

15 November 2024

Parliament House
Canberra ACT 2600

Sent via: nuclear.reps@aph.gov.au

RE: Queensland Conservation Council Submission to the Federal Nuclear Inquiry

1. Introduction

The Queensland Conservation Council (QCC) welcomes the opportunity to provide input into the House Select Committee on Nuclear Energy's inquiry into nuclear power generation in Australia. Queensland Conservation Council is the peak body for environmental groups in Queensland and has been supporting communities to protect their environment since 1969.

Queensland's unique environments and communities are already suffering climate impacts. We need to rapidly reduce emissions by 2035 to achieve a 1.5 degree future that will give the Great Barrier Reef a chance at survival. Emissions from energy and electricity production are currently the biggest source of emissions in Queensland, and therefore the first that need to be reduced. A well planned transition to renewable energy can achieve these emissions reductions and deliver benefits for nature and communities. Nuclear cannot play a role in this transition on this time frame.

Further, we have deep concerns about nuclear for the following reasons:

- High water use in an already stressed and drought prone state, particularly in an emergency
- Long term waste storage and safety management
- First Nations opposition to nuclear development on Country
- The expense and incompatibility of nuclear with the high renewables system we need to build in the next decade to reduce emissions

Queensland is on track to reach 80% renewable energy by 2035, which will allow significant progress towards a 1.5 degree aligned emissions reduction path. By focusing on delivering renewable energy well for Queensland, we can achieve reliable and affordable electricity as well as maintain Queensland's precious environment for future generations .

2. Key Queensland Concerns around Nuclear Power Generation

2.1 Deployment Timeframes and the Climate Imperative

Nuclear power generation could not be deployed rapidly in Queensland. A world-wide review of nuclear plant construction time indicates that, from start of construction to grid connection, has been on average 7.7 years, and that this is longer for new technologies or countries with multiple regulators or without an existing nuclear industry¹.

From where we are now, the start of construction for a nuclear power plant would be many years away. The United Arab Emirates, for example, declared its interest in developing a peaceful nuclear industry in 2006, and completed commissioning its first nuclear power station in 2024². This is an 18 year journey, in an autocracy.

Hinkley Point C in the UK is also a sobering case study for the deployment of nuclear energy - it has been delayed at least six years so far and is now on track to be operational in 2029, 16 years after the power purchase agreement, or contract for difference, was signed by the UK Government in 2013³. Just signing that contract was the culmination of another eight years of policy work and agenda by the UK Government to revive investment in nuclear power in the UK⁴.

Based on these international experiences, a timeframe of 15-20 years to come online seems optimistic.⁵ This puts nuclear power generation not available to Queensland until 2040 - 2045 at the earliest.

We need to rapidly reduce our emissions to stay within a 1.5 degree carbon budget, by at least 60% by 2030⁶. Net zero by 2050 cannot mean we continue to produce emissions until then, or we will condemn ourselves to dangerous climate change.

Furthermore, the majority of Queensland's coal fired power stations at Stanwell, Tarong, Gladstone, Callide B and Tarong North will reach the end of their technical life by 2045. These

¹ https://inis.iaea.org/collection/NCLCollectionStore/_Public/42/105/42105221.pdf

² <https://world-nuclear.org/information-library/country-profiles/countries-t-z/united-arab-emirates>

³ UK Department of Energy and Climate (2013) [*Initial agreement reached on new nuclear power station at Hinkley*](#)

⁴ EnergyPost (2014) [*The saga of Hinkley Point C: Europe's key nuclear decision*](#)

⁵ Why nuclear power will never be right for Australia. Australian Conservation Foundation. 2024. Delayed reaction: Why Queensland will never need nuclear energy. Clare Silcock. Queensland Conservation Council. 2024

⁶

<https://www.marineconservation.org.au/wp-content/uploads/2019/10/Report-CarbonBudgetForQueensland-ClimateAnalytics-2019-WEB.pdf>

will have to be replaced to maintain security of supply, well before a potential nuclear power generator could be built.

Recommendation: The committee should accept that nuclear power generation will not be able to deliver emissions reductions in a meaningful time frame for Queensland's environment.

