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IPAN Vision: An Independent and Peaceful Australia

Select Committee on Nuclear Energy
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15 November 2024

Submission to the Federal Government's Inquiry into Nuclear Power

Dear Committee Secretariat

The Independent and Peaceful Australia Network (IPAN) welcomes the opportunity to contribute this written submission. IPAN is a national body comprised of peace organisations, faith organisations, trade unions and environmental and anti-nuclear and other groups. IPAN campaigns for an Australia that acts independently of foreign influences, in the best interests of the Australian people, seeking and promoting peaceful and mutually beneficial relations with all countries.

IPAN and its organisational members (around 50) and individual members (over 200 individuals) contribute submissions to national inquiries and consultations related to peace and defence and foreign policy matters – including raising concerns relating to nuclear issues and nuclear weapons. In the past year, IPAN has written the following submissions:

- Submission to the Senate Standing Committee on Foreign Affairs Defence and Trade Re: Australian Naval Nuclear Power Safety Bill 2023 (and gave evidence at a public hearing for the Inquiry)
- Submission re Australian Submarine Agency Licence Application to Site a Prescribed Radiation Facility known as the 'Controlled Industrial Facility'

In addition, in 2022, IPAN released the findings of its own People's Inquiry: Exploring the case for an Independent and Peaceful Australia[i]. A large number of the 280+ submissions included in this report raised concerns around storage of nuclear waste and the need for the Australian Government to sign and ratify the Treaty on the Prohibition of Nuclear Weapons (TPNW). Submissions to the Inquiry resulted from extensive public consultations and discussions involving several thousands of people (questionnaire responses; public meetings; group discussions and zoom meetings and webinars) from a wide range of civil society organisations, as well as the *Inquiry Request for Submissions* being widely advertised in social media.

IPAN therefore has a great interest in the issue of nuclear power and understands the importance of civil society organisations and community members speaking out at a time like this and appreciate your time considering the issues that we raise in this submission, which will cover the following:

1. **Prohibitive costs of nuclear power**
2. **Nuclear timeframe too slow**
3. **Legal impediments**
4. **Embracing nuclear power will slow down the movement to increase renewables**
5. **Renewables are already here**
6. **Long term storage of high-level nuclear waste**
7. **Other environmental concerns, including water usage**
8. **Impact on First Nations' people and their lands**
9. **Health concerns/risks**
10. **Enrichment poses proliferation risks**

1. Prohibitive costs of nuclear power

IPAN is aware of the very high costs associated with nuclear power, and the impact on households of passing these costs on to them. The cost of building a large-scale nuclear power plant in Australia would cost at least $8.5 billion[ii].

Recent figures provided in the CSIRO GenCost Report 2024 show that nuclear power to be at least 50 per cent more expensive than wind and solar power backed by batteries.

The figures reveal that nuclear options, including large-scale and small modular reactors, would cost between $155 and $641 per megawatt-hour; far higher than the costs of wind and solar with storage, which would cost between $100–140 per MWh – see table here – with renewables the cheapest form of power by quite a margin:

> ***'Onshore wind and solar PV without integration costs such as transmission and storage are the lowest cost generation technologies by a significant margin.'[iii].***

Cost per Megawatt-Hour of various categories of energy sources

Category	Cost per Megawatt-Hour	
	Low Estimate	**High Estimate**
Nuclear SMR	**$387**	**$641**
Nuclear large-scale	**$155**	**$252**
Solar PV and wind with firming	**$100**	**$140**
Solar thermal	$134	$168
Gas	$124	$183
Black coal with CCS	$193	$364
Gas with CCS	$177	$266

Table based on data from CSIRO 2024 [iv]

It is also important to note that these high costs do not include the additional high costs of decommissioning retired reactors; and the astronomical cost of isolating reactor waste from the environment for the very long duration over which they pose an environmental hazard

