Submission to the House Select Committee on Nuclear Energy

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Parliament House
Canberra ACT 2600

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

RE: Australian Marine Conservation Society: Submission to the Federal Nuclear Inquiry

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Introduction

Australia stands at a critical juncture in addressing climate change and securing its environmental heritage. As one of the most vulnerable continents to climate impacts[1], Australia cannot afford to delay urgent action to reduce greenhouse gas emissions. This submission outlines significant concerns regarding the potential adoption of nuclear power as part of Australia's energy future. Establishing a nuclear industry in Australia involves extended planning and implementation timelines, substantial water demands, and complex waste storage challenges, all of which risk undermining Australia's climate goals and environmental integrity.

The Great Barrier Reef, one of Australia's most iconic ecosystems, has experienced five mass bleaching events in the past eight years[2], highlighting the immediate threats posed by climate change. With the Australian Government committed to an 82% renewable energy target by

[1] Cole Latimer, Australia one of the countries most exposed to climate change, bank warns. *Sydney Morning Herald.* Website, published March 22, 2018. https://www.smh.com.au/environment/climate-change/australia-one-of-the-countries-most-exposed-to-climate-change-bank-warns-20180322-p4z5n8.html

[2] Australian Institute of Marine Science. Coral Bleaching events. *Australian Government,* Website accessed 12.11.2024. https://www.aims.gov.au/research-topics/environmental-issues/coral-bleaching/coral-bleaching-events

2030[3], prioritising existing and established renewable energy technologies, like solar and wind, is crucial to meeting our domestic and international climate commitments. Delays associated with nuclear energy infrastructure risk compromising these targets. Renewables offer a faster, safer, and more effective pathway to decarbonisation.[4]

Diverting investment and focus on building a nuclear industry, with its expense, extensive water demands, and long timelines, would delay the rollout of renewable energy that is already deployable and effective. Prioritising renewable energy offers Australia a faster, more reliable path to achieving its climate goals, safeguarding vulnerable ecosystems, conserving precious water resources, and ensuring a resilient, clean energy future.

Australia must act now on renewable energy.

Australia's Great Barrier Reef faces an unprecedented threat from climate change, with five mass bleaching events in just eight years, including one during a traditionally cooler La Niña year. If global temperatures rise by 1.5°C, coral reefs could decline by 70-90%, and at 2°C, nearly all could be lost.[5] This would have profound impacts on Queensland's economy and communities, with thousands of jobs reliant on a healthy Reef. Rapid emissions reductions are essential to protect this iconic ecosystem, and the Australian Government's target of 82% renewable energy by 2030[6] is a key step in meeting these climate needs.

However, prioritising nuclear power as a climate solution risks delaying these urgent reductions, jeopardising both Australia's Paris Agreement commitments and the Australian Government's 2030 and 2035 targets. Establishing a nuclear industry in Australia requires extensive planning, construction, and regulatory approval, likely taking 15-20 years. For example, the United Arab Emirates took 18 years from initiating interest in nuclear power to achieving grid connection.[7] In Australia, however, significant legislative, regulatory, and community hurdles would extend this timeline even further, resulting in substantial delays in establishing a nuclear industry[8]. Delays

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[3] Annual Climate Change Statement 2022 The first Annual Climate Change Statement to Parliament as required by the Climate Change Act 2022. *Australian Governmnet*, Webpage, 2022. Page 32. https://www.dcceew.gov.au/sites/default/files/documents/annual-climate-change-statement-2022.pdf

[4] Sovacool, B.K., Schmid, P., Stirling, A. et al. Differences in carbon emissions reduction between countries pursuing renewable electricity versus nuclear power. Nat Energy 5, 928–935 (2020). https://doi.org/10.1038/s41560-020-00696-3

[5] Climate Analytics, *A 1.5°C* COMPATIBLE CARBON BUDGET FOR QUEENSLAND. September 2019. Page1.https://www.marineconservation.org.au/wp-content/uploads/2019/10/Report-CarbonBudgetForQueensland-ClimateAnalytics-2019-WEB.pdf

