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STANDING COMMITTEE ON STATE DEVELOPMENT

Feasibility of undergrounding the transmission infrastructure for renewable energy projects



Report 51

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Standing Committee on State Development

Feasibility of undergrounding the transmission infrastructure for renewable energy projects

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Feasibility of undergrounding the transmission infrastructure for renewable energy projects

"August 2023"

Chair: Hon Emily Suvaal MLC



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Terms of reference

1. That the Standing Committee on State Development inquire into and report on the feasibility of undergrounding the transmission infrastructure for renewable energy projects, with particular reference to:
 - (a) the costs and benefits of undergrounding,
 - (b) existing case studies and current projects regarding similar undergrounding of transmission lines in both domestic and international contexts,
 - (c) any impact on delivery timeframes of undergrounding, and
 - (d) any environmental impacts of undergrounding.
2. The Committee report on its findings by 31 August 2023.

The terms of reference were referred to the committee by the Hon Penny Sharpe MLC, Minister for Climate Change, Minister for Energy, Minister for the Environment, Minister for Heritage, Leader of the Government in the Legislative Council on 19 June 2023.¹

¹ *Minutes*, NSW Legislative Council, 22 June 2023, pp 226-227.

Committee details

Committee members

Hon Emily Suvaal MLC	Australian Labor Party	<i>Chair</i>
Hon Mark Buttigieg MLC	Australian Labor Party	
Ms Cate Faehrmann MLC	The Greens	
Hon Wes Fang MLC*	The Nationals	
Hon Emma Hurst MLC	Animal Justice Party	
Hon Stephen Lawrence MLC	Australian Labor Party	
Hon Taylor Martin MLC	Liberal Party	
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* The Hon Wes Fang MLC substituted for the Hon Sam Faraway MLC from 26 June 2023 for the duration of the inquiry.

Secretariat

Elsbeth Dyer, Principal Council Officer
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 Gareth Perkins, Administration Officer
 Emma Rogerson, Director

Chair's foreword

The New South Wales electricity system is currently undergoing a once-in-a-century transformation. To meet the target of net zero emissions by 2050, our state needs to rapidly move away from reliance on fossil fuels and towards renewable sources of energy. This change requires substantial investment across the electricity network, including in generation, transmission and distribution.

This inquiry focussed on the transmission network. According to the Australian Energy Market Operator, 10,000 km of transmission lines are needed nationally to support the transformation of the electricity market and to meet emissions reductions targets. Much of these must be built in New South Wales. However, the construction of such substantial infrastructure raises important questions about where and how it should be built.

This inquiry considered current and planned transmission infrastructure projects in New South Wales. In Chapter 2, we consider the case study of HumeLink, a transmission line connecting Wagga Wagga, Bannaby and Maragle, involving 360 km of proposed new transmission lines and new or upgraded infrastructure at four substations. In Chapter 3, we look at the Victoria to New South Wales Interconnector West, a transmission line currently planned to run from Jerilderie to the Victorian border north of Kerang.

These projects are planned to be built as overhead lines connected by transmission towers. However, in both cases, the committee heard significant community support for constructing them as underground lines instead. This inquiry was established to assess the feasibility of each model. We looked at several factors including cost, time to build, technical suitability, impacts on landowners, impacts on the local community and economy, impacts on the local environment and bushfire risk.

In relation to HumeLink, ultimately, the committee found that the current plan for constructing HumeLink as an overhead line is the correct approach, especially given the applicable regulatory environment and the lack of any action to date in progressing the undergrounding option. We acknowledge that this is not what many in the local community are calling for, and we emphasise that this was not an easy conclusion to come to. However, the evidence before us was clear that undergrounding would result in substantial additional cost and lengthy delays and would be unlikely to receive regulatory approval. Further, the previous state government took no steps to facilitate or plan for the undergrounding of HumeLink, meaning that even if it was possible within the current regulatory environment, the time for considering it as an option has long passed us. It is therefore not a feasible option when climate change requires us to move to renewables as fast as possible. In relation to the Victoria to New South Wales Interconnector West, the committee makes no findings or recommendations, given that this project is still at a preliminary stage.

Throughout this inquiry, the committee heard a range of other concerns relating to the transformation of our electricity system. We make two recommendations in this space. First, we recommend that the NSW Government consider the viability of changing the planning framework to require a comprehensive cumulative impact study to be undertaken before any renewable energy zone (REZ) is declared; and community consultation on any proposed REZ to start at the scoping stage to allow adequate consideration of viable alternatives. This is in response to concerns that the REZs were declared without adequate consideration of community and environmental concerns and without meaningful community consultation.

Second, we recommend that the NSW Government consider the creation of an independent ombudsman to oversee consultation upon, and rollout of, renewable energy projects and transmission infrastructure

in New South Wales and to receive and handle complaints about these processes. This is in response to concerns that Transgrid does not always fully engage with stakeholders who may have less technical expertise about alternative options that would reduce negative community impacts but may be more expensive.

On behalf of the committee, I would like to thank everyone who contributed to this inquiry through writing submissions or appearing at hearings or public forums. I would also like to thank the landowners who hosted the committee during site visits in the Tumut region. I acknowledge the findings of this inquiry may not be what those in impacted areas were calling for. The applicable regulatory environment and lack of action to date mean that undergrounding transmission infrastructure for Humelink is not a feasible option. I urge the federal government to consider the evidence and findings of this report, in any future reviews of the regulatory framework.

Finally, I thank the secretariat for their diligence and professionalism in assisting this inquiry.



