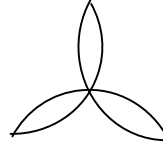


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Committee Secretariat
Standing Committee on Environment and Energy
PO Box 6021
Parliament House
Canberra ACT 2600

By Email: Environment.Reps@aph.gov.au

Re: Inquiry into the prerequisites for nuclear energy in Australia

Dear Committee Secretariat

Thank you for the opportunity to submit to the Standing Committee on Environment and Energy in relation to the prerequisites for nuclear energy in Australia

EcoEnviro Pty Ltd has been consulting to the renewable energy industry sector in Australia since 2003. It's clients include major utilities, developers and engineering companies. EcoEnviro specialises in project development from greenfield development through to construction, operation and management of wind and solar projects. EcoEnviro is also developing its own wind and solar projects in Northern NSW and is contracting to Pilbara Solar in North West Western Australia.

Addressing the terms of reference:

- a. Waste management, transport and storage
Nuclear waste is a long term radioactive contaminant for soils, air and water. Nuclear waste is dangerous to many forms of life, including humans. Radiation from nuclear waste has a long half-life, which has the possibility to impact future generations. Nuclear power relies on this energy to function, hence nuclear power should not be considered a sustainable energy option in Australia's energy mix.
- b. health and safety
Whilst many nuclear power plants around the world have a strong safety record, there are a string of recorded incidents of failure of plants around the world, most notably Three-Mile Island, Chernobyl and most recently Fukushima. These plants were all considered to be "safe" in their day, and each of them continues to be a radiation and health hazard to the environment. We can no longer afford to risk the safety of our community based on even low probability, especially when cheaper, safer options of energy generation are available. One of the largest nuclear generators in the world (Germany) is now closing and dismantling its power plants in favour of distributed renewable energy and local smart-grids.

- c. environmental impacts
As in b. above the impacts to the environment from the mining, transport and utilisation of uranium for nuclear generation are avoidable. Cheaper, cleaner options of generation are now available to us on utility-scale wind and solar projects .
- d. energy affordability and reliability
Nuclear energy will not solve the energy affordability and reliability issues, that we are facing. Nuclear energy has a higher levelised cost of energy (LCOE) than renewables (Bloomberg New Energy Finance 2018), and has a long lead time to development, construction and operation of plant. Better options for affordability include the deployment of more wind and solar generation, in combination with battery storage. Battery storage has already demonstrated its effectiveness in South Australia and Victoria, with home battery storage becoming a fast-developing market due to improving cost effectiveness. Installation of high voltage direct current (HVDC) transmission lines between the Eastern States, and also between the NEM and Western Australia could also prove to be effective in opening up new renewable energy opportunities and increasing the reliability of wind and solar.

The Pilbara has the best solar resource in the world, and the capacity to power all of Australia if there was some connectivity between the National Electricity Market (NEM), the North West Interconnected System (NWIS) and the South West Interconnected System (SWIS). This would be a far better use of funds, providing employment and training opportunities for Northern Australia and releasing opportunities for cheap clean energy generation Australia and possibly SE Asia.

- e. economic feasibility
Based on a cost per megawatt of installed capacity, nuclear power is more expensive than renewables, which have less impact and less waste (BNEF 2018). The cost of developing nuclear in Australia would be more expensive, would require more land, and extensive community consultation and engagement. The location of any plant would need to be remote and would require significant investment in new high voltage transmission lines to deliver the power to the loads. Investment in such transmission lines would be better served in opening-up new regions with renewable energy opportunities.
- f. community engagement
Community engagement and participation in new generation projects is always challenging. Obtaining community approval to develop, construct and operate a nuclear facility in any region in Australia will probably be the most challenging project ever seen in Australia. The project will experience community objection from every corner of the country based on cost, risk, safety and health, visual amenity and environmental impact. And rightly so. There will be no social licence for such a plant to operate, without significant and probably excessive compensation to impacted parties and parties at risk from indirect impacts.
- g. workforce capability
The capability to develop, construct and operate a nuclear power plant in Australia exists, however the costs attached to each of these processes will be significantly higher than the cost to deploy cheaper, cleaner generation sources. There are more employment and training opportunities in renewables than there are for nuclear power.

h. security implications

One of the issues of the centralised generation model, that we are now moving away from is the risk of energy security. Recently we have witnessed the impact of failing coal fired power plants which has caused significant market volatility and the need for load shedding. The impact of failure at a nuclear power plant can be multiplied and then multiplied again with respect to:

- power pricing
- health and safety risk
- terrorist threat
- grid stability and reliability

i. national consensus

There is a school of thought that exists that nuclear could solve our present energy problems. The irony is that this “problem” was forecast over 20 years ago and nothing was done about it. The call for a nuclear solution is a “band aid” fast-fix idea that is fraught with cost and risk issues.

j. other matters

The idea that Australia needs a nuclear power industry is laughable. Australia has such rich renewable energy resources that it has the potential to generate power for all of SE Asia. The record deployment of renewable energy in Australia over the past 5 years has reached most parts of regional Australia with grid capacity. This deployment has also caused a reduction in the wholesale price of energy, which has rarely been passed down to the consumer. Consequently, we have witnessed the fastest uptake of rooftop solar in the world, most commonly to the lower income suburbs of Australia. We are now observing the uptake of rooftop solar into the commercial and industrial sectors, in combination with battery storage. Commercial power purchase agreements between renewable energy projects, direct to the customer are now commonplace, and the world is heading toward 100% renewable energy.

Perhaps a better idea would be to lead the world in renewable energy and new battery storage technologies, rather than heading back down a path that the rest of the world has decided to leave behind.

I trust that this information is of benefit

Yours sincerely

Richard Finlay-Jones



Dr Richard Finlay-Jones
Director