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Submission by the Synod of Victoria and Tasmania, Uniting Church in Australia to the inquiry into *Civil Nuclear Transfers to India Bill 2016*

17 November 2016

The Uniting Church in Australia, Synod of Victoria and Tasmania welcomes the opportunity to make a submission to the inquiry into the *Civil Nuclear Transfers to India Bill 2016*. The Synod opposes the Australian Government proceeding with the sale of uranium and other nuclear material to India and therefore urges the Committee to recommend the Bill not be proceeded with.

In the view of the Uniting Church in Australia, the world must be rid of nuclear weapons. Nuclear weapons are unique in their ability to cause catastrophic human suffering, and to severely diminish the Earth's capacity to support all life

The Uniting Church has traditionally taken a very strong stance against the use and export of uranium. The Uniting Church in Australia supports the development of environmentally benign, renewable energy sources and the cessation of uranium mining.

What is particularly alarming about the *Civil Nuclear Transfers to India Bill 2016* is there is no mention of the recommendations of the Joint Standing Committee on Treaties (JSCOT) recommendations with regards to necessary safeguards before any sale of uranium to India proceeds.

In particular JSCOT recommended:

Recommendation 3

Committee recommends that, should the Agreement between the Government of Australia and the Government of India on Cooperation in the Peaceful Uses of Nuclear Energy be ratified, uranium sales to India only commence when the following conditions are met:

- *India has achieved the full separation of civil and military nuclear facilities as verified by the IAEA;*
- *India has established an independent nuclear regulatory authority under law;*
- *the Indian nuclear regulator's existing policies and arrangements have been reviewed to ensure its independence;*
- *the frequency, quality and comprehensiveness of onsite inspections at nuclear facilities have been verified by the IAEA as being best practice standard; and*

- *the lack of sufficient planning for the decommissioning of nuclear facilities has been rectified.*

In its response to the JSCOT report in November 2015, the Commonwealth Government acknowledged that the above conditions with regards to nuclear safety had not been met but “the Government does not accept the Committee’s recommendation that exports of uranium to India should be deferred.”

Yet the 2016 nuclear security index produced by the Nuclear Threat Initiative ranks India on a low score of 46 out of 100 on the risk of theft of nuclear material ranking, near the bottom of countries that possess nuclear material with only Iran, Pakistan and North Korea being assessed as posing a greater risk.¹ The only other countries with weapons-grade material and no independent oversight are North Korea and Iran.² The Nuclear Threat Initiative said of India:

In the future, India’s nuclear materials security conditions could be improved by strengthening laws and regulations for on-site protection, control and accounting, and mitigating the insider threat, and ensuring an independent regulatory agency in fulfilment of its Nuclear Summit commitment to ensure compliance with nuclear security-related regulations. India’s nuclear materials security conditions remain adversely affected by its continued increase in quantities of nuclear material, high levels of corruption among public officials, and the presence of groups interested in and capable of illicitly acquiring nuclear materials.

Similarly, India scored poorly on the 2016 nuclear security index sabotage risk ranking scoring only 55, making it rank 36th out of 45 countries, for very similar reasons as those outlined above.³

As an example that the risk assessment of theft of nuclear material is not simply theoretical, in 2009 a nuclear reactor employee in southwest India poisoned dozens of his colleagues with a radioactive isotope, taking advantage of numerous gaps in plant security.⁴

The paramilitary Central Industrial Security Force, which has the job of keeping nuclear materials safe from being stolen from nuclear power plants and other sites, is short-staffed, ill-equipped, has low morale and is inadequately trained according to a leaked report of the Indian Home Ministry from 2013.⁵

It has been alleged that the Indian Government moves fissile materials around in unmarked trucks that “look like milk tankers”, without obvious armed escorts⁶, making them vulnerable to capture by terrorist groups in India should they be detected.

