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Introduction to: *The Debate on Nuclear Policy in Australia, 2005-2006*

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Abstract

This introduces a series of papers which examines the arguments presented for and against the expansion of Australia's present engagement in nuclear activities — uranium mining, radioactive waste storage and, potentially, nuclear power generation. The present paper gives an overview of debate over the last two years, showing the economic, environmental, and political factors leading to a higher intensity of discussion on these matters since 2005.

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Introduction

This paper introduces a series of seven papers on the current debate on nuclear policy in Australia. The series examines arguments used on either side — for or against expansion — as they are applied in key subordinate areas of discussion. These are: what levels of demand for uranium can be anticipated; our present capacity to manage radioactive waste; the potential for the adoption of nuclear power to reduce greenhouse gas emissions; whether wider dissemination of nuclear materials will necessarily increase the numbers and availability of nuclear weapons, and the implications of a higher level of nuclear activity for questions of safety and security. A final paper considers the arguments identified overall, and concludes the series.

The core of the series is an analysis of positions outlined in a selection of six submissions to an inquiry of the House of Representatives Standing Committee on Industry and Resources (HRSCIR): the *Inquiry into the Strategic Importance of Australia's Uranium Resources*, which is part of a broader *Inquiry into developing Australia's non-fossil fuel energy industry* (House Standing Committee on Industry and Resources, 2005). Each paper in the series presents the arguments made in the submission by advocates and opponents of an expansion in Australia's nuclear activities, under the headings 'For' and 'Against'. In each paper these are then set in a wider context, under the heading 'Correspondences', linking them to opinions expressed in news sources from 2005-2006, demonstrating that the arguments raised in the submissions do indeed reflect sentiments held in the wider community, and noting important events in the debate.

The original spur for the series was the advent of two 2005 federal Government decisions. In the first, the government made itself the sole arbiter on decisions on who would have rights to mine uranium in the Northern Territory, with the intention of raising the amount of uranium mined and exported. The second was the decision to place a National Radioactive Waste Facility in the Territory to manage radioactive waste produced by the Commonwealth agencies, most of all the Australian Nuclear Science and Technology Organisation (ANSTO). Reviewing the progress of the debate, it is clear that while these continue to be important foci, we must now add a third — consideration of a domestic nuclear power capacity for Australia. The present paper reviews events surrounding each of these areas before going on to show the main elements of the wider debate that has developed around them.

The Federal takeover of Territory uranium mining

On August 5, 2005, it was reported that talks between Territory and federal Governments over uranium mining in the Territory had broken down and that, in the face of opposition by the Territory government to an expansion to uranium mining, the federal Government would exercise the superior power vested in it by law to override the Territory government and make unilateral determinations on uranium mining in the Territory (Trembath, 2005; Murdoch, 2005). According to report, the federal Government 'always had ultimate control over uranium in the Northern Territory', but under

> a deal struck with the previous CLP Government, the Commonwealth agreed to share those powers with the Territory, effectively giving it the right to veto any expansion of the uranium industry (Barker, 2005b).

At that stage the Territory Labor government adhered to the 'three mines' policy adopted by federal Labor in the 1980's, putting it on a collision course with the federal Government.[1]

There is one uranium mine currently operating in the Territory: the Ranger mine in Kakadu National Park. Australian Bureau of Statistics figures for Mining Operations show that for the financial year 2002-03 (the most recent available figures for Australian states and territories), Territory uranium mining was valued at $AUD 154.1 million, equivalent to approximately 1.7% of the Northern Territory Gross State Product at $9,064 million. In the same 2002-03 financial year the value of uranium mining in South Australia amounted to $153.4 million, giving a total value for uranium mining in Australia of $307.5 million (Australian Bureau of Statistics, 2004b, p.42).

To get a sense of perspective — on the value of uranium mining relative to the broader context of mining in Australia — we must resort to another source. Figures produced by the Australian Bureau of Agricultural and Resource Economics (ABARE) do not give separate entries for States and Territories, but do provide a basis for national comparisons across commodities. ABARE quotes a total export value of $427 million for Australian uranium oxide in 2002-03. For the same year, comparisons are: $11897 million for coal exports, $6402 million for 'Crude oil and other refinery feedstock', $5133 million for gold, $3660 million for alumina, $3696 for aluminium, and $2607 million for natural gas (Australian Bureau of Statistics, 2004a, p.508, table 16.22). In short, it is no exaggeration to say that revenue from uranium mining is dwarfed by that of other commodities — a fact that is often overlooked in more optimistic expressions of sentiment on the benefits of uranium exports (Trounson, 2005).

