

Hubbard, Christopher (2007) Uranium exports and non-proliferation: a policy coordination challenge, in *The International Expert Workshop*, The Wine Centre, North Terrace, Adelaide, 7-8 June, 2007.

“URANIUM EXPORTS AND NON-PROLIFERATION: A POLICY COORDINATION CHALLENGE”

A PAPER TO BE PRESENTED AT THE INTERNATIONAL EXPERT WORKSHOP *“URANIUM: ENERGY, SECURITY, ENVIRONMENT”*

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DATE: 7 - 8 JUNE 2007

VENUE: THE WINE CENTRE, NORTH TERRACE, ADELAIDE.

My topic today is one which is currently exercising many minds, both in Australia and further afield, and its outlines are easily described. As always, however, the devil is in the detail, so my remarks today will inevitably be both reasonably straightforward in Australian nuclear policy terms and far more complex in their implications.

The nuclear non-proliferation regime is under serious threat from a number of directions and sources in 2007. While Libya has finally renounced its nuclear weapons ambitions, North Korea continues spasmodic negotiations in Beijing on the status of its weapons program, having recently convinced the world that it is now in possession of operational nuclear explosive devices.

On the Indian sub-continent both India and Pakistan continue to confront each other with proven nuclear weapons capacities and reliable missile delivery systems. In Iran, the government defies the West in its insistence on the peaceful intent of its nuclear program, including the known establishment of at least one centrifuge enrichment cascade of some 1 300 elements, as the IAEA Inspectors now report from Natanz. While the multilateral Proliferation Security Initiative (PSI), in which Australia participates, has enjoyed some success (notably in respect of Libya's nuclear ambitions) and is growing in international recognition of its utility, there is no doubt that there exists the potential for nuclear weapons, their technologies and perhaps their delivery systems to fall into the hands of international terrorist organisations.

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Should this happen, those organisations will not hesitate to use them on the big cities of their Western and other enemies, including Australia.

Thus, there is no doubt that the nuclear non-proliferation regime is coming under increasing strain in the opening years of the new century, and there is a consequent and urgent need to reinforce those practical measures of transparency, oversight, verification against materials transfer, and ultimately denial of supply which form the NPT's operational core.

What I want to suggest is that there are emergent opportunities to do just that, and that a set of complementary circumstances, in both its domestic and foreign policy settings, will allow Australia to participate in meaningful ways in re-focusing and shoring up the NPT regime into the middle distance.

The major premises on which my analysis is based are these:

- First, Australia is, and will remain a first order and – in the future - even a dominant supplier of uranium oxide into world markets.
- Second, the global demand for uranium is more likely than not to continue to rise as atmospheric warming, energy deficits and the price electricity producers are willing to pay for uranium also climb.
- Third, efforts by Australia to strengthen the global nuclear non-proliferation regime against incipient erosion of its principal strengths will remain as a central pillar of its nuclear policy settings.
- Fourth, a coordinated policy which accounts for the inherent tension between the two fundamental elements of Australia's current nuclear engagement – its uranium export and weapons counter-proliferation activities – is both technically and politically *feasible*, and politically and economically *desirable*. It is also in Australia's national interest.

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- Finally, Australia is *more* likely than not, in the short term, to decide to establish a domestic nuclear power generation industry and comparatively *less* likely in the short to medium terms also to establish associated fuel cycle industries (such as conversion, enrichment, fabrication and reprocessing).

Given these premises, the fundamental elements of Australia's policy coordination challenge I will discuss here, expressed as policy questions, are these:

One:

How can changes to Australia's policy in the fields of uranium exploration, mining and export be expected to impinge on Australia's global counter-proliferation activities and their global recognition?

Two:

How can Australia *ensure* that the *conditions* under which it exports uranium oxide into the future contribute in *optimal* ways to maximising the strength of Australia's contribution to stemming the spread of nuclear weapons and the technologies which produce them?