As has been highlighted by Robertson and Carlson (2016) the Separation Plan of the Indian Government with regards to its nuclear reactors has produced three streams: “civilian

¹ Seema Sirohi, ‘India Must tackle Global Concerns on the Independence of its Nuclear Regulator’, *The Wire India*, 30 March 2016; and Nuclear Threat Initiative, ‘NTI Nuclear Security Index. Building a Framework for Assurance, Accountability, and Action’, 3rd Edn., January 2016, p. 20.

² Nuclear Threat Initiative, ‘NTI Nuclear Security Index. Building a Framework for Assurance, Accountability, and Action’, 3rd Edn., January 2016, p. 48.

³ Nuclear Threat Initiative, ‘NTI Nuclear Security Index. Building a Framework for Assurance, Accountability, and Action’, 3rd Edn., January 2016, p. 30.

⁴ Adrian Levy, ‘India’s nuclear explosive materials are vulnerable to theft, US officials and experts say’, Centre for Public Integrity, 17 December 2015.

⁵ Adrian Levy, ‘India’s nuclear explosive materials are vulnerable to theft, US officials and experts say’, Centre for Public Integrity, 17 December 2015.

⁶ Adrian Levy, ‘India’s nuclear explosive materials are vulnerable to theft, US officials and experts say’, Centre for Public Integrity, 17 December 2015.

safeguarded”, “civilian unsafeguarded” and “military.” They point out the relationships and overlap between the three streams are not transparent. Some civilian facilities, even when operating under certain provisions of India’s safeguards agreement with the International Atomic Energy Agency (IAEA), may contribute to India’s stockpile of unsafeguarded weapons-usable nuclear material.⁷

India has military nuclear facilities, which are primarily designed to produce fissile material for nuclear weapons and naval propulsion. India is currently expanding its fissile material production capability.⁸ India continues to increase its quantity of nuclear materials for military purposes.⁹

In general, there is no formal verification whether facilities in the “civilian unsafeguarded” stream are contributing nuclear material to India’s nuclear weapons program. Many of India’s Pressurised Heavy Water Reactors have reportedly been used as sources of weapons-grade plutonium for its military program, both through recovery from low burnup first irradiated fuel discharges and through at least one dedicated campaign in the late 1990s.¹⁰

As of early 2016, the 500MW Prototype Fast Breeder Reactor, scheduled to achieve criticality in April 2016, and which India has not placed under safeguards, introduces a new pathway for the production of both electricity and unsafeguarded plutonium.¹¹ In 2006, Prime Minister Singh stated that Fast Breeder Reactors would be excluded from safeguards during the development stage in order to avoid “encumbrances” on the program. India has maintained the option of using its Fast Breeder Reactors to produce plutonium for nuclear weapons.¹²

To highlight the on-going safety concerns regarding India’s nuclear reactors, in March 2016, Unit-I of KASP nuclear power reactor in Gujarat had to be shut down following a leakage in its heavy water coolant system.¹³ Fortunately, no people working at the plant were reported to have been exposed to radiation from the leak and there was no radiation leak outside of the plant into the local communities.¹⁴

The Synod is concerned that the Bill grants significant protection from domestic legal action to private corporations in order to grant them certainty over the profits they will make exporting uranium to India.

⁷ Kalman Robertson and John Carlson, ‘The Three Overlapping Streams of India’s Nuclear Programs’, Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 1.

⁸ Kalman Robertson and John Carlson, ‘The Three Overlapping Streams of India’s Nuclear Programs’, Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 6.

⁹ Nuclear Threat Initiative, ‘NTI Nuclear Security Index. Building a Framework for Assurance, Accountability, and Action’, 3rd Edn., January 2016, p. 35.

¹⁰ Kalman Robertson and John Carlson, ‘The Three Overlapping Streams of India’s Nuclear Programs’, Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 7.

¹¹ Kalman Robertson and John Carlson, ‘The Three Overlapping Streams of India’s Nuclear Programs’, Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 1.

¹² Kalman Robertson and John Carlson, ‘The Three Overlapping Streams of India’s Nuclear Programs’, Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 5.