An associated question that has emerged over the last twelve months is whether Australia should enrich the uranium it exports. Currently Australian exports leave the country in an un-enriched form as uranium dioxide or 'yellow cake'. A number of nuclear proponents, including John Howard and ALP resources spokesman Martin Ferguson, have called for enrichment to be considered as part of an expansion in Australia's nuclear activities (Uren, 2006; Maiden, 2006b). There are several threads to this argument: that Australia would get better value from its uranium reserves (Uren, 2006; Kerr, 2006); that international nuclear security would be better served by limiting enrichment to a small number of 'reliable' countries — Australia amongst them (Minchin, 2006; Maiden, 2006). On the other hand, some sources suggest that 'the global uranium enrichment market is already oversubscribed', raising a question mark over whether present-day optimism about markets for nuclear materials is well founded (Hodge, 2006). The other objection

[1] Recently the Territory Government changed its position. See (AAP Australian National News Wire, 2006).

raised is that uranium enrichment stands to add radioactive waste byproducts, in Australia, to those already produced in the mining process — a feature of the production cycle that is commonly overlooked (Hodge, 2005).

Amongst those arguing the affirmative case, there is also a wider vision: that Australia should embrace a wide range of functions within the nuclear fuel cycle — mining, enriching, using and storing waste products from uranium as part of a coherent body of nuclear activities (Minchin, 2006). In these arguments, there is a sense that involvement in one strand of nuclear activity *entails* involvement in another. Indeed, there may be something in this: a less partisan source makes the point that proposals for 'lease-back' arrangements, for example, on nuclear fuel, if implemented, would call on a local capacity to enrich uranium, which Australia would possess if it had chosen to adopt nuclear power (Grattan, 2006). But deductions from this argument can go either way: either as an argument for expansion ('if we mine it, we should use and store it') or against it ('if we are not prepared to store it, then let's not mine it'). In either case, conceptual linking between different elements is a feature of the debate, which the present series aims, specifically, to address through its scope and design.

The National Radioactive Waste Facility

The decision to site the National Radioactive Waste Facility in the Territory is discussed in a previous issue of *Research Papers of the Parliamentary Library Service*. As discussed there, the decision to create a storage site for radioactive waste in the Territory came after a series of proposals had been rejected by other states, most recently by South Australia (Lloyd, 2006, p.7). It has provoked considerable discussion in public fora in the Territory, and given rise to the perception that residents of the Territory have less power in relation to the central government than other Australian citizens, since those in other jurisdictions have been able to frustrate similar moves. A realistic view is that placing the Facility in the Territory represents a lower level of electoral risk: the Territory's low population density makes such a move politically sustainable. A higher population would give residents greater power to organise and, potentially, place a greater numbers of votes in doubt, and a higher population density would, in any case, result in a greater sense of affront.

Consequently, the federal Government considers this a firm proposal. The time-line for the Facility flags site investigations for 2005-2006, the beginning of construction for 2010, and the beginning of operations in 2011, subject to necessary authorisations (DEST, c.2005). It is proposed that the site will be chosen out of a range of three possibilities: Mount Everard, Harts Range and Fishers Ridge - all of which belong to the federal Department of Defence (Nelson, 2005).

The stated rationale for the creation of the Facility is to consolidate and render secure the current inventory of Australian 'low and intermediate level radioactive waste', currently distributed 'over 100 locations' across Australia (Nelson, 2005). It is proposed that the Facility

will house Low Level- and Intermediate Level-Waste (ILW), arising from Commonwealth agencies only, most of all from activities at the current Hi-Flux Australian Reactor (HIFAR) and future Open Pool Australian Light Water (OPAL) research reactors at ANSTO's Lucas Heights facility. According to a media release announcing the Facility, the material to be held consists of Low Level Waste, including such items as 'laboratory gloves, clothing and glassware, luminous dials and contaminated soil' and Intermediate Level Waste, described as 'disused radiotherapy and industrial sources' (Nelson, 2005). A further, and very significant part of this second, intermediate-level category is accounted for by fifty cubic metres of waste due to return to Australia from overseas reprocessing of spent fuel from HIFAR (Nelson, 2005). This would be added to, in future, by material arising from the OPAL ('replacement') reactor at Lucas Heights (Nelson, 2005). As spent fuel, classified as 'Long-term Intermediate Level Waste', this last is a much more contentious category of material, which is capable of arousing stronger public concern.

