The Standing Committee on Environment and Planning

Via Email: nuclearprohibition@parliament.vic.gov.au

**ETU Victorian Branch Submission – Victorian Inquiry into Nuclear Prohibition.**

1. On Wednesday 9 October 2019 the ETU appeared before the Federal Parliamentary Inquiry into the prerequisites for nuclear energy in Australia.

2. The ETU is a signatory to the joint civil society statement opposing nuclear power, available here: https://www.acf.org.au/wide_community_opposition_to_nuclear_power

3. The ETU recommends to the Committee the joint submissions to federal and NSW nuclear inquiries by Friends of the Earth Australia, the Australian Conservation Foundation and other national environment groups and state conservation councils. For decades these organisations have played a key role in working with affected communities and key stakeholders, and in supporting people in remote Aboriginal communities dealing with the immediate impacts of uranium mining and potential impacts of the storage of nuclear waste.

4. The Committee should call these organisations as witnesses.

5. We attach our recent submission to the Federal Parliamentary Inquiry into the prerequisites for nuclear energy in Australia and submit that the information, arguments and recommendations contained within that submission are relevant to this inquiry and should be considered by the committee.

6. In addition to the recommendations contained within that submission, we further recommend to this committee;

    a. That the intent of the current Victorian legislation is appropriate, reflects community views and is supported by science and any amendment should only be of an administrative nature to improve drafting or modernise the legislation without altering its intent.

    b. That the Committee recommend to the Victorian Government to call on the Australian government to ratify the UN Treaty on the Prohibition of Nuclear Weapons, or at least stop blocking its global progress.

    c. The committee recommend to the Victorian Government that the transition to renewable energy, the variability of renewable energy, and the price of electricity for consumers would be better managed with a much stronger and more coordinated government role in planning, investment and direct ownership of the energy system, including investments in energy generation, storage and an improved system of interconnectors and transmission.

d. The Inquiry must acknowledge that corporatisation, fragmentation, privatisation, and the introduction of a National Electricity Market with no decarbonisation target has introduced significant obstacles to the planning, building and transition to a decarbonised electricity system.

e. The best path for Victoria's energy future involves the State and Federal Governments supporting large scale renewable projects. Projects such as the Star of the South offshore wind farm off the coast of Gippsland will provide large scale renewable power generation and support a just transition for workers and communities impacted by the move away from fossil fuels.

f. The ETU recognises the work already undertaken by the Andrews Government to invest in Victoria's renewable energy future including setting meaningful targets and the Solar Homes Program.

7. If the ETU can be of further assistance to the committee, please don't hesitate to contact at your convenience.

Electrical Trades Union

# Submission to the Inquiry into the prerequisites for nuclear energy in Australia

**September 2019**

# Contents

# 1 EXECUTIVE SUMMARY

A. The ETU opposes the development of nuclear power generation in Australia and supports the civil society joint statement on nuclear power.

B. Rather than fuel higher carbon emissions and unnecessary radioactive risk, the Australia Government can and should do better.

C. Our shared energy future is renewable, not radioactive and our Government must plan for and support a fair and just transition for energy workers, their communities and the Australian people.

D. The Government needs to focus its efforts on establishing and implementing an actual energy policy based on the science, technical and engineering expertise available to it.

E. Australia needs to embrace the fastest growing global energy sector and become a driver of clean energy thinking and technology. Renewable energy is affordable, low risk, clean, and popular. Nuclear is simply not.

# 2 RECOMMENDATION

The ETU recommends that the Government;

1. Reject the development of nuclear power generation in Australia.

2. Retain the Nuclear prohibitions contained in existing environmental legislation and expand the provisions to prevent the opening of new uranium mines.

3. Legislate the staged closure of all Uranium mines in Australia.

4. Introduce stronger regulation for the proper rehabilitation of uranium mines.

5. Make the necessary investment in the Lucas Heights facility to operate more safely and to better store existing and future waste in-situ.