¹³ Iftikhar Galani, ‘Delhi N-leak: Clamour for safety regulator grows’, Daily News and Analysis India, 10 October 2016, <http://www.dnaindia.com/india/report-delhi-n-leak-clamour-for-safety-regulator-grows-2262790>

¹⁴ Pallava Bagla, ‘Gujarat Nuclear Plant Shut Down After Major Leak, All Workers Safe’, NDTV, 12 March 2016.

Concerns about Safeguards in the Agreement

Despite the safeguards in the treaty to ensure that Australian uranium and nuclear technology can only be used for civilian purposes, our concern stems from the risks that uranium sales to India will facilitate nuclear weapons proliferation and undermine the existing international treaties aimed at preventing such proliferation and promoting nuclear weapons disarmament.

The Synod notes the concerns about the treaty that have been publicly expressed by John Carlson, who headed the Australian Safeguards and Non-Proliferation office for more than two decades until 2010. He wrote: “Now that the text of the agreement has been quietly made public, some substantial departures from Australia’s current safeguards conditions are evident. These suggest, disturbingly, that Australia may be unable to keep track of what happens to uranium supplied to India.”¹⁵ India is not required to get Australia’s ongoing consent for use of plutonium from reprocessing spent fuel. Australia’s usual demand that any breach of the agreement will automatically invoke a right to have the nuclear material returned is missing.¹⁶ There is no formal dispute resolution mechanism within the agreement and no specified arbitration process in the case a dispute cannot be resolved by negotiation.

According to John Carlson:¹⁷

If India succeeds in delinking foreign-obligated nuclear material from individual bilateral agreements, making it impossible to identify which batch of material is covered by which agreement, then India could work a ‘pea and thimble’ trick in which no supplier could tell whether their material was being used contrary to bilateral conditions. The mere possibility of this is sufficient to call into question India’s commitment to observing bilateral agreements.

To date Australia’s consent to reprocessing has been limited to the EU and Japan, and has been given on a programmatic basis, that is Australia has approved specific ‘downstream’ facilities using separated plutonium and the purposes involved. In this agreement, the Australian Government has effectively given consent in advance for India to reprocess in accordance with an ‘arrangements and procedures’ document India concluded with the US in 2010. This covers safeguards at two reprocessing plants that India plans to build, but includes only a vague reference to management of plutonium, and nothing corresponding to programmatic consent.¹⁸

The Australia Government’s standard condition has been that, if for any reason IAEA safeguards cease to apply, the parties are to establish safeguards arrangements that conform with IAEA safeguards principles and procedures and provide equivalent assurance. This agreement requires only that the parties consult and agree on ‘appropriate verification measures’, a vague term readily open to differing interpretations.¹⁹

India has not committed to nuclear disarmament; still refuses to sign the Comprehensive Test Ban Treaty; continues to produce fissile material for weapons and to expand its nuclear weapons and missile programs more generally. India’s safeguards agreement with the IAEA does not impose the same restrictions as bilateral agreements in areas such as

¹⁵ Daniel Flitton, ‘Nuclear deal with India lacks normal safeguards’, *The Age*, 5 October 2014.

¹⁶ John Carlson, ‘Is the Abbott Government abandoning Australia’s nuclear safeguards standards for India?’, <http://www.lowyinterpreter.org>, 1 October 2014.

¹⁷ John Carlson, ‘Is the Abbott Government abandoning Australia’s nuclear safeguards standards for India?’, <http://www.lowyinterpreter.org>, 1 October 2014.

¹⁸ John Carlson, ‘Is the Abbott Government abandoning Australia’s nuclear safeguards standards for India?’, <http://www.lowyinterpreter.org>, 1 October 2014.