And three,

How will a decision to establish a domestic nuclear power generation industry and perhaps associated fuel cycle activities *modify* Australia's uranium export and counter-proliferation policy options?

With these policy premises and challenges in mind, I want first to spend a little time discussing the most important immediate effects of changes to Australia's nuclear policy settings.

The speech by the Leader of the Opposition, Mr. Kevin Rudd to the 2007 ALP National Conference in Sydney on 28 April 2007 on Australia's uranium debate coincided with an announcement by the Prime Minister, Mr Howard, that the Australian Government had decided to proceed with preparations to accommodate the establishment of an Australian nuclear power generation industry.

Given the proximity of the next Federal election, this is not politically surprising. However, the subsequent and only narrowly-passed ALP Conference motion to do away with the Labor Party's long-standing "Three Uranium Mines" policy was less easy to predict. Its significance, though, is clear. In the event of a Labor Party victory in October, Australia will now continue to respond to commercial pressures and opportunities by ramping up uranium exploration activities (and uranium production at existing mines) as well as developing new deposits.

What consequences, then, can be expected to follow from the reality of rising levels of uranium exports, and how will those effects translate into modified counter-proliferation policy settings? At first glance, it appears that Australia already has in place a regime of conditions of uranium supply which are sufficiently robust as not to require significant modification. Their major elements are well known:

- Australia currently has in place 19 bilateral safeguard agreements covering 36 countries (including the Euratom states), with the China agreement to come.
- These agreements apply specific safeguards to Australian Obligated Nuclear Material (AONM) *beyond* the additionally obligatory standard IAEA safeguards agreement, in respect of which all non-nuclear weapon status recipient states must *also* have negotiated an Additional Protocol on full scope safeguards with the IAEA.
- Finally, its bilateral safeguard agreements require Australia's consent to the following:
 - the exclusively peaceful use of AONM
 - re-transfer to third parties of AONM *only* on the basis of internationally accepted physical security standards
 - coverage of AONM by the IAEA or fallback safeguards arrangements for the full life of the material
 - its enrichment for fuel element reprocessing involving AONM beyond 20% U235.

Taken together, the conditions under which Australia will currently agree to sell uranium to NPT signatory states are probably the most stringent in the global

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marketplace. Nevertheless, it is also probable that they will be enhanced even further by either a Coalition *or* ALP government from October 2007.

Leader of the Opposition Rudd declared in his April Conference speech that Australia has supplied uranium to an energy-hungry world for many years, and that it must continue to do so. But his caveat was that uranium exports must in the future be conducted in the context of "... [a] non-proliferation regime that is the most robust possible ...", given that the NPT, its regime, and the IAEA itself are, to use Rudd's phrase, coming under increasing duress.

How to respond to this challenge? Rudd's formula comprises the following:

- Strengthening export control regimes and the rights and authority of the IAEA.
- Tightened controls over the export of nuclear materials and technology.
- Seeking to make adherence to an IAEA Additional Protocol a mandatory condition of supply by Nuclear Supplier Group states for all relevant transfers.
- Seeking to criminalise actions by individuals and corporations who assist in nuclear proliferation.
- Sponsoring a UN Security Council resolution addressing penalties to be imposed on states for withdrawal from the NPT.

And it seems clear that the alternative Australian Prime Minister is on the right track here, especially in terms of the need to strengthen the effectiveness of the Nuclear Suppliers Group and the Zangger Committee in maintaining the currency of controls over dual use technologies. As technology develops, so too must oversight and control track relevant changes to those which *can* be used for non-peaceful, as well as peaceful purposes. More generally, there is no doubt that, in reality, room still exists for Australia to act either unilaterally and / or in the context of the NPT regime to tighten controls over both its own uranium exports *and* those of other, competitor, states.

Why so?

