NATIONAL OFFICE
Level 1, 16 - 20 Good Street, Granville NSW 2142
T: 1300 040 482 **E:** members@nat.awu.net.au **W:** www.awu.net.au
Daniel Walton National Secretary

THE AUSTRALIAN WORKERS' UNION
STRONGER TOGETHER
ABN 28 853 022 982

16 January 2023

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

Via electronic submission

To whom it may concern,

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

Thank you for the opportunity to make a submission on the Environment and Other Legislation Amendment (Removing Nuclear Energy Prohibitions) Bill 2022.

Nuclear energy offers the opportunity to secure Australia's energy needs

The Australian Workers' Union (AWU) represents around 72,000 members nationally in a diverse range of industries. These members include those mining the 5,000 tonnes of uranium that Australia exports to the world, as well as thousands working in heavy industry – particularly metalliferous mining and the manufacturing of essential goods including steel, aluminium, glass, plastic, cement and food.

Access to affordable and reliable energy is critical to a thriving industrial sector. The AWU supports a technology-neutral approach to meeting industry's energy needs while reducing carbon emissions in line with the Australian Government's commitments. To meet this challenge, Australia's energy future will inevitably involve the replacement of fossil fuels as the foundation of Australia's baseload electricity needs, and greater use of renewable energy sources combined with storage and peaking generation. The Australian Energy Market

Operator's current 'most likely' scenario of Australia's energy needs incorporates wind, solar, hydro, batteries, hydrogen and gas peaking power stations.[1]

However, under the current legislative prohibition on nuclear power, Australia is not able to realistically assess the extent to which nuclear energy could form a part of this framework. As a result, Australia's limited nuclear energy debate takes place at an extremely abstract level, without serious analysis of the potential impacts of nuclear energy for workers, communities and Australian economy and society.

The AWU supports the repeal of the ban on nuclear energy in Australia, to begin the process of a serious examination of the role that nuclear energy could play in Australia. If successful, there would be many benefits for the Australian economy:

- Affordable, reliable and abundant energy to support the survival and growth of manufacturing and heavy industries in our country. These industries provide much-needed jobs and contribute significantly to our economy.
- Transition opportunities for workers in the energy sector.
- Replacing coal and gas electricity generation with an emissions-free alternative while maintaining a stable 'baseload' capacity.
- Maximising the use of Australia's world-leading uranium resource by integrating it into Australia's energy mix, rather than merely exporting it.

Nuclear power could not replace all of Australia's fossil fuel use. Coal, oil and gas are fundamental to industrial energy use for steel and other products, and are also a feedstock for plastics and chemicals (among others). However, they could offer a way to replace the baseload capacity of coal and gas-fired power generation without the emissions – putting a serious dent in the estimated 160 million tonnes of Australia's carbon dioxide emissions associated with burning fossil fuels for electricity.[2]

Some barriers to an Australian nuclear industry are more realistic than others

Critics of the potential of an Australian nuclear industry have resorted to the same arguments over the decades since nuclear power became a serious option. These arguments do not stand up to basic scrutiny. As reported by the Australian Government:[3]

[1] Australian Energy Market Operator (June 2022) Integrated System Plan for the National Electricity Market.
[2] Australian Government Department of Climate Change, Energy, the Environment and Water (June 2022) National Greenhouse Gas Inventory Quarterly Update. Available online: https://www.dcceew.gov.au/climate-change/publications/national-greenhouse-gas-inventory-quarterly-update-june-2022
[3] Australian Department of Industry, Science and Resources (DISR) Resources and Energy Quarterly (December 2022), pp. 93-97.

- Despite a small number of high-profile safety incidents, nuclear has the best safety record globally of any power source.
- Nuclear power plants protect local communities by ensuring that minimal land is needed to generate significant quantities of electricity. 2 square kilometres of land can provide enough space for a nuclear power facility that supplies electricity for 4-5 million people. And with the newest small modular reactor (SMR) technology, this site boundary area can be reduced even further.
- Contrary to the view that nuclear power plants are rapidly becoming dated and expensive 'white elephants', nuclear energy is expanding globally as a complement to renewable energy sources. In the last few years, new nuclear power generation has been deployed in the US, Sweden, France, Japan and China.

Nonetheless, there remain significant barriers to the establishment of an Australian nuclear energy sector even if the prohibition on nuclear power was repealed:[4]

- **State prohibitions:** State legislation in Victoria, New South Wales, South Australia, and Queensland prohibits the deployment of commercial nuclear power plants and associated fuel cycle facilities.
- **Lack of existing regulatory framework:** Australia's existing legal and regulatory framework for nuclear facilities is not suited to nuclear power facilities (precisely because they are prohibited). Before the ban could be repealed, an alternative regulatory framework must be established covering licensing, operator training, safety, liability and waste management, among other critical issues.
- **Workforce and capability:** Although Australia punches above its weight in its nuclear capability (through its world-leading uranium mining industry and the world-class Australian Nuclear Science and Technology Organisation (ANSTO) research reactor at Lucas Heights in Sydney), significant workforce capability development would be required in relevant operational, technical and professional occupations.