6. Establish an open inquiry into the future of radioactive waste in Australia.

7. Develop and implement and actual energy policy with adequately resourced Just Transition frameworks, including the establishment of a Transition Authority.

# 3 INTRODUCTION

1. The Electrical Trades Union of Australia ("the ETU") is the Electrical, Energy and Services Division of the Communications, Electrical, Electronic, Energy, Information, Postal, Plumbing and Allied Services Union of Australia (CEPU). The ETU represents approximately 61,000 electrical and electronic workers around the country and the CEPU as a whole, represents over 100,000 workers nationally.

2. The ETU welcomes the opportunity to make a submission to the Inquiry into the prerequisites for nuclear energy in Australia.

3. Our nation is experiencing a necessary but entirely unplanned and uncontrolled energy transition. Against a backdrop of increasing climate impacts and scientific evidence the need for a clean and renewable energy transition is clear and irrefutable. Australia is transitioning from fossil fuels to low carbon electricity generation, but the transition is being denied, and in some cases obstructed by Government.

4. Australia urgently needs the Federal Government to create an Energy Transition Authority responsible for navigating Australia's energy transition to a clean-energy economy.

5. As a minimum the Transition Authority needs the requisite powers and resources to plan for, establish and oversee the orderly management of power station transitions, network augmentation and generator retirements in order to mitigate the severity of surrounding structural adjustments to workers, their families and communities.

6. The Authority would be responsible for;

    a. The research, consultation and policy development required to develop and implement effective transition plans including developing plans for regional communities that support economic diversification and encourage new investments in alternative industries;

    b. Overseeing industry-wide multi-employer pooling and retrenchment schemes that facilitate worker transitions including enabling retrenched workers to transfer to roles either in remaining fossil fuel, renewable or low emissions generators or to other industries; and

    c. Developing and implementing strong labour adjustment packages.

7. The Authority would also implement the broader "Just Transition" initiatives needed to identify jobs and industries likely to be affected by future climate change policies and other environmental initiatives, develop a timetable of labour market impacts, and implement a long term strategy, working with State and Local Governments to coordinate assistance packages for businesses, workers and communities that focus on creating new, secure jobs and the skills required to access these jobs.

8. Nuclear power is a dangerous and unnecessary distraction from the real movement on the pressing energy decisions and climate actions Australia desperately needs. The political energy, investment and time required to deploy Nuclear would deliver a significantly faster and better transition for workers and their communities if it was instead applied to a proper transition to renewables.

# 4 RADIOACTIVE WASTE

9. Nuclear reactors produce long-lived radioactive wastes that pose a direct human and environmental threat for many thousands of years and impose a profound inter-generational burden.

10. Radioactive waste management is costly, complex, contested and unresolved, globally and in the current Australian context.

11. Nuclear power cannot be considered a clean source of energy given its intractable legacy of nuclear waste.

12. Even the nuclear industry concedes it can only develop and implement most and not all the necessary technologies required for the final disposal of all of the waste it produces. Instead it now focusses on public relations campaigns to try and achieve public acceptance as it is not currently technological feasible to eliminate the hazard.

13. Current levels of radioactive waste created by nuclear power stations globally equates to approximately 34,000m³ of high-level waste each year. That's equivalent to 3,400 concrete trucks worth of high-level waste each year. The construction of more nuclear power stations will only increase this output.

14. In addition to the challenge of storage of radioactive waste is the safe transport of radioactive waste. Whilst Australia currently has a regulatory framework in place to deal with transport of radioactive substances it is in no way up to the task of dealing with the size, volume and complexities of transportation that would be necessary with the introduction of a nuclear power generation industry in Australia.

15. Radioactive waste management in Australia has been a contested, divisive and ultimately non-productive area of public policy for decades.

16. Nearly all of Australia's intermediate level waste is held where it was created at the Australian Nuclear Science and Technology Organisation's (ANSTO) Lucas Heights nuclear reactor facility in southern Sydney. This material is Australia's highest-level radioactive waste and is the most significant management challenge.