2. **Nuclear timeframe too slow**

IPAN is aware that coal is on the way out, with most coal to be phased out in around ten years' time – and all coal should be gone in 15 years' time.[v]

Critically CSIRO's chief economist Paul Graham says nuclear power could not be provided in Australia in time to meet the deadline for ending coal-fired power. Graham has stated the following:

> ***'...any nuclear power plant would be unlikely to be built until 2040 or later — well after much of Australia's coal-fired generation capacity needs to be replaced'.***[vi]

Other experts, such as former Chief Scientist Alan Finkel have argued that the required timeframe (of up to twenty years) to build a nuclear power plant would delay emissions reduction efforts by decades.[vii]

IPAN is aware that there are extensive delays and cost blowouts when it comes to international nuclear projects. The World Nuclear Industry 2024 Status Report[viii] noted that every reactor currently under construction has exceeded the five year construction estimate. Many have suffered significant delays. Of those operational in recent years, time from construction to grid connection is 7 to 15 years. *(See 2024 Status Report Figure 11)*. Renewables, however, have a distinct advantage as they can be rapidly deployed to meet immediate energy needs.

In the case of Small Modular Reactors (SMRs), which are often suggested as an alternative to renewables, we are not simply facing the significant latency and bottlenecks of construction; and problems are not just compounded by the lack of Australian experience. The reality is that commercial development of SMRs in Australia would be an open-ended task, given it has never been done anywhere in the world.

In addition, even if the plan of current Opposition Leader, Peter Dutton was implemented, it would come with the serious disadvantages outlined in this submission (high cost, too slow and toxic waste (see below)), and would only contribute 12% to Australia's total energy production by 2050.

The Climate Council (2024) have stated the following:

> ***'The electricity delivered by seven nuclear reactors would only provide around 12% of the power we'll need by 2050. If most of the rest of our electricity still comes from gas or other polluting sources out to 2050 and beyond, we'll have no hope of getting climate pollution under control'.***[ix]

3. **Legal impediments**

Nuclear power is currently banned in Australia under federal and some state laws. The Australian Radiation Protection and Nuclear Safety Act 1998 is one of the pieces of current legislation that would restrict the development of nuclear power.

Senate support would be required to overturn the current restrictions in place. Additionally, it could possibly result in complicated and protracted legal battles between federal and state governments.

4. **Embracing nuclear power will slow down the movement to increase renewables**

IPAN is also extremely concerned that any time spent on promoting and developing nuclear power would not only represent a massive opportunity cost (money that should be spent on renewables) it could also be seen as a deliberate delay tactic that seeks to prolong fossil fuels.

With the world experiencing unprecedented flooding in some parts, and extreme heat and bushfires in others, any delay in further expansion of renewables is only going to amplify the current climate catastrophe the world is experiencing. Nuclear power is a high cost and long consequence energy option. In a nation with plentiful renewable energy resources, we simply cannot afford to be investing time or money in the wrong energy option in this critical decade for taking action.

IPAN is aware that globally renewables are outpacing nuclear power. In 2023, renewables saw record additions of 507 gigawatts globally while nuclear power experienced a net loss of capacity[x]. Solar and wind now produce over three times more electricity than nuclear worldwide. The Australian Energy Market Operator (AEMO) forecasts that renewables could meet 96% of Australia's electricity needs by 2040, with nuclear adding limited, if any, value. There is simply no reason to explore nuclear power options.

5. **Renewables are already here**

Renewable energy options have a distinct advantage over nuclear power because they are already here. Renewable energy is proven and deployable vastly safer and cheaper than nuclear and 'currently 35% of our national power' (Dave Sweeney, 2024)[xi]. Currently, for example, 100% of the power is renewable in the ACT as well as Tasmania, and in South Australia, 75% of the power, 'en route… [to] 100% of the power by the end of this decade' (Dave Sweeney, 2024)[xii].