¹⁹ John Carlson, ‘Is the Abbott Government abandoning Australia’s nuclear safeguards standards for India?’, <http://www.lowyinterpreter.org>, 1 October 2014.

reprocessing, higher enrichment, retransfers to third countries, research and development or the production of tritium (which has uses in nuclear weapons).²⁰ The deal struck between India and the US for uranium export to India does not preclude India building new, unsafeguarded reactors or other facilities for its weapons program.²¹ The agreement allows the same Indian personnel to work on both India's civilian and military nuclear sectors. India is able to divert more of its own uranium to weapons with the US-India deal allowing India to increase its capacity to produce fissile material for nuclear weapons if it chooses to do so. Uranium exports from Australia to India would seem to only make that situation worse.

For states with comprehensive safeguards agreements with the IAEA, the additional protocol creates additional reporting obligations and extends the IAEA's right of access to nuclear-related sites. However, India negotiated with the IAEA a much more limited additional protocol in 2009: the reporting and access provisions of India's additional protocol are effectively restricted to India's export activities. Consequently, India's safeguards agreement and its additional protocol do not have any practical application to its uranium and thorium mines, heavy water production facilities, nuclear fuel cycle-related research activities, or plants where it manufactures equipment for its nuclear facilities.²²

India operates 22 nuclear facilities under continuous IAEA safeguards, which include 14 of India's power reactors, six conversion and fuel fabrication facilities for these reactors and two spent fuel storage sites.²³ At the same time a number of facilities, including eight of its pressurized heavy water power reactors that serve a civilian or commercial function are not listed in India's safeguards agreement and are not subject to safeguards (except in specific circumstances where India may introduce safeguarded nuclear material into them).²⁴ India's safeguards agreement with the IAEA permits the transfer of nuclear material subject to safeguards into a facility in the "civilian unsafeguarded" stream, provided that the facility is placed under temporary safeguards while that material is present (articles 11(f) and 14(b)).²⁵

In deciding whether or not to place a nuclear facility under IAEA safeguards, India's Separation Plan pointed to "a judgement [by the Indian Government] whether subjecting a facility to IAEA safeguards would impact adversely on India's national security". A facility could be excluded from safeguards because it is co-located with military facilities or otherwise related activities of strategic significance. This appears to be the basis for

²⁰ John Carlson, 'Is the Abbott Government abandoning Australia's nuclear safeguards standards for India?', <http://www.lowyinterpreter.org>, 1 October 2014.

²¹ The deal involves 14 reactors being subjected to IAEA safeguard inspections by 2014, of which six were already subject to safeguards. Eight power reactors, all its research reactors, the plutonium-fuelled fast breeder reactor program, reprocessing and enrichment facilities will remain beyond the scope of safeguards. India reserves the right to classify any future reactors as civilian or military (although supplier states can make sales contingent on the application of IAEA safeguards).

²² Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 4.

²³ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 4.

²⁴ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 5.

²⁵ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 7.

excluding all of India's existing reprocessing and enrichment facilities from being listed for continuous safeguards.²⁶

The provision for temporary safeguards over otherwise unsafeguarded facilities is most likely to become problematic if the Indian Government uses it in combination with provisions that allow safeguarded material to be used alongside unsafeguarded material (for example, articles 25 and 96 of India's safeguards agreement). Article 25 allows nuclear material (including spent fuel containing weapons-plus plutonium) that "has been produced in or by the use of safeguarded nuclear material" to be exempted from safeguards under particular conditions. Specifically, article 25 exempts a proportion of the plutonium produced in a reactor provided that less than 30% of the fissionable material in each loading is safeguarded material.²⁷ In effect, the IAEA safeguards agreement with the India Government permits the India Government to use its safeguarded plutonium to produce significant quantities of unsafeguarded plutonium per year.²⁸

India is also believed to have unsafeguarded separated plutonium from power reactors, which is available to its nuclear weapons program and could hypothetically be used to increase the size of India's nuclear arsenal. India may be deliberately holding some of this material to enhance what it believes is a nuclear deterrent.²⁹