The Hon Emily Suvaal MLC
Committee Chair

Findings

Finding 1

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That, in considering all the evidence, the current plan for constructing HumeLink as a 500 kV overhead transmission line is the correct approach especially given the applicable regulatory environment and the lack of any action to date in progressing the undergrounding option.

Recommendations

Recommendation 1

42

That the NSW Government consider the viability of changing the New South Wales planning framework to require:

- a comprehensive cumulative impact study to be undertaken before any renewable energy zone (REZ) is declared; and
- community consultation on any proposed REZ to start at the scoping stage to allow adequate consideration of viable alternatives.

Recommendation 2

44

That the NSW Government consider the creation of an independent ombudsman to oversee consultation upon, and rollout of, renewable energy projects and transmission infrastructure in New South Wales and to receive and handle complaints about these processes.

Conduct of inquiry

The terms of reference for the inquiry were referred to the committee by the Minister for Climate Change, Minister for Energy, Minister for the Environment, Minister for Heritage, Leader of the Government in the Legislative Council on 19 June 2023 and adopted by the Committee on 22 June 2023.

The committee received 301 submissions and 15 supplementary submissions.

The committee held five public hearings: two at Parliament House in Sydney, one in Tumut, one in Armidale and one in Deniliquin. The committee also held public forums in Tumut and Deniliquin.

The committee also conducted two site visits to properties affected by the proposed HumeLink project in the Tumut area.

Inquiry related documents are available on the committee's website, including submissions, hearing transcripts, tabled documents and answers to questions on notice.

Chapter 1 **Background: the electricity system in New South Wales**

The electricity system in New South Wales operates in a complex framework involving state and federal agencies, private corporations, and commercial and individual consumers. This inquiry focuses on one level of the system – transmission. However, this chapter provides a brief overview of the broader National Electricity Market and the transformation it is currently undergoing to contextualise the current challenges impacting the transmission network. It also outlines key features of the transmission network, including how it is operated and governed, major infrastructure projects across the state, and how electricity can be transmitted.

The National Electricity Market

- 1.1** New South Wales is part of the National Electricity Market (NEM). The NEM was formed in 1998, covering Queensland, New South Wales, the Australian Capital Territory, Victoria, Tasmania, and South Australia.² It is a wholesale market through which generators and retailers trade electricity. The NEM is one of the largest interconnected electricity systems in the world, covering approximately 40,000 km of transmission lines and cables and supplying approximately 10.7 million customers.³
- 1.2** The electricity system in the NEM, like other electricity systems, has four main levels:
- generation: the production and storage of electricity
 - transmission: the infrastructure used to transmit electricity from generators to substations
 - distribution: the infrastructure which transmits electricity from substations to consumers (often referred to as 'poles and wires')
 - retail: the sale of electricity to consumers.⁴

Governance and regulation of the National Electricity Market

- 1.3** The NEM is governed by the National Electricity Law and the National Electricity Rules, which have force in New South Wales through the *National Electricity (New South Wales) Act 1997*.⁵
- 1.4** Three national agencies govern, operate, and regulate the NEM:
- the Australian Energy Market Operator (AEMO) administers and operates the gas and electricity markets and power systems
 - the Australian Energy Market Commission (AEMC) makes the National Electricity Rules and advises on the design of the NEM

² Australian Energy Market Operator, *Factsheet: The National Electricity Market* (2021), p 1.

³ Australian Energy Market Operator, *Factsheet: The National Electricity Market* (2021), p 1.

⁴ NSW Department of Planning, Industry and Environment, *NSW Electricity Strategy* (2019), p 3.

⁵ NSW Department of Planning, Industry and Environment, *NSW Electricity Strategy* (2019), p 2.

- the Australian Energy Regulator (AER) enforces the National Electricity Rules, sets the amount of revenue that network businesses can recover from customers and monitors and reports on the conduct of market participants.⁶

1.5 In addition, the Australian Energy Infrastructure Commissioner has an independent function to facilitate the handling of complaints about energy projects, identify and promote best practices for the planning, operation, and governance of such projects, and improve information access and transparency about proposed and operating projects and relevant government and industry information more broadly.⁷

1.6 The Energy Security Board (ESB) was formed in 2017 to coordinate implementation of recommendations from the Independent Review into the Future Security of the National Electricity Market. The ESB is made up of the heads of the AEMO, the AEMC, and the AER.⁸ The ESB reports to the Energy and Climate Change Ministerial Council.⁹

Transformation of the New South Wales electricity system

1.7 The New South Wales electricity system, like others interstate and overseas, is currently undergoing a significant transformation as it moves away from reliance on fossil fuels and towards renewable sources of energy. This transformation is a key step to achieving the target of net zero emissions by 2050, which all Australian states and territories have committed to.¹⁰

1.8 This transformation will affect all elements of the system, including the transmission network. The AEMO has described this as 'a once-in-a-century transformation in the way electricity is generated and consumed in eastern and south-eastern Australia' which is 'accelerating and irreversible'.¹¹

1.9 In 2022, the AEMO released its latest Integrated System Plan (ISP). This is described as 'a whole-of-system plan that provides an integrated roadmap for the efficient development of the National Electricity Market (NEM) over the next 20 years and beyond'.¹² Its aim is to design the most cost-effective, secure, and reliable energy system capable of meeting emissions reductions targets at an acceptable level of risk.¹³

⁶ NSW Department of Planning, Industry and Environment, *NSW Electricity Strategy* (2019), p 2; Australian Energy Regulator, *About Us*, <https://www.aer.gov.au/about-us>

⁷ Submission 107, Australian Energy Infrastructure Commissioner, p 1.