Dave Sweeney (2024), Nuclear Free Campaigner for the Australian Conservation Foundation recently stated

> ***'It has been said repeatedly by independent analysis, including the Australian energy market operator and the CSIRO, that it [nuclear power] is simply the slowest and the most expensive energy option and at the same time renewables, is 35% of the power, growing every day. Now to interrupt the renewable rollout, really, it's nothing short of economic and environmental sabotage'[xiii].***

In the past Australia has not embraced nuclear power, even when other countries have done so, because Australia has had large quantities of coal. We now have much greater awareness about the impact of coal on the climate (which some term as 'climate chaos'); and we know that in the next decade we need to retire 80% of coal from the National Electricity Market. This is going to be a huge challenge in and of itself – which is not going to be helped by unnecessary delays. Any time wasted on considering nuclear power options is precious time that would be far better spent focusing on further developing renewables.

IPAN believes that the energy future of Australia is very clear. Renewables must be embraced because they are cheaper, cleaner and faster and very deployable. They already exist and are producing energy in Australia everyday. Renewables are already creating jobs, lowering emissions, and securing genuine clean energy for this generation and generations to come.

In addition, renewables enjoy significant popular support with a majority of Australians supporting the transition to renewable energy over nuclear or coal (e.g. a recent ISPOS Poll showed that 59% of Australians support the transition to renewable energy[xiv]). Australia deserves an energy path that is future-focused and builds on the strength of our abundant sun and wind.

6. Long term storage of high-level nuclear waste

Managing nuclear waste safely is a complex and long-term commitment. All the scientific evidence points to a need for safe and reliable storage and monitoring of the highly radioactive components of nuclear power waste for tens of thousands of years.

Australia has no current facilities for high-level nuclear waste, and there is no operating underground repository for such waste globally. Nuclear industries abroad have experienced incidents with radioactive materials transport, and Australia lacks the necessary systems and capacity to safely dispose of nuclear waste domestically. Any move to advance nuclear power in Australia would also see growing pressure for us to host international radioactive waste, which IPAN believes simply should never happen.

7. Other environmental issues, including water storage

Nuclear power plants require large amounts of water, which limits potential sites and strains water resources. IPAN understands that a typical 1,000-megawatt reactor uses between 35 and 65 million litres of water daily[xv]. This is an extraordinary volume of water. In coastal areas, this could severely affect marine ecosystems. In contrast, renewables need minimal to no water, making them far more adaptable to Australia's environment and climate.

Dave Sweeney (2024), Nuclear Free Campaigner for the Australian Conservation Foundation also recently stated the following:

> ***'The Australian public don't know anything about waste management plans and the waste of civil nuclear reactor, commercial nuclear reactor is orders of magnitude more serious than what we currently have in Australia and what we currently have is serious. We have intermediate level waste which needs to be isolated from people on the planet for 10,000 years and for commercial nuclear power waste, that high level waste needs to be isolated from people on the planet for up to 100,000 years'[xvi].***

While nuclear energy produces toxic waste that is harmful to human health and remains so for tens of thousands of years Renewable forms of energy production, however, do not produce such toxic waste.

8. Impact on First Nations' people and their lands

Australia's First Nations communities have long resisted proposed nuclear waste sites on their lands. The UN has emphasized that Indigenous rights must be respected, advocating for 'free, prior, and informed consent' regarding any nuclear development on these lands. This is a fundamental issue that any future nuclear plans would need to address carefully.

9. Health concerns/risks

Experts highlight that nuclear power brings unique risks not seen with renewables. Beyond routine safety protocols, there is a heightened risk of catastrophic failures, as seen with Japan's Fukushima disaster in 2011, which displaced nearly 200,000 residents and incurred billions in continuing costs. Furthermore, nuclear plants can become potential terrorist targets. International incidents like the Zaporizhzhia nuclear plant crisis in Ukraine highlight these security concerns.

