



Dissenting Report from Zali Steggall MP

Foreword

- 1.1 Firstly, I would like to commend the Chair of this inquiry, Mr Ted O'Brien MP, for a thoughtful and consultative approach to a very difficult topic. The Chair has managed to conduct a thorough inquiry whilst managing a tight timeframe of six months.
- 1.2 In this dissenting report, I outline my concerns in respect to the majority's main report (Report) and recommendations. I also discuss further prerequisites that emerged during the inquiry as well as recommendations which should be taken into account for any future government considering nuclear.
- 1.3 As for the Report, I comment on aspects of the Report in line with the terms of reference including:
 - a) waste management, transport and storage;
 - b) health and safety;
 - d) energy affordability and reliability;
 - f) community engagement;
 - i) national consensus; and
 - j) other relevant matters.
- 1.4 This dissenting report discusses j) other relevant matters and makes further recommendation not discussed in the Report such as:
 - a long term emissions reduction target; and
 - national energy policy.

- 1.5 I support recommendations 1 and 2 in the Report, whilst noting that it is my view that an independent community engagement program should educate and inform Australians on all energy technologies including nuclear. I do not support recommendation 3, which seeks conditional removal of the moratorium on some nuclear technologies.
- 1.6 The Committee adopting recommendation 3 is pre-emptive. Obtaining a social license is an essential prerequisite to any consideration of raising the moratorium on nuclear energy.

Introduction

- 1.7 The moratorium on nuclear energy has been maintained by bipartisan support for the last several decades. This is significant; lifting the moratorium should not be done without bipartisan support.
- 1.8 Nuclear energy comes with a certain amount of risk. The accidents at Chernobyl and Fukushima, the environmental impacts of uranium mining and the risk of proliferation of nuclear weapons were all discussed during the inquiry.
- 1.9 Due to these inherent risks, any inquiry into the moratorium on nuclear energy should include balanced scrutiny of the evidence and facts presented. Substantial evidence both for and against lifting the moratorium on nuclear energy was received, yet the report overwhelmingly refers to evidence in support. In so doing, the Report overstates benefits and understates risks of the technology.

A) Waste management, transport and storage

- 1.10 During the inquiry waste management emerged as an important consideration to lifting the moratorium on nuclear energy. The Report at paragraph 1.152 identifies the importance of well managed waste.
- 1.11 Nevertheless, the Report understates the difficulties associated with nuclear waste management in Australia and the lack of consensus on long term waste disposal. At paragraph 1.160 the Report states:

In long-standing nuclear countries, waste has been firstly stored at the same site where the nuclear plants operate. While this has proven effective and safe, it is notable that some of these countries have started looking for new solutions to manage their waste after decades of plant operation. Some nuclear countries are assessing

options for a centralised permanent location to store nuclear waste.

- 1.12 The difficulty finding long term storage locations for nuclear waste is common to all nuclear nations. Evidence was received from Mr. Simon Holmes à Court who talked on his recent overseas experiences visiting decommissioned nuclear facilities where waste is stored:

Recently, just two weeks ago, I was in Massachusetts and was driving in the area of the Yankee Rowe power station, which is an interesting plant in that it was one of the first commercial plants in the US—so it was not owned by the Department of Energy—and one of the first to be decommissioned. I was very interested in it because it has been decommissioned back to bare grass. They've done a really good job in taking it back, except for one issue, which is the waste. The waste sits in canisters on site. There are 16 canisters—big, stainless steel. They are encased in concrete and then steel and then concrete on the outside. They are 100 tons each. They have an armed presence looking after them...I did a fair bit of research after that and found out that those casks have been there since the plant stopped generating in 1992. So, within a few years, that site will have been a waste repository for longer than it was ever a nuclear power plant. Those canisters sit there because the Department of Energy hasn't been able to commission a central federal repository.¹

- 1.13 Mr Holmes à Court continued:

There are 200 different suits against the federal government over that repository. So, in the meantime, this waste sits on the edge of this small community in Massachusetts. There is a 24-hour armed presence. The day I went, there were 12 cars in the car park, and every couple of years the owner sues the federal government for the cost of maintaining that—\$10 million a year to maintain these 16 casks. And that will be the case at every facility in the US until they have a federal repository—something that they have been trying to get for about 60 years.²