⁸ Energy Security Board, *Who is the Energy Security Board?* <https://esb-post2025-market-design.aemc.gov.au/who-is-the-energy-security-board>

⁹ Australian Department of Climate Change, Energy, the Environment and Water, *Energy and Climate Change Ministerial Council* (2023), <https://www.energy.gov.au/government-priorities/energy-and-climate-change-ministerial-council>

¹⁰ ClimateWorks Centre, *Government Climate Action: Leading Policies and Programs in Australia* (December 2022), p 6.

¹¹ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 7.

¹² Australian Energy Market Operator, *Integrated System Plan (ISP)* (2022), <https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp>

¹³ Australian Energy Market Operator, *Integrated System Plan (ISP)* (2022), <https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp>

- 1.10** The ISP reports that so far, transformation in the NEM has 'outpaced all expectations'.¹⁴ However, there is still considerable progress to be made. A key challenge is that electricity demand is increasing due to electrification of transport, industry, office and homes; but at the same time, coal-fired generation is withdrawing faster than announced.¹⁵ According to the ISP, meeting this increased demand for electricity without coal will require variable renewable energy capacity to triple by 2030, then double again by 2040, and again by 2050.¹⁶ These increases in renewable energy generation will also require improvements in transmission, which we consider further below.
- 1.11** The ISP is the principal document setting out the future direction of the NEM. However, several state government strategies and documents also shape the electricity market, including:
- the NSW Electricity Strategy¹⁷
 - the NSW Electricity Infrastructure Roadmap¹⁸
 - the NSW Climate Change Policy Framework¹⁹
 - the Net Zero Plan Stage 1: 2020–2030.²⁰
- 1.12** The NSW Electricity Strategy acknowledges that 'NSW is part of a national electricity system and the NSW Government's preference is for national solutions to issues facing the electricity system'.²¹ However, state policies also have a role to address 'the specific needs of NSW'.²²
- 1.13** Several independent electricity experts, including Prof Simon Bartlett AM told the committee that Australia is lagging well behind 'international best practice, knowledge and experience both in terms of undergrounding and especially the use and benefits of HVDC VSC technology'.²³ Professor Bartlett told the committee that 'other than TasNetworks and Amplitude Consultants, there is almost no knowledge of HVDC VSC in Australia. In fact, AEMO and the other TNSP's are unaware of the key role for this technology in the massive integration of renewables into Australia's power systems. Proof can be found in AEMO's Draft 2023 Transmission Expansions Options Report, issued 2 May 2023, that contained the most appalling assumptions on all their HVDC options ever imaginable'.²⁴

¹⁴ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 26.

¹⁵ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 9.

¹⁶ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 10.

¹⁷ New South Wales Government, *NSW Electricity Strategy* (2019).

¹⁸ NSW Government, *Electricity Infrastructure Roadmap* (2023), <https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/electricity-infrastructure-roadmap>

¹⁹ NSW Government and Office of Environment and Heritage, *NSW Climate Change Policy Framework* (2016).

²⁰ NSW Department of Planning, Industry and Environment, *Net Zero Plan Stage 1: 2020–2030* (2020).

²¹ NSW Government, *NSW Electricity Strategy* (2019), p 1.

²² NSW Government, *NSW Electricity Strategy* (2019), p 1.

²³ Submission 29, Professor Simon Bartlett AM, Independent expert, p 2.

²⁴ Submission 29, Professor Simon Bartlett, p 2.

Renewable Energy Zones

- 1.14** A key element in the transformation of the state's electricity system is the creation of Renewable Energy Zones (REZs). REZs are areas which contain new renewable energy infrastructure, including generators; storage, such as batteries and pumped hydro; and high-voltage transmission infrastructure. They have been described as 'the equivalent of modern-day power stations'.²⁵
- 1.15** According to the New South Wales Government, by connecting multiple renewable energy projects and electricity storage, REZs 'capitalise on economies of scale to deliver cheap, reliable, and clean electricity for homes and businesses in NSW'.²⁶
- 1.16** To date, five REZs have been declared in New South Wales. These are:
- the New England Renewable Energy Zone
 - the Central-West Orana Renewable Energy Zone
 - the Hunter-Central Coast Renewable Energy Zone
 - the Illawarra Renewable Energy Zone
 - the South West Renewable Energy Zone.²⁷
- 1.17** The REZ locations were chosen following a geospatial mapping exercise undertaken by the New South Wales Government in 2018. This exercise considered renewable energy resource potential, proximity to the existing electricity network, and potential interactions with existing land uses.²⁸
- 1.18** EnergyCo is the statutory authority responsible for leading the delivery of REZs.²⁹

The transmission network in New South Wales

- 1.19** This inquiry focusses on the second level of the electricity system – transmission. The transmission network in New South Wales transports electricity from generation sources (including coal, gas, wind, solar and hydro) to homes and businesses via the distribution network and to large directly connected industrial customers.³⁰ The network comprises 13,045 km of transmission lines, 126 substations and switching stations, and five interconnections to Queensland and Victoria.³¹

²⁵ EnergyCo, *Renewable Energy Zones* (2023), <https://www.energyco.nsw.gov.au/renewable-energy-zones>

²⁶ EnergyCo, *Renewable Energy Zones* (2023), <https://www.energyco.nsw.gov.au/renewable-energy-zones>

²⁷ EnergyCo, *Renewable Energy Zone Locations* (2023), <https://www.energyco.nsw.gov.au/renewable-energy-zones/renewable-energy-zone-locations>

²⁸ EnergyCo, *Frequently Asked Questions* (2023), <https://www.energyco.nsw.gov.au/about-energyco/frequently-asked-questions>

²⁹ EnergyCo, *Our Purpose* (2023), <https://www.energyco.nsw.gov.au/about-energyco/our-purpose>

³⁰ Submission 102, Transgrid, p 3.

