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**From:** Jim Green  
**Sent:** Monday, 26 September 2005 11:46 AM  
**To:** Committee, ISR (REPS)  
**Subject:** Re: Query re submission

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**2005 House of Representatives Parliamentary Uranium Inquiry**

**Supplementary Submission by Friends of the Earth, Australia**

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20/9/05

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Friends of the Earth, Australia (FoEA) asks the committee to consider the report 'Nuclear Power: No Solution to Climate Change' attached to this submission and available on the internet at <[www.foe.org.au](http://www.foe.org.au)>.

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**The 'safeguards' system is flawed.**

See the 'Nuclear Power: No Solution to Climate Change' report at <[www.foe.org.au](http://www.foe.org.au)>:

- \* Chapter 3. Nuclear Weapons Proliferation: The Myth of the Peaceful Atom
- \* Appendix 4: Australian Uranium and Weapons Proliferation.

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**Doubling nuclear power by 2050 would reduce emissions by about 5%**

This issue is addressed in chapter 2.1 of the 'Nuclear Power: No Solution to Climate Change' report at <[www.foe.org.au](http://www.foe.org.au)>.

It can easily be calculated (e.g. using data and projections from the IEA) that a significant nuclear expansion would have only modest impacts on greenhouse emissions - a doubling by 2050 would reduce emissions by about 5%, a tripling would reduce emissions by 8% and so on. The reasons for this include the fact that nuclear power has hardly any applications other than the production of electricity, and the fact that electricity accounts for less than one third of global greenhouse gas

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emissions.

For example, Feiveson (2001) calculates that if global nuclear power grew at just over 2% per year until 2050 to an installed capacity in that year of 1000 GWe (about three times greater than current output), total cumulative carbon emissions projected during this period would be reduced by about 8%.

A doubling of global nuclear capacity by 2050 would involve the construction of roughly 1,000 reactors (including replacement of existing reactors)

\* capital cost several trillion dollars

\* the reactors would generate a total of 1.5 million tonnes of spent nuclear fuel over their lifespan (50 years, 30 tonnes SNF per reactor per year)

\* the reactors would produce enough plutonium over a 50-year lifespan to produce 1.5 million nuclear weapons (300 kg Pu per reactor per year, 10 kg Pu per weapon). If 99.9% of that plutonium was indefinitely safeguarded against military use, the remaining 0.1% would suffice to build no less than 1,500 nuclear weapons.

Of course, if nuclear displaces renewables, which are generally less greenhouse intensive per unit output than nuclear, the legacy will be increased greenhouse emissions as well as the high-level waste and weapons-useable plutonium legacy.

Feiveson, Harold, 2001, "The Search for Proliferation-Resistant Nuclear Power", The Journal of the Federation of American Scientists, September/October 2001, Volume 54, Number 5, <[www.fas.org/faspir/2001/v54n5/nuclear.htm](http://www.fas.org/faspir/2001/v54n5/nuclear.htm)>.

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### **Misinformation from the so-called Australian Safeguards and Non-proliferation Office (ASNO)**

ASNO is notorious for making false and misleading comments. A small number are discussed below. The committee should recommend sweeping reform of ASNO.

ASNO sometimes states and frequently implies that the safeguarding of Australian-obligated nuclear materials (AONM) is foolproof. For example, ASNO director John Carlson (2002) says: "All Australian-obligated nuclear material, including plutonium, is fully accounted for." Self-evidently there is always some risk of diversion of AONM for use in nuclear weapons or dirty bombs. For example, ASNO concedes that incidents of Material Unaccounted For (MUF) have occurred involving AONM and the possibility of diversion cannot be entirely discounted.

ASNO (letter, available on request) insists that South Korea did not use AONM in its long-standing secret nuclear weapons research program. How can ASNO be sure? According to the letter, the answer is: because the South Koreans say so! The South Korean program is known to have used both indigenous and imported nuclear materials and it is still under investigation by the IAEA. Uranium exports to South Korea ought to be suspended at least until the conclusion of the investigation.