In the IAEA safeguards agreement, the Indian Government undertakes not to use items subject to the agreement, including any facility under temporary safeguards while safeguarded material is present, to further any military purpose (article 1). However, Robertson and Carlson point out that due to the absence of any verification, the international community has no assurance that the Indian Government is not building nuclear weapons with plutonium that has been produced using safeguarded material by use of the exemption articles in the safeguards agreement. The Canadian-supplied Cirus reactor provides an example of how nuclear material can be diverted to nuclear weapons when safeguards are not applied. Prior to shutting down the Cirus reactor in 2010, the Indian Government used it to produce unsafeguarded plutonium for nuclear weapons, despite being under an obligation not to use the reactor or any products resulting from its use for military purposes. This example illustrates that a simple undertaking not to use plutonium for military purposes is not adequate to prevent such misuse in absence of verification.³⁰

As an example of how the Indian Government could manipulate the IAEA safeguards agreement should its nuclear weapons program ever face a temporary shortage of unsafeguarded uranium from its own national sources, Robertson and Carlson point out the Indian Government could load the core of the Prototype Fast Breeder Reactor with unsafeguarded uranium and plutonium, while making blankets out of a mixture of safeguarded and unsafeguarded uranium (as long as the safeguarded uranium makes up

²⁶ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 5.

²⁷ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 8.

²⁸ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 9.

²⁹ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 6.

³⁰ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 9.

less than 30% of the total fissionable material at loading). After unloading the spent fuel, India could claim an exemption from safeguards for up to 70% of the plutonium in this fuel. To make up this 70%, the IAEA safeguards agreement appears to allow India to claim exemption for all of the weapons-grade plutonium in the blankets and part of the reactor-grade plutonium in the core.³¹

A uranium trade with India by the US and Australia seems likely to encourage Pakistan to seek greater nuclear trade with China. Further, Pakistan is reported to be building a fourth plutonium-producing reactor at the Khushab nuclear complex, as part of its nuclear arms race with India. In January 2011 the Pakistani permanent representative to the UN Conference on Disarmament, Zamir Akram, stated in response to the possibility of India being able to join the Nuclear Suppliers' Group that it: "will enable our neighbour to further expand upon its nuclear co-operation agreements and enhance its nuclear weapons and delivery capability. As a consequence, Pakistan will be forced to take measures to ensure the credibility of its deterrence."

Tensions between the governments of India and Pakistan mean the Indian press regularly raises concerns about the possibility of a future war involving nuclear weapons, fuelled by actual acts of violence. For example, the attack on the Indian military outpost on 18 September 2016 in which four gunmen were able to cross the Line of Control between India and Pakistan and killed eighteen soldiers in the Kashmir town of Uri. The attack is the worst of its kind in more than two decades. The Pakistan Government rejected the Indian Government's presumption that the gunmen came across the Line of Control from the Pakistan side of the border.³²

Uranium trade with India undermines a fundamental principle of the global non-proliferation and disarmament regime. This is the principle that only signatories to the NPT can engage in international nuclear trade for their civilian nuclear programs. The precedent set by nuclear trade with India increases the risk of other countries pulling out of the NPT, and building nuclear weapons with the expectation that civilian nuclear trade would continue. It is important for Australia to send a consistent and clear message in its exporting of uranium.

During the 2010 NPT Review Conference, the 118 nations of the Non-Aligned Movement complained that the US-India agreement had given a non-NPT state more benefits than NPT parties and argued that comprehensive safeguards ought to be a requirement for nuclear supply.

Energy Needs for India

The Synod believes that India has choices to meet the energy needs for its people, without the planned expansion in nuclear power.

The International Energy Agency assessed in its 2015 energy outlook for India there were 240 million people in India (around 20% of the population) who lack access to electricity.³³ However, the population without access to power is concentrated in a relatively small number of states: almost two-thirds are in two populous northern and north-eastern states,

³¹ Kalman Robertson and John Carlson, 'The Three Overlapping Streams of India's Nuclear Programs', Harvard Kennedy School, Belfer Centre for Science and International Affairs, April 2016, p. 9.

³² Rommel Parane, 'Cooler Heads Prevail amid Rising Tension between India and Pakistan', Newline, 28 September 2016, <https://newsline.com/cooler-heads-prevail-amid-rising-tension-india-pakistan/>

³³ International Energy Agency, 'India Energy Outlook', 2015, pp. 21, 28.