2.2 Storage of Waste

Nuclear power generation creates radioactive waste that will remain dangerous for tens of thousands of years. All nuclear waste is currently just in storage, because no country in the world has been able to permanently dispose of nuclear waste⁷.

Australia generates a small amount of radioactive waste from medical facilities such as Lucas Heights. There is not a long term solution for storing this waste⁸. It is currently shipped to the UK for processing, then shipped back to Australia for continued storage at Lucas Heights. This is not a viable solution for increased amounts of increasingly radioactive waste.

Proposals for nuclear waste dumps in Australia, for example, at Muckaty Station⁹ and more recently Kimba¹⁰, have received huge opposition from local Traditional Owners and ultimately been abandoned.

Nuclear power generation would produce much more waste than we currently create for research and medical purposes. No community in Australia has yet consented to storing waste. Transporting radioactive materials introduces additional risks of accidents and spills during transit.

Recommendation: the committee provides advice that it is inherently too risky to proceed with nuclear power generation without a long term waste storage solution.

7

<https://world-nuclear.org/information-library/nuclear-fuel-cycle/nuclear-waste/storage-and-disposal-of-radioactive-waste#:~:text=Storage%20of%20used%20fuel%20may.final%20management%20of%20radioactive%20waste.>

8

<https://theconversation.com/nuclear-energy-creates-the-most-dangerous-form-of-radioactive-waste-where-does-peter-dutton-plan-to-put-it-233213>

9

<https://www.abc.net.au/news/2014-06-19/northern-land-council-withdraws-muckaty-creek-nomination/5535318>

10

<https://theconversation.com/the-kimba-nuclear-waste-plan-bites-the-dust-heres-what-went-wrong-and-how-to-do-better-next-time-211344>

2.3 Impact on the electricity system

Nuclear energy is prohibitively expensive. The CSIRO GenCost Report estimates that nuclear power would cost between \$200 and \$350 per megawatt-hour, compared to \$30 to \$70 for solar and wind.¹¹

In Queensland, renewable energy is already bringing down energy prices¹² and with a continued stable policy environment, will continue to do so¹³. Renewables are the clear, reliable path forward for Australia's energy future without the risks or delays of nuclear power.

The delay in being able to build nuclear power generation also means that renewable energy will have to be built to reduce emissions and replace our ageing coal fired power stations. Nuclear power generation is not flexible, and must be kept running at a minimum load. Even incorporating one 1,000 MW nuclear power station into the likely generation mix in Queensland by 2040 would displace more than 3,700 GWh of renewable energy annually by 2040, forcing the the equivalent 45,000 rooftop solar systems to be turned off on an average day to accommodate the nuclear power station¹⁴. This would not only waste cheap, abundant solar energy but would undermine the investments made by Queensland households and businesses in clean energy.

Recommendation: The committee should prioritise solar and other renewable energy sources that are already contributing to Queensland's energy needs without the downsides of nuclear power.

2.4 Water Use

Nuclear power stations require vast amounts of water for cooling, which is a critical concern in Queensland, a state already facing water scarcity, which will become worse under all climate projections. At the most conservative estimate, nuclear power stations require a similar amount of water as our thirsty coal fired power stations. It is estimated that around 1.4% of Australia's

¹¹ GenCost. CSIRO. Why nuclear power will never be right for Australia. Australian Conservation Foundation. 2024. Delayed reaction: Why Queensland will never need nuclear energy. Clare Silcock. Queensland Conservation Council. 2024

¹²

https://assets.nationbuilder.com/queenslandconservation/pages/5629/attachments/original/1713233471/P_rice_Impacts_of_Renewable_Energy_2023_QCC_Report_April2024.pdf

¹³

<https://assets.nationbuilder.com/queenslandconservation/pages/5629/attachments/original/1727756969/QCC-report-impact-energy-policy-power-prices-2024-10.pdf?1727756969>

¹⁴

https://assets.nationbuilder.com/queenslandconservation/pages/5629/attachments/original/1721611969/Delayed_reaction_Why_Queensland_will_never_need_nuclear_energy_%281%29.pdf?1721611969

total water consumption is used by coal fired power stations¹⁵. An estimated 10,000 ML of water per year is pumped to Callide B and Callide C power stations, near Bileola in Central Queensland, around 40% of the total Gladstone Area Water Board demand¹⁶.

Drought has already forced Queensland's coal fired power stations to reduce operations. In 2007, Tarong Power Station in the South Burnett region of Southern Queensland turned off two of its four units and reduced operation at the remaining two to reduce water consumption. Water consumption at Tarong was also an issue in the 2019-20 drought, because it draws water from the Boondooma Dam drinking water supply in times of drought.

Nuclear power stations would also require huge amounts of water on hand in case of emergencies. In Fukushima, over 1.3 million cubic litres of water was required to cool the reactors to prevent an explosion after the earthquake and tsunami caused all safety and backup systems to fail¹⁷.

Competing water use between nuclear power stations and agriculture could threaten Queensland's farming communities¹⁸.

Recommendation: the committee recognise the severe detrimental impact of nuclear power generation on Queensland's already increasingly fragile water security

2.5 Queensland State Government Legal Frameworks

Nuclear power is currently banned in Queensland, under both federal and state legislation. Queensland's *Nuclear Facilities Prohibition Act 2007*¹⁹ requires a plebiscite to be held if the Federal Government moves towards nuclear development in Queensland.

This adds significant delays to development as well as costs. The marriage equality plebiscite cost at least \$160m²⁰.

¹⁵ <https://www.sciencedirect.com/science/article/pii/S2588912518300080>

¹⁶ https://www.qca.org.au/wp-content/uploads/2019/05/16612_W-Callide-GAWB-SubStageB-1.pdf

¹⁷ <https://www.iaea.org/topics/response/fukushima-daiichi-nuclear-accident/fukushima-daiichi-alps-treated-water-discharge/faq>

¹⁸ Why nuclear power will never be right for Australia. Australian Conservation Foundation. 2024.

¹⁹

<https://www.legislation.qld.gov.au/view/pdf/asmade/act-2007-004#:~:text=3-,Purpose%20of%20Act%20and%20its%20achievement,in%20the%20nuclear%20fuel%20cycle.>

²⁰

<https://www.theguardian.com/australia-news/2016/mar/14/marriage-equality-plebiscites-true-cost-estimated-at-525m>

Recommendation: Rather than wasting time on changing laws to accommodate nuclear, Australia should focus on improving legal frameworks to accelerate the development of cheap renewable energy.

2.6 Risks to local communities

Queensland communities have also shown little support for nuclear energy, with 76% of Australians preferring to live near wind or solar farms over nuclear power stations²¹. Nuclear power also carries significant safety risks, particularly for communities near potential plant sites. Australia's geographic vulnerability to natural disasters, such as bushfires and floods, makes the prospect of managing a nuclear disaster particularly concerning.

In Finland, nuclear power stations have to have an exclusion zone of 20 km, within which residents have an emergency evacuation plan²². In Queensland, such a threshold would encompass thousands of residents of regional Queensland if power stations were built at Tarong and Callide.

Queensland's First Nations communities have vocally opposed nuclear development, as have many other First Nations communities around the country, especially those which have borne the brunt of reckless nuclear experiments in decades past²³.

Recommendation: The committee should focus on energy solutions that have broad community backing.

3. Conclusion

The Queensland Conservation Council strongly opposes the development of nuclear power in Australia. Nuclear energy is too costly, too slow to deploy, and poses significant risks to both the environment and communities. We urge the committee to reject nuclear power as a viable energy option and focus its efforts on advancing Australia's renewable energy future, which will deliver faster, cheaper, and safer energy solutions while safeguarding our environment and way of life.

²¹ Why nuclear power will never be right for Australia. Australian Conservation Foundation. 2024.

²² https://australiainstitute.org.au/wp-content/uploads/2020/12/Nuclear-siting-40_10.pdf

²³ https://www.queenslandconservation.org.au/dutton_force_poisons_onto_lands_traditional_owners