

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

Personal Details

My name is Marc Centner. I am 69 years old, in full time employment in a business that undertakes environmental chemical testing. I am not affiliated with any organisations, either pro- or anti-nuclear power and my submission is based a journey I have made over the last four years in getting to understand energy and its relationship to climate change.

My real concern, at my age is really for my children, grand child, and unborn grand children and, ultimately, for a flourishing Australia with a bright future for all.

Background

I had a real concern coming up to the last election that energy was not a central issue and that this was an election about the preferred Prime Minister and not really about a long-term vision for Australia. The only question I would have asked each prospective PM was to describe their vision of Australia in 2050.

From my reading and other media, I am concerned that the path currently taken by Australia (100%) renewables will not, despite modelling, lead to a positive outcome for climate, but will, instead, in my opinion, be a costly failure. Refer to, for example, <https://info.gorozen.com/2021-q4-market-commentary-the-distortions-of-cheap-energy> where there are good arguments based on energy returned on energy invested (EROEI). I am sure others will make this point and discuss energy density and how this relates to environmental impacts of energy sources.

Energy Density

I have thought about a way of illustrating this in a simple way:

Imagine a 10 L bucket containing 10 goldfish and contrast this to a 30 L tank containing the same number of fish. Now consider the effort to scoop a single fish from the bucket versus one from the 30L tank. This essentially sums up the difference between less dense forms of power like wind and solar PV and highly dense power that comes from nuclear energy.

Others will no doubt address nuclear waste, time to build (the usual arguments against nuclear power, but we need to remember, investment in nuclear power is intergenerational whereas with renewables, start again in twenty years,

Australia's Reliance on Renewables to Mitigate Climate Change

I respectfully ask the committee to take model's promoting this strategy with some scepticism, and rather look at history. The German *energiewende* included phase out of nuclear power and we see where they stand 20 years later. I would trust history rather than someone's spreadsheet model. We must also consider that models are only as good as their assumptions and for this there may be a vested academic interest in promoting a particular standpoint depending where the money comes from.

We have seen, historically, in Australia, that the uptake of rooftop solar has been remarkable, but those who have adopted this are largely socioeconomically better off. The financial incentives in the form of renewable energy credits are ultimately passed on to consumers with those who least

afford it footing the bill. This is true for large-scale RE projects too. It seems to me that we are just looking at another form of trickle-up economics which ultimately benefit the rich at the expense of most of Australians.

Naturally, the high resource demands of less energy dense wind and solar power are attractive to business (increased mining for required resources to support such technologies, including overbuild, storage and a complex grid) so very difficult to turn the tide on this or to counter the greenwashing associated with this. Sadly, at the same time whilst we have RE targets that are admirable, these are simply aspirational, and will little benefit the climate, the natural environment. They could be achieved, only through the impoverishment of Australia through high energy costs and de-industrialisation.

Abundant Energy and Human Flourishing

My belief is that abundant, low-cost energy is everyone's right in the same way that we expect basic education, medical care, defence, policing, and a welfare system supporting those in need. A healthy, vibrant economy generates the tax revenues that create these things. Include in this promotion and support for the arts and sciences – all "luxuries", ultimately supported by such revenues, so if we care about Australia in the long term we need to preserve and improve on this.

Over the years, we have all seen Australia steadily de-industrialising and becoming more and more of a primary producer with little value adding. If we do want to embrace new technologies such as robotics and additive manufacturing, then we need abundant reliable (and clean) energy to drive our economy. Without looking to things not yet invented, there is one reliable source of abundant, reliable, low cost and **safe** energy, and that is nuclear power.

If Australia is open to going down this pathway, the stimulus to the economy in terms of technical expertise and trades and supply chains would be tremendous. The alternate path (100% renewables) really offshores manufacturing to China (essentially) with potentially dubious labour and environmental practices associated with the manufacture of RE "machines). I would prefer the former rather than the latter and see well paying skilled jobs for our children soon.

What Is My Solution

I do take an extreme position, based on my learnings, that is rather unaccommodating to large-scale renewable projects and grid expansion. This position is based on both economic and environmental grounds and because high density clean energy is available based on existing, well established technology. Only nuclear power has full environmental stewardship from construction to decommissioning and we often see little concern for people, environment, and end of life management of renewable projects.

This is what I think and if this does echo some positions of the more conservative side of politics, I am not concerned because we are talking about large infrastructure endeavour that just may not be able to be driven by the market alone:

- Start working now (with the AEC) on the regulatory framework to manage nuclear power
- Start training now for the labour skills required to undertake nuclear projects (engineers and trades)
- Start developing the supply chain now - be it uranium enrichment, fuel fabrication etc.
- Electrify transport - the old school way
 - Electrified rail freight - carry the bulk of goods between the capitals by rail and only distribute from the rail junctions outward by truck.
 - Improved reliable electrified public transport
 - Fast train to replace airlines on major routes. City to city even a little slower than air travel but can be much more productive and comfortable for commuters.

- Consider current technology Gen3+ power generation as replacement for large scale coal powered plants - my own preference is to work with our South Korean friends based on track record, proximity, and delivery (APR1400)
- Look at SMR technologies as and when they develop for situations where smaller scale reliable power is required.
- The United States reduced its emissions in the last twenty years by de-industrialisation (not advocated nor a good solution - just offshores pollution to elsewhere) and replacement of coal powered electricity generation with methane powered generation. This sounds a bit terrible but replacing coal with natural gas as an interim measure will reduce emissions.
- Begin a public education initiative to objectively provide information on energy alternatives. Bring this into mainstream discourse and depoliticise where possible (see below)
- Consider medium scale renewables only in circumstances that are not impactful to the environment - in remote communities as required.

The Politics of Energy

I am not sure when the Liberals/Nationals had a come-to-Jesus moment and embraced nuclear energy (apart from Senator Matt Canavan sometime in 2022, if a recall correctly) and energy was certainly not front and centre in political discourse in Australia until after the War in Ukraine commenced.

I live in a safe Liberal seat (Bradfield) but I would say that my politics lean centre left. It is regrettable to me that positive discussion on nuclear power is largely in the Murdoch press and that we do not have objective discussion in the public eye of such an important issue. The issue of clean energy should transcend politics because this is about our future and will not happen in the term of a single government. The matter is too important to become a political football in our adversarial form of government and should be subject to a saner, technically informed consensus politics.

There are no just grounds for the current ban under any circumstances. Arguably, biodiversity would be more impacted by the high resources, space and energy inputs of less dense energy systems and this needs to be addressed.

Conclusions

I have come to the position above based on concerns for my family, the future of Australia and that of the world. I do this from a left-leaning (perhaps Keynesian) position that the market cannot do this alone but needs Government participation. We need to build an abundant, clean energy infrastructure in Australia and do assist our friends in Asia and the Pacific to do the same as they develop and move their people out of energy poverty. If this is not done through a deployment of high density, reliable clean energy, this will be largely coal powered development and ultimately not good for people and the environment.

Please listen to the science on this, understand the history that has lead to negative perceptions and repeal this un-necessary ban.

Thank you for reading this.

MARC CENTNER

January 16, 2023.