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## Nuclear energy is not viable for Australia, for a number of reasons

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The prospect of nuclear power generation in Australia is now a live debate. There are a number of barriers that make nuclear unviable as a solution for Australia's energy transition in a timeframe necessary to respond to the climate, energy and cost-of-living crisis. We outline these below.

We need energy, decarbonisation and cost of living solutions this decade. The Intergovernmental Panel on Climate Change recommends a [50 per cent emissions reduction](#) by 2030. As former Chief Scientist [Dr Alan Finkel](#) has noted, it is hard to imagine first operation of small modular reactor (SMR) technology before 2040.

[SMR technology](#), advocated by proponents of nuclear energy in Australia, is not commercial. There are [no SMRs](#) in operation [outside of Russia and China](#), and none under construction in Europe or North America, meaning there is no evidence of their safe and consistent operation, or viability. In November, the only SMR development in the US was [terminated](#).

Nuclear power is prohibited in Australia under federal legislation, with similar legislation in the states and territories.

To overturn these bans and establish the new regulatory and compliance regime would take years and would only be the start of the process of developing a nuclear industry. Sites for reactors would need to be identified, and social licence secured. Rigorous approvals processes would need to run their course. A skilled specialist local workforce would need to be trained and deployed. Robust arrangements would need to be made to manage waste and to mitigate risk. Legal challenges and civic protest would arise.

All of the above means nuclear would not be ready to deploy in a climate-necessary timeframe in Australia.

Therefore, we must continue to deploy the commercially viable and proven zero-emissions technologies of firmed solar and wind power as rapidly as possible.

Further, the [cost of nuclear power generation](#) is much higher than its [low-cost alternatives](#).

The 2022 [World Nuclear Industry Status Report](#) (WNISR) notes that between 2009 and 2021, unsubsidised costs for solar PV declined from US\$359 to US\$36 per megawatt hour (MWh), a fall of 90 per cent, and for wind from US\$135 to US\$38 per MWh, a 72 per cent fall, while nuclear power costs rose from US\$123 to US\$167 per MWh, up 36 per cent. This gap is widening.

The CSIRO/Australian Energy Market Operator May 2023 [GenCost report](#) found that: "A review of the available evidence makes it clear that nuclear power does not currently provide an economically competitive solution in Australia - or that we have the relevant frameworks in place for its consideration and operation within the timeframe required."

The Investor Group on Climate Change, which represents investors with \$30 trillion in assets under management, says there is [no interest](#) among investors in nuclear, when nuclear has "project time blowouts of anything from seven to 15-plus years and cost blowouts in the tens of billions, and lowest-cost technologies, renewables, batteries and so on, are available to deploy now".

The [2023 WNISR](#) notes that in 2022, "total investment in renewable electricity capacity reached a new record all-time high of US\$495 billion (up 35 per cent), 14 times the reported global investment decisions for the construction of nuclear power plants".

The climate and energy price crises require Australia to accelerate the decarbonisation of its electricity system and economy toward zero-emissions this decade.



Mass solar electrification of households should be central to our plans.

Australia enjoys the global advantage of superabundant solar and wind resources.

Unlike some economies where nuclear energy is established, Australia also has available landmass for renewables infrastructure and the opportunity to [share the benefits](#) with communities.

We urge the federal government to maintain its policy and investment focus on the proven technology of low-cost, deflationary firming renewables and "electrification of everything", and to accelerate deployments, as it has done with its recent landmark boost to the [Capacity Investment Scheme](#) (CIS) bolstered by its [pledge at COP28](#) to triple renewables by 2030.

When announced last year, the federal government said the first iteration of its CIS would drive around \$10 billion of investment in clean dispatchable power.

Climate Energy Finance estimates the recently announced turbocharging of the CIS will see a [four-fold lift](#) in firming clean energy investment across Australia.

The fastest-to-deploy and most popular renewable energy option for Australia is rooftop solar, the world's [cheapest energy source](#), because it eliminates transmission and distribution costs.

Mass solar electrification of households should be central to our clean energy transition plans.

Electrification of communities and commercial operations in Renewable Energy Zones will improve equity and build social licence for large-scale energy infrastructure, as it enables decarbonisation of industry.

These complementary actions will permanently reduce greenhouse emissions and energy prices, enable Australia to deliver on its climate commitments, and catalyse our generational opportunity to position Australia as a zero-emissions trade and investment leader.

Australia has no time to lose. The rise of renewables offers us a chance to reinvent Australia's economy.

We can ill afford the opportunity cost of delay to our renewables transformation.

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