Carlson (2000) states that "... in some of the countries having nuclear weapons, nuclear power remains insignificant or non-existent." Carlson's attempt to absolve civil nuclear programs from the proliferation problem ignores the well-documented use of civil nuclear facilities and materials in weapons programs as well as the important political 'cover' civil programs provide for military programs. Of the nine states known to have produced nuclear weapons, only Israel has no power reactors and even in Israel the pretence of a civil nuclear program provided a rationale for key technology transfers. Pakistan and India have power reactors, and South Africa's weapons program was facilitated by a parallel nuclear power program. North Korea possibly the tenth nuclear weapons state has had a nuclear power program and operates an 'Experimental Power Reactor'

which is an important component of its weapons program. Carlson's view also sits uncomfortably with the concentration of nuclear power in weapons states - almost 60% of global nuclear power output (in GWe) is in the five declared weapons states and those power programs involve large numbers of nuclear scientists, technicians, engineers etc with frequent transfer to and from nuclear WMD programs.

Likewise, Carlson (2000) says: "If we look to the history of nuclear weapons development, we can see that those countries with nuclear weapons developed them before they developed nuclear power programs." However, ostensibly civil nuclear programs clearly preceded and facilitated the successful development of nuclear weapons in India, Pakistan, and in the former nuclear weapons state South Africa.

Carlson said in November 2002 that: "The North Koreans have to come to a realisation that building up nuclear weapons is not in their interest." (Quoted in Koutsoukis, 2002.) Clearly the North Korean regime had not come to that realisation.

Statements by Carlson/ASNO about the weapons useability of below-weapon-grade plutonium grossly distort the available scientific evidence and can only be seen as an attempt to promote uranium exports and to absolve governments and uranium mining companies of their culpability in increasing the global stockpile of weapons-useable plutonium. ASNO implies that the USA is lying in relation to its statements about the 1962 weapon test - but has ASNO had the courtesy to inform the US government of its view? And is ASNO implicitly accusing the US government of deceit with or without the knowledge of DFAT and the minister for foreign affairs? (For a detailed discussion on the use of reactor grade or fuel grade plutonium in nuclear weapons, and references to the scientific literature, see <[www.geocities.com/jimgreen3/rgpu.html](http://www.geocities.com/jimgreen3/rgpu.html)>.)

Carlson (2002) states that Australian-obligated plutonium is not weapon-grade but he fails to note that so-called below-weapon-grade plutonium can be - and has been - used in nuclear weapons. Further, weapon grade plutonium is produced using Australian uranium - in the normal course of events this WGPu is produced in power reactors and in the normal course of events it is converted to fuel grade then reactor grade plutonium in the reactor.

Carlson (2002) says "weapons-grade plutonium is not produced in the normal operation of power reactors" though he knows it is and he knows that below-weapon-grade plutonium has been used in weapons (see above).

Further, research reactors can be used to produce plutonium in support of a weapons program. Israel and India are the most notorious examples of 'research' reactors being used for this purpose (most or all of the fissile material for their nuclear arsenals comes from research reactors). (Detailed paper at: <[www.geocities.com/jimgreen3/rrweapons.html](http://www.geocities.com/jimgreen3/rrweapons.html)>.)

Carlson (2002) defends the International Atomic Energy Agency's safeguards system and says it provides the "foundation" for preventing misuse of Australian-obligated nuclear materials. The safeguards system was exposed as a farce by the Iraqi regime in the 1980s and early '90s - see the voluminous material on this scandal published in the Bulletin of the Atomic Scientists over the past decade (<[www.thebulletin.org](http://www.thebulletin.org)>). Since the Iraq debacle, efforts have been made to improve the system, but it still inadequate (and the IAEA is still hopelessly compromised by its other mandate - promoting the spread of nuclear technologies).

Carlson (1998) makes the absurd claim that: "One of the features of Australian policy ... is very careful selection of our treaty partners. We have concluded bilateral arrangements only with countries whose credentials are impeccable in this area." Carlson's claim is demonstrably false:

1. The US is breaching its NPT disarmament commitments in many ways: refusing to ratify the Comprehensive Test Ban Treaty; making a mockery of the proposed Fissile Material Cut-Off Treaty

by blocking any inspection or verification measures; engaging in research on new generations of nuclear weapons; indicating that it might begin nuclear weapons testing again; resuming the production of tritium for use in nuclear weapons, and using a 'civil' power reactor to produce the tritium; acknowledging in its Nuclear Posture Review that it intends to maintain its nuclear arsenal "forever"; embarking on nuclear co-operation with India (a non-NPT state); threatening first-use nuclear strikes; and developing a nuclear hit-list of seven states, all of them NPT member states except North Korea, and five of them non-nuclear weapons states.