17. Most of the low-level waste is at the Defence Department's Woomera site in South Australia.

18. Enhanced and extended interim storage at current federal facilities should be adopted as the short to medium term policy, coupled with an all options review, as the best way to identify and advance lasting and responsible radioactive waste management.

# 5 WE DON'T HAVE THE WATER

19. Nuclear power is a thirsty industry that consumes large volumes of water, from uranium mining and processing through to reactor cooling.

20. Meanwhile Australia is a dry nation where water is an important resource and supply is often uncertain. In fact, Australia is the driest inhabited continent on Earth.

21. Technological advancements mean Australia has an opportunity to produce electricity without the need to burn huge volumes of water, in such a dry country it is folly to continue to invest in unnecessary water intensive industries.

22. Many reviews into the viability of a nuclear power generation industry in Australia have concluded that the water volumes required would need to be derived from sea water with the resultant effect of nuclear generators needing to be constructed close to Australia's coastline and therefore, likely to be constructed in more densely populated areas.

23. Further, the desalination plants required to service them are huge consumers of electricity in themselves meaning that a large portion of the power generated would simply be used to satisfy the demands of generating the power, a highly inefficient process.

24. Desalination plants also have their own inherent risks with pollutants increasing the seawater temperature, salinity, water current and turbidity. These pollutants also harm the marine environment, causing fish to migrate while artificially enhancing the presence of algae, nematodes and tiny molluscs potentially decimating recreational fishing stocks and impacting Australia's aquaculture and commercial fishing operations.

25. There is also the problem that on a warming planet, cool water can sometimes be a tricky thing to get hold of – as Europe discovered when it sweltered under 40-plus temperatures and the river water used to cool reactors in France and Germany was too warm to use.[1]

# 6 We Don't Have The Time

26. Regardless if the priority of your interest in exploring energy alternatives lies with system supply reliability or with addressing emissions reductions there simply isn't time left to romanticise about the creation of some new pet industry.

27. The Australian Energy Market Operator has issued reports year in and year out on the deficiencies in our power network. Consumers are experiencing blackouts now. Privatised and corporatized power companies drive inefficiencies in the wholesale market to drive up prices. Reports prove we have enough generation capacity already to meet the electricity demands.

28. Australia's emissions are going up, not down and our nation is not on track to achieving our 2030 emissions reductions targets.

29. According to the Department of Environment and Energy's latest accounts, in the year to March 2019 Australia's carbon emissions rose 0.6 per cent.[2]

30. Nuclear power is a slow response to a pressing problem. Nuclear reactors are slow to build and license.

31. Globally, reactors routinely take ten years or more to construct and time over-runs are common. Construction and commercialisation of nuclear reactors in Australia would be

[1] https://www.reuters.com/article/us-france-electricity-heatwave-idUSKCN1UK0HR
[2] https://www.environment.gov.au/system/files/resources/6686d48f-3f9c-448d-a1b7-7e410fe4f376/files/nggi-quarterly-update-mar-2019.pdf

further delayed by the lack of nuclear engineers, a specialised workforce, and a licensing, regulatory and insurance framework.

32. If nuclear was somehow the answer to either network stability or emission reductions, by the time a nuclear generator was planned, built and brought online, under the current privatised and deregulated system, consumers could potentially experience 10 years of escalating blackouts and would be many thousands of kilo tonnes over its emissions reduction's targets.

## 7 We Can't Afford It

33. Nuclear power is highly capital intensive and a very expensive way to produce electricity.

34. The 2016 South Australian Nuclear Fuel Cycle Royal Commission concluded nuclear power was not economically viable[3].

35. The controversial Hinkley reactors being constructed in the UK will cost more than $35 billion and lock in high cost power for consumers for decades. Cost estimates of other reactors under construction in Europe and the US range from $17 billion upwards and all are many billions of dollars over-budget and many years behind schedule.

