



Nuclear impacts on Solar

THE FACTS



What is the nuclear - solar switch-off?

Australia leads the world in rooftop solar uptake, and right now, about ten million Australians in nearly four million households are saving \$1300 a year (on average) on their energy bills. (1)

But the plan to introduce nuclear reactors to our energy system poses a serious threat to our Aussie rooftop solar savings.

This is because running nuclear reactors will only be economically viable if they are run constantly, regardless of the energy demand.

Energy experts warn that the extra nuclear capacity would force out substantial amounts of cheap, renewable energy from the grid, and lead to a forced 'solar switch-off' for millions of Aussie homes with rooftop solar.

Solar owners in some areas already face being switched off from their inverters if there is too much solar in the grid during the day, or being charged to export power into the grid.

The Smart Energy Council warns



Up to 5 million rooftop solar systems (12.5 million Australians) will need to be shut off every day if nuclear energy is in the system.



Nuclear will knock out solar for an average 67% of the year, resulting in lost energy savings and solar residents being forced on to higher nuclear power prices.



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Clean Energy Council concerns

"A nuclear-powered energy grid would be a disaster for the four million Australian homes that have already installed a rooftop solar system as a way to lower their power bills. These systems would have to be switched off regularly if Australia was to move to inflexible nuclear power."

Kane Thornton, CEO
Clean Energy Council (3)

The Clean Energy Council reviewed the Coalition's nuclear plan and found that **13 Gw of nuclear power is much more than is needed** to provide 'baseload power'

"We expect that this would place the energy market operator, AEMO, in the position of having to force more flexible and lower cost forms of electricity supply, including solar, wind and pumped hydro, to be turned down or off. Australia's four million solar homes (and growing) would also be vulnerable, and the CEC anticipates that the 'emergency backstop mechanism' would need to be utilised on a far more frequent basis by the market operator.

This implies that the payback periods for rooftop solar systems are likely to increase, households will generate less value from their investment, and solar households and businesses will also be subject to purchasing higher cost nuclear power from the grid more frequently." (2)

1. Smart Energy Council: [How nuclear will switch off household solar and double energy bills](#), Dec 2024

2. Clean Energy Council: [Briefing - Analysis of Frontier Economics Analysis of including Nuclear Power in the NEM](#), Dec 2024

3. Clean Energy Council [media release](#) 13/12/2024



Nuclear Energy will result in burning more coal and gas



The Federal Government Inquiry into Nuclear Power Generation in Australia found that building a nuclear power industry from scratch would **take far too long and cost much more** than the current pathway of renewable power backed by storage. (1)



It found that nuclear reactors are expected to take **at least 15 years to build**, and cites construction and cost blow outs in current reactors being built in the UK, France and the US. Based on the evidence the report found that no reactor is **likely to be operational before 2040**, well after all existing coal fired power stations need to be decommissioned.



The Climate Change Authority calculates that this delay would result in an additional **2 billion tonnes of CO2 emissions** across all sectors. (2)

Solar Saves, Nuclear Costs



Nuclear power is extremely expensive. CSIRO's GenCost report estimates the cost of building seven nuclear reactors in Australia to be **at least \$116 billion, with the possibility of rising costs - up to \$600 billion.** (3)



New analysis finds that **all Australian homes could be equipped with solar and batteries 3 times over for the cost of nuclear** and the average energy bill would be more than 8 times higher if homes were connected to nuclear instead of being powered by solar and batteries. (4)



The Inquiry into Nuclear power generation in Australia concluded that, due to the likelihood of cost blow-outs, "the deployment of nuclear power generation in the Australian context is currently **not a viable investment of taxpayer money.**" (1)



Australia's abundant renewable resources (solar and wind) are more cost-effective and can be paired with storage and dispatchable power technologies, such as concentrated solar thermal and biomass, which are already competitive with nuclear.



Future advancements in battery storage and other dispatchable power technologies are projected to **reduce costs significantly over the next decades.**



Join our campaign to Save Our Solar

Scan the QR code to find out more:

www.solarcitizens.org.au/nuclear_vs_solar

1. Interim report for the inquiry into nuclear power generation in Australia, Federal House of Representatives Select Committee on Nuclear Energy, 26 Feb 2025
2. Climate Change Authority, Assessing the impact of a nuclear pathway on Australia's emission, Feb 2025
3. CSIRO GenCost 24-25 report and Nuclear Cost Explainer 9 Dec 2024
4. A comparison of household electricity bills under a nuclear scenario versus rooftop solar and a home battery scenario Energy Resource Insights April 2025