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Australia is not without substantial global recognition for its work over many years in counter-proliferation, and is listened to carefully in fora such as the Nuclear Suppliers Group, the Zangger Committee and the IAEA itself. In an international legal sense, Australia is party, among others, to the 1980 UN *Convention on the Physical Protection of Nuclear Material* (CPPNM) and the 1997 *Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management*. Australia was also instrumental in the development of the Additional Protocol to IAEA Nuclear Safeguards Agreements.

So Australia, in these and other respects, stands at or near the zenith of global nuclear counter-proliferation activities. Once Australia releases its potential for gaining a growing share of a burgeoning global uranium market, it will also have within its grasp a significantly enhanced capacity, at least in the short to medium terms, to improve the effectiveness of major aspects of its nuclear counter-proliferation policies.

How So? Australia's rising presence in the global uranium market, combined with its extant advantages in terms of the counter-proliferation measures already outlined, will bestow on it capacities for driving the counter-proliferation future from the front rank of the world's nuclear nations. The decision by the federal government to clear the way for commercial development of a domestic nuclear power generation industry will only enhance that outcome.

So, while there is only a very small possibility that an increase in the volume of Australian uranium exports would increase overall diversion and proliferation risks, Australia now has the opportunity to drive change which enhances security against proliferation in fields in which *real risk* is growing. The revelation in 2004 of the A.Q. Khan network of international trafficking in uranium enrichment technologies to Iran, Libya and North Korea was the clearest indication yet of the size and seriousness of clandestine proliferation activities around the world. By working closely with friends and allies, the international community generally and within the NPT regime, Australia can make a growing difference in counter-proliferation.

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The fields in which Australia will experience the most significant levels of enhanced agency of this kind (and the corollary, of course, is greater *expectations* of that agency by the international community) are:

- High Level Waste (HLW) waste management and disposal.
- International fuel leasing, enrichment and reprocessing arrangements such as the US - proposed Global Nuclear Energy Program (GNEP).
- Generation IV proliferation-resistant nuclear reactor technologies.

HLW waste management and disposal is no doubt the most politically sensitive of the three options. Nevertheless, it must be considered seriously, as the UMPNER report has found. The technologies necessary to safely store and sequester HLW in deep repositories is both mature and reliable, and there is no insoluble barrier to Australia offering to accept the return of its uranium in the form of spent fuel elements for long term sequestration. Australia's stable geology in fact makes parts of this country an ideal site for geo-sequestration on a commercial scale. The establishment of a Commonwealth Radioactive Waste Management facility for domestic material in the Northern Territory, announced in 2004, could well form the basis of an international waste management service.

For those countries operating open fuel cycle generation technologies, such a service would answer many political and policy conundra.

For Australia it would mean a significant new source of income, reduced possibilities for AONM diversion by non-state actors, higher uranium sales, and would further enhance Australia's capacity to influence policy decisions by countries contemplating nuclear energy in their response to the need to reduce greenhouse gas emissions.

Fuel leasing arrangements are a second practical option for Australia. While still in its early stages, a program such as the US-proposed Global Nuclear Energy Partnership presents the framework of a longer term fuel leasing program for Australia - given the slim likelihood of an indigenous reprocessing and fuel fabrication industry on the basis of its cost and the current industry position globally. Nevertheless, there is no reason to discount it in longer time frames.

Finally, Australia's embrace and promotion of the Generation IV fast neutron reactor technologies – with their shorter-lived HLW and their capacity to burn much of the HLW now produced, thus greatly reducing volumes – can help to reshape the future of the global nuclear power generation industry. Thorium-based reactor technologies are a further possibility for the future.

In the end, though, Australia has one over-riding policy lever for situations in which more nuanced policy has failed and there is a clear possibility that AONM is unacceptably insecure: denial of supply. Australia will in the future possess the unilateral capacity to significantly alter the quantum of uranium oxide entering world markets in short and medium time frames, and to do so in a targeted way (i.e. against potential, suspected or known weapons proliferators) *if it judged* that to do so would be in the interest of counter-proliferation generally, and thus also in its own interests. Those countries which relied to a large degree on Australia for their uranium imports – and that will be a growing cohort - would presumably think twice about pursuit of a weapons production policy which had this effect. The same would be true for states which such as India which allowed weapons or nuclear technologies to fall into the hands of non-state agents.

