Environment and Other Legislation Amendment (Removing Nuclear Energy Prohibitions) Bill 2022

Submission by Ian Levy[1] 25 November 2022

Executive summary

- With modern small-scale nuclear power, Australia has an opportunity to build and expand on its current leadership role in nuclear medicine production for Southeast Asia and Oceania
- ANSTO's Lucas Heights nuclear reactor has provided nuclear medicines for the SE Asian and Oceania region for decades and is highly trusted by all nations
- ANSTO could be the model for an organisation that eventually could provide small-scale nuclear power plants across the region over coming decades to reduce power costs in developing nations and operating within a safety and maintenance system coordinated and provided by Australia and/or under the aegis of treaties such as AUKUS or the Quadrilateral
- A project-specific non-proliferation treaty and on-going technology development under that treaty would be the first step in this long-term project which must develop a mutual trust ethos
- Eventually, Australia could provide interchangeable, robust, small-scale nuclear power plants on a rotation basis with servicing done in Australia, similar to how ANSTO manages its nuclear medicines
- Australia cannot miss this opportunity, lest it be permanently supplanted by other major nuclear powers.

Concept

Developing nations of SE Asia and Oceania have many small-scale diesel power stations located near ports so that fuels can be supplied. These power generators are inefficient, aging and producing electricity which is rising in price in real terms, thus inhibiting the economic development of nations and the regions. Many regions have unreliable power supplies, so people and communities often run their own generator plants, which are extremely expensive, so that lights can stay on at nights, thus draining poor communities of funds that are needed for education, health and infrastructure.

The current power grids of developing nations are fragile and often suffer major damage from cyclones, tsunami, floods and earthquakes. Solar and wind turbines are not suited to most of these countries.

Global engineering firms and certain governments have often persuaded these small nations to take on disproportionate debts to build hydro schemes and/or renewable energy projects that have tended to be unsuccessful and high cost, leaving these nations facing unserviceable national debts.

Small-scale nuclear power: Just as modern railway diesel engines were originally developed as submarine engines, nuclear submarines have developed highly efficient small nuclear power plants with decades of safe operation.

Nations are starting to trial these ex-submarine power plants and the world is potentially at a watershed moment in nuclear power, just as it was when powerful diesel locomotives started to replace coal locos.

Once small-scale nuclear power has been developed further, it has the unique potential to provide first-world power systems to third world nations without those nations having to go into major debt. This would deliver large benefits from cooperation, especially in the SE Asia and Oceania.

Australia's high reputation for safe nuclear operations is a national asset that should not be underestimated or diminished.

Yours respectfully

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RESUME OF AUTHOR

Ian Levy

BSc (1st Hons & economics major, ANU), MSc (Dist, London, Royal School of Mines), DIC (Imperial College, UK)
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Ian Levy has 50 years' experience in mining and exploration. His 12 years with Western Mining Corporation Limited included Melbourne head office business development roles associated with the uranium projects at Yeelirrie WA and Olympic Dam, SA that involved high-level negotiations with Australian government officers, SA state government agencies, international energy corporations from France, UK and Japan as well as community consultations.

From 1984 to 2009, Ian worked on various projects in Fiji, Solomons, PNG, Thailand and Indonesia, often in remote locations serviced only by helicopters. He has seen the challenges caused by unreliable electricity supplies in SE Asia and the South Pacific.

Ian has experienced first-hand 5 major tropical cyclones above category 3 and has assisted small isolated communities to recover from the widespread damage caused by these natural disasters, including taking on senior leadership roles with a mine-based fire brigade and coordinating emergency generators to safeguard food supplies after two consecutive category 4 cyclones, Nigel and Eric had broken every power pole within 20 kms.

After cyclones Nigel and Eric in northern Vanua Levu, Fiji, the powerlines were repaired by the mine's electricians and the gold mine's generators supplied electricity to the mine township and the communities of the Tavua basin. It took months for the district to reconnect to the Monasavu hydroelectric project in the mountains, which, in any case, provided the most expensive electricity in Fiji and was the main national debt for that small nation. Ian learnt that many grandiose capital projects are for the benefit of the financing and engineering organisations and are often detrimental for the 3rd world country that has been convinced to fund these projects.

In the Vatukoula gold mine, Ian observed how hard it was for a talented young Fijian member of his exploration team to complete his BSc by correspondence when trying to study at night by the light from kerosene lamps.

Ian remains actively involved in Fiji, supporting families and community projects near Savusavu on Vanua Levu. During the devastation of Savusavu and hinterlands caused by severe tropical cyclone Winston, Ian was the first to personally send emergency funds for fuel so that contractors could clear fallen trees from roads and provide drinking water for isolated villages before health problems developed. Ian's two self-help recovery projects around Savusavu commenced 2 days after Winston which was 4 weeks before the first NGO reached the area.

Cyclone Winston was the most intense tropical cyclone in the Southern Hemisphere, and the costliest tropical cyclone on record in the South Pacific basin. It taught Ian that benevolent NGOs are well-intended but are far less helpful than developing self-reliance and resilience within local communities who know their districts well.

Whilst working in the Solomons in 2005-06, Ian experienced the debilitating effects on business investment caused by intermittent power supplies when trying to develop a project and work with government agencies that had been poorly funded for several years. The mercantile class of Solomons power their own compounds, mainly using diesel gensets and these high costs are added to the cost of staple goods, thereby increasing poverty and restricting the capital markets of these 3rd world countries.

Similar experiences in remote mountainous areas of Fiji in 1985 and in PNG in 1995 convinced Ian that the single best support that can be given to the South Pacific nations is cheap, robust electricity provided without incurring oppressive national debts.

Mr Levy was Federal President, Australian Institute of Geoscientists 1994-96 and a member of the Joint Ore Reserve Committee of Australasia (JORC) 1991-2002, including four years as Vice Chairman 1996-2001.

Ian is currently executive Director of the ABx Group Limited, working primarily on ABx's discovery of Rare Earth Elements in northern Tasmania and technology development linked to recycling waste from aluminium smelters.