

INTERNATIONAL POLICY IMPLICATIONS ARISING FROM AUSTRALIA'S ENGAGEMENT IN NUCLEAR FUEL CYCLE ACTIVITIES

Outline of Issues addressed by Professor the Hon Gareth Evans AC QC FASSA FAIIA*
before South Australia Nuclear Fuel Cycle Royal Commission, Adelaide, 2 December 2015

Civil nuclear energy generally

1. The conceptual distinction between nuclear energy harnessed for civilian purposes (“atoms for peace”) and military purposes is universally understood and accepted internationally at state level, if not always accepted by civil society. Enrichment and reprocessing aside, there are no inherent international policy sensitivities associated with Australia engaging in any part of the nuclear fuel cycle.

Mining

2. With Australia possessing one-third of the world’s uranium resources – and with the potential contribution these carbon-free resources can make to meeting the world’s energy needs – there is no reason why we should not mine and export commensurately.
3. There are no international policy implications which arise from mining and exporting uranium ore, so long as Australia applies and strictly observes a strict export safeguards policy. That policy is not as robust as one might have thought prior to Australia’s decision to export uranium to India: it is regrettable that Australia has not insisted on safeguards arrangements at least as strong as those being required by the US in its own bilateral agreement with India.

Further processing and conversion

4. No international policy implications arise in Australia’s processing of uranium ore into uranium oxide.
5. Establishing the capability to convert uranium oxide into uranium hexafluoride would involve commercial and standard safety issues, but not create any international policy issues.

Enrichment and reprocessing of spent nuclear fuel

6. While the *Treaty on the Non-Proliferation of Nuclear Weapons* (‘NPT’) does not – as explicitly stated in Article 4 – place any barriers on a country’s development of nuclear technology in the context of peaceful use (and it was always a Quixotic enterprise to seek to bar Iran completely from going down this path), fundamental international policy issues do arise in relation to any state developing this technology. Even if it is only intended that uranium hexafluoride be enriched to low levels for industrial use, the same technology will enable the production of highly enriched uranium capable of fuelling nuclear weapons.
7. Although it is highly unlikely that Australia would ever consider producing nuclear weapons, it is important for Australia to lead by example and not enter into enrichment

activities. No state seriously supporting non-proliferation should develop enrichment capabilities. In refraining from producing its own fissile materials, Australia is in a better position to dissuade other countries that may be considering domestic production of those materials.

8. Refraining from developing any enrichment capability should be seen as in Australia's national interest, notwithstanding that this might conceivably mean foregoing future commercial opportunities (although as to this see 9 below).
 - 8.1 Every state in the contemporary world should be seen as having – in addition to traditional security and economic interests – a third category of national interest, that of being, and being seen to be a good international citizen.
 - 8.2 The essence of good international citizenship is commitment to the cooperative achievement of global public goods even if doing so might not be seen as directly advancing traditional economic or security interests.
 - 8.3 Acting to demonstrate strong commitment to the global public good of nuclear non-proliferation is an unequivocal manifestation of cooperative good international citizenship.
 - 8.4 Quite apart from any perceived moral imperative to so act, there are hard-headed returns from good international citizenship in reputational and reciprocity terms. States with strong reputations for good international behaviour start with an advantage in diplomatic and trade negotiations and when competing for election to international bodies. And states demonstrably willing to assist others to solve global issues more directly impacting upon them, are more likely to attract reciprocal support from those others on global issues of more salience to themselves.
9. The United Arab Emirates's decision to not develop these capabilities in association with its nuclear energy generation program provides assurance to the international community that it will comply with its safeguards commitments. It was not compelled to make such a decision and has derived a reputational advantage from doing so. If Australia was to include nuclear technology in its energy generation mix, it would be ideal for it to provide that same assurance.
10. In any event, it does not appear that Australia would be putting at risk any traditional economic or security interest by foregoing domestic enrichment capability. No new enrichment facilities are needed to meet market demand for the foreseeable future, and should Australia or any other state be concerned about guaranteed supply of fissile material should it embark upon a nuclear power generation program, alternative options are available to domestic production – notably international fuel banks. And there is no relevant geostrategic security interest in play here so long as Australia remains, committed to never acquiring any nuclear weapon of its own.
11. The NPT does not expressly deal with the issue of reprocessing as, at the time of drafting, only the Nuclear Weapons States had developed that technology. Just as with the absence of any treaty constraint on uranium enrichment, this gives rise to a gap in international policy.

12. The best strategy to manage the safeguards and security risks associated with fissile material production – either enriched uranium or reprocessed plutonium sensitive – is through some form of multinational, as distinct from single-state, control of the relevant facilities the establishment of multilateral facilities at which these activities are undertaken. Such an arrangement may take various forms, including:
- 10.1 A fuel bank which is controlled and operated by an international agency, namely the International Atomic Energy Agency ('IAEA'), like that shortly to be opened in Kazakhstan; or
 - 10.2 A multilateral arrangement whereby technology producing fissile materials is under the joint control of the countries that will utilise the fuel in their own nuclear power plants (e.g. URENCO).
13. It is particularly attractive for Australia to support a regional co-operative solution for fuel supply to countries in South-East Asia, such as Vietnam and India. This would make it unnecessary for those nation states to acquire proliferation sensitive technologies of their own. Any regional solution would be operated in addition to the existing frameworks which control safeguards.

Energy generation

14. The question as to whether Australia should embark upon nuclear energy production is a matter essentially for economic and environmental policy judgement. There are no other particular international policy implications. The safety, security and safeguards arrangements that would need to be in place are well understood, with a huge body of international experience available for Australia to draw upon: nothing that went wrong at Fukushima, Chernobyl or Three Mile Island was anything we did not know how to avoid at the time, or do not know now how to fix, or cannot afford to fix

Radioactive waste storage and disposal

15. Unlike enrichment, the storage and disposal of radioactive waste does not raise significant proliferation risks, because it is generally difficult to convert waste into fissile material. Security issues do arise with the possible use of radioactive material in a “dirty bomb” (i.e. using conventional explosives), but they are manageable. The main issues that arise are the familiar environmental and other safety concerns.
16. Australia, with its large and geologically stable land mass – not least in South Australia – is admirably placed to make a major contribution to the resolution of this worldwide problem – not only by taking back for ultimate disposal the radioactive waste produced by use of Australian Obligated Nuclear Material ('AONM'), but material of other origin as well. The economic returns involved here would prima facie be immense. And for Australia to so act would very much advance our national interest in being, and being seen to be, a good international citizen.
17. The environmental risks associated with an appropriately designed repository would appear to be minimal. Because we may not be completely confident that some kind of contamination will not occur over the course of, say, the 24,100 year half-life of Pu239,

this should not stop us being completely comfortable for at least the next 50-100 years, while technology further evolves, with reversible deep underground storage solutions.

18. It would be appropriate in this context for contracts for the supply of uranium, Australia could include a condition that it will accept the radioactive waste that is produced so long as the country being supplied does not develop enrichment or reprocessing capabilities.

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