

# **House of Representatives Standing Committee on Industry and Resources**

## **Inquiry into the development of the non-fossil fuel energy industry in Australia**

### **Case study into the strategic importance of Australia's uranium resources**

#### **Further supplementary question to ASNO, following request from Committee member**

#### **Response by Mr John Carlson, Director General, ASNO 24 February 2006**

The Committee has requested a response to points raised in an article headed "*Uranium to China could go in nukes*" published in "The Australian" on 18 January 2006. My response is as follows.

I consider this article is misleading in two respects. First, it tries to convey the impression that the way nuclear material is identified and accounted for has previously not been publicised and has only now been brought to light by this reporter. In fact, Australian and international practice in this regard has been made clear from the beginning of Australia's uranium export policy in the late 1970s, and has been explained on many occasions, to Parliament and Parliamentary Committees, in various public statements, and in publications such as ASNO's Annual Reports.

Second, it implies there is a risk Australian uranium will end up being used by China for nuclear weapons. As I will discuss, there is no basis for believing there is any such risk.

As I explained in my evidence to the Standing Committee on 10 October 2005, uranium is a fungible material – uranium atoms are indistinguishable from one another – and international nuclear practice is to attribute safeguards obligations to nuclear material on the basis of the principles of equivalence and proportionality. Accordingly, it is not possible to identify and track atoms that originated in Australia. In international practice "Australian uranium" means "Australian Obligated Nuclear Material", or AONM.

Through identifying batches of nuclear material as AONM as they move through the fuel cycle, and ensuring that this material is used for exclusively peaceful purposes in accordance with the conditions of our safeguards agreements, Australia is able to ensure that AONM does not materially contribute to or enhance any military process. Even if at some point AONM is co-mingled with nuclear material that is not covered by safeguards obligations, the presence of the AONM in no way benefits or contributes to the quantity or quality of the unobligated material.

As to whether AONM *could* contribute to China's nuclear weapons program, I note first that – assuming conclusion of a safeguards agreement - Australian uranium will not be sold to China for unspecified purposes, but will be bought by Chinese power utilities for electricity generation. Second, the claim that Australian uranium could somehow find its way into

Chinese nuclear weapons assumes that China is producing fissile material for weapons. However, unclassified sources indicate that China ceased production of fissile material for nuclear weapons in the early 1990s. China is understood to have a sizeable stockpile of weapons-grade fissile material it is able to draw on if required.

At any rate, it is useful to put into perspective the suggestion that supply of uranium to a nuclear weapon state frees up indigenous uranium for nuclear weapons programs. The quantities of uranium required for a nuclear weapons program are relatively small, as little as five tonnes of natural uranium to produce one nuclear weapon. Such quantities of uranium are readily available in the nuclear weapon states. By contrast, producing fuel for one 1,000 megawatt power reactor requires around 200 tonnes of natural uranium every year. China's currently announced nuclear power program - 40,000 megawatts by 2020 - will require around 8,000 tonnes of uranium each year.

For a nuclear weapon state considering whether to proceed with nuclear power, therefore, the choice is not between using its uranium for nuclear weapons or for nuclear power – the quantities required for nuclear power are so much larger that the actual choice is whether to generate base load electricity with uranium, or coal, or gas, or hydropower.

China's decision to reduce dependency on fossil fuels by expanding nuclear power will have significant environmental benefits. China's announced nuclear program will avoid carbon dioxide emissions roughly equivalent to the whole of Australia's carbon dioxide emissions from all sources.