

## **A CLEANER, SAFER WORLD - HOW CAN AUSTRALIA HELP?**

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Two prominent global concerns today are the potential effects of CO<sub>2</sub> emissions on the earth's climate and the safety/security of nuclear technologies. There can be a linkage between these concerns, and Australia is in a position to help alleviate both – and, at the same time, to gain significant benefits for the country. To achieve this, however, radical decisions are required in the controversial areas of nuclear power production, uranium mining and radioactive waste management.

An increasing number of countries are recognising that “safe, clean nuclear power” (to quote President Bush in his 2006 State of the Union speech) can help reduce emissions due to burning of fossil fuels. Australia is at present not a user of nuclear power; its introduction could counter-act Australia's role as one of the biggest producers of greenhouse gases. Even if it does not itself use nuclear power, however, Australia does make a global contribution by being a major exporter of uranium used in foreign nuclear power plants. Since Australia has around 30% of the world's reserves of this valuable raw material, provision of this service will continue for a long time. Indeed, if fast developing nations like China keep to their ambitious nuclear power targets, the volume of exports can rise significantly, increasing even further the current revenues of over 2 billion Australian dollars.

There are, of course, many who have reservations about nuclear power, either because they fear that it can lead too easily to nuclear weapons development or because they view the problem of safe permanent disposal as being intractable. A response to the first concern is the increasing support for the idea of international fuel cycle centres, as proposed most recently by the Director General of the IAEA in his acceptance speech for the 2005 Nobel peace prize. These centres would allow close control of all sensitive technologies, in particular of the enrichment and reprocessing processes that yield fissile material usable in power reactors and also in weapons. The centres could supply reactor fuel to third-party countries and then take back the spent fuel.

What is then to be done with this spent fuel to ensure that it cannot be misused? The most preferred solution is deep geological disposal in a suitable, stable tectonic setting. Australia contains stable, arid, remote regions that are amongst the most suitable environments for a safe repository. Australia could offering a disposal service for returned spent fuel made from its exported uranium, or even for spent fuel in general. This would be recognized as an invaluable Australian contribution to safety and security. The international credentials of the country in the security area are as sound as the geological arguments that make Australia so suitable.

What would Australia itself gain from this, in addition to international recognition and influence? One direct benefit would be that suitable disposal facilities would become available those Australian radioactive wastes that need to be disposed of in a deep repository. The quantities of such wastes in Australia are relatively small; unfortunately, however, the very high costs of a geological repository do not reduce in

proportion to the waste volumes to be emplaced. The other dramatic gain would be the ability to earn large revenues that could be put to a multitude of uses, including remediation of mining areas and revitalisation of mining communities. Currently, as a simple producer of uranium ore, Australia receives about 10% of the value-added to uranium as it progresses through the fuel cycle, with the rest going to those nations that enrich uranium, fabricate fuel, transport nuclear materials, use nuclear power and dispose of the wastes. Implementing a disposal service would increase the Australian share to well over 50%.

Of course, the nuclear initiatives described could be implemented only if visionary political leadership is able to take courageous decisions and to win sufficient public support for these decisions. National attitudes in the past have made this seem an unlikely scenario. In today's rapidly changing world, however, old taboos and dogmatic beliefs are being regularly overturned. Perhaps the time is ripe for new thinking also in Australia.

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