- 1.14 The Committee heard from Mr. Richard Weller, Convenor of Climate Future who reinforced this:

Cost assessments of nuclear power generally don't include the cost of storing waste. This fact alone should disqualify nuclear power. There is no storage facility available, and one is not likely to be,

1 Mr Simon Holmes à Court, *Proof Committee Hansard*, Canberra, 18 October 2019.

2 Mr Simon Holmes à Court, *Proof Committee Hansard*, Canberra, 18 October 2019.

either. We have never designed a facility with a useful life of 100,000 years. There is also no stable method for the storage of radioactive materials for such a long time nor any method for cleaning up an old power station site for reuse for agriculture or accommodation.³

1.15 Dr Ziggy Switkowski AO detailed the difficulty:

No country has yet commissioned and completed a spent fuel or high-level nuclear waste facility. Australia has even struggled to get traction to build a small, low-level facility in Central Australia. The costs of spent fuel storage in reactor decommissioning may be high and may be a potential burden on future generations extending into the hundreds of years.⁴

1.16 It is essential that we transparently and accurately convey the obstacles and issues associated with contentious technologies.

1.17 We have not reached consensus in respect to low to medium waste let alone heavy waste that would result from any increase in nuclear technologies.

B) Health and safety

1.18 Whilst some evidence purported to characterise nuclear energy as ‘clean, cheap and safe’, substantial evidence was received to the contrary, particularly in respect to safety. Due to its hazardous nature, understanding of health and safety must be a prerequisite for consideration of lifting the moratorium on nuclear energy.

1.19 On the evidence, the Report significantly understates potential health impacts and safety risks. The Report suggests at paragraph 1.163 that:

The evidence heard by the Committee points to nuclear energy being the safest form of energy in the world based on comparative mortality rates of different energy sources.

1.20 Table 1.4 purports to support this. I note that the source of this table could not be verified and as such cannot be considered credible evidence.

1.21 Inclusion of this evidence understates the very real danger of nuclear energy as well as misleads on the down-stream health effects that are

3 Mr Richard Weller, Convenor, Climate Future, *Proof Committee Hansard*, Sydney, 9 October 2019.

4 Dr Ziggy Switkowski, *Committee Hansard*, Sydney, 20 August 2019.

caused by radiation and nuclear incidents. In particular incidents like Fukushima and Chernobyl.

1.22 The Electrical Trades Union emphasized this, stating:

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.⁵

1.23 The Committee heard from Dr Ingrid Johnston, Senior Policy Officer at the Public Health Association who detailed these ongoing effects:

Unfortunately, previous experience with the five major nuclear accidents so far have provided us with an insight into the far-reaching health effects. Along with the immediate and longer-term physical health issues, psychological and social effects are found. Severe healthcare problems are created by evacuation and long-term displacement, especially for the most vulnerable people such as the elderly and those in hospital. Public health responses required after the Fukushima disaster included the evacuation of 150,000 people; stable iodine prophylaxis to reduce the uptake of radioactive iodine by the thyroid; morgue management for radioactive dead bodies; protection of food and drinking water supply, including monitoring intake of contaminated food and water; monitoring of radioactivity and estimations of exposure; a massive decontamination exercise through disposal of contaminated soil and wastes; and public communication around risks.⁶

1.24 As for the safety claims of nuclear, the Report repeatedly includes reference to the improved safety benefits of new design reactors. Paragraph 1.230 states:

The Committee received evidence that newer generations of nuclear reactors will incorporate better safety features.

1.25 The Report also cites Emeritus Professor Erich Weighold at paragraph 1.232, who submitted that advances in technology make modern reactors 'extremely safe'.

1.26 Contrary to this, the Committee also heard evidence by M.V Ramana, Professor and Simons Chair in Disarmament, Global and Human Security at the University of British Columbia, which questioned the safety benefits of new technologies. Ramana stated:

5 Electrical Trades Union, *Submission 164*.

6 Dr Ingrid Johnston, Senior Policy Officer, Public Health Association of Australia, *Proof Committee Hansard*, Canberra, 18 October 2019.