Within the Territory opinion has been divided. At the time of the announcement, the Martin Labor government criticised Commonwealth actions on the grounds that it had not consulted Territorians before coming to a decision on the Facility, or on sites on which it might be placed (Senate Employment Workplace Relations and Education Legislation Committee, 2005, pp.2-3). There have also been concerns raised that site selection had been undertaken on an inadequate basis of factual evidence, and more specifically as to the suitability of hydrological conditions (that is, ground water movements) for the three possible sites proposed (Barker, 2005a; Salleh, 2005a; Salleh, 2005b). On the other hand, positive views were also, to an extent, voiced in contributions to the popular press, which discounted threats from radioactive materials, and adopted optimistic views of what benefits might flow to the Territory in terms of employment, revenue and infrastructure as a result of having the Facility ("Features Letters", 2005, p.13).

The way the federal Government has sought to present the case for the Facility to the wider Australian public shows that these are indeed sensitive matters. The media release announcing the Facility de-emphasised its role in storing what is, essentially, 'spent fuel' (with all of its controversial 'high-level waste' connotations) and emphasised instead the *medical* use of radioactive materials:

> Each year over 400,000 Australian patients benefit from a medical radioisotope produced in ANSTO's research reactor, including procedures used in the detection and treatment of cancer. All Australians, at least once throughout their life, will benefit from a medical procedure using medical radioisotopes. (Nelson, 2005)

This approach suggests that the federal Government anticipated negative public sentiment on the Facility, which it wished to forestall, as indeed would be consistent with the history of public sentiment on nuclear matters in Australia since the 1970s (Holland, 2004).

But if the medical imperative is one of the federal Government's reasons for proceeding with the Facility, it is not the only one. As the previous issue of *Research Papers of the Parliamentary*

Library Service suggested, analysis of other federal Government rationales indicates that prime movers for the Facility hinge on at least two other matters. First, there is the immediate need for the Commonwealth to provide a place for radioactive waste arising from its own agencies: unlike the states and territories, it has no land that lies solely within its own jurisdiction, and this leaves it with the sole option of using Crown Land within a state or territory's jurisdiction. Second, there is the tactical importance, for a government favouring an expansion in nuclear activities in Australia, of continuing to have a 'research reactor' in production, and the scientific activities associated with it. This is part of what the previous paper termed 'facts on the ground': that is, physical assets existing in the present that appear to underwrite, by virtue of their very existence, a particular course of action (Lloyd, 2006, p.18).[2]

As for other elements of the wider debate, when we look at issues surrounding radioactive waste management, it appears that there are important symbolic dimensions, and key structural connections, which link them to other parts of the overall policy 'equation'. And so it seems likely that the issue of radioactive waste management has, in wider debate, everything to do with the third leg of current debate: whether Australia should consider a domestic nuclear power program of its own.

Proposals for Nuclear Power

When the federal Government sealed its 2005 decisions on uranium mining and radioactive waste, some proposals for Australia to consider nuclear power plants had been aired, but they were few, and there was a tenuous link between them and any mainstream agenda. Indeed, commentators still regard proposals for nuclear power in Australia as "the most contentious and economically questionable aspect of the debate" (Maiden, 2006a). However, since 2005 a number of senior government figures have made more forthright statements, with a developing preparedness on their part to speak more openly in favour of this as an option. This could amount to either a natural change in the climate of opinion, where speakers have become progressively more open about expressing views that were previously considered too sensitive, or it could be a planned exercise in which softer statements prepare the way for more forthright ones. If this last were true, it would be consistent with this kind of 'agenda setting' that has been seen as one of the key characteristics of John Howard's Prime Ministership (Grattan, 2006; Lewis, 2006).

In either case, over the course of the two-year period under consideration, various other government ministers, such as Ian Campbell, Minister for the Environment and Heritage, and Ian McFarlane, Minister for Industry, Tourism and Resources — and indeed the Prime Minister himself — have adopted various positions on this question, undertaking to speak in favour of expanded uranium mining, for example, but not domestic nuclear power plants (Murphy, 2005b),

[2] 'Facts on the ground' is a phrase used by Israel to refer to its settlements in Gaza and the West Bank, implying that the settlements' presence strengthens Israel's claims for sovereignty over the areas.

and various other 'mid-point' positions that have been more positive about a liberalised regime on nuclear activities, but perhaps not as thorough-going as those voiced more recently (Schubert, Gordon and Fyfe, 2005; Khadem, 2005; Gottliebsen, 2005b; Grattan, 2006). However, a speech by Brendan Nelson, the then Minister for Education, Science and Training, figures as an important point in the debate, in which a senior government minister was prepared to state his open support for nuclear power in Australia (Maiden, 2006c). After this bolder intervention, these figures — again including the Prime Minister — have felt, over time, progressively more able to adopt, themselves, more enthusiastic positions on domestic nuclear power (Shanahan, 2006c; Shanahan, 2005b).