[6] Annual Climate Change Statement 2022 The first Annual Climate Change Statement to Parliament as required by the Climate Change Act 2022. *Australian Governmnet*, Webpage, 2022. Page 32. https://www.dcceew.gov.au/sites/default/files/documents/annual-climate-change-statement-2022.pdf

[7] Nuclear Power in the United Arab Emerites. *World Nuclear Association*. Website, accessed 11/112024 https://world-nuclear.org/information-library/country-profiles/countries-t-z/united-arab-emirates

[8] Daniel Mercer, Tim Leslie. Does nuclear power have a future in Australia? These numbers will help cut through the debate. *ABC News.* Website published 11 Jun 2024.

that would require Australia to remain dependent on fossil fuels, adding billions of tonnes to yearly emissions and undermining immediate progress. By contrast, renewables like solar and wind can be deployed quickly, delivering rapid and measurable emissions reductions. Delaying action for a nuclear option would mean lost years in the fight against climate change, risking both domestic and international climate targets and pushing the Great Barrier Reef and other critical ecosystems closer to collapse.

Risks to Inland and Coastal Waters

Nuclear plants are highly water-intensive, requiring billions of litres annually for cooling, typically drawn from rivers, lakes, and coastal sources. Like coal-fired power stations, nuclear facilities are estimated to need vast amounts of water for cooling, placing heavy demands on coastal and inland water systems critical to Queensland's biodiversity. For example, Callide B and Callide C power stations near Biloela represent around 40% of the Gladstone Area Water Board's demand[9], each using an estimated 10,000 megalitres (ML) per year. In times of drought, Queensland has already struggled to supply water to its coal-fired power stations. In 2007, Tarong Power Station reduced operations by approximately 50%, taking two of its four units offline to conserve water[10]. Nuclear plants, with similar water demands[11], would further stress Queensland's already limited water resources, especially in drought-prone regions. A risk made more severe by the intense water demands of a nuclear industry competing with agriculture, industry, the environment and communities for scarce resources.

Additionally, nuclear waste storage presents further risks. Long-term storage requires meteorological, political and geological stability to avoid contamination of groundwater with radioactive particles.[12] Leakage from degraded containment could harm both ecosystems and public health; furthermore, in emergencies, nuclear facilities require vast amounts of water, as demonstrated by the Fukushima incident, where over 1.3 million cubic litres of water were used to cool reactors and prevent explosions.

Australia's Global Responsibility

Australia, as one of the continent's most vulnerable to climate change, cannot afford to lag behind in climate action. With its unique natural heritage, including the Great Barrier Reef,

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https://www.abc.net.au/news/2024-06-11/nuclear-power-for-australia-cost-and-timelines-explained/103641602

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

[10] ABC News. Power station announces further cut backs. Website Published 14 March 2007. https://www.abc.net.au/news/2007-03-14/power-station-announces-further-cut-backs/2216564

[11] ABC News. Enough water for nuclear reactors in NSW but scientists worry about wildlife. Website published 20 July 2024. https://www.abc.net.au/news/2024-07-20/nuclear-power-plant-water-supply-environmental-concerns-nsw/104084348

[12] Matt Turner.Nuclear energy creates the most dangerous form of radioactive waste. Where does Peter Dutton plan to put it? *The Conversation AAP*, Website 2023. https://theconversation.com/nuclear-energy-creates-the-most-dangerous-form-of-radioactive-waste-where-does-peter-dutton-plan-to-put-it-233213

Australia plays a critical role in showcasing climate leadership. Progressing action on renewables would allow Australia to achieve its renewable energy target of 82% by 2030 and reinforce its standing as a responsible global citizen, inspiring others to follow. With its long development timelines, pursuing nuclear could detract from this leadership and undermine Australia's commitment to protecting its iconic ecosystems.

Conclusion

Given the urgency of climate action, the risks to inland and coastal water resources, and the immediate viability of renewable energy, prioritising renewables gives Australia a faster, safer, and more sustainable path to decarbonisation. Relying on nuclear power risks delaying emissions reductions, placing Australia's marine environments and the Great Barrier Reef in even greater jeopardy. By focusing on renewables, halting new fossil fuel projects, and demonstrating strong climate leadership, Australia can meet its targets, protect its natural heritage, and secure a resilient, clean energy future.

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