...when they talk about an inherently safe design or how there are no accident possibilities, they're talking about a single reactor unit in a certain configuration. When they actually try to deploy, often SMR proponents find that they have to do two things. One is that they may have to deploy multiple units in one site. The NuScale design, for example, is being sold in 12-packs, so there will be 12 reactors at one particular site. As we saw in Fukushima, this is a source of potential safety hazards because, if there is a problem with one of these units, it will affect how we can deal with other surrounding units. In Fukushima, for example, because of high radiation levels due to a meltdown in one reactor unit, the personnel could not access nearby units.⁷

1.27 The evidence continued:

The second issue is that, in order to cut costs, many of these reactor designs call for reducing other safety precautions which are outside of the reactor—for example, reducing what's called the emergency planning zone, the area where the local government units are trained to be able to evacuate people or take other kinds of action in the event of an accident. SMR vendors would like the EPZ to be shrunk to within the plant boundary so that no local governments are involved, because it costs money for them to plan for this, do emergency drills and so on and so forth, and they want to save a little bit of money that way.⁸

1.28 Despite taking issue with the Report failing to properly reflect the disparity in evidence received, I support the recommendation that the Australian Government commission a technology assessment that would clarify the extent of health and safety impacts with inclusion that the assessment be independent and environmental and carbon emissions be addressed.

D) Energy affordability, reliability and emissions reduction

1.29 I agree with paragraph 1.9 in the Report which states that:

Australia should be goal-oriented in seeking to deliver affordable and reliable energy while fulfilling its international emissions reduction obligations.

7 MV Ramana, *Proof Committee Hansard*, 24 October 2019.

8 MV Ramana, *Proof Committee Hansard*, 24 October 2019.

- 1.30 However, there have been several misrepresentations throughout the Report that overstate nuclear energy's ability to meet these goals, particularly in comparison to other technologies.

i) Affordability and economics

- 1.31 The Report discusses the importance of energy affordability. It highlights power prices faced by consumers in recent years.
- 1.32 Although the Report acknowledges that the economics of competing technologies is contested, I have concerns with some of the portrayal of nuclear specifically, in its ability to assist with energy affordability.
- 1.33 At paragraph 1.27 of the Report Mr Tristan Prasser stated:
...the contemporary experience of South Korea and United Arab Emirates demonstrates that nuclear remains one of the most reasonable and affordable pathways to decarbonisation on a large-scale.
- 1.34 This was directly contradicted by evidence submitted by The Australia Institute who cited the 2018 World Nuclear Industry Status Report which states:
Nuclear new-build is simply not competitive under ordinary market economy rules anywhere.⁹
- 1.35 The Report also limits this comparison of costs to nuclear only, such as in table 1.3. Whilst I acknowledge the difficulty of using traditional levelised cost of electricity analysis to compare technologies, there must be some representation of the method used to compare technologies in the Report as it currently is the most useful method to do this.
- 1.36 For example, a group of nine conservation organisations submitted a Lazard levelised cost of electricity analysis from November 2018 which stated a nuclear cost of A\$166-280/MWh as compared to \$A43-83/MWh for wind and A\$55-68/MWh for solar.¹⁰
- 1.37 Analysis of competing technologies is essential and the Report should have reflected this. Dr John Koomey echoed this submitting:
The context of competition is also relevant. Photovoltaic and wind generation (along with associated battery storage) have fallen dramatically in recent years...In the decade or two it will take to bring small commercial reactors to market, solar, wind, and storage technologies will undergo additional doublings of

9 The Australia Institute, *Submission 167*.

10 Joint submission by nine national environment groups and state conservation councils, *Submission 219*.

cumulative production, dropping their already attractive costs significantly.¹¹

- 1.38 The Committee heard from Mr. Tim Buckley from the Institute for Energy Economics and Financial Analysis (IEEFA) who further elaborated that due to the attractive renewables costs, international investors were not seeking to finance new nuclear developments. He stated:

The example I wanted to quote was a speech that was given last Friday by the largest and most successful utility in America and, potentially, the world. It's the CEO of NextEra Energy. The CEO, James Robo, gave a presentation last Friday....Why do I focus on NextEra? It is the most successful and largest utility in America... It's also one of the biggest nuclear players in the world. Mr James Robo said: We see renewables plus battery storage without incentives being cheaper than natural gas and cheaper than existing coal and existing nuclear. And that is game changing.¹²