36. Renewable energy is simply the cheapest form of new generation electricity as the CSIRO and the Australian Energy Market Operator concluded[4] in their December 2018 report.

37. The projections of the levelised cost of electricity by all credibly independent experts shows that nuclear is far more expensive than other generation types.

38. Forecast generation costs released by the CSIRO[5] as recently as December 2018 show renewables outperforming all other fuel types and demonstrate a strong ongoing learning rate leading to further reductions in cost over time.

39. Learning rates of other fuel types remain steady with little gains in efficiency forecast compared to renewables.

40. Nuclear is not getting cheaper.

## 8 Domestic and International Security

41. Nuclear power plants have been described as pre-deployed terrorist targets and pose a major security threat. This in turn would likely see an increase in policing and security operations and costs and a commensurate impact on civil liberties and public access to information.

42. Other nations in our region may view Australian nuclear aspirations with suspicion and concern given that many aspects of the technology and knowledge base are the same as those required for nuclear weapons.

[3] Para 52 http://nuclearrc.sa.gov.au/app/uploads/2016/02/NFCRC-Tentative-Findings.pdf
[4] https://www.csiro.au/en/News/News-releases/2018/Annual-update-finds-renewables-are-cheapest-new-build-power
[5] https://publications.csiro.au/rpr/download?pid=csiro:EP189502&dsid=DS1

43. On many levels nuclear is a power source that undermines confidence.

44. Security measures adopted by other nations with nuclear power generation incorporate utilisation of significant military resources, a further cost and domestic consideration which is not currently factored into Australian electricity prices or energy plans.

## 9 DEMAND RESPONSE LIMITATIONS

45. Existing nuclear reactors are highly centralised and inflexible generators of electricity. They lack capacity to respond to changes in demand and usage, are slow to deploy and not well suited to modern energy grids or markets.

46. Small Modular Reactors (SMRs) are not in commercial production or use and remain unproven and uncertain.

47. This is no basis for nuclear energy being a solution to Australia's energy challenges.

48. Multiple organisations have now published extensive information on the challenges faced by the national electricity grid and base load is not one of them. Indeed, the concept of base load is an economic, not technical issue and much of Australia's electricity network was historically designed to attach large volumes of inefficient load to the network to allow fossil fuel generators to run continuously at high outputs to achieve maximum plant efficiency.

49. The current levels of renewable deployment have already rendered the concept of base load power redundant in some parts of the network as identified in the August 2019 National Energy Emissions Audit released by The Australia Institute.[6]

50. The already planned for deployment of additional renewable energy is likely to render the need for so called base load obsolete well before a nuclear plant could be constructed.

51. Australia needs a flexible, responsive energy system with appropriate levels of intermittent generation sources firmed through hydro, pumped hydro and battery storage solutions. Nuclear is not that solution.

## 10 SAFETY

52. All human made systems fail. When nuclear power fails it does so on a massive scale. The human, environmental and economic costs of nuclear accidents like Chernobyl and Fukushima have been massive and continue.

53. Decommissioning and cleaning up old reactors and nuclear sites, even in the absence of any accidents, is technically challenging and very costly.

54. Even in the most controlled and regulated environments of the Lucas Heights facility in New South Wales, as recently as June 2019 workers were exposed to radiation above the statutory limits.[7]

[6] https://www.tai.org.au/sites/default/files/NEEA%20August%202019%20%5BWEB%5D_0.pdf
[7] https://www.abc.net.au/news/2019-06-24/lucas-heights-nuclear-facility-workers-exposed-to-radiation/11242278

55. An independent review of the Lucas Heights facility in October 2018 found it failed modern nuclear safety standards and should be replaced.[8]

56. Australia has not even been able to manage a small 10MW nuclear medicine facility, what hope does it have of safely regulating the construction and operation of a Nuclear Power Station.