As for the previous two overriding strands in the debate, there are powerful linkages between proposals for domestic nuclear power and other elements in the debate. In some arguments, connections are made between more liberal regimes on uranium mining and domestic use of uranium to generate electricity, suggesting that it is inconsistent for Australia to sell uranium and not use it. Similarly, in connection with nuclear waste, questions arise as to whether Australia, which is contributing to the sum of nuclear waste world-wide by supplying fuel, should not also be prepared to accept the radioactive waste that comes from its use. This provokes questions as to whether a 'yes case' on these points is a way to make higher levels of uranium export acceptable, or whether it bespeaks an attitude that is simply in favour of a greater involvement in nuclear activities and functions in Australia across the board. Unpacking these propositions is important if we are to arrive at a better understanding of arguments now active in the public domain.

Drivers for the policy debate

Over the last two years — before and after the key announcements on mining and radioactive waste in the Territory — a number of key drivers have emerged for the nuclear debate. Amongst these there are two pivotal elements: if we understand something of these, we can understand, better, why these matters are under discussion now, and achieve a clearer perspective on the debate as a whole.

The first arises from movements in the price of uranium. It is now evident that, after a period of depressed prices for uranium on world commodity markets, prices are strengthening. In Australia, which holds a high proportion of the world's uranium reserves — generally quoted at 30% of world reserves — business interests and the federal Government have had their attention captured by this phenomenon (Bromby, 2005; Dunn, 2005). Indeed, there has been a good deal of optimistic business sentiment, evinced in bullish statements from the business sector — "in recent times, once moribund uranium prices have surged" writes one source, and continues: "no wonder the world's biggest miners are making a beeline for outback South Australia" (Trounson, 2005). These messages are reinforced by others in a similar vein:

"uranium prices are booming as demand heats up. Australia is poised to reap the rewards" (Bromby, 2005).[3]

The second imperative comes from the realisation, on both sides of politics — conservative and progressive — of the reality of global warming. For conservatives this change in attitude has occurred with some reluctance, arising from the "creeping conviction ... within the Coalition" that "global warming is real" (Shanahan, 2005c): it was, until recently, conventional for conservatives to maintain a skeptical stance on the greenhouse effect.

It is to be remembered that Australia originally signed the Kyoto Protocol — the international agreement to reduce greenhouse gas emissions — in 1997, then followed US policy by refusing to ratify the teaty (Australian Greenhouse Office, 2006). Since then it has shown itself reluctant to fall in line with treaty provisions: when John Howard was asked at one point for his thoughts on whether Australia should ratify the Kyoto protocol, he responded by saying that "the government would be selling out the interests of Australian industry and jobs if it signed the climate change protocol in its current form" (Peters, 2005). Unfortunately, Australia makes a very significant contribution to the world's total output of greenhouse gas emissions in two ways: directly, as a consumer of domestically derived coal and, indirectly, through its significant export trade in coal. Brown coal underwrites, through the low-cost energy it provides to domestic consumers, and the very considerable export income it generates, Australia's current prosperity in a fundamental way. At the same time, by virtue of the central position of coal in the Australian economy, Australia is the world's highest greenhouse gas emitter *per capita* (Minchin, 2005).

While there were sufficient numbers of prominent greenhouse skeptics — US president George Bush amongst them — and the scientific evidence could in any sense be resisted, the federal Government's position was, to some degree, sustainable. Now important figures on the international horizon, such as Tony Blair (and George Bush himself), have acceded to the reality of global warming, the current Australian federal Government cannot hold to its original position (Gottliebsen, 2005a). It must do something — or be seen to do something — or face the consequences of apparent paralysis on an issue of clear importance.

This puts the Howard government on the horns of a dilemma. Australia's present prosperity, based on a commodities boom, has the government enjoying an electoral advantage over its opponents. Adopting practical steps to reduce greenhouse gas emissions, however, brings with it the prospect of trading-off prosperity against emissions reduction, likely to result in higher energy costs on the domestic front. At the same time, there may be lower levels of demand for coal, Australia's most important export commodity, and the combined effects of these changes could have an impact on the government's electability

[3] The quotation concludes: "if the political will is there" (Bromby, 2005)

The political polarisation that comes into play on environmental and energy issues makes the government's position even more complex. For if it were to accede to demands to take a more progressive line in its response to global warming, it would run the risk of alienating its natural constituency across business and conservative circles. So it must exercise some delicacy over where lines are drawn between the interests of the environment and business. These pressures — to do something about climate change, to make efforts to maintain prosperity and the minerals boom, and to 'keep faith' with key constituents — are important factors in the government's current stance in favour of nuclear expansion. The federal Government appears to take the view, voiced recently by Tony Blair, that wide adoption of nuclear power represents a way — the only possible way — to reduce greenhouse gas emissions 'without a substantial fall in living standards' (Gottliebsen, 2005). This, then, is a kind of holy grail for those arguing the affirmative case in this debate: a nuclear powered energy regime that would allow the world's economies to maintain their present settings while reducing greenhouse gas emissions.

Whether this is an outcome that can be realised, in fact, is a matter for careful judgement. In their most optimistic moments, nuclear enthusiasts predict an exponential growth in the numbers of nuclear power plants across the world, increasing "from 440 now to more than 10,000 this century" (Wilson, 2006). Others predict the price of uranium to more than treble to US $110 a pound (Bromby, 2005). Clearly if these were to eventuate, it would have considerable significance for Australia's position, if it were in business as a large-scale vendor of uranium. But there are also skeptical voices, even within the uranium industry, that see these predictions as far-fetched (Finch, 2006).

It is interesting that those who favour these scenarios do not calculate the results for Australia in dollar terms alone. Rather, their vision has a strategic dimension in which, if it were free to export more uranium, Australia could be "in the box seat in the nuclear renaissance" (Wilson, 2006), enjoying a pivotal role in world affairs:

> Never before in Australian history have we had the dominant share of a commodity that, at least in the eyes of the British, is essential to save many of the world's coastal cities and countries such as India from largescale destruction. (Gottliebsen, 2005a)

In this view, the economic significance of higher uranium sales shares prominence with a potential for Australia to achieve a new role on the world stage. The view is that Australia can achieve, as a pivotal supplier of uranium, a strategic importance unavailable by any other means. Australia's current attention to new overseas markets for uranium in China and India, placing itself in competition with the US, could encourage — and be motivated by — this viewpoint (Murphy, 2006a; Shanahan, 2005a; Nason, 2005).

Reflecting the complexity of interconnections between different parts of the debate, the significance of domestic nuclear power for Australia's uranium export business is not always clear. Is a domestic nuclear capacity an 'advertisement' for a prize export product, or are plans for nuclear power the result of a valid 'necessary connection' between uranium export and

domestic use that is perceived in the minds of some? (Murphy, 2006a) There is an irony in that it appears, on the basis of recent reports and opinions, that domestic nuclear production, with its high capital and running costs, could only become economically sustainable if Australia were to apply the kinds of carbon tax regimes contained in the Kyoto protocols. Without such measures, or significant subsidies by government, domestic nuclear power would not be in a position to compete with low-cost electricity generated with coal, and, as noted, the present government has made a concerted stand against any such move (Doherty and Murphy, 2006; Trounson, 2006). As it turns out, even some of the material produced at the behest of the government, such as a recent report for ANSTO, suggests that domestic nuclear power would require significant tax-funded subsidies for the first decade or so of operation to be competitive with existing energy sources (Uren, 2006).

Conclusion

Inherently contentious because of the risks and rewards involved, nuclear policy in Australia is especially so at present — because there is a genuine possibility of change. At stake are things of great importance: domestic prosperity, environmental and other kinds of security, and Australia's relationship with the world. As suggested, there are several layers to the issue as a whole — climate change, export income, different ways of meeting domestic energy needs, and the political pragmatism that arises in connection with them. There are intimate ties between these different areas: consideration of expanded uranium exports, and of domestic nuclear power, for example, provokes questions over our capacity to manage radioactive waste, as it does questions over implications for security. Also implicated are questions as to the safety of nuclear power generation and the associated stores and stockpiles of materials that feed and leave the plants. There are fundamental questions as to what kind of returns Australia can expect from a liberalised regime on uranium mining: what level of demand it could expect, what variations are likely in the supply and demand, and the implications of these for proposals to adopt nuclear power in the domestic sphere. This last hinges on the interdependent questions over economic sustainability and whether nuclear power will be seen to be, ultimately, as a valid answer to global warming.

Not only is the matter contentious as a whole, but in each of its component topics. In each of these there are 'lines' run by partisans on either side, with consequences for how other matters are construed. The papers in this series consider each of these topics, sorting substantive arguments from the persuasive mechanisms used to deliver them, with the intention of contributing to a more informed approach to the debate as a whole and a wider appreciation of the key questions raised by this most important discussion.

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