Uttar Pradesh and Bihar. In large swathes of India, including the majority of southern states, electrification rates are well above 90%.³⁴

Renewable resources in India promote energy security, are cheaper and less vulnerable to market fluctuations and can be utilised in a variety of ways, from small to large scale capacities. Renewable energy resources can help promote sustainable development, increase employment opportunities, particularly for the rural poor.³⁵ Solar energy, wind energy, hydropower, ocean energy, wave energy, geothermal energy, waste-to-energy and biomass power are all renewable energy options available in India.³⁶

It has been argued that India's clean energy industry is booming and the country is best served by renewable energy sources such as wind, solar and small-scale hydropower. India added the equivalent of about 40% of Australia's installed electricity capacity in renewable power generation from 2010-2014, both cheaper and more efficient in the rural regions.³⁷

Dr Praveen Saxena, advisor to India's Ministry of New and Renewable Energy, stated that "so far, renewable energy has only harnessed 12.2% of its estimated potential and that this should greatly increase by 2017. By then, it's expected that decentralised applications of solar, biogas, and solar cook stoves would be widespread; that energy access in rural areas would be a priority; that a new avenue of setting up microhydel projects based on the velocity of water on rivers/canals would emerge; that waste to energy would be a viable option; and that more applications of hydrogen/fuel cells would be developed."³⁸

India has announced targets of 60 GW generating capacity by wind energy and 100 GW generating capacity by solar energy by 2022.³⁹ Currently India has 45 GW of hydropower and 23 GW of wind power, but according to the International Energy Agency (IEA) "has barely tapped its huge potential for renewable energy."⁴⁰ The IEA has assessed that the current 45 GW of hydropower "represents a little under a third of the assessed resource."⁴¹ The International Energy Agency is expecting India to have 340 GW of wind and solar power generating capacity by 2040, making India the world's second-largest solar market.⁴² Decentralised rooftop solar and off-grid projects will account for around 90 GW of the increase.⁴³ The IEA estimates that with current policy settings half of India's new energy generation brought online between now and 2040 will be from renewables, increasing their share of capacity in the power mix from 28% to more than 40%.⁴⁴

The IEA has assessed that India's solar resource is strongest in the north and north-west of the country⁴⁵, the very regions where there are the greatest number of people in need of being connected to electricity.

³⁴ International Energy Agency, 'India Energy Outlook', 2015, p. 28.

³⁵ WWF and The Energy and Resources Institute, "The Energy Report – India: 100% Renewable Energy by 2050", 2013 p. 21.

³⁶ WWF and The Energy and Resources Institute, "The Energy Report – India: 100% Renewable Energy by 2050", 2013 pp. 21, 26, 32, 35, 37, 38, 42, 45.

³⁷ <http://www.theguardian.com/commentisfree/2014/oct/22/take-it-from-us-in-india-the-world-needs-renewables-not-more-australian-exported-coal>

³⁸ cseindia.org/userfiles/Praveen_Saxena.pdf

³⁹ International Energy Agency, 'World Energy Outlook 2015 Factsheet – India'.

⁴⁰ International Energy Agency, 'India Energy Outlook', 2015, p. 19.

⁴¹ International Energy Agency, 'India Energy Outlook', 2015, p. 30.

⁴² International Energy Agency, 'World Energy Outlook 2015 Factsheet – India'.

⁴³ International Energy Agency, 'India Energy Outlook', 2015, p. 13.

⁴⁴ International Energy Agency, 'India Energy Outlook', 2015, p. 124.

⁴⁵ International Energy Agency, 'India Energy Outlook', 2015, p. 127.