57. Ranger uranium mine, now closed, was marred by a culture of underreporting, secrecy and safety incidents. What comfort could the Australian community have that future activities will be any different.[9]

58. The consequences of inevitable safety breaches are extreme. The fall out from failed nuclear plants creates literal “dead zones” for many thousands of square kilometres.

59. Australia’s emergency services personnel are neither trained nor equipped to deal with this kind of potential emergency. Nor have they been asked if they would be prepared to put themselves in harms way to this extreme level of risk should an incident occur.

## 11 Unlawful and Unpopular

60. Nuclear power and nuclear reactors are prohibited under existing federal, state and territory laws.

61. The nuclear sector is highly contested and does not enjoy broad political, stakeholder or community support. A 2015 IPSOS poll found that support among Australians for solar power (78–87%) and wind power (72%) is far higher than support for coal (23%) and nuclear (26%).

62. Currently in Australia the law prohibits the construction of Nuclear Power Stations and there is neither a mandate, nor broad political support or consensus to change those laws.

63. Geopolitical considerations have not been contemplated for our pacific neighbours, including New Zealand. The potential footprint of any emergency event as well as the likely shipping transport corridors associated with the industry passing through their regions means our international strategic relationships must also be taken into consideration prior to advancing any nuclear power industry in Australia.

## 12 Displacing Land and People

64. The nuclear industry has a history of adverse impacts on Aboriginal communities, lands and waters. This began in the 1950s with British atomic testing and continues today with uranium mining and proposed nuclear waste dumps.

65. These problems would be magnified if Australia ever advanced domestic nuclear power.

66. Historically these adverse impacts have been somewhat quarantined to more remote and regional parts of Australia, out of site and out of mind to the general population. Even then they remain unpopular.

[8] https://www.arpansa.gov.au/sites/g/files/net3086/f/independent_review_of_ansto_health.pdf
[9] http://www.wise-uranium.org/umopaura.html#RANGERVIOL

67. The creation of a Nuclear power industry in Australia would be likely to further encroach on native title as well as prime agricultural land.

## 13 BETTER ALTERNATIVES

68. Australia has extensive opportunities for both intermittent energy resources and for firming capacity through battery, hydro and pumped hydro deployment.

69. A recent study by the Australian National University (ANU) included the completion of an audit of 22,000 potential sites across Australia for pumped hydro energy storage, which can be used to support a secure and cheap national electricity grid with 100 per cent renewable energy.[10]

70. The report found that a tiny fraction of the sites for pumped hydro storage was needed – about 450 GWh of storage – to support a 100 per cent renewable electricity system with all of these locations in regional Australia delivering infrastructure, investment and jobs in locations most impacted by the energy transition.

71. Further evidence of the opportunities presented with renewable energy is demonstrated by the extensive development proposals in place to build renewable energy projects in Australia including projects to export clean energy offshore such as the Asian Renewable Energy Hub project in Western Australia.[11]

72. Our nation has extensive renewable energy options and resources and Australians have shown clear support for increased use of renewable and genuinely clean energy sources.

73. Pursuing public investment in high emissions, inefficient, costly and risky energy sources would be reckless and irresponsible in the circumstances.

## 14 CONCLUSION

74. The transition to clean, safe, renewable energy could re-power the national economy. The development and commercialisation of manufacturing and infrastructure and new energy thinking would provide skills and sustainable employment opportunities, particularly in regional Australia.

75. There should be no debate that this energy transition is already occurring, however choices and decisions are needed on how to make sure the transition serves the interests of workers, their communities and the broader Australian community.

76. Nuclear power is a dangerous and unnecessary distraction from real movement on the pressing energy decisions and climate actions Australia desperately needs.

77. This Government is grasping at nuclear power as the answer to a question they clearly don't understand.

[10] https://energy.anu.edu.au/research/highlights/anu-finds-22000-potential-pumped-hydro-sites-australia
[11] https://asianrehub.com/