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Australian Government

Department of Climate Change, Energy, the Environment and Water

Committee Secretary Senate Standing Committees on Environment and Communications PO Box 6100 Parliament House CANBERRA ACT 2600

Dear Committee Secretary

The Department of Climate Change, Energy, the Environment and Water (the Department) welcomes the opportunity to provide a submission to the Environment and Communications Legislation Committee's inquiry into the Environment and Other Legislation Amendment (Removing Nuclear Energy Prohibitions) Bill 2022.

The Bill seeks to remove Commonwealth prohibitions to nuclear energy in Australia by repealing relevant sections of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Australian Radiation Protection and Nuclear Safety Act 1998* (ARPANS Act).

Under the EPBC Act, nuclear actions (defined in section 22) are a matter of national environmental significance. An approval is required if a nuclear action will, or is likely to, have a significant impact on the environment (sections 21 and 22A). However, the EPBC Act prohibits the Minister from approving an action (sections 140A and 146M), making a declaration relating to bioregional plans (section 37J), or entering into a conservation agreement (paragraph 305(2)(d)) if the approval is for, or the declaration or agreement relates to, the construction or operation of a nuclear fuel fabrication plant, a nuclear power plant, an enrichment plant, or a reprocessing facility. The 2020 Independent Review of the EPBC Act undertaken by Professor Graeme Samuel AC did not make any recommendations in relation to this prohibition.

Insights from countries with established nuclear power industries, such as France, the United Kingdom, United States, Canada and Japan, show strong regulatory frameworks are essential to the safe operation and management of nuclear power and associated waste. Effective community engagement also helps maintain the social license to operate nuclear power plants and waste management systems.

In addition to the removal of the prohibitions in the EPBC Act and ARPANS Act, establishing a civil nuclear power industry in Australia would require the development of strategies and frameworks for:

- the assessment and management of the health, safety, social, security and environmental impacts of any proposed nuclear power plants or related facilities, as well as for community engagement; and
- equivalent frameworks for the transport, processing and storage of nuclear fuel and radioactive waste; and

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• an adequate workforce capability to build, operate and maintain civil nuclear power plants and other related facilities, and to regulate these activities.

The Department notes New South Wales, Victoria and Queensland currently have legislation prohibiting the construction of nuclear power plants within their jurisdictions. Western Australia, South Australia and the Northern Territory have legislation that prohibits the transport or disposal of nuclear waste.

The Department draws on the expertise of Australia's scientific agencies and energy market bodies, including the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Australian Nuclear Science and Technology Organisation, and the Australian Energy Market Operator (AEMO), to inform the advice it provides to Government. International organisations, such as the International Atomic Energy Agency, the Organisation for Economic Cooperation and Development Nuclear Energy Agency, the International Energy Agency and the World Nuclear Association are also valuable sources of analysis.

In their *GenCost 2021-22* report, the CSIRO and AEMO estimate in 2030 the deployment of nuclear power from small modular reactors (SMRs) in Australia could cost between \$136 and \$326 per megawatt hour (MWh). The report suggests there is no prospect of SMRs being deployed in Australia before 2030. Other recent modelling by bodies such as the University of Queensland (2021) estimate the levelised cost for nuclear power at \$60 to \$102/MWh from the 2030s. These differences in estimates are due to variations in data, modelling methodologies and assumptions.

By comparison, the estimated costs in the *GenCost 2021-22* report for integrated renewables are between \$53 and \$82MWh in 2030, depending on the level of renewables penetration and including the costs of additional investment in transmission and storage to manage the variable output of renewable energy generators. The 2022-23 edition of *GenCost* is currently being prepared. The consultation draft suggests costs for SMRs in 2030 remain above the cost of integrated renewables. AEMO's *2022 Integrated System Plan* estimates that by 2030, renewable energy will provide 83 per cent of generation capacity in the National Electricity Market.

The Department will continue to consider new information as it becomes available, in order to provide up-to-date advice to Government.

Thank you again for providing the Department an opportunity to make a submission to the Inquiry.

Yours sincerely,

Beth Brunoro Acting Deputy Secretary Department of Climate Change, Energy, the Environment and Water

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