³¹ Submission 102, Transgrid, p 3.

- 1.20** The transmission network in New South Wales and the Australian Capital Territory is owned and operated by Transgrid, which is licensed under the *Electricity Supply Act 1995*.³² Transgrid was formed in 1995 when the high voltage electricity transmission network assets were separated from the NSW Electricity Commission (then known as Pacific Power), during a broader period of deregulation of the energy industry nationally.³³ In 2015, a consortium called NSW Electricity Networks obtained a 99-year lease over Transgrid's transmission network.³⁴
- 1.21** Transgrid earns a regulated return on its lease of the transmission network. The rate of return is determined by the AER through a five-yearly revenue determination.³⁵ Revenue may also be earned on major capital projects, although such projects are subject to various requirements, including completion of a regulatory investment test known as the RIT-T.³⁶

Current and future transmission infrastructure projects in New South Wales

- 1.22** The 2022 ISP outlines the need for significant investment in transmission infrastructure across eastern and south-eastern Australia in order to support the transformation of the electricity market and meet emissions reductions targets.³⁷ This includes the installation of 10,000 km of new transmission to efficiently deliver firm renewable energy to consumers.³⁸ In its submission to the inquiry, Iberdrola Australia Networks remarked that there has not been an expansion to the power system on this scale in over fifty years.³⁹
- 1.23** One of the main reasons for the need for additional transmission infrastructure is that renewables tend to be in more remote and dispersed areas, and so infrastructure is required to transport electricity to urban areas where demand is concentrated. Professor Andrew Dyer, Australian Energy Infrastructure Commissioner, explained to the committee that we are moving from a 'high centralised power generation grid system' to a 'very distributed generation approach'.⁴⁰ He explained that this 'redefines how the grid needs to be built and run'.⁴¹
- 1.24** In its submission, Squadron Energy elaborated that 'as renewable resources are often located in new areas away from legacy transmission, there is a clear and demonstrated need for new transmission – it is critical to transport renewable energy from where it is generated to where it is needed'.⁴² Mr Brett Redman, Chief Executive Officer, Transgrid added that 'without an urgent acceleration in building transmission infrastructure, New South Wales will not be able to

³² NSW Department of Planning, Industry and Environment, *NSW Electricity Strategy* (2019), p 6.

³³ Transgrid, *Our History*, <https://www.Transgrid.com.au/about-us/our-history>

³⁴ Transgrid, *Our History*, <https://www.Transgrid.com.au/about-us/our-history>

³⁵ Evidence, Mr Jim Cox, Acting Chair, Board of Directors, Australian Energy Regulator, 18 July 2023, p 17; NSW Department of Planning, Industry and Environment, *NSW Electricity Strategy* (2019), p 7.

³⁶ Evidence, Mr Cox, 18 July 2023, p 17.

³⁷ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 8.

³⁸ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 12.

³⁹ Submission 113, Iberdrola Australia Networks, p 2. See also Submission 42, Nexa Advisory and Climate Energy Investor Group, p 1.

⁴⁰ Evidence, Professor Andrew Dyer, Australian Energy Infrastructure Commissioner, 18 July 2023, p 24.

⁴¹ Evidence, Professor Dyer, 18 July 2023, p 24.

⁴² Submission 114, Squadron Energy, p 1.

connect the renewable energy zones to the grid to move clean energy from where it's generated to where it is needed'.⁴³

1.25 The ISP identifies a range of committed, anticipated and actionable transmission projects, along with their advised delivery dates. Projects in New South Wales include:

- Victoria – New South Wales Interconnector Minor Upgrade (November 2022)
- Queensland – New South Wales Interconnector Minor upgrade (Mid-2023)
- Central West Orana REZ Transmission Link (July 2025)
- Project EnergyConnect (July 2026)
- HumeLink (July 2026)
- Sydney Ring (July 2027)
- New England REZ Transmission Link (July 2027), and
- Victoria to New South Wales Interconnector West (July 2031).⁴⁴

1.26 According to the AEMO, the total benefit of planned transmission projects in the National Energy Market will be \$28 billion, delivering a return on investment of 2.2.⁴⁵ The AEMO states that all projects are needed and should be delivered as early as possible.⁴⁶

1.27 Transgrid has the primary responsibility for planning, proposing and delivering transmission infrastructure projects in New South Wales.⁴⁷ Transgrid is the jurisdictional planning body responsible for actionable ISP projects in NSW, except for Renewable Energy Zones (REZs). In its submission, Transgrid stated that it is investing \$16.5 billion in transmission infrastructure in New South Wales over the next decade.⁴⁸ It commented that its strategy is aligned with the AEMO's roadmap 'to build the critical infrastructure which will reshape the National Electricity Market and will continue to drive innovation and efficiencies'.⁴⁹

1.28 Electricity consumers primarily bear the cost of transmission infrastructure projects, which we discuss in the next chapter. However, there may also be other sources of financing available. For example, in December 2022, the Commonwealth and New South Wales Governments announced a joint \$7.8 billion deal to fund REZ and transmission projects in New South Wales. This included \$4.7 billion in funding from the Commonwealth's 'Rewiring the Nation' program and \$3.1 billion from the NSW Transmission Acceleration Facility.⁵⁰

⁴³ Evidence, Mr Brett Redman, Chief Executive Officer, Transgrid, 18 July 2023, p 26.