By comparison to the potential or renewable energy in India, the contribution of nuclear power is trivial (3% of current generation capacity)⁴⁶ with existing reactors providing just 5.8 GW of power.⁴⁷ The additional six nuclear power plants under construction will only add an additional 4 GW of power generation.⁴⁸ However, the current Indian Government plans to increase nuclear power generation to 17.3 GW by 2024 and for nuclear power to be 25% of India's power generation by 2050.⁴⁹ The security risks of theft of nuclear material for terrorist purposes within the Indian Government's currently regulatory and security framework will be significantly magnified in such a rapid scale up. However, the IEA assessment is that despite the Indian Government's stated wishes, a realistic assessment is that even under the current policy setting the nuclear share of total generation will barely double from 3% currently to 7% by 2040.⁵⁰

Concerns about Regulation of the Nuclear Power Industry in India

The Synod is greatly concerned that India lacks an independent nuclear regulatory mechanism with the mandate to ensure that high standards of safety and security are observed in India's civilian nuclear facilities.⁵¹ Currently the Indian Atomic Energy Regulatory Board (AERB), established in 1983 through a gazette notification, is tasked with regulating the safety and security aspects of the country's civilian nuclear facilities. However, it is not an autonomous body as it depends on the Department of Atomic Energy for all practical purposes. It has, as a result, been unable to perform its regulatory functions effectively.⁵²

The demand for India to establish a truly autonomous nuclear regulatory authority has been a long standing one. In 1997, the Raja Ramanna Committee report had recommended that the *Atomic Energy Act 1962* should be amended to enhance the effectiveness of the nuclear regulatory system in the country. Even though the Union Government, in 2000, had directed the Department of Atomic Energy to suggest the necessary amendments to the 1962 Act, nothing substantial happened for almost a decade.⁵³

In 2011, the *Nuclear Safety Regulatory Authority (NSRA) Bill* was drafted by the Department of Atomic Energy and submitted to the Union Cabinet for approval. The Department of Atomic Energy note that sought approval from the Cabinet to introduce the Bill in Parliament had cited both the Mayapuri and the Fukushima accidents as the factors that contributed to the urgency to strengthen the country's nuclear regulatory mechanism. However, even the NSRA, as currently envisioned by the Department of Atomic Energy, does not propose the establishment of a truly autonomous regulatory authority. The Bill, first introduced in the Lok Sabha in 2011, has now lapsed and will have to be reintroduced in the Lok Sabha.⁵⁴

The Comptroller and Auditor General of India had undertaken a "Performance Audit on Activities of Atomic Energy Regulatory Board" which was tabled in Parliament in August 2012. It concluded that "the legal status of AERB continues to be that of an authority subordinate to the Central Government, with powers delegated to it by the latter", and recommended to the government to "ensure that the nuclear regulator is empowered and

⁴⁶ International Energy Agency, 'India Energy Outlook', 2015, p. 37.

⁴⁷ International Energy Agency, 'India Energy Outlook', 2015, p. 135.

⁴⁸ International Energy Agency, 'India Energy Outlook', 2015, p. 37.

⁴⁹ International Energy Agency, 'India Energy Outlook', 2015, p. 135.

⁵⁰ International Energy Agency, 'India Energy Outlook', 2015, p. 135.

⁵¹ Assistant Professor Happymon Jacob, 'Regulating India's nuclear estate', http://happymon-jacob.blogspot.com.au/2014_08_24_archive.html, 30 August 2014.

⁵² Assistant Professor Happymon Jacob, 'Regulating India's nuclear estate', http://happymon-jacob.blogspot.com.au/2014_08_24_archive.html, 30 August 2014.

⁵³ Assistant Professor Happymon Jacob, 'Regulating India's nuclear estate', http://happymon-jacob.blogspot.com.au/2014_08_24_archive.html, 30 August 2014.