- 1.39 The Report does not accurately reflect the evidence received on affordability and economics. It is unlikely that new nuclear will be able to compete with renewables without any kind of timeframe it could be operational in Australia, especially given the rate of price deflation of renewables. However, I support the technology assessment as set out in recommendation 2 as it may clarify this further.

ii) Reliability

- 1.40 The Report discusses the importance of firming for the increasing amounts of renewables coming on to the grid. At paragraph 1.42 it states:

...that because it is impossible to accurately predict when the sun will shine and the wind will blow, these variable renewable sources need to be partnered with more reliable shortfalls in production.

- 1.41 At paragraph 1.46, the Report states that nuclear could be a 'partner' for renewables. Firming the renewables and allowing for ramp-up and ramp down as needed.

- 1.42 Contrary to the conclusion, the Committee heard evidence from the Australian Energy Council (AEC) suggesting that existing nuclear would be ill-suited to firm renewables due to the lack of these essential characteristics i.e flexibility. The AEC submitted:

11 Dr John Koomey, *Submission 295*.

12 Mr Timothy Buckley, Director, Energy Finance Studies, Australasia, Institute of Energy Economics and Financial Analysis, *Proof Committee Hansard*, Sydney, 9 October 2019.

The downside to nuclear power is that the conventional designs used overseas are inflexible and difficult to turn on and off. Indeed, during periods of excess supply, it may even be more costly to reduce the output of these nuclear plants than to spill renewable generation.¹³

1.43 Several nuclear proponents referenced throughout the Report suggest that future technologies like Small Modular Reactors (SMR) may be able to rectify these issues such as costs and inflexibility.

1.44 Evidence was received from Engineers Australia that suggested these technologies remain speculative and difficult to assess, stating:

There is no clarity on the likely role, function and scale that SMR technology may have in a future energy market. This encourages speculation about SMRs as: a like-for-like substitute for the expected withdrawal of coal fired generation; or conversely, unnecessary because rapid developments in renewable energy technologies will meet any needs. Neither is a strong basis for assessment of the likely need or contribution of nuclear energy or, for that matter, any technology.¹⁴

1.45 Further, the necessity of using nuclear to firm renewables is not settled. Dr Matthew Stocks, from the Australian National University (ANU), gave evidence that Australia has plentiful sources of firming capacity in the form of pumped hydro sites:

In Australia, we found 3,000 sites with about 300 times the energy storage capacity of what we actually need. So there is absolutely no shortage of pumped hydro opportunities in Australia, or anywhere in the world.¹⁵

1.46 Simon Holmes à Court went further and questioned the necessity of baseload power required to firm renewables in total, stating:

There is a widespread perception that as these 'baseload' generators are retired they must be replaced 'like for like' with generators sharing similar generation profile and that only nuclear energy is a drop-in replacement... A large body of academic work concludes that not only can modern power grids provide reliable power without 'baseload' generation, but in many markets (including Australia) the cheapest path forward is to use a

13 Australian Energy Council, *Submission 14*.

14 Engineers Australia, *Submission 170*.

15 Dr Matthew Stocks, Research Fellow, The Australian National University, *Proof Committee Hansard*, Canberra, 18 October 2019.

portfolio of variable renewables with dispatchable energy sources.¹⁶

- 1.47 In summary, on the evidence, it is unlikely that firming in the form of nuclear will be needed. However, I support the technology assessment in recommendation 2 to analyse all claims.

iii) Emissions reduction outcomes

- 1.48 A dominant reason provided for support in lifting the moratorium on consideration of nuclear energy was that Australia needs to decarbonise its energy sector. This was even submitted by the Queensland Resources Council, who stated:

Like the rest of the world, the challenge for Australia is to balance lowering emissions while maintaining our reliable and affordable energy supply. Just over half of Australia's net total emissions are from stationary energy – around 53 per cent – with Queensland's net total emissions at a similar level of 46 per cent. QRC recommends that any feasible opportunity to reduce a significant portion of Australia's emissions should be considered.¹⁷

- 1.49 Portrayal of nuclear's role in the Report as playing a major role in decarbonising efforts ignores the vast resources Australia has available to power renewable energy and emerging technology like hydrogen.