The disgraceful role of the US, and its manifold breaches of its NPT obligations, have been ignored by the Australian government. Successive Australian governments have claimed that the US is in compliance with its NPT obligations because of the reduction in the number of nuclear weapons. But even that solitary achievement is largely a function of creative accounting "worthy of Enron" according to the US Natural Resources Defense Council.

2. France and the UK are also customers of Australian uranium and, like the US, neither country has the slightest intention of fulfilling its NPT disarmament obligations.

3. Japan, a major customer of Australian uranium, has developed a nuclear 'threshold' or 'breakout' capability - it could produce nuclear weapons within months of a decision to do so, relying heavily on facilities, materials and expertise from its civil nuclear program.

An obvious source of fissile material for a weapons program in Japan would be its stockpile of plutonium - including Australian-obligated plutonium. In April 2002, the then leader of Japan's Liberal Party, Ichiro Ozawa, said Japan should consider building nuclear weapons to counter China and suggested a source of fissile material: "It would be so easy for us to produce nuclear warheads; we have plutonium at nuclear power plants in Japan, enough to make several thousand such warheads."

Japan's plutonium program increases regional tensions and proliferation risks. Diplomatic cables in 1993 and 1994 from US Ambassadors in Tokyo describe Japan's accumulation of plutonium as "massive" and questioned the rationale for the stockpiling of so much plutonium since it appeared to be economically unjustified. A March 1993 diplomatic cable from US Ambassador Armacost in Tokyo to Secretary of State Warren Christopher, obtained under the US Freedom of Information Act, posed these questions: "Can Japan expect that if it embarks on a massive plutonium recycling program that Korea and other nations would not press ahead with reprocessing programs? Would not the perception of Japan's being awash in plutonium and possessing leading edge rocket technology create anxiety in the region?"

Australian consent to the separation of Australian-obligated plutonium and its stockpiling in Japan should be withdrawn on proliferation grounds. That consent should also be withdrawn on the basis of the unacceptable safety record of Japan's plutonium/reprocessing program over the past decade.

4. South Korea is another major customer of Australian uranium with less than impeccable credentials. In 2004, South Korea disclosed information about a range of activities which violated its NPT commitments uranium enrichment from 1979-81, the separation of small quantities of plutonium in 1982, uranium enrichment experiments in 2000, and the production of depleted uranium munitions from 1983-1987.

Australia has supplied South Korea with uranium since 1986. It is not known and may never be known whether Australian-obligated nuclear materials were used in any of the illicit research. South Korea has acknowledged using both indigenous and imported nuclear materials in the tests, but denies that any AONM was used.

5. China. The federal government is now negotiating a bilateral treaty with China to permit uranium sales. China is a nuclear weapons state with no intention of fulfilling its NPT disarmament

obligations, and it refuses to ratify the Comprehensive Test Ban Treaty. Further, the Chinese state is undemocratic and repressive. It is difficult to imagine a nuclear industry worker in China publicly raising safety, security or proliferation concerns without reprisal. It is a closed, secretive state - which makes safeguarding AONM all the more difficult.

6. India. Following the recent US decision to engage in nuclear co-operation with India, two Australian government ministers (Macfarlane and Campbell) are now arguing for uranium sales to India. But India is outside the NPT/IAEA regime altogether. Allowing nuclear co-operation and uranium sales to India would clearly weaken the NPT. Potential nuclear weapons states - in north-east Asia or the Middle East, for example - would be all the more likely to 'go nuclear' if civil nuclear co-operation and trade with non-NPT states were to become the norm. Civil nuclear trade is important to a number of states such as Japan, with significant uranium demand but limited indigenous supplies.

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Koutsoukis, Jason, November 9, 2002, "Has anybody seen Australia's uranium?", Australian Financial Review, pg. 21. <[www.geocities.com/jimgreen3/uraniumbombs.html](http://www.geocities.com/jimgreen3/uraniumbombs.html)>

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#### Heathgate Resources

Heathgate Resources' statements regarding its relations with Adnyamathanha people are entirely at odds with statements made by a number of Adnyamathanha people themselves. The committee should investigate the matter by meeting Adnyamathanha people in their communities (if they are agreeable). See also relevant submissions to previous inquiries e.g. the 2002-03 Senate uranium inquiry.

Heathgate has also admitted using spies to infiltrate environment group/s as David Brunt can confirm.

The committee should recommend an immediate cessation of Heathgate's practice of dumping liquid radioactive/toxic waste in groundwater.

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#### Clean energy options

The committee cannot claim that it has not been presented with information on clean energy options - the first FoE submission provided references to a mountain of literature on the potential of renewables and energy efficiency and the references are included below.

See also chapter 6 of the 'Nuclear Power: No Solution to Climate Change' report at <[www.foe.org.au](http://www.foe.org.au)>

### Greenhouse gas emissions reductions studies

All of the studies listed below analyse and propose methods of achieving large reductions in greenhouse gas emissions. Most of the studies do not envisage a role for nuclear power, though a small number consider scenarios with or without nuclear power. A number of these studies are summarised by Saddler et al., 2004, ch.13.

#### Australian studies

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Diesendorf, Mark, 2005, "Towards New South Wales' Clean Energy Future", A Report for the Clean Energy Future Group, <[www.wwf.org.au/News\\_and\\_information/Publications/PDF/Report/nswcefreport2005.pdf](http://www.wwf.org.au/News_and_information/Publications/PDF/Report/nswcefreport2005.pdf)>.

Saddler, Hugh, Richard Denniss and Mark Diesendorf, 2004, "A Clean Energy Future for Australia", Report for the Clean Energy Future Group, <[www.wwf.org.au/News\\_and\\_information/Features/feature10.php](http://www.wwf.org.au/News_and_information/Features/feature10.php)>.

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Naughten B., P. Pakravan, J. Dlugosz J., and A. Dickson, 1994, "Reductions in greenhouse gas emissions from the Australian energy system: a report on modelling experiments using ABARE's MENSA model", Canberra: ABARE.

#### International studies

Bailie A., S. Bernow, B. Castelli, P. O'Connor, and J. Romm, April 2003, "The Path to Carbon Dioxide-Free Power: Switching to Clean Energy in the Utility Sector", a study by Tellus Institute and Center for Energy and Climate Solutions for World Wildlife Fund, USA, <[worldwildlife.org/climate/projects/powerSwitch.cfm](http://worldwildlife.org/climate/projects/powerSwitch.cfm)>.

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Department of Trade and Industry (UK), 2003, "Our Energy Future Creating a Low Carbon Economy", Energy White Paper, Version 11, <[www.dti.gov.uk/energy/whitepaper](http://www.dti.gov.uk/energy/whitepaper)>.

Friends of the Earth (UK), September 2002, "Tackling climate change without nuclear power: A report detailing how climate targets in the power sector can be met without replacing existing nuclear capacity", <[www.foe.co.uk/campaigns/climate/resource/general\\_readers.html#nuclear\\_power](http://www.foe.co.uk/campaigns/climate/resource/general_readers.html#nuclear_power)>.

Hansen, J., M. Sato, R. Ruedy, A. Lacis and V. Oinas., 2000, "Global warming in the twenty-first century: An alternative scenario", Proc. Natl. Acad. Sci., 97, pp.9875-9880.

Harmelink, M., W. Graus, K. Blok, and M. Voogt, 2003, "Low Carbon Electricity Systems: Methodology & Results for the EU", report by Ecofys for World Wide Fund for Nature.

Interlaboratory Working Group on Energy-Efficient and Clean-Energy Technologies (USA), November 2000, "Scenarios for a Clean Energy Future", Prepared for Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy, <[www.ornl.gov/sci/eere/cef](http://www.ornl.gov/sci/eere/cef)>.

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Torrie, Ralph, Richard Parfett and Paul Steenhof, October 2002, "Kyoto and Beyond: The low-emission path to innovation and efficiency", prepared by Torrie Smith Associates for the David Suzuki Foundation and the Canadian Climate Action Network Canada.  
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<[www.davidsuzuki.org/files/Kyoto\\_72.pdf](http://www.davidsuzuki.org/files/Kyoto_72.pdf)>.