⁴⁴ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 13.

⁴⁵ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 15.

⁴⁶ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 15.

⁴⁷ Submission 102, Transgrid, p 2.

⁴⁸ Submission 102, Transgrid, p 5.

⁴⁹ Submission 102, Transgrid, p 3.

⁵⁰ Media release, Hon Anthony Albanese MP, Australian Prime Minister, Hon Chris Bowen MP, Australian Minister for Climate Change and Energy, Hon Dominic Perrottet MP, New South Wales Premier, and Hon Matt Kean MP, New South Wales Treasurer and Minister for Energy, 'Landmark rewiring the nation deal to fast-track clean energy jobs and security in NSW', 21 December 2022.

How electricity is transmitted

- 1.29** In New South Wales (and across Australia), the 'traditional' or most common, method of transmitting electricity from generation assets to substations is through overhead alternating current (AC) power lines.⁵¹
- 1.30** An alternate method of transmitting electricity is through underground electrical cables. High voltage power cables, extra-high voltage power cables, and submarine power cables can all be used underground.⁵² There are various methods to place transmission cables underground, including trenching, directional drilling, and deep tunnelling.⁵³
- 1.31** Underground transmission lines are usually high voltage direct current (HVDC),⁵⁴ which the Australian Energy Infrastructure Commissioner reported is the 'preferred option for long distance underground transmission'.⁵⁵ This requires the use of converter stations to connect the underground cables to the existing overhead AC powerlines.⁵⁶ High voltage AC (HVAC) lines may be used underground but this is typically for shorter distances below 50 km.⁵⁷
- 1.32** Examples of existing and planned underground transmission infrastructure projects in Australia include:
- Directlink: an existing partially overground and partially underground 65 km HVDC cable between Mullumbimby and Terranora in New South Wales⁵⁸
 - Murraylink: an existing underground 178 km HVDC line between Red Cliffs, Victoria and Berri, South Australia⁵⁹
 - Aquasure: an existing 87 km long HVAC cable connecting a desalination plant in Wonthaggi, Victoria to Melbourne⁶⁰
 - Powering Sydney's Future: a planned 20 km HVAC underground cable between Potts Hill and Alexandria in Sydney⁶¹

⁵¹ Submission 29, Professor Simon Bartlett, p 2; Submission 102, Transgrid, p 10; Submission 107, Australian Energy Infrastructure Commissioner, p 3.

⁵² Submission 102, Transgrid, p 10.

⁵³ Submission 102, Transgrid, p 10.

⁵⁴ Submission 102, Transgrid, p 10.

⁵⁵ Submission 107, Australian Energy Infrastructure Commissioner, p 4.

⁵⁶ Submission 29, Professor Simon Bartlett, p 2; Submission 107, Australian Energy Infrastructure Commissioner, p 4.

⁵⁷ Submission 29, Professor Simon Bartlett, p 2; Submission 33, Energy Grid Alliance, p 17; Submission 102, Transgrid, p 11; Submission 107, Australian Energy Infrastructure Commissioner, p 4; Evidence, Mr Redman, 18 July 2023, p 27.

⁵⁸ Submission 33, Energy Grid Alliance, p 22; Submission 235, Amplitude Consultants, p 2.

⁵⁹ Submission 33, Energy Grid Alliance, p 21; Submission 235, Amplitude Consultants, p 2.

⁶⁰ Submission 33, Energy Grid Alliance, p 25.

⁶¹ Submission 102, Transgrid, p 13.

- Mariner Link: a proposed electricity and telecommunications interconnector between Tasmania and Victoria involving approximately 255 km of undersea HVDC cable and approximately 90 km of underground HVDC cable in Victoria⁶²
- Star of the South: a proposed offshore wind farm off the south coast of Gippsland, Victoria, which is planned to involve a HVAC transmission network of undersea and underground cables and substations to connect to Hazelwood.⁶³

1.33 Overseas, there are several notable examples of planned underground transmission infrastructure projects that will cover significant distances, including:

- SuedLink: a proposed 700 km HVDC underground cable connection to transport wind power from northern Germany to Bavaria and Baden-Württemberg⁶⁴
- SuedOstlink: a proposed 250 km underground HVDC cable between Saxony-Anhalt and Bavaria in Germany⁶⁵
- SOO Green: a proposed 563 km HVDC underground cable between Illinois and Iowa.⁶⁶

1.34 We consider the advantages and disadvantages of the different models of transmission infrastructure in the next chapter.

⁶² Submission 33, Energy Grid Alliance, p 20; Submission 102, Transgrid, p 12.

⁶³ Submission 33, Energy Grid Alliance, p 24; Submission 44, RE-Alliance, p 6.

⁶⁴ Submission 33, Energy Grid Alliance, p 19; Submission 102, Transgrid, p 12; Submission 235, Amplitude Consultants, p 11.

⁶⁵ Submission 102, Transgrid, p 12; Submission 235, Amplitude Consultants, p 11.

⁶⁶ Submission 33, Energy Grid Alliance, p 18; Submission 102, Transgrid, pp 12-13; Submission 235, Amplitude Consultants, pp 11-12.

