meant that:

Generating power from uranium must become an essential part of the process of sustaining economic growth, maintaining the developed world's lifestyle, improving the living standards of developing economies and saving the environment. A cheap clean source of power will allow these countries to develop their own natural resources and help lift their populations out of the poverty rut.⁴³

9.27 Similarly, Mr Andrew Parker submitted that 'Australia should ensure that enough uranium and thorium is available to our regional trading partners who are not well endowed with either oil or uranium reserves.'⁴⁴

Economic benefits derived from Australia's uranium industry

*A responsible approach to our great natural resource could reap Australia major economic benefits.*⁴⁵

9.28 The strategic importance of Australia's uranium resources lies partly in the extent to which they can generate economic benefits. Uranium exploration and mining in Australia has produced the following economic benefits:

- employment;
- regional development and infrastructure;
- export earnings;
- benefits for Aboriginal communities;
- royalties, taxes and fees paid to governments;

41 Mr Alan Eggers, *op. cit.*, p. 1.

42 UIC, *Nuclear Power in India and Pakistan*, Nuclear Issues Briefing Paper No. 45, viewed 1 June 2006, <<http://www.uic.com.au/nip45.htm>>.

43 Arafura Resources NL, *op. cit.*, pp. 4–5. See also: Dr Mohamed ElBaradei, *loc. cit.*

44 Mr Andrew Parker, *Submission no. 3*, p. 3.

45 Arafura Resources NL, *op. cit.*, p. 8.

- 9.29 Southern Gold predicted that further expansion of the industry would result in numerous economic benefits:

Further development of the industry would involve large-scale construction projects, investment in plant and equipment, community infrastructure, employment creation, increased Government revenues and greater export earnings.⁴⁶

Employment

- 9.30 Heathgate Resources noted that although the company is the smallest and the newest uranium producer in Australia, it directly employs 100 people and, together with those indirectly employed, a total of almost 300 people – almost all of whom are located in regional Australia.⁴⁷ The company expressed pride in the fact that it is the largest private employer of Aboriginal people from the Flinders Ranges, with approximately 25 per cent of the mine site workforce drawn from this area.⁴⁸

- 9.31 ERA is also a significant employer in the Northern Territory (NT), with an annual payroll of \$45 million:

The company is the dominant contributor to the Alligator rivers regional economy, employing more than 300 permanent, full-time and fixed-term contract staff, including at present 45 Aboriginal staff. Many more contractors, subcontractors and local businesses are also dependent on the company's business.⁴⁹

- 9.32 Olympic Dam in South Australia currently employs some 1 750 people at the mine site, with a further 6 240 jobs indirectly generated by the mine across the State.⁵⁰

- 9.33 Nova Energy estimated that \$1 million of uranium industry expenditure generates 13 full time equivalent (FTE) jobs in Australia.⁵¹ It assessed that uranium mining in Western Australia (WA), if permitted, would generate 20 800 FTE positions nationally.⁵²

46 Southern Gold Ltd, *Submission no. 54*, pp. 7–8.

47 Mr Mark Chalmers (Heathgate Resources), *Transcript of Evidence*, 19 August 2005, p. 96; Heathgate Resources, *loc. cit.*

48 *ibid.*

49 Mr Harry Kenyon-Slaney (ERA), *Transcript of Evidence*, 24 October 2005, p. 46.

50 The South Australian Centre for Economic Studies (SACES), *The Gross Economic Impact of the Proposed Expansion of Olympic Dam on the South Australian Economy*, SACES, Adelaide, 2005, pp. i–ii.

51 Nova Energy Ltd, *op. cit.*, p. 13.

52 *ibid.* See also: Eaglefield Holdings Pty Ltd, *Submission no. 18*, p. 5; Compass Resources NL, *Submission no. 6*, p. 4.

Regional development and infrastructure

- 9.34 The Director of National Parks, Mr Peter Cochrane, noted that the Ranger mine generates a range of benefits for the people living in the region and is extremely important for the viability of the Jabiru township

I understand that nearly half the current population of Jabiru is associated with the mine and mineworkers' families, so the mine has a very significant economic benefit for the region. Clearly, the town is of a sufficient size to warrant the current school, health clinics and other key services which my staff and their families enjoy, as do Aboriginal residents of the park and the wider region. So the mine has a significant economic impact on the region.

