COMMITTEE FOR MELBOURNE

Policy Brief

2 December 2021

Maximising Australia's renewable energy potential

Introduction

The Commonwealth Government should develop a comprehensive renewable energy policy in collaboration with the states and territories.

Australia and the world are on the cusp of a clean energy revolution. Driven by the need to avoid the worst impacts of climate change, renewable energy sources could replace fossil fuels, which are harmful to the natural environment and human health.

With a sophisticated national policy framework, Australia could harness its abundance of renewable energy sources for the national and global good.

Context

Australia remains heavily reliant on fossil fuels for domestic consumption and export earnings.

Coal is the largest energy source in Australia's National Electricity Market, comprising 54 per cent of total generation in 2020.[i] Australia is the second largest exporter of that commodity globally.[ii]

Natural gas is also a major component of Australia's domestic energy and export mix. Victorian households are particularly reliant on natural gas, accounting for approximately two-thirds of Australia's total household gas use.[iii]

Australia should reduce its reliance on fossil fuels for two key reasons:

1. Emissions reduction: Australia has committed to reduce its greenhouse gas emissions under the Paris Agreement and has a target of net zero emissions by 2050.[iv]

2. Economic opportunities: Decarbonising the national economy could stimulate job creation, *green* industry development and transform Australia's export profile.

Emissions reduction

Climate change is driving the need for Australia and the international community to transition from fossil fuels to clean, renewable energy sources.

Linked to extreme and more frequent environmental events, including drought, flooding, heat and bushfires, as well as rising sea levels, climate change presents significant environmental and human health risks.

Recognising these risks, 196 parties signed the 2015 Paris Climate Accords (Paris Agreement), pledging to undertake initiatives to help keep the increase in global average temperature to below 2° Celsius.[v] Australia is a signatory to the Paris Agreement.

Australia's federal and state governments have also pledged a net zero emissions target by 2050.[vi] Embracing renewable energy will be required to achieve this target.

Economic opportunities

Australia has an unprecedented opportunity to benefit economically through global decarbonisation efforts.

With its vast landscape, much of which is uninhabited and exposed to sunlight for long periods, combined with its extensive coastline, Australia is particularly suited for large-scale solar and wind energy generation.

These two energy sources, when backed by pumped hydro and batteries, are the most reliable and cheapest forms of energy.[vii] Efficient use of both sources in tandem would help alleviate fluctuating supply, minimise storage needs and drive down electricity costs, potentially providing Australia with an energy-cost advantage over competitors.

Leveraging Australia's solar and wind generation capacities to deliver low-cost clean electricity would help local manufacturers stay competitive, attract foreign investment and reduce emissions across the economy.

Producing low-cost renewable electricity and renewable hydrogen could generate export opportunities, including the direct sale of that energy to key trading partners, as well as trade in various *green* commodities and services.

Policy settings

Energy policy governance in Australia is complex and fragmented.

The Federal Government does not have a comprehensive renewable energy policy. The Howard Government introduced the Renewable Energy Target (RET) scheme in 2001.[viii] This target expired in 2020 and has not been replaced.

The Federal Government appears unsure as to whether more coal, gas or renewables should replace retiring coal-fired plants. A 'gas-led recovery' was announced following the onset of the COVID-19 pandemic while its Technology Investment Roadmap places increasing importance in solar and "clean hydrogen."

In this roadmap, the government is aiming for solar to produce electricity for less than $15 per megawatt hour – about half the current cost.[ix] Though no additional funds have been allocated to achieve the target.

With no national renewable energy policy in place, Australia's state and territory governments are proceeding with their own renewable energy policies. In Victoria, the state government released its Renewable Energy Action Plan in 2017 and more recently, increased the Victorian Renewable Energy Target to 50 per cent by 2030.[x]

This uncoordinated approach is creating various regulatory frameworks; risking resource duplication and other inefficiencies. Furthermore, direct government interventions in the market are creating an uncertain investment environment, making it more difficult for private investors to commit to new projects.

Uncoordinated energy policies mean Australia is jeopardising its opportunity to harness its ample renewable energy resources to develop a thriving renewables industry and low-carbon economy.

Policy considerations

More policy direction and support at all levels of government would help Australia simultaneously reduce its greenhouse gas emissions while potentially transforming into a clean energy and manufacturing powerhouse.

With the private sector to play a critical role in the transition to renewable energy generation, better coordination between the federal and state governments on grid transformation, including agreement on the optimal mix of energy sources, is necessary.

Clarity and support on four key policy areas could accelerate private renewable energy investment.

Coal-fired power stations

Governments could provide guidance on when Australia's existing coal-fired plants will be retired, as well as the policies and programs that will support communities impacted by the transition.

Many of Australia's coal-fired power stations are becoming less reliable and more expensive as they age. Some have had to close suddenly as a result, including Hazelwood in 2017. Sudden closures may occur again without a clear national approach.

Workers, consumers and the broader economy are vulnerable with no timetable or plans to manage the eventual closure of these plants. Managing the transition from coal-fired power to renewable energy would encourage further investment in renewable energy generation.

Transmission infrastructure

Governments could accelerate investment in electricity transmission infrastructure.

Australia's transmission grid needs to be modernised to support the high penetration of renewable energy. An optimised grid would be flexible to allow renewable energy to enter the grid from various sources and flow across the community and economy in various directions.

Government investment in transmission infrastructure linked to large-scale renewable generation sites could incentivise greater private investment in renewable energy projects and integrate more renewable energy into the grid.

Storage capacity

Governments could continue to invest in large-scale battery and pumped hydro energy storage to *firm* fluctuating wind and solar energy.

There is increasing optimism that large-scale batteries could enable solar and wind power to reliably displace more fossil fuels from the electricity grid. As battery costs decrease and technology advances, they could one day effectively store energy over months to manage intermittency more effectively.

Pumped hydro will become more effective. Two major projects - Snowy 2.0 and Battery of the Nation – will provide large-scale pumped hydro energy storage capacities to support the grid as coal-fired plants retire.

Export opportunities

Governments could create the policy framework necessary to accelerate investment in low-emissions energy for export purposes.

Australia's major trading partners, including China, Japan and South Korea, have committed to decarbonise their economies and will seek clean energy sources over the long-term.

Capturing new market opportunities with *green* products and services will reduce Australia's trade exposure to the global decarbonisation effort. The anticipated downturn in demand for Australia's fossil fuel exports, including coal and natural gas, should galvanise efforts to export low-emissions electricity, green hydrogen and products produced from these energy sources.

Conclusion

Australia has an opportunity to leverage its abundant renewable energy capacities to reduce national greenhouse gas emissions and unleash a new wave of economic growth.

Maximising the renewable energy opportunities available to Australia is not a foregone conclusion. It will only succeed with strong and ambitious national policy to help drive greater investment in large-scale renewable sources.

[i] Australian Energy Update 2021, Department of Industry, Science, Energy and Resources, Canberra, p. 30, https://www.energy.gov.au/publications/australian-energy-update-2021, viewed 29 November 2021.

[ii] Geoscience Australia, revised 2021, https://www.ga.gov.au/digital-publication/aecr2021/coal, viewed 29 November 2021.

[iii] T. Wood & G. Dundas (2020). Flame out: The future of natural gas, Grattan Institute, p. 43, https://grattan.edu.au/wp-content/uploads/2020/11/Flame-out-Grattan-report.pdf, viewed 29 November 2021.

[iv] Taylor, M. (Minister for Industry, Energy and Emissions Reduction) 2021, *Australia's plan to reach our net zero target by 2050,* media release, Canberra, 26 October, viewed 26 November 2021, https://www.minister.industry.gov.au/ministers/taylor/media-releases/australias-plan-reach-our-net-zero-target-2050

[v] United Nations Climate Change, revised 2021, https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement, viewed 24 November 2021.

[vi] T. Wood, A. Reeve & J. Ha (2021). Towards net zero: a practical plan for Australia's governments, Grattan Institute, p. 22, https://grattan.edu.au/wp-content/uploads/2021/10/Towards-net-zero-A-practical-plan-for-Australia-s-governments.pdf, viewed 24 November 2021.

[vii] Department of Industry, Science, Energy and Resources, revised 2021, https://www.energy.gov.au/business/equipment-and-technology-guides/renewable-energy, viewed 29 November 2021.

[viii] St John, Dr. A. (2014, 14 May). *The Renewable Energy Target: a quick guide*, Parliament of Australia. https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1314/QG/RenewableEnergy, viewed 29 November 2021.

[ix] Department of Industry, Science, Energy and Resources, revised 2021, https://www.industry.gov.au/data-and-publications/technology-investment-roadmap-low-emissions-technology-statement-2021/introduction

[x] Victorian Renewable Energy Target: 2019-2020 Progress Report, Department of Environment, Land, Water and Planning, Melbourne, p. 4, https://www.energy.vic.gov.au/__data/assets/pdf_file/0026/506825/VRET_2019-20_Progress_Report. pdf, viewed 25 November 2021.