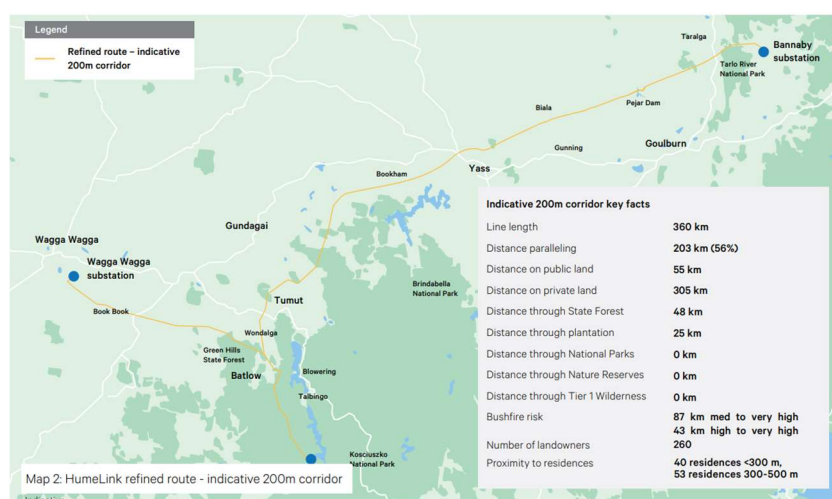
Chapter 2 Case Study - HumeLink

HumeLink is a significant, 360 km-long transmission project in the South-East of New South Wales. While proposed to be comprised of overhead cables supported by transmission towers, an alternate model to place it underground has been put forward by many in the local community. This chapter begins by outlining HumeLink, including its purpose, location, size, cost and timeline. It then considers how the planned model and the underground alternative compare on various measures, including cost, time to build, technical suitability, impacts on landowners, impacts on the local community and economy, impacts on the local environment, and bushfire risk.

HumeLink: Overview

- 2.1 HumeLink is a planned 500 kV transmission line that will connect Wagga Wagga, Bannaby and Maragle in the South-East of New South Wales.⁶⁷ It will involve 360 km of proposed new transmission lines and new or upgraded infrastructure at four substations.⁶⁸ HumeLink will facilitate the transmission of 2,200 megawatts of renewable energy.⁶⁹
- 2.2 HumeLink will be used to transport renewable energy from generation sources in South Australia, Victoria and South-Western New South Wales (through links with Project EnergyConnect) to demand centres in and around Sydney. It will also be used to transport surplus renewable energy to Snowy 2.0 to be stored.⁷⁰
- 2.3 The current route for HumeLink is set out in the map below:

Figure 1 Refined HumeLink route, March 2022⁷¹



⁶⁷ Submission 102, Transgrid, p 7.

⁶⁸ Submission 102, Transgrid, p 7.

⁶⁹ Answers to questions on notice, Ms Marie Jordan, Executive General Manager—Network, Transgrid, 18 August 2023, p 7.

⁷⁰ Evidence, Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, 7 August 2023, p 8; Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 69.

⁷¹ Transgrid, *HumeLink Fact Sheet: Route Refinement Decisions* (March 2022), https://www.transgrid.com.au/media/j3ee5dlz/01-transgrid_a4_factsheet_humelink-route-refinement-decisions-march-2022.pdf

- 2.4 The most recent official cost estimate of HumeLink is \$4.89 billion.⁷² This has recently been revised upwards from the previous figure of \$3.3 billion.⁷³ The increased cost was attributed to inflation, with Transgrid stating that there are currently 30 per cent cost increases in the construction industry alone.⁷⁴
- 2.5 The committee also heard evidence that the cost of HumeLink had increased by a much larger amount when compared against TransGrid's first estimate Project Assessment Draft Report (PADR), issued in January 2020. This initial cost estimate was just \$1.35bn.⁷⁵

Timeline

- 2.6 Early planning for HumeLink commenced in 2019.⁷⁶ Through 2020-2022, Transgrid underwent preliminary regulatory processes with the Australian Energy Regulator (AER), including the regulatory investment test for transmission (RIT-T) and a first contingent project application. Transgrid also conducted investigations and consultations to determine the route.⁷⁷
- 2.7 A preferred 1 km corridor was identified in early 2020, and a refined 200 m corridor announced in March 2022 (as shown in the image above).⁷⁸ Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, reported that Transgrid have now surveyed 70 per cent of the route.⁷⁹
- 2.8 As of August 2023, Transgrid have commenced procurement and purchasing for the project. Mr Roberts advised that Transgrid have already ordered 16 high-voltage transformers and reactors, and 'are very close to' ordering the conductor and the transmission line steel.⁸⁰ Transgrid are also 'close to' commencing early design works with contracting parties.⁸¹
- 2.9 The Environmental Impact Statement (EIS) for the project is due to be released for public exhibition in September, shortly after this inquiry concludes.⁸² Transgrid expect the EIS process to be complete by mid-2024.⁸³ During this time, Transgrid will submit the feedback loop to

⁷² Evidence, Mr Roberts, 7 August 2023, p 5.

⁷³ Evidence, Mr Brett Redman, Chief Executive Officer, Transgrid, 18 July 2023, p 28.

⁷⁴ Evidence, Mr Roberts, 7 August 2023, p 6.

⁷⁵ Submission 106a, HumeLink Alliance Incorporated, p 8.

⁷⁶ Transgrid, *HumeLink*, <https://www.transgrid.com.au/projects-innovation/humelink>

⁷⁷ Evidence, Mr Roberts, 7 August 2023, pp 10, 19; Transgrid, *HumeLink*, <https://www.transgrid.com.au/projects-innovation/humelink>

⁷⁸ Transgrid, *HumeLink*, <https://www.transgrid.com.au/projects-innovation/humelink>; Transgrid, *HumeLink Fact Sheet: Route Refinement Decisions* (March 2022), https://www.transgrid.com.au/media/j3ee5dlz/01-transgrid_a4_factsheet_humelink-route-refinement-decisions-march-2022.pdf

⁷⁹ Evidence, Mr Roberts, 7 August 2023, p 10.