- 9.35 Moreover, Mr Cochrane argued that if the mine were to close the costs to maintain the town, including electricity generation, would then have to be borne by government:

... if half the town population disappears with the closure of Ranger uranium mine then those services – presumably – will not be provided at anywhere near the current level. That would have an impact on the region and on my capacity to staff the park as well ... The power generation for the town is currently supplied by the mine. That alone would be a significant impost in the future on some government or other entity that would be responsible for providing power to the township and the surrounds. I cannot comment on what a halving of the town population would mean for things like the viability of the supermarket or banking services et cetera. But my guess is that as soon as you start halving the size of the town you probably have a greater impact than halving the size of the associated services.⁵³

- 9.36 ERA credits its work in Jabiru as galvanising:

... much of the infrastructure in the area – roads, the power station, housing and of course the money that is returned to the area through employment, services and taxes.⁵⁴

The company has provided much of the infrastructure for the town of Jabiru, an important service centre for the Kakadu National Park.⁵⁵

- 9.37 In addition to the infrastructure and services that support the mine and the Jabiru township, such as roads and the construction of the power
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53 Mr Peter Cochrane (DEH), *Transcript of Evidence*, 10 October 2005, p. 8.

54 ERA, *op. cit.*, p. 9.

55 Mr Harry Kenyon-Slaney, *op. cit.*, p. 46.

plant, Mr Harry Kenyon-Slaney noted that ERA is also involved in supporting a range of social programs with the local community.⁵⁶

9.38 Areva detailed the economic benefits of the uranium industry for regional areas:

... the most significant contribution of the industry is at a more regional level where it significantly impacts on:

- a) Housing and infrastructure, through the establishment of mining facilities and access roads, railways ...
- b) Local employment, usually promoted as part of the various approval processes
- c) Health monitoring of local employees
- d) Training and education: ongoing training of on-site personnel is considered standard practice in the mining industry and the uranium mining industry is no exception, with a special emphasis on occupational health and safety
- e) Sports and recreation, usually benefiting not only the mine site but also surrounding communities.⁵⁷

9.39 The Northern Territory Minerals Council (NTMC) cited a study entitled the *Contribution of the Ranger uranium mine to the Northern Territory and Australian economies*, which found that the Ranger mine and directly related activities accounted for seven per cent of the Territory's economic activity between 1981–82 and 1991–92, some \$5.3 billion in 1991–92 terms. The NTMC asked the Committee to:

Imagine what one new uranium mine of that size could do for the Northern Territory, its economy and its people, let alone if we could have two more mines.⁵⁸

9.40 Eaglefield Holdings, owners of the Mulga Rock deposit (MRD) in the eastern regions of the WA goldfields, pointed out that uranium deposits, particularly in WA, tend to be located away from existing mining areas.⁵⁹ Development of uranium deposits could therefore have regional benefits and support the development of other resource projects:

As a consequence of that, the development of uranium deposits, particularly in WA, would see the development of infrastructure in parts of Western Australia which are presently devoid of any infrastructure. I am talking primarily about access,

56 *ibid.*, p. 55; ERA, *op. cit.*, p. 4.

57 Areva Group, *op. cit.*, p. 15.

58 Ms Kezia Purick (NTMC), *Transcript of Evidence*, 24 October 2005, pp. 32–33.

59 Mr Michael Fewster (Eaglefield Holdings Pty Ltd), *Transcript of Evidence*, 23 September 2005, p. 24.

accommodation and other types of infrastructure. A consequence of the installation of that infrastructure would be to allow the development of other resource projects of great benefit to the region.⁶⁰

Export income

9.41 The Association of Mining and Exploration Companies (AMEC) argued that uranium mining makes a significant contribution to the nation's finances by generating export income:

Australia's uranium export revenue was A\$410 million in 2004, and the industry is thus worth some A\$1 billion per year to the Australian economy, and is forecast to increase.⁶¹

9.42 The UIC noted that in 2004–05 uranium exports were worth A\$475 million. Over the five years to mid 2005, Australia exported 46 600 tonnes of uranium oxide with a value of over \$2.1 billion to eleven countries around the world.⁶²

9.43 Arafura Resources highlighted the dramatic increase in uranium export revenue over recent years:

Between 2002 and 2004 our uranium exports generated about A\$400 million per annum in revenue when uranium prices were between US\$10 and US\$15 per lb. Uranium prices have now increased to almost US\$25 per lb which means our exports have grown in value to A\$650 million.⁶³

9.44 Eaglefield Holdings also suggested that uranium mining in WA could also increase exports of LNG and other commodities.⁶⁴ The major export markets for uranium are also major or emerging markets for LNG, a commodity in which Australia has a smaller competitive advantage. Eaglefield suggested that sales of uranium to such markets could be made contingent on purchases of LNG and other commodities.⁶⁵

9.45 Eaglefield Holdings claimed that uranium mining in WA could deliver economic benefits through the establishment of related industries. It submitted that the production of uranium from the MRD would create

60 *ibid.* See also: Eaglefield Holdings Pty Ltd, *loc. cit.*, p. 5.

61 AMEC, *Submission no. 20*, p. 4.

62 UIC, *Australia's Uranium and Who Buys It*, Nuclear Issues Briefing Paper No. 1, viewed 1 June 2006, <<http://www.uic.com.au/nip01.htm>>.

63 Arafura Resources NL, *op. cit.*, p. 7.

64 Eaglefield Holdings Pty Ltd, *op. cit.*, p. 6.

65 *ibid.*

industries for the production of related commodities, such as scandium and synthetic oil.⁶⁶

- 9.46 A number of submitters highlighted the potential contribution of uranium mining to the Australian economy, particularly in relation to the national balance of payments.⁶⁷ The UIC noted the importance of uranium exports for the national economy, particularly through foreign investment and in the event of a downturn in demand for coal and other fossil fuel exports:

In terms of Australian domestic strategic considerations, uranium is an important 'hedge' for the balance of payments. It will help offset the negative impact on Australia's coal exports of any international move to reduce global carbon emissions, with any fall in coal-fired power generation stimulating demand for alternative fuel sources such as uranium.⁶⁸

- 9.47 Paladin Resources argued that the uranium and coal industries are complementary:

Australia's uranium exports "neutralise" the carbon content of Australia's thermal coal exports by generating in our customers' countries an amount of carbon-free electricity to balance the inevitable carbon emissions of burning the coal equivalent.⁶⁹

Indeed, Paladin contended that uranium exports should earn credits against carbon taxes, where these exist.⁷⁰

Benefits for Aboriginal communities

- 9.48 Southern Gold predicted that an expanded uranium industry would have benefits for Aboriginal groups and regional Australia, through the creation of employment, provision of royalties and establishment of new infrastructure.⁷¹
- 9.49 ERA pays 4.25 per cent of net sales via the Commonwealth to the Aboriginal Benefits Trust Account for distribution to the Aboriginal owners. In addition, ERA pays 1.25 per cent of net sales via the Commonwealth to the NT to cover the costs of administration.⁷² During 2005, ERA paid \$10.2 million in royalties from the Ranger operation to the

66 *ibid.*, pp. 6–9.

67 See for example: UIC, *op. cit.*, pp. 2, 12; Jindalee Resources Ltd, *Submission no. 31*, p. 4; AMEC, *op. cit.*, p. 6; Summit Resources Ltd, *Submission no. 15*, pp. 7, 18, 36.

68 UIC, *op. cit.*, p. 12.

69 Paladin Resources Ltd, *op. cit.*, p. 4.

70 *ibid.*, p. 5.

71 Mr Cedric Horn (Southern Gold Ltd), *Transcript of Evidence*, 19 August 2005, p. 13.

72 Geoscience Australia, *Submission no. 42*, p. 8.

Australian Government, with these funds ultimately distributed to the Traditional Owners, the Mirrar Gundjehmi people.⁷³

- 9.50 Heathgate Resources pays over \$1 million per year in native title royalties to the Indigenous community. In addition to the royalty payments, Heathgate also argued that the establishment of the Beverley uranium mine has delivered employment benefits to the Adnyamathanha and Kuyani people, traditional claimants to the land, with Aboriginal persons from the local area comprising 25 per cent of Beverley's workforce. The company also makes community and administration payments.⁷⁴
- 9.51 As the Northern Land Council (NLC) explained, sections 63 and 64 of the *Aboriginal Land Rights (Northern Territory) Act 1976* (ALRA) provide that amounts equal to mining royalties received by the Commonwealth or the NT governments from mining on Aboriginal land must be paid into the Aboriginal Benefits Account (ABA), with amounts received by the ABA distributed as follows:
- 40 per cent to meet the administrative costs of land councils (in such proportions as the Minister determines);⁷⁵
 - 30 per cent to the relevant land council to forward within six months to Aboriginal associations the members of which live in, or are the traditional Aboriginal owners of, the area affected by mining operations; and
 - 30 per cent, as directed by the Minister, paid to or for the benefit of Aboriginals living in the NT.⁷⁶
- 9.52 In the case of royalties from the Ranger operation, the NLC forwards payments to the Gundjehmi Aboriginal Corporation (GAC). Thus, for royalties paid by ERA in 2005, the Traditional Owners were entitled to receive approximately \$3.06 million.
- 9.53 However, the NLC argued that royalties are not substantial and are spread thinly. To increase the returns to Aboriginal people, it was argued repeatedly that land councils should be empowered under the ALRA to enter into commercial mining agreements with mining companies:

People seem to think that there is a golden mile club out at Jabiru.
The reality is that the money does not go very far at all. That is

73 Mr Harry Kenyon-Slaney, *op. cit.*, pp. 46, 55; ERA, *op. cit.*, p. 4. ERA, *2005 Annual Report*, p. 18. viewed 27 June 2006, < <http://www.energyres.com.au/corporate/era-ar-2005.pdf>>. See also: Nova Energy Ltd, *op. cit.*, pp. 12–13.

74 Heathgate Resources Pty Ltd, *Submission no. 49*, p. 3. See also: AMEC, *op. cit.*, p. 4.

75 Under proposed reforms to the ALRA, the amount currently distributed to land councils for administrative costs (40 per cent) will be abolished and replaced with annual appropriations.

76 NLC, *Submission 78.1*, p. 2.

why we are talking today about the requirement for part 4 to allow us to enter into commercial mining agreements.⁷⁷

Royalties, taxes and fees paid to governments

9.54 The uranium industry generates revenue for the government through the payment of various taxes and fees. As AMEC noted:

Uranium mining contributes to the economy in the form of corporate and PAYE income taxes, indirect taxes and royalties ...⁷⁸

9.55 ERA stated that, in nominal terms, the company has paid more than \$700 million in income taxes since the project commenced in 1980. During that period, the Ranger mine has paid a total of \$220.9 million in nominal terms in royalties, which are levied at 5.5 per cent of sales revenue. In 2005, ERA paid \$2.9 million in royalties to the Australian Government for distribution to the NT Government.⁷⁹

9.56 Heathgate Resources stated that the Beverley uranium mine contributed some \$50 million per annum to state economies, through the payment of royalties, taxes, wages and payments to suppliers.⁸⁰

9.57 Eaglefield Holdings suggested that uranium mining royalties and other taxes paid to state governments reduce the taxation burden on the community.⁸¹ It estimated that, in the event that uranium mining is permitted in WA, uranium mining could potentially deliver \$30 million per annum, in royalties alone, to the state government.⁸²

Proposed expansion of Olympic Dam

9.58 Chapter three described the proposed expansion of the Olympic Dam copper-uranium mine. The expansion will involve an investment of up to US\$5 billion. During the four-year execution phase, the company will employ an average of 5 000 construction workers, with peaks of up to double this number. The expanded mine may require the construction of significant additional infrastructure, including a possible rail line from Pimba to the mine, a desalination plant and gas pipe lines from Moomba to Olympic Dam.⁸³

77 Mr Norman Fry (NLC), *Transcript of Evidence*, 24 October 2005, p. 24.

78 AMEC, *op. cit.*, p. 4.

79 Mr Harry Kenyon-Slaney, *op. cit.*, pp. 46, 55; ERA, *op. cit.*, p. 4; ERA, *2005 Annual Report*, *loc. cit.* See also: Nova Energy Ltd, *op. cit.*, p. 13.

80 Heathgate Resources, *Exhibit no. 57*, *op. cit.*

81 Eaglefield Holdings Pty Ltd, *op. cit.*, p. 5.

82 *ibid.*

83 Dr Roger Higgins (BHP Billiton), *Transcript of Evidence*, 2 November 2005, pp. 7, 16. See also: UIC, *op. cit.*, pp. 12-13.

9.59 A study commissioned by the mine's former owners, WMC Resources, estimated the economic impact the proposed expansion would have on the SA economy. At present, it is estimated that there are some 6 240 jobs associated with Olympic Dam throughout the State and 1 750 directly employed at the mine. With the expansion, direct employment would increase to 3 250, with 14 660 associated jobs in SA. Table 9.1 summarises the economic impact of the proposed expansion.

Table 9.1 Economic benefits of Olympic Dam and the proposed expansion

	Olympic Dam today	Expanded (2013+)
Direct employment at Olympic Dam	1 750 full-time	3 250 full-time (plus an average of 5 000 workers during the four-year construction phase)
Location	Roxby Downs 80% Fly-in-fly-out (FIFO) / Drive-in-drive-out (DIDO) 20%	Roxby Downs ~85% FIFO/DIDO ~15%
Indirect employment (associated with Olympic Dam throughout SA)	6 240	14 660
Sales revenue (per year)	\$1.1 billion	\$2.7 – 3.2 billion
Royalties (per year)	~\$35 million	\$70 – 80 million
Payroll tax (per year)	~\$6 million	\$9 – 10 million
Contribution to SA's overseas exports (per cent)	12%	~15%
Contribution to Gross State Product (GSP) (\$ in 2004 prices and percentage of State GSP)	\$1.04 billion (2% of GSP)	\$2.43 billion (3% of GSP)

Source The South Australian Centre for Economic Studies (SACES), *The Gross Economic Impact of the Proposed Expansion of Olympic Dam on the South Australian Economy*, SACES, Adelaide, 2005; Michael Nossal, *Olympic Dam Development Study*, WMC Resources, Melbourne, 2004, p. 10; BHP Billiton, *Exhibit no. 56, Olympic Dam Development Pre-feasibility Study*, p. 18. Figures in Australian dollars.

9.60 The aggregate impact of the expanded mine on gross state product (GSP) would be of the order of three per cent of South Australia's GSP. Production from the mine would account for approximately 15 per cent of the State's overseas exports:

Thus Olympic Dam's contribution to South Australia's GSP would increase by about \$1.4 billion and the number of jobs associated with its activities would increase by about 8,400.⁸⁴

9.61 In addition to these benefits, the expanded mine would generate up to three times the current sales revenue (up to A\$3.2 billion annually), double the current royalty payments (to \$80 million). Payroll tax would also rise significantly.⁸⁵

Valhalla, Skal and Andersons

9.62 Summit Resources, which owns uranium deposits in Queensland that it is currently prevented from developing, is another example of the potential significance of uranium mines to regional economies. Once a mining lease is granted, Summit Resources intends to initially produce six million pounds of U₃O₈ per year (2 750 t). This will make it Australia's third largest uranium mine. After three years, the company proposes to scale up production to nine million pounds (4 000 t) per year. The mine life will initially be 10 years (based on current measured and indicated resources), but there is potential for this to be extended to over 20 years.⁸⁶

9.63 The company has estimated that it will outlay \$400 million in capital expenditure in the district of the mine and spend another \$600 million in operating costs, largely on wages and contractors in the district. Export revenues would be \$2.5 billion over six years. The company will employ some 600 people in the initial mining and construction phase and about 400 to 500 full time employees on an on-going basis. In addition, Summit will generate royalties in the order of \$55 million over six years as well as taxation revenues.⁸⁷

Economic significance of Australia's undeveloped uranium resources

9.64 Evidence to the Committee emphasised the value of Australia's undeveloped uranium resources. Eaglefield Holdings stated that:

A Government should be mindful of the enormous value and income potential of these resources to the people of the state if considering policies that seek to sterilise them.⁸⁸

9.65 Areva provided an estimate of the value of the major undeveloped uranium resources in each state, which are listed in table 9.2. Areva estimated the possible revenues that might be earned from the resources

85 Mr Michael Nossal, *Olympic Dam Development Study*, WMC Resources Ltd, Melbourne, 2004, p. 10.

86 Mr Alan Eggers, *op. cit.*, pp. 9–10.

87 *ibid.*, p. 5; Summit Resources Ltd, *Exhibit no. 77, Presentation by Mr Alan Eggers*, p. 32.

88 Eaglefield Holdings Pty Ltd, *op. cit.*, p. 5.

at over A\$19 billion. However, this amount is likely to significantly underestimate the current value of the resources because the estimates were made assuming a U_3O_8 price of US\$26 per pound, while the spot price has now risen to US\$43 per pound.⁸⁹

Table 9.2 Possible revenues from uranium sales for the most significant undeveloped resources in Australia

State	Orebody	Potential in-ground value (million \$A)	Total value per state (million \$A)
NT	Jabiluka	10 500	11 923
	Koongarra	917	
	Angela	506	
WA	Kintyre	1 580	5 517
	Yeelirrie	2 300	
	Mulga Rock	660	
	Manyingee	~300	
	Oobagooma	438	
	Lake Way	239	
SA	Honeymoon	123	200
	Gould's Dam	88	
Queensland	Ben Lomond	264	1 551
	Maureen	198	
	Valhalla	1 090	

Source Areva, *Submission no. 39*, p. 15.

- 9.66 Similarly, the NTMC estimated current in-ground uranium reserves in the NT at 300 000 t U_3O_8 .⁹⁰ This equates to an estimated value of some \$12 billion, based on a U_3O_8 spot price as at October 2005 of US\$30 per pound. However, Dr Ron Matthews argued that 'there is potential to double or treble that, or perhaps even more.'⁹¹
- 9.67 Recalculating the potential revenues based on the current spot price significantly increases the value of the uranium resources. For example, total uranium reserves at Jabiluka in the NT are 163 000 t U_3O_8 .⁹² At the current spot market price, the in-ground value of these reserves is approximately US\$15.4 billion (A\$20.6 billion).⁹³

89 Spot price for U_3O_8 at 1 June 2006. Uranium market prices available at <<http://www.uxc.com/>>. The in-ground value calculation also assumes an exchange rate of US\$0.78.

90 NTMC, *Submission no. 51*, p. 5.

91 Dr Ron Matthews (NTMC), *Transcript of Evidence*, 24 October 2005, p. 34.

92 Mr Harry Kenyon-Slaney (ERA), *op. cit.*, p. 49.

93 Calculation based on a spot price of US\$43 per pound U_3O_8 and an exchange rate of A\$1=US74.5c.

- 9.68 Summit Resources estimated the in-ground value of its uranium resources near Mt Isa in Queensland at over A\$3 billion at prices prevailing in November 2005.⁹⁴ Summit argued emphatically that:
- The Commonwealth government, the Queensland state government and the city and people of Mount Isa should not be deprived of the significant economic, environmental and social benefits that new and sustainable uranium mines' processing and export operations will deliver over a significant period of time.⁹⁵
- 9.69 In terms of the value of uranium resources currently 'locked up' in WA due to mining restrictions, Nova Energy estimated that the total reserves and resources in key, known uranium deposits in the state is over 190 000 t U₃O₈.⁹⁶ At the current spot market price, the in-ground value of these reserves and resources is approximately US\$18 billion (A\$24 billion).
- 9.70 It was estimated that, based on a long-term export sales price for U₃O₈ of US\$25 per pound, WA deposits would generate sales revenue of US\$1.2 billion per year (A\$1.6 billion). Moreover, Nova Energy estimated that a further A\$1.5 billion would be added annually throughout the state and the nation due to multiplier effects. Assuming the equivalent royalty to production ratio for key deposits in WA as exist for the Ranger mine in the NT, would result in royalties of A\$42 million per year.⁹⁷
- 9.71 Summit Resources estimated that the total in-ground value of known uranium resources unable to be produced nationwide due to mining restrictions is \$32 billion, based on November 2005 prices.⁹⁸ Again, given the substantial increase in uranium price in the months since then, this figure is likely to significantly underestimate the in-situ value of the resource.
- 9.72 MCA argued that restrictions on resource development now involve a higher opportunity cost because the price of uranium has trebled since 2003.

Other countries will supply if Australia chooses not to

- 9.73 A number of submitters suggested that Australia's willingness to export uranium has negligible impact on international nuclear programs, as Australian uranium could easily be replaced by supplies from other

94 Mr Alan Eggers, *op. cit.*, p. 5. This figure is likely to underestimate the value of the resource as the spot price is now considerably higher.

95 *ibid.*, p. 7.

96 Nova Energy Ltd, *op. cit.*, pp. 11-12.

97 *ibid.*, p. 12-13.

98 Summit Resources Ltd, *Exhibit no. 77, op. cit.*, p. 18.

countries.⁹⁹ Compass Resources, for example, argued that Australian uranium would be of strategic importance if it is developed, but that if development is constrained, 'marginally higher cost overseas resources will meet the demand.'¹⁰⁰

- 9.74 Compass Resources noted that while expanding Australia's uranium exports offers economic benefits to Australia and benefits to the world in terms of safeguarded uranium mined in a best practice manner, other countries will supply if Australia fails to do so:

I believe, however, that it would be a mistake to think that failure to meet the supply of uranium from Australian sources would somehow disrupt the growth of the nuclear power industry. Uranium is, after all, not a scarce or rare commodity, and, in the absence of Australian production, alternative supplies will make their way onto the market from countries well endowed with uranium resources, such as Canada, south-west Africa, west Africa and former Soviet republics, such as Kazakhstan. Logic would seem to argue that Australia, with its strong regulatory environmental position for mining operations and the adherence to the Nuclear Non-Proliferation Treaty, would be encouraging new uranium operations to meet the increased demand. In that way, we believe that Australia has an opportunity to exert world's best practice on mining operations and will play an important role in monitoring uranium through the nuclear fuel cycle.¹⁰¹

- 9.75 Similarly, Mr Keith Alder, formerly the General Manager of the Australian Atomic Energy Commission, argued that the significance of Australia's uranium resources in the global context was negligible:

... because if we decided to leave it in the ground it would not make any difference at all ... to the development of nuclear power anywhere; there is plenty of other uranium ... the Canadians would continue to laugh all the way to the bank because they have far less uranium than we do but they export far more than we do.¹⁰²

99 See for example: Compass Resources, *op. cit.*, pp. 2, 4; Mr Keith Alder, *Submission no. 7*, p. 1; R Broinowski, *Fact or fission: the truth about Australia's nuclear ambitions*, Scribe Publications, Melbourne, 2003, p. 242.

100 Compass Resources, *op. cit.*, p. 2.

101 Dr Malcolm Humphreys (Compass Resources NL), *Transcript of Evidence*, 16 September 2005, p. 61

102 Mr Keith Alder, *Transcript of Evidence*, 16 September 2005, p. 81. See also: Mr Alan Layton (AMEC), *Transcript of Evidence*, 23 September 2005, pp. 21-22; Mr Alistair Stephens (Arafura Resources NL), *Transcript of Evidence*, 23 September 2005, p. 57.

9.76 The UIC concurred, noting that:

In a strategic sense, were Australia to withhold its supply of uranium, it is becoming increasingly undeniable and inevitable that those countries needing it will seek it from elsewhere, since it is a low-cost fuel for capital intensive plants.¹⁰³

9.77 The ANF argued that if Australia were to cease exporting uranium the world's nuclear programs would continue:

We believe that world nuclear programs would continue via an early introduction of breeder reactors, so nothing else would change – except that this country would miss out on a considerable export income and would probably lose influence in world nuclear affairs.¹⁰⁴

9.78 The ANF argued that, instead, 'Australian uranium exports should be governed primarily by market forces, but consistent with non-proliferation constraints.'¹⁰⁵

Australia's place in the international fuel cycle

9.79 A number of submitters emphasised Australia's role in establishing a safe, international nuclear energy industry.¹⁰⁶ Their submissions suggested that, by virtue of its significant uranium reserves and growing global demand, Australia is in a position to impose strict conditions on the sale of uranium. Such conditions include comprehensive occupational health and safety and environmental regulations, as well as precautions for the safe use of uranium.¹⁰⁷ The UIC argued that:

... with the extent of the world's uranium resources it controls, Australia is uniquely placed to exercise even greater international influence to maintain the safety and security of the nuclear fuel cycle.¹⁰⁸

9.80 The Director General of ASNO, Mr John Carlson, argued that because Australia possesses some 30 per cent of the world's uranium resources recoverable at medium-level cost and is a major exporter means that Australia occupies a significant place in the international fuel cycle and is therefore well placed to pursue non-proliferation objectives:

103 Mr Ian Hore-Lacy, *op. cit.*, p. 89.

104 Mr James Brough (ANF), *Transcript of Evidence*, 16 September 2005, p. 43.

105 *ibid.*

106 See for example: Compass Resources NL, *op. cit.*, p. 4; UIC, *op. cit.*, p. 11; Nova Energy Ltd, *op. cit.*, pp. ii, 25.

107 *ibid.*

108 UIC, *op. cit.*, p. 11.

... Australia has a major place in the international fuel cycle. It is a place which has given us very strong standing to pursue non-proliferation objectives. We are a permanent member of the IAEA board of governors. We are very active in the development of non-proliferation mechanisms. We are particularly active in the development of IAEA safeguards. I have a personal appointment as the chairman of the international advisory group that advises the IAEA in the development of safeguards and making safeguards more effective. We have substantial influence through our position as a major uranium exporter.¹⁰⁹

- 9.81 Nova Energy stated that Australian uranium is produced within a demanding regulatory regime and is exported under stringent safeguards, enabling the IAEA to track the material throughout its entire life cycle.¹¹⁰ This, it suggested, was in contrast with conditions placed upon supplies of uranium from developing countries in Asia and Africa.¹¹¹ Nova Energy argued that 'the greater the percentage of uranium produced in Australia, the greater the degree of control on its usage.'¹¹²
- 9.82 However, Mr Keith Alder noted the prominent position in international nuclear policy that Australia enjoyed in the past, and contrasted this with the minor role it now plays.¹¹³ Mr Alder argued that this transformation was due to Australia losing its 'former expertise relating to power reactors and the nuclear fuel cycle ... as a result of changes in Government policy' and observed that 'Australia's only claim to importance in nuclear matters now arises from possession of major uranium resources'.¹¹⁴
- 9.83 A number of submitters argued that it is not appropriate for Australia to export uranium to North Asia, given the geopolitical tensions in that region.¹¹⁵ Indeed, People for Nuclear Disarmament opposed such exports of uranium, claiming that 'North Asia is a nuclear disaster waiting to happen.'¹¹⁶
- 9.84 Friends of the Earth (FOE) expressed concern about stockpiles of Australian-obligated nuclear material in Japan potentially being diverted

109 Mr John Carlson (ASNO), *op. cit.*, p. 17.

110 Nova Energy Ltd, *op. cit.*, p. 9.

111 *ibid.*

112 *ibid.*

113 Mr Keith Alder, *Submission no. 7*, p. 1.

114 *ibid.*

115 See for example: People for Nuclear Disarmament NSW Inc.(PND), *Submission no. 45*, p. 9; FOE, *Submission no. 52*, p. 22; MAPW, *Submission no. 30*, p. 4; Professor Richard Broinowski, *Submission no. 72*; p. 3.

116 PFND, *op. cit.*, p. 9.

to a systematic nuclear weapons program.¹¹⁷ Even in the absence of such a program, FOE suggested that these stockpiles exacerbate tensions in the region.¹¹⁸ It argued that:

While the construction of nuclear weapons by Japan is an unlikely development, it cannot be discounted and the assessment could change quickly, for example in the event of a North Korean nuclear test ... That latent potential is an ongoing source of tension in north-east Asia – it provides both an incentive and an excuse for countries such as North Korea, South Korea and Taiwan to pursue nuclear weapons programs or to steer ostensibly civil nuclear programs in such a way as to reduce the lead-time for weapons production ...¹¹⁹

9.85 The Medical Association for the Prevention of War (MAPW) contended that any expansion of the Australian uranium industry was 'indefensible', arguing that:

Any activity which has significant potential to increase the number of nuclear weapons, the number of countries or other entities possessing them, and/or the possibilities for their use, or lowers the threshold for their use, therefore magnifies what is already the greatest immediate risk to human health and survival.¹²⁰

Conclusions

9.86 Uranium is Australia's second largest energy export in thermal terms, which is of great importance given predictions for an increase in energy demand over the coming decades, particularly in developing countries.

9.87 The Committee concludes that nuclear power represents a significant means of addressing the global energy imbalance. It is an important component of the global energy mix, which can provide developing countries with access to the energy required to fuel their industrialisation and particularly their electricity requirements.

9.88 Uranium production currently generates considerable economic benefits and has the potential to make such contributions in states that currently prohibit uranium mining. In recognising the economic benefits of the industry, the Committee is conscious that failure to permit the

117 FOE, *op. cit.*, p. 22. See also: *ibid.*

118 FOE, *loc. cit.*

119 FOE, *op. cit.*, p. 23–4.

120 MAPW, *op. cit.*, p. 4.

development of the industry has corresponding costs. Such costs include loss of the industry's current and potential contribution to the national and state economies, regional development, services and employment in Aboriginal communities and further promotion of Australia's role in the international nuclear community. As pointed out by Jindalee Resources, the cost to Australia of limiting the development of the uranium industry is:

... the loss of uranium exploration investment and expenditure, regional development and employment opportunities, royalties and tax receipts, both State and Federal, export income and contributions to the balance of payments.¹²¹

Impediments to the uranium industry are discussed in greater detail in chapter 11 of this report.

- 9.89 The Committee notes that while precise estimates of the value of undeveloped uranium resources varies, one conservative estimate suggests that the locked up uranium in Australia could earn revenues in excess of A\$32 billion (at prices prevailing in November 2005). Sales of uranium from WA alone could generate revenues of A\$1.6 billion per year.
- 9.90 In summary, the Committee concurs with the view expressed by the UIC, which argued that Australia's uranium resources provide an opportunity, 'reflecting a happy coincidence of national self-interest and environmental altruism.'¹²²
- 9.91 It was submitted that exports of uranium into North and East Asia may raise broader geopolitical issues, such as tensions between China, Japan, Taiwan and the Koreas. The Committee does not agree, however, that increased exports of uranium to these countries will necessarily or appreciably add to any regional tensions.
- 9.92 Notwithstanding the potential benefits, the Committee was reminded in evidence of an observation made by the Slatyer report 22 years ago, that further expansion of the nuclear power industry will not be dependent on Australian uranium and will proceed irrespective of whether or not Australia supplies uranium.¹²³ If Australia fails to supply then marginally higher cost overseas resources will be supplied to meet global demand, and these resources may not be provided to the market with the same safeguards and other regulatory requirements imposed on Australian

121 Jindalee Resources Ltd, *loc. cit.*

122 Mr Ian Hore-Lacy, *op. cit.*, p. 90.

123 ASTEC, *loc. cit.*

exports. However, Australia can contribute to international energy security by being a reliable and stable supplier of uranium.

- 9.93 In view of the strategic importance of Australia's uranium resources, the potential benefits from the further development of these resources, and following consideration of the fuel cycle risks summarised in the previous four chapters, the Committee concludes that development of new uranium deposits should be permitted and encouraged. In the following chapter the Committee addresses the regulatory arrangements that govern the industry in Australia.