A secondary effect of such a move by Australia would certainly be to distort the global market for yellowcake to a degree which would call into question Australia's commitment to the stability of worldwide uranium supplies. The political implication, of course, is a judgement about the costs *versus* the benefits of so radical a policy response. Should actual or potential proliferators believe that Australia was capable of such a drastic policy shift, that belief may be sufficient to alter the behaviour of those seriously considering an attempt at fissionable materials diversion into a weapons development program – even those with some capacity to develop indigenous uranium supplies over time.

In this context, there is an obvious need for close cooperation with Australia's fellow supplier states (and especially Canada, the world's current leading producer of uranium) to determine the timing and extent of supply denial. In circumstances in

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which a balance of probabilities pointed towards moves to attempt a diversion of fissionable material, it seems probable that commercial rivalry would be replaced with a spirit of cooperation in the cause of global nuclear safety. Of course, this scenario lies at the outer edge of a counter-proliferation policy continuum, but it must be one part of a comprehensive consideration of available policy levers.

The question still remains whether a denial of supply by a dominant uranium exporter would ultimately have any real effect on determined proliferators, given the ubiquity of uranium in the Earth's crust, and in sea water. Certainly, the UMPNER Report is explicit in its assertion that a supply denial decision would have no impact on reducing the potential for diversion of fissionable materials.

While it is certainly true that most states with the requisite financial and technical capacities could produce uranium oxide in sufficient quantities for multiple fission weapons using their indigenous uranium resources, there is still the question of how to convert U3O8 to HEU which is usable in a weapons program. Iran demonstrates the complexities of this challenge.

And what of rogue states burdened with authoritarian regimes innocent of scruple in terms of their willingness to open their territories to uranium exploration and extraction? The fact that most states could produce, in the absence of external sources, at least small quantities of uranium oxide does not lead directly to a capacity to convert that material into a form usable in a nuclear weapon. The experience of Libya highlights the difficulties confronting a potential proliferator state in moving even a short distance towards indigenous weapons development (a reality which Australia itself confronted for nearly twenty years from the early nineteen fifties when contemplating a nuclear deterrent strike force).

I will conclude with some observations about Australia as an agent of change in nuclear non-proliferation policy in the coming years. It is often noted that Australia is able in some circumstances to "fight above its weight" and to exert international influence which is disproportionate to its diplomatic, economic and military clout. As

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a close and trusted ally of the United States it is often regarded from outsiders as a rider on American coat tails.

In the nuclear field, however, the truism of being in the wrong weight division is in fact correct. With the glaring omission of a domestic nuclear power generation industry, and the suite of nuclear skills and expertise which that demands, Australia has been engaged in nuclear affairs for the entire history of the use of the atom for energy – in weapons or in reactors. As I mentioned earlier, it certainly canvassed the possibility of an Australian nuclear deterrent strike force up to around 1967. With significant gaps, Australia has been a supplier of uranium to governments and on world markets since the nineteen thirties. Currently, Australia has around 38% of the world's low cost identified reserves, while output is expected to reach around 15 000 tonnes of U₃O₈ by 2013 if Olympic Dam is expanded as BHP Billiton intends. In addition, new mines coming on stream could significantly raise that figure – as UMPNER reports, to some 25 000 tonnes. And there is a very high level of exploration activity which will doubtless result in the discovery of new economic ore bodies.

There is no doubt that Australia will continue as both a leading global uranium supplier and non-proliferation activist state. The two arms of its nuclear policy are, in simple terms, in direct tension. It remains to be seen whether, and to what extent, they can also – in a careful and incremental way – be developed as complementary sides of an integrated and functionally optimal Australian nuclear policy.