- 1.50 At paragraph 1.25, Mr Ian Hore-Lacy stated:

That there is no real realistic decarbonisation prospect for Australia which does not involve nuclear.

- 1.51 This was contradicted by evidence submitted by Professor Andrew Blakers to the effect that renewables could deliver 100 per cent of Australia's energy decarbonisation needs. Blakers submitted:

Energy balancing for a 50-100% renewable grid is straightforward using off-the-shelf techniques that are already widely used. These techniques comprise energy storage, demand management, and strong interconnection over large areas using high voltage transmission lines.¹⁸

- 1.52 Further, he stated that that current deployment rate of renewables is fast enough to reach 50 per cent renewable electricity by 2024 and 100 per cent by 2032.

16 Mr Simon Holmes a Court, *Submission 258*.

17 Mr Ian Macfarlane, Chief Executive, Queensland Resources Council, *Proof Committee Hansard*, Brisbane, 30 September 2019.

18 Professor Andrew Blakers, *Submission 97*.

- 1.53 Dr Mark Diesendorf from the University of New South Wales also submitted a peer reviewed paper he co-authored titled: 'The feasibility of 100% renewable electricity systems: A response to critics', which stated:
- Electricity supply systems, operating on 100% renewable energy with the major proportion from variable renewables, are technically feasible, reliable and affordable for many countries and regions of the world.¹⁹
- 1.54 The Report's assertion that there is no realistic decarbonisation without nuclear is dubious and that it is needed to firm renewables. It is simply not reflective of the evidence.
- 1.55 Further discussion in relation to decarbonisation goals of the Australian economy is at Section J.1 below.

iv) Nuclear as a share of global energy generation

- 1.56 At paragraph 1.45, the Report stated:
- It is notable that nuclear energy represents approximately 11 per cent of the world's total energy mix, with countries that use nuclear energy using other energy sources including renewables.
- 1.57 The Report omits that in fact the share of nuclear energy as a portion of total energy capacity is shrinking due to rapid growth of renewable energy. Only serious intervention would reverse this trend. The International Energy Agency's 'Nuclear Energy in a Clean Energy System', report, which was cited throughout the inquiry, states that nuclear's:
- ...share of global electricity supply has been declining in recent years. That has been driven by advanced economies, where nuclear fleets are ageing, additions of new capacity have dwindled to a trickle, and some plants built in the 1970s and 1980s have been retired.²⁰
- 1.58 Professor Andrew Blakers explains the driving force behind this trend:
- You have to ask: why is it that nuclear is completely stagnant and renewables are now two-thirds of global net new generation capacity, and 100 per cent in Australia? The answer is very simple: renewables, like wind and solar, are much cheaper than any alternative, including nuclear.²¹

19 Dr Mark Diesendorf, *Submission 86*, Attachment 1.

20 See <https://www.iea.org/reports/nuclear-power-in-a-clean-energy-system>.

21 Professor Andrew Blakers, *Proof Committee Hansard*, Canberra, 18 October 2019.

- 1.59 To counter this, nuclear proponents throughout the inquiry point to the examples of China and India who do have some new nuclear facilities planned and in operation.
- 1.60 Whilst both are building moderate amounts of nuclear, they have much greater generation targets in renewables which further demonstrates the international decline of nuclear. India in particular has an impressive commitment. Mr Tim Buckley outlined the scale of India's ambition:
- Prime Minister Narendra Modi has a visionary ambition for India to install 523GW of renewable energy by 2030 as a way of dramatically reducing air pollution, reducing water scarcity risks, permanently reducing reliance on crippling fossil fuel imports, and hence improving energy security. This puts India on track to well exceed their Paris Agreement commitments, possibly achieving these commitments up to a decade ahead of schedule.²²
- 1.61 In comparison, India has 21 nuclear reactors planned to be brought online by 2030. Equivalent to 15.7 GW.²³
- 1.62 I support the recommendation by the Committee that seeks to clarify the various points of view on these matters. The committee has recommended that the Australian Nuclear Science and Technology Organisation (ANSTO) or another equivalent expert reviewer undertake a technology assessment and the Productivity Commission undertake an assessment of the viability of nuclear.

F) Community Engagement & Social License

- 1.63 It is clear that community engagement and social license is a prerequisite in establishing nuclear energy in Australia. RADM the Hon Kevin Scarce, AC, CSC Rtd. stated:
- The community consultation – getting and maintaining the social licence – is a critical issue. Everything that we saw overseas was, 'Don't underestimate how long that will take'. When you're talking about storing waste for a million years people have every right to be concerned and need to understand the technology.²⁴

22 Institute of Energy Economics and Finance Studies, *Submission 103*.

23 See: <http://world-nuclear-news.org/Articles/India-plans-expansion-of-nuclear-fleet-says-DEA-c>

24 RADM the Hon Kevin Scarce, AC, CSC, Rtd, *Proof Committee Hansard*, Adelaide, 2 October 2019.

- 1.64 This would be especially necessary with SMRs. Whilst waste would be less than Generation 1 and 2 nuclear technologies, they would be deployed in greater numbers across numerous locations.²⁵
- 1.65 At this time, a sufficient level of community engagement has not occurred. Essential and Roy Morgan Polls submitted to the inquiry have shown increasing levels of support for nuclear energy,²⁶ however, in those same polls when asked about situating a nuclear development close to their residence, both polls have a strong majority of respondents resistant to the idea. This community sentiment would need to significantly shift to enable any nuclear technology to be progressed.
- 1.66 The ANU Energy Change Institute citing the Symposium on the Nuclear Fuel Cycle submitted that education is one way to help build greater understanding and engagement in the community of nuclear energy, asserting that this will take time, transparency and extensive consultation.²⁷
- 1.67 Associate Professor Peter Speck stated:
- The introduction of nuclear power into Australia must be accompanied by an intensive and completely transparent program to give Australians knowledge about every aspect of nuclear power. Such a program should be a high priority in planning for a nuclear future, and it should receive the significant resources it deserves, for decades into the future... The Commonwealth Government should take a leading role in building community engagement, with a view to arriving at a community consensus.²⁸
- 1.68 In this process, it is important to learn from the mistakes of the past failed citizens' juries as part of the South Australia Nuclear Fuel Cycle Royal Commission 'Get to Know Nuclear' campaign.²⁹
- 1.69 We must also learn from the experiences of Indigenous communities like the Adnyamathanha situated close to a uranium mine in the Flinders ranges whose representative, Mr. Couthard told the committee of their experience:
- In the midst of this discussion about nuclear energy, Adnyamathanha people, and Aboriginal people in South Australia, are very much afraid that we're going to be left with a dump site for our next generation. I think that's a big concern to

25 SMR Nuclear Technology Pty Ltd, *Submission 39*.

26 Bright New World, *Submission 168*.

27 ANU Energy Change Institute, *Submission 160*.

28 Associate Professor Peter Speck, *Submission 108*, p. [1].

29 South Australia, *Nuclear Fuel Cycle Royal Commission Report*, May 2016.

put on the table as traditional owners are very much concerned about the fact that there are no guarantees in terms of this actually making an impact, a lasting impact, a beneficial impact.³⁰

- 1.70 Effective community engagement leading to social license is possible. At paragraph 1.104, the Report highlighted the examples of overseas jurisdictions effectively doing so:
- Countries that operate nuclear energy plants – especially liberal democracies that are comparable to Australia – place great significance on maintaining a social license. Lessons from these countries indicate the importance of transparency in building and maintaining a high degree of trust to ensure the ongoing safety and security of nuclear facilities.
- 1.71 Any future Australian government must be community focused and recognise the need to obtain social license first.
- 1.72 A future Australian Government should commission an independent community engagement program. However, it must have regard to technology neutrality and inform the community of all the options available.
- 1.73 The community, especially those situated close to proposed sites, should have all the information available to them as they will be required to make a complex and difficult decision on a controversial technology. Perhaps those communities would prefer a wind or solar farm located nearby.

I) National Consensus and Political Bipartisanship

- 1.74 The Committee heard from various groups and individuals about the importance of national consensus and political bipartisanship as a consideration of lifting the moratorium on nuclear energy.
- 1.75 The Report refers to and discusses this. However, the Report understates the importance of these needs and does not consider a viable solution to achieving both.
- 1.76 After several commissions, inquiries and a great deal of debate, the public is still divided as is the Committee.
- 1.77 A Roy Morgan Poll cited by Bright New World had a narrow majority of Australians supporting nuclear power (51 per cent) if it was used to reduce Australia's carbon emissions. However without reference to

30 Mr Dwayne Coulthard, Representative, Conservation Council of South Australia, *Proof Committee Hansard*, Adelaide, 2 October 2019.

- reducing carbon emissions only 45 per cent of respondents say Australia should develop nuclear power.³¹
- 1.78 A different poll conducted by YouGov on behalf of the Australia Institute found that when asked about their preferred source of energy, 22 per cent placed nuclear in their top three, whilst 59 per cent placed it in their bottom three.³²
- 1.79 Amongst the Australian public who submitted and presented to the inquiry in an independent capacity, there was also a lack of consensus.
- 1.80 The Minerals Council of Australia submitted:
Political bipartisanship is required to both reflect and drive community engagement and form the basis for a national consensus.³³
- 1.81 A lack of bipartisanship and national consensus can only be overcome if a future government seeks a clear mandate from the Australian people. A mandate can only be confirmed by plebiscite or federal election.
- 1.82 In response to the findings of the South Australian Royal Commission into the Nuclear Fuel Cycle, the South Australian Government similarly recognised the importance of a mandate, confirmed by popular vote. Stating that a move into nuclear would require:
...bipartisanship and broad social consent, secured through a statewide referendum.³⁴
- 1.83 Accordingly I sought amendments to the Report recommendation 3 which instead requires social license confirmed by plebiscite or federal election prior to the conditional approval of nuclear energy. This was ultimately rejected by the Committee. On the evidence, it is still necessary.
- 1.84 With the long development times for nuclear energy and the requisite preparation of the workforce and introduction of legislation and regulation to manage new nuclear facilities³⁵ this Government should convey its intent to the Australian people as soon as possible.

31 Bright New World, *Submission 168*.

32 The Australia Institute, *Submission 167*.

33 Minerals Council of Australia, *Submission 266*.

34 Government of South Australia, *Response to the Nuclear Fuel Cycle Royal Commission*, November 2016.

35 See Australian Nuclear Science and Technology Organisation (ANSTO), *Committee Hansard*, Sydney, 29 August 2019.

J.1) Legislation for Net Zero

- 1.85 There needs to be a clear purpose for considering lifting the moratorium on nuclear energy. This can only be a goal of zero emissions.
- 1.86 The Report supports emissions reduction commitments and goals for nuclear generally. At paragraph 1.10 it states:
- Australia should be goal-oriented in its consideration of nuclear energy. This requires us to...consider the prospect of nuclear energy against broader goals for Australia's energy system – that is, to deliver affordable and reliable energy whilst fulfilling international emissions reduction obligations.
- 1.87 There is no doubt Australia needs to decarbonise its energy supply. The Committee heard from many parties both for and against nuclear that a core prerequisite for a future government was acceptance that nuclear energy could play a role in decarbonising the energy sector.
- 1.88 Specifically in order to meet the Paris Agreement's stated goal of limiting global warming to 1.5 degrees Celsius.
- 1.89 The Intergovernmental Panel on Climate Change's (IPCC) 'Global Warming of 1.5 °C' Special Report shows that time is of the essence.³⁶ We need to decarbonise quickly.
- 1.90 The long development times of nuclear, canvassed in the Report as between ten and twenty years, mean it is ill-suited to the decarbonisation of the energy sector that is required. There is a risk that by focusing on future technologies like SMRs we may be leaving decarbonisation too late.
- 1.91 Lifting the moratorium and considering nuclear energy distracts from current and emerging technologies. It does not make sense when Australia has the potential to be an energy superpower with renewables and hydrogen.
- 1.92 The Paris Agreement requires Australia to increase its ambitions from our National Determined Contribution and develop a long term plan in line with a long term goal.
- 1.93 Even the Minerals Council of Australia stated that limiting warming to 1.5 degrees necessitates Australia reaching net zero emissions by 2050.³⁷
- 1.94 Net zero targets have been adopted by all the States in Australia in either statute or policy as well as many of Australia's trading partners such as the United Kingdom, Japan and New Zealand. See table 1 below:

36 Intergovernmental Panel on Climate Change, *Global Warming of 1.5 °C Special Report*, 2018.

37 Minerals Council of Australia, *Submission 266*.

Table 1: International Net Zero Targets

International Net Zero Targets	
Country	Status
New Zealand	In Law
Norway	In Law
Sweden	In Law
France	In Law
United Kingdom	In Law
Portugal	Policy Position
Iceland	Policy Position
Ireland	Policy Position
Japan	Policy Position
Switzerland	Policy Position
European Union	Under Discussion
Germany	Under Discussion
The Netherlands	Under Discussion

Source: Countries' stated positions.

- 1.95 A recent Australia Institute survey of 1,424 respondents found almost two-thirds of Australian support a net zero target.³⁸
- 1.96 Yet, the Federal Government currently lacks a legislated net zero target and no plan has been released. On the evidence, if a future government wishes to consider nuclear energy it must be in the context of decarbonisation in line with long term goal. This can only be a net zero target by 2050.

J.2) National Energy Policy

- 1.97 Australia does not currently have a national energy policy. This is not referenced in the Report and must be a prerequisite of lifting the moratorium.
- 1.98 Dr Ziggy Switkowski AO submitted that you cannot:
 ...graft a long term commitment to nuclear energy onto a currently unconfirmed and unstable national energy policy.³⁹
- 1.99 Ms Chloe Munro AO, Deputy Chair, Energy Forum, Australian Academy of Technology and Engineering reinforced this:

38 See <https://www.tai.org.au/content/majority-support-national-net-zero-emissions-2050>.

39 Dr Ziggy Switkowski, *Submission 41*.

Contemplating lifting the moratorium would be more productive in the context of a holistic energy policy, which we don't entirely have at the moment.⁴⁰

1.100 On 8 September 2018, the National Energy Guarantee, a national energy policy which would have provided Australia certainty and direction in its transition to low carbon electricity, was abandoned. It would have assisted any consideration of nuclear energy. The current Government has not signalled any intent to provide a new policy.

1.101 A key consideration for future government in settling the national energy policy is the regard for the energy policy direction of each State government. The Report at paragraph 1.115 states:

The Committee heard that the Commonwealth cannot act on this issue alone - cooperation across the three tiers of government will be needed. This is particularly important given that the states and territories have legislative and regulatory responsibility for aspects of nuclear energy, such as accessing the mineral resources.

1.102 The New South Wales Government has recently released the 'NSW Electricity Strategy'⁴¹ which details the development of three renewable energy zones in New South Wales. The Victorian Government has committed to a target of 50 per cent renewables by 2030 and the South Australian Government has a target of 100 per cent renewables by 2030.

1.103 The difficulty in achieving congruence in direction was evident from the evidence. Queensland Liberal National Party MP Michael Hart on behalf of the Opposition submitted:

The LNP is strongly committed to an energy policy that delivers safe, affordable, and reliable energy to consumers while fulfilling Australia's international emissions reductions obligations...We believe this can be achieved without lifting the moratorium on nuclear energy generation.⁴²

1.104 He further stated that the Government should focus on supporting the development of renewables. I agree.

1.105 A national energy policy is an essential prerequisite to the consideration of lifting the moratorium on nuclear energy. This policy must take into account the direction of the States.

40 Ms Chloe Munro, Deputy Chair, Energy Forum, Australian Academy of Technology and Engineering, *Proof Committee Hansard*, Melbourne, 1 October 2019.

41 See <https://energy.nsw.gov.au/media/1926/download>.

42 Mr Michael Hart MP, *Submission 132*.

1.106 Accordingly I made the following additional recommendation which was only supported by opposition members of the Committee.

Recommendation

The Committee recommends that the Australian Government legislate a Net Zero emissions target by 2050.

1.107 In respect to a National Energy Policy, I support the recommendation made by Labor members of the Committee in their dissenting report.

**Ms Zali Steggall OAM MP
Member for Warringah**