⁸⁰ Evidence, Mr Roberts, 7 August 2023, p 5.

⁸¹ Evidence, Mr Roberts, 7 August 2023, p 14.

⁸² Evidence, Mr Roberts, 7 August 2023, p 11.

⁸³ Evidence, Mr Roberts, 7 August 2023, p 8.

Australian Energy Market Operator (AEMO) and then a second contingent project application to the AER.⁸⁴ This was described by Transgrid as 'the final gate in the process for approval'.⁸⁵

- 2.10** Construction on HumeLink is scheduled to begin in early 2025, with completion expected by mid-2026.⁸⁶

How HumeLink will be constructed

- 2.11** HumeLink will be constructed as an overhead transmission line. It will involve dual circuit 500 kV alternating current (AC) transmission cables supported by 850 steel transmission towers.⁸⁷
- 2.12** According to Transgrid, the steel transmission towers will range in height from 50 m to 76 m. The towers will be spaced 300 m to 600 m apart, depending on topography and ground conditions.⁸⁸
- 2.13** The committee heard there is widespread opposition to HumeLink and strong support for underground transmission lines. Various community groups, including HumeLink Alliance Incorporated, HumeLink United, Stop Rethink HumeLink Campaign, and HumeLink Action Group have been formed to advocate for this option.⁸⁹ At the public forum in Tumut, all who spoke were in favour of this approach.⁹⁰
- 2.14** In response to community concerns, in late 2021 Transgrid engaged GHD (with sub-consultants Stantec) to prepare an independent report investigating the options for undergrounding HumeLink (GHD report).⁹¹ A Steering Committee was appointed to oversee the report, which included representatives from Community Consultative Groups (CCGs).⁹²
- 2.15** This report was released in August 2022.⁹³ Among other findings, the report found that undergrounding HumeLink would increase the cost and delay completion by up to five years.⁹⁴

⁸⁴ Evidence, Mr Roberts, 7 August 2023, p 19.

⁸⁵ Evidence, Mr Roberts, 7 August 2023, p 19.

⁸⁶ Evidence, Mr Roberts, 7 August 2023, p 8.

⁸⁷ Transgrid, *HumeLink Fact Sheet: Transmission Towers* (June 2023), https://www.transgrid.com.au/media/nhyg4u1i/tran_302546_humelink-transmission-towers-fact-sheet-update-may-2023_fa_web.pdf

⁸⁸ Transgrid, *HumeLink Fact Sheet: Transmission Towers* (June 2023), https://www.transgrid.com.au/media/nhyg4u1i/tran_302546_humelink-transmission-towers-fact-sheet-update-may-2023_fa_web.pdf

⁸⁹ See Submission 106, HumeLink Alliance Incorporated; Submission 111, HumeLink United; Submission 198, Stop Rethink HumeLink Campaign; Submission 240, Humelink Action Group.

⁹⁰ See Public forum, 26 July 2023, pp 20–32.

⁹¹ Submission 102, Transgrid, p 14.

⁹² Submission 102, Transgrid, p 14.

⁹³ GHD, *Concept Design and Cost Estimate: HumeLink Project – Underground* (22 August 2022).

⁹⁴ Submission 102, Transgrid, p 14.

- 2.16** The CCG representatives on the Steering Committee for the GHD report ultimately refused to endorse it.⁹⁵ Ms Andrea Strong, Vice-President, HumeLink Alliance, who was on the Steering Committee, told the committee that they considered the report to be 'flawed and unbalanced'.⁹⁶ The representatives had 52 outstanding issues that were not addressed and were concerned that the report misrepresented the costs of the undergrounding option.⁹⁷ Ms Strong told the committee that they are currently in the process of having the report reviewed.⁹⁸

Community consultation

- 2.17** In late 2021, Transgrid established CCGs for the HumeLink project.⁹⁹ Each CCG is made up of representatives of local councils, community groups, organisations and individual community members.¹⁰⁰ According to Transgrid, as at June 2023, 27 CCG meetings with more than 250 attendees had been held.¹⁰¹ Transgrid also reported that in this time, there had been 44 community events with more than 200 attendees and it had provided responses to 5,202 community enquiries.¹⁰²
- 2.18** However, this inquiry heard numerous concerns from the local community about Transgrid's approach to consultation during this project. At the public forum in Tumut, participants said:
- 'Really, how Transgrid has handled us has been abysmal—a public relations failure'.¹⁰³
 - 'For many of us, consultation hasn't been meaningful or transparent'.¹⁰⁴
 - 'We have grave concerns that the largest cost of HumeLink will be people. This has further been exacerbated by Transgrid's bullying tactics, mistruths, misinformation and withholding of information'.¹⁰⁵
 - 'Transgrid has been appalling to deal with. They've been dishonest. They've been secretive. It's just been a nightmare'.¹⁰⁶
- 2.19** Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, acknowledged that 'at the start, the consultation was not the best'.¹⁰⁷ He explained that Transgrid commissioned an independent

⁹⁵ Submission 108, Community Consultation Group Representatives on the HumeLink Undergrounding Study Steering Committee, p 1; Evidence, Ms Andrea Strong, Vice-President, HumeLink Alliance, 18 July 2023, p 3.

⁹⁶ Evidence, Ms Strong, 18 July 2023, p 3.

⁹⁷ Submission 108, Community Consultation Group Representatives on the HumeLink Undergrounding Study Steering Committee, p 1; Evidence, Ms Strong, 18 July 2023, p 3.

⁹⁸ Evidence, Ms Strong, 18 July 2023, p 3.

⁹⁹ Transgrid, *HumeLink*, <https://www.transgrid.com.au/projects-innovation/humelink>

¹⁰⁰ Submission 102, Transgrid, p 9.

¹⁰¹ Submission 102, Transgrid, p 21.

¹⁰² Submission 102, Transgrid, p 21.

¹⁰³ Public forum, Mr Bill Kingwill, 26 July 2023, p 23.

¹⁰⁴ Public forum, Ms Rachael Purcell, 26 July 2023, p 25.

¹⁰⁵ Public forum, Ms Rebecca Tobin, 26 July 2023, p 28.

¹⁰⁶ Public forum, Mr Peter Barratt, 26 July 2023, p 29.

¹⁰⁷ Evidence, Mr Roberts, 7 August 2023, p 8.

report by Rod Stowe, a former NSW Commissioner for Fair Trading, to review their consultation methodologies and provide a list of recommendations, all of which were adopted.¹⁰⁸

- 2.20** Dr Joe McGirr MP, Member for Wagga Wagga, also mentioned the Stowe report, telling the committee 'Transgrid, to their credit, accepted all of the recommendations of that report and significantly changed their consultation process' and that he thought this 'improved the consultation process'.¹⁰⁹ Cr Julia Ham, Councillor, Snowy Valleys Council, told the committee 'I think that process has gradually improved slightly because we've made such a lot of noise about it'.¹¹⁰ However, she maintained that 'most people come away very distressed and depressed after those consultation meetings'.¹¹¹
- 2.21** NSW Farmers' Association observed that the rejection of the GHD report by sectors of the local community 'has exacerbated the community opposition to the construction as a whole'.¹¹² They expressed the view that this was 'another demonstration of undermining trust in the process of consultation and consideration of all options to avoid or mitigate the impacts on operations on farms and harm to regional communities'.¹¹³

Acquisition of land and compensation to landowners

- 2.22** The majority of HumeLink will be constructed on private land.¹¹⁴ To construct transmission lines through private land, Transgrid must acquire easements over these properties. In most cases, Transgrid will require a 70 m wide easement.¹¹⁵
- 2.23** For the HumeLink project, Transgrid is intending to acquire easements through Option Agreements.¹¹⁶ The making of each agreement can involve significant negotiation between Transgrid and the landowner.¹¹⁷ Final Option Agreements will include payment for the easement

¹⁰⁸ Evidence, Mr Roberts, 7 August 2023, p 8.

¹⁰⁹ Evidence, Dr Joe McGirr, Member for Wagga Wagga, 26 July 2023, p 35.

¹¹⁰ Evidence, Cr Julia Ham, Councillor, Snowy Valleys Council, 26 July 2023, p 3.

¹¹¹ Evidence, Cr Ham, 26 July 2023, p 3.

¹¹² Submission 163, NSW Farmers' Association, p 2.

¹¹³ Submission 163, NSW Farmers' Association, p 2.

¹¹⁴ Transgrid, *HumeLink Fact Sheet: Route Refinement Decisions* (March 2022), https://www.transgrid.com.au/media/j3ee5dlz/01-transgrid_a4_factsheet_humelink-route-refinement-decisions-march-2022.pdf

¹¹⁵ Transgrid, *HumeLink: Landowner Easement and Compensation Guide* (January 2023), https://www.transgrid.com.au/media/uqefurnr/tran_302377_landowner-compensation-brochure-update-january-2023_v3.pdf

¹¹⁶ Transgrid, *HumeLink: Landowner Easement and Compensation Guide* (January 2023), https://www.transgrid.com.au/media/uqefurnr/tran_302377_landowner-compensation-brochure-update-january-2023_v3.pdf

¹¹⁷ Transgrid, *HumeLink: Landowner Easement and Compensation Guide* (January 2023), https://www.transgrid.com.au/media/uqefurnr/tran_302377_landowner-compensation-brochure-update-january-2023_v3.pdf

itself, impacts to business, and reimbursement for legal and valuations advice.¹¹⁸ Transgrid engages an independent land valuer to assess the compensation value for each landholder.¹¹⁹

- 2.24** Transgrid also establishes property management plans for each affected landholder. These are 'bespoke and individual' and set out when and how Transgrid will require access to, and undertake construction on, the landholder's property.¹²⁰ Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, explained that 'we engage with the landowner to find suitable times and suitable processes during the construction, understanding the impacts that we will have, to try to work with them'.¹²¹ Mr Roberts also reported that Transgrid consult with the landowner on the route that the line will take through their property, stating that in 77 per cent of cases where landowners have sought a change to the route, this has been accommodated.¹²²
- 2.25** Landowners will receive 75 per cent of the compensation amount outlined in the Option Agreement when Transgrid exercises the option to acquire the easement, and the remaining 25 per cent once the easement is registered on title.¹²³ Landowners will also receive a one-off payment of \$20,000 when the Option Agreement is signed.¹²⁴
- 2.26** In answers to questions on notice, Transgrid provided the following information:
- Currently Transgrid has Consents to Enter for approximately 249.9km of the total alignment of 328km or 76% of the line. Approximately 40.747km of this is public land or approximately 16% of the 249.9km where we have Consents to Enter.¹²⁵
- 2.27** If Transgrid and the landowner are unable to reach agreