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Joint Standing Committee on Treaties  
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## **Inquiry into the Agreement between the Government of Australia and the Government of India on Cooperation in the Peaceful Uses of Nuclear Energy**

I welcome the opportunity to make a submission to the Joint Standing Committee on Treaties (JSCT) concerning the Agreement between the Government of Australia and the Government of India on Cooperation in the Peaceful Uses of Nuclear Energy.

I recommend against ratification of the Agreement for a number of reasons. The export of Australian uranium to India would directly or indirectly fuel the expansion of India's nuclear arsenal, thus threatening regional peace and security, and undermine the nuclear non-proliferation regime. There are further concerns about the poor safety record at Indian nuclear facilities and fueling reactors that are built in the face of strong opposition by communities living near these facilities. And, finally, to counter a popular misconception, nuclear energy is unlikely to become a major source of electricity for India and will not help meet the urgent energy needs of India's poor.

### **Expanding nuclear arsenal**

Despite the United Nations Security Council Resolution 1172 calling "upon India and Pakistan immediately to stop their nuclear weapon development programmes, to refrain from weaponisation or from the deployment of nuclear weapons, to cease development of ballistic missiles capable of delivering nuclear weapons and any further production of fissile material for nuclear weapons", both countries, India included, continue to pursue all of these activities. In particular, the Indian government has continued producing fissile material for nuclear weapons, an activity that should be of particular concern as Australia debates selling uranium.

India is producing weapon-grade plutonium at the Dhruva reactor. Many of its power reactors remain outside of International Atomic Energy Agency (IAEA) safeguards, potentially available for military purposes. Also outside IAEA safeguards is the Prototype Fast Breeder Reactor that is under construction and that could produce about 140 kg of high-quality weapon-grade plutonium, sufficient for nearly 30 Nagasaki type bombs, every year. In 2013, the International Panel on Fissile Materials (IPFM) estimated that India had stockpiled  $540 \pm 180$  kg of weapon-grade plutonium and 4,300 to 5,100 kg of separated reactor-grade plutonium that are all outside of safeguards.

India is also expanding its capacity to enrich uranium, reportedly for use in a nuclear submarine. IPFM estimates India's HEU stockpile at  $2.4 \pm 0.9$  tons as of the end of 2012. Google Earth images suggest that new centrifuge halls,

roughly twice the size of the existing facility, are being constructed. Again, none of the uranium enrichment facilities are under IAEA safeguards..

Although uranium from Australia would be sent only to facilities under safeguards, it is clear that such exports would help India utilize more of its domestically mined uranium for weapons purposes. In 2005, K. Subrahmanyam, former head of the National Security Advisory Board, argued that "Given India's uranium ore crunch and the need to build up our ...nuclear deterrent arsenal as fast as possible, it is to India's advantage to categorize as many power reactors as possible as civilian ones to be refueled by imported uranium and conserve our native uranium fuel for weapons grade plutonium production." Over the last decade, lack of uranium has impacted the operation of its nuclear reactors; several were shut down and the commissioning of new ones was delayed.

India is developing an operational triad of aircraft, land-based missiles and (nuclear-powered) submarine-launched missiles for delivery of nuclear warheads. It has continued testing missiles and its nuclear powered submarine. China and especially Pakistan are reacting to all of these programmes by further developing their own arsenals and military strategies. The export of uranium from Australia should be clear that this would contribute, albeit indirectly, to this three-way nuclear arms race.

### **Undermining the non-proliferation regime**

Selling uranium to India would, in essence, constitute a violation of the spirit of the non-proliferation regime. The basic bargain underlying the NPT (the Treaty on the Non-Proliferation of Nuclear Weapons) is that non-weapon states would get access to nuclear technology in exchange for giving up the possibility of developing nuclear weapons. Implicit in this bargain is that no country that acquired nuclear weapons would gain access to nuclear technology. Nuclear trade with India violates this implicit understanding.

### **Nuclear accident risks**

There are good reasons to be worried about the risk of severe accidents at Indian nuclear facilities. I have written about this at length in my book *The Power of Promise: Examining Nuclear Energy in India* (Penguin Books, 2012) and will only briefly summarize these concerns here.

Amongst all electricity generating technologies, nuclear power alone comes with the possibility of catastrophic accidents, with consequences spreading out across space and time. Despite improvements in reactor technology, the probability of such catastrophic accidents remains stubbornly greater than zero. This poses extreme organizational demands, which are not met by India's Department of Atomic Energy (DAE) and its related entities.

Most nuclear facilities in the country have experienced small or large accidents although, fortunately, none of these has been catastrophic. Many of these were caused by inattention to recurring problems or other warnings; to the extent that those responsible for safety have tried to fix them, they have not always been successful. Compounding this state of affairs is an absurd confidence that DAE leaders have publicly expressed—and have likely internalized—in the safety of nuclear facilities in the country. This has often taken the form of asserting that the probability of a nuclear accident in India is

zero, something that was frequently heard in the aftermath of Fukushima. Worse, on 15 March, 2011, the Chairman of Nuclear Power Corporation of India Limited reassured the public saying “there is no nuclear accident or incident in Japan’s Fukushima plants. It is a well planned emergency preparedness programme which the nuclear operators of the Tokyo Electric Power Company are carrying out to contain the residual heat after the plants had an automatic shutdown following a major earthquake.” Such denial would be laughable but when the person thus opining is in charge of India’s power reactor fleet, it ceases to be amusing.

Because of these concerns, a large majority of the Indian public, especially those living near proposed nuclear facilities, are opposed to the continued construction of nuclear power plants. Their concerns were reinforced when they witnessed the multiple accidents at Japan’s Fukushima nuclear power plant and learnt the obvious lesson: nuclear reactors are hazardous, and communities living near nuclear facilities would be the worst affected in the event of an accident. Thus, it should be no surprise that there are on going protests at all new sites selected for nuclear plants, with the protracted and intense protests over the commissioning of the Koodankulam reactors in Tamil Nadu being just the most spectacular of these. The risk of catastrophic accidents means that the pursuit of nuclear power is justified only if it is done democratically with the informed consent of the potentially affected populations. What the ongoing protests over Koodankulam and other reactor sites tells us is that these populations are not consenting to be subject to this risk. They deserve to be listened to.

### **Limited prospects of nuclear power**

Despite much talk about India’s nuclear program, nuclear energy is unlikely to contribute more than a few per cent of the country’s electricity capacity in the next several decades, if ever. The Department of Atomic Energy (DAE) has always promised much and delivered little. In the early 1970s, for example, DAE projected that by 2000 there would be 43,000 MW. Installed nuclear capacity in 2000 was 2720 MW. This mismatch between promise and delivery has continued. As of July 31, 2014, nuclear power constituted 1.91 per cent of the total electricity generation capacity. In contrast, the total generating capacity of renewable energy projects was 31,692 MW, 12.6 per cent of total generating capacity. Though almost all of the growth in modern renewable energy capacity has been over the last two decades, they already generate more electricity (in MWh) than all reactors put together.

India, and industrializing countries in general, need electricity that is cheap and affordable. Nuclear power simply does not meet this criterion, primarily because reactors are extremely expensive. Further, because of its centralized character and the huge costs involved in transmitting this power to far-flung villages, nuclear power cannot play a significant role in solving the energy needs of the vast majority of India’s population, much less do so in a way that offers any net environmental gains.

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