10. Enrichment poses proliferation risks

IPAN wishes to highlight that the same technology used for nuclear power generation and to develop and deploy small modular reactors, can be extended to produce the Highly Enriched Uranium (HEU) used in nuclear weapons. If the option of nuclear power was pursued in Australia, enrichment would pose nuclear proliferation risks. This is another reason why IPAN opposes nuclear power generation in Australia.

Australia has no (conventional) enrichment capability, and no relevant regulatory experience. Any attempt at domestic enrichment would encounter not only technical hurdles but also global political obstacles stemming from non-proliferation concerns. IPAN would be totally to opposed to Australia opening itself up to having (conventional) enrichment capability.

I thank the Committee for the opportunity to contribute to this Inquiry and sincerely hope the points I have raised will be considered.

Yours faithfully

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On behalf of the Independent and Peaceful Australia Network

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[ii] Paul Graham, CSIRO Chief Scientist, 2024 cited in ABC Article, 22 May 2024, https://www.abc.net.au/news/2024-05-22/nuclear-power-double-the-cost-of-renewables/103868728

[iii] GenCost 2024 GenCost 2023-24 Final report Paul Graham, Jenny Hayward and James Foster May 2024, p. file:///C:/Users/JP/DownloadsGenCost2023-24Final_20240522%20(1).pdf

[iv] GenCost 2024, 2023-24 Final report, Excel spreadsheet data-B9En8, Paul Graham, Jenny Hayward and James Foster May 2024, p.71file:///C:/Users/JP/Downloads/GenCost2023-24Final_20240522%20(1).pdf

[v] Dave Sweeney, ACF 13 Aug 2024 https://ipan.org.au/understanding-and-resisting-the-nuclearisation-of-australia-13-august-2024/

[vi] Paul Graham, CSIRO Chief Scientist, 2024 cited in ABC Article, 22 May 2024 https://www.abc.net.au/news/2024-05-22/nuclear-power-double-the-cost-of-renewables/103868728

[vii] ABC News Online, 11 June 2024, Does nuclear power have a future in Australia? These numbers will help cut through the debate https://www.abc.net.au/news/2024-06-11/nuclear-power-for-australia-cost-and-timelines-explained/103641602

[viii] The World Nuclear Industry 2024 Status Report https://www.worldnuclearreport.org/ Figure 11 AVERAGE ANNUAL CONSTRUCTION TIMES IN THE WORLD

[ix] Climate Council, 2024), PETER DUTTON'S ENERGY SCHEME: EVERYTHING YOU NEED TO KNOW, 21 June 2024 https://www.climatecouncil.org.au/resources/peter-duttons-energy-scheme-everything-you-need-to-know/

[x] Renew Economy, 2024, Nuclear goes backwards, again, as wind and solar enjoy another year of record growth November 16, 2024 https://reneweconomy.com.au/nuclear-goes-backwards-again-as-wind-and-solar-enjoy-another-year-of-record-growth/#:~:text=Nuclear%20power%20suffered%20a%20net%20loss%20of%201.7,additions%20set%20a%20new%20record%2C%20the%20IEA%20states.

[xi] https://ipan.org.au/understanding-and-resisting-the-nuclearisation-of-australia-13-august-2024/ and https://ipan.org.au/wp-content/uploads/TRANSCRIPT-13.8.24-Presentations-David-Noonan-and-David-Sweeney.pdf
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[xiv] https://www.ipsos.com/en-au/australians-now-more-concerned-about-green-energys-impact-cost-living-and-electricity-bills
[xv] https://nuclear.foe.org.au/wp-content/uploads/Water-NP-2xA4-2018.pdf
[xvi] https://ipan.org.au/understanding-and-resisting-the-nuclearisation-of-australia-13-august-2024/ and https://ipan.org.au/wp-content/uploads/TRANSCRIPT-13.8.24-Presentations-David-Noonan-and-David-Sweeney.pdf