⁵⁴ Assistant Professor Happymon Jacob, 'Regulating India's nuclear estate', http://happymon-jacob.blogspot.com.au/2014_08_24_archive.html, 30 August 2014.

independent. For this purpose, it should be created in law and should be able to exercise necessary authority in the setting of regulations, verification of compliance with the regulations and enforcement of the same in the cases of non-compliance.”⁵⁵

Following the Comptroller and Auditor General report, the Public Accounts Committee of Parliament also produced a report in 2013 entitled “Activities of Atomic Energy Regulatory Board” in which it agreed with the view taken by the Comptroller and Auditor General on the functioning of the AERB. The PAC also highlighted the observation made by the Parliamentary Standing Committee on Science and Technology, Environment and Forests in 2012 that the NSRA lacks autonomy. The Public Accounts Committee was critical of the functioning of the AERB as well as the proposed NSRA Bill and stated in its report that the “DAE should seriously re-examine the provisions of the Bill and take necessary steps urgently so as to ensure that the nuclear regulator becomes an independent and credible body at par with similar regulators in other Countries.”⁵⁶

Media reports as recently as 10 October 2016 have stated that the *Nuclear Safety Regulatory Authority (NSRA) Bill* in order to set up a Nuclear Safety Regulatory Authority to replace the existing Atomic Energy Regulatory Board (AERB) seems to have been placed on indefinite hold, calling into question the commitment of the Indian Government to nuclear safety.⁵⁷

In short, India lacks a genuinely autonomous, transparent and accountable institution that is capable of regulating India’s nuclear power sector.

The consequence of the lack of a genuine independent regulator of the nuclear power sector in India is concerns about safety and security. For example a leaked revelation revealed one of the containment domes for the new reactors at the Kudankulam plant was finished without critical cabling.⁵⁸ There were also allegations in an official Russian corruption probe that an unknown number of substandard parts were installed in critical areas of the same nuclear facility.⁵⁹ In 2013 a group of Indian scientists called for “a fresh independent and thorough quality inspection of the components used in the two reactors.” The scientists warned “The ramifications of such corruption need to be taken very seriously as they have implications for the long term safety of the nuclear plant.”⁶⁰

No public inquiry was carried out and instead in August 2014 a report by the Indian Government’s Intelligence Bureau into the activities of 65 non-government organisations, including some of those that supported the Kudankulam protests. The report accused the groups of being “tools for the strategic foreign policy interests of Western Governments”.⁶¹ The Indian security forces have allegedly mounted a campaign of harassment and intimidation against people protesting against the building of the Kudankulam nuclear power

⁵⁵ Assistant Professor Happymon Jacob, ‘Regulating India’s nuclear estate’, http://happymon-jacob.blogspot.com.au/2014_08_24_archive.html, 30 August 2014.

⁵⁶ Assistant Professor Happymon Jacob, ‘Regulating India’s nuclear estate’, http://happymon-jacob.blogspot.com.au/2014_08_24_archive.html, 30 August 2014.

⁵⁷ Iftikhar Galani, ‘Delhi N-leak: Clamour for safety regulator grows’, Daily News and Analysis India, 10 October 2016, <http://www.dnaindia.com/india/report-delhi-n-leak-clamour-for-safety-regulator-grows-2262790>

⁵⁸ Adrian Levy, ‘India’s nuclear solution to global warming is generating huge domestic protests’, Centre for Public Integrity, 17 December 2015.

⁵⁹ Adrian Levy, ‘India’s nuclear solution to global warming is generating huge domestic protests’, Centre for Public Integrity, 17 December 2015.

⁶⁰ Adrian Levy, ‘India’s nuclear solution to global warming is generating huge domestic protests’, Centre for Public Integrity, 17 December 2015.

⁶¹ Adrian Levy, ‘India’s nuclear solution to global warming is generating huge domestic protests’, Centre for Public Integrity, 17 December 2015.

plant. It has included the use of mass arrests, destruction of school property, cutting off electricity to communities where members have been involved in the protest and freezing bank accounts of the Catholic diocese of Tutarin based on allegations the accounts had been used to channel foreign funds to anti-nuclear protestors.⁶² The Synod does not believe this is an environment into which Australia should be selling uranium.

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⁶² Adrian Levy, 'India's nuclear solution to global warming is generating huge domestic protests', Centre for Public Integrity, 17 December 2015.