The commitment by Australia to acquire nuclear-powered submarines under the AUKUS treaty creates a complementary opportunity to fully establish Australia as a nuclear-capable nation, with the skilled workforce to match. Even with that opportunity, by the time that these legislative, regulatory and workforce barriers are overcome, it would likely take another 10 years – at a minimum – and billions of dollars of capital investment until a nuclear power plant began operations in Australia.[5] But the current prohibition prevents potential investors and the

[4] Stephen Wilson (June 2021) *What would be required for nuclear energy plants to be operating in Australia from the 2030s* (University of Queensland).
[5] See, for example, Australian Workers' Union evidence, Climate Change (Consequential Amendments) Bill 2022, Climate Change Bill 2022, public hearing of the Environment and Communications Legislation Committee, 18 August 2022.

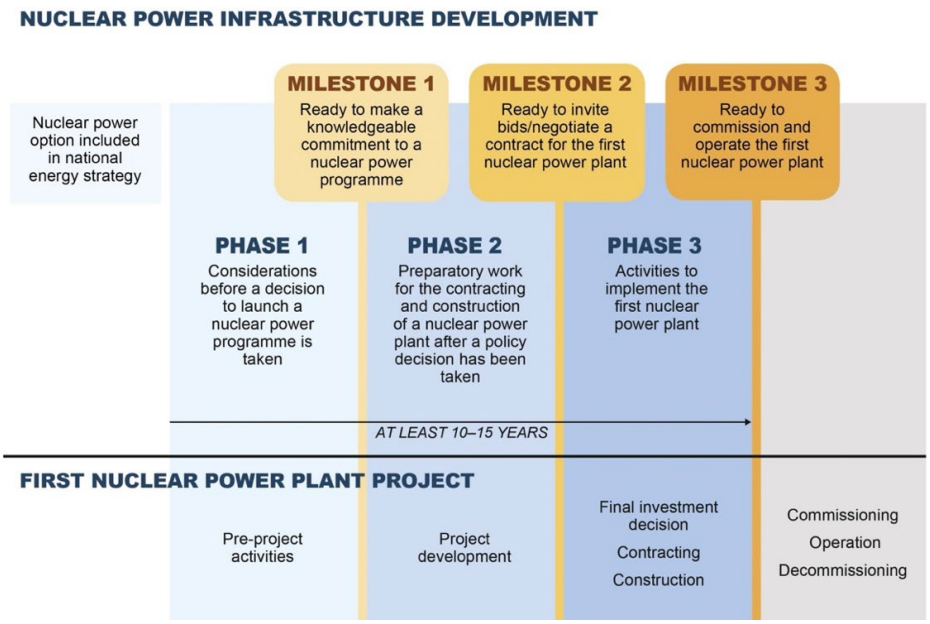
broader community from making a serious assessment of the competitiveness of nuclear power in Australia.

If the nuclear prohibitions covered in the Bill are removed and the technology is thoroughly assessed, capital costs remain a major hurdle that would need to be overcome. The AWU does not believe that nuclear power in Australia should go ahead at any cost. Given Australia's historical and current energy mix and rapidly-advancing renewable energy sector, the AWU does not see a role for traditional large-scale nuclear energy facilities in Australia. However, it is essential that Australia gives nuclear energy a fair chance to prove its worth.

Recommendations

In line with the assessment above, the AWU recommends that the Committee consider the following approach to seriously considering the role of nuclear energy:

1. **A serious commitment to considering nuclear power**
   The Australian Government should, in line with a technology-neutral approach to reducing emissions, consider nuclear power as part of Australia's national energy strategy. This would represent a commitment to the International Atomic Energy Agency's 'Milestones Approach'[6] – a phased and comprehensive method to assist countries considering or planning their first nuclear power plant (illustrated in the figure below).



[6] International Atomic Energy Agency (2015) *Milestones Approach*. Available online: https://www.iaea.org/topics/infrastructure-development/milestones-approach

2. **Reviewing the regulatory framework and commercial case for nuclear power** Rather than merely repealing the prohibition, the Australian Government should conduct a detailed review of existing legislation and institutions, to assess the specific forms of regulation that would be required for a nuclear power industry in Australia. This review should:
    a. be conducted by an independent and experienced panel
    b. consult with Federal, State and Territory government departments and agencies (including ANSTO)
    c. engage with workers in the energy, mining and manufacturing sectors, and trade unions as their representatives
    d. consider the evidence of previous inquiries (such as the South Australian Royal Commission on the Nuclear Fuel Cycle) as well as new and emerging commercial technologies such as small modular reactors
    e. identify the commercial opportunities for Australia's energy transition to be aided by nuclear power
    f. make its own assessment about the costs and benefits of an Australian nuclear energy industry.
3. **Continuing to grow Australia's world-leading uranium industry** The Australian Government should continue to develop and promote the mining of uranium in Australia for provision to nuclear energy nations that have either signed the Non-Proliferation Treaty, or are strategic allies with appropriate separation between their civil and military nuclear programs (such as India).

The AWU has had a long-standing interest in the opportunity for an Australian nuclear energy industry and would welcome the opportunity to appear before a hearing of the Committee or provide any further material to the inquiry.

Kind regards

DANIEL WALTON
National Secretary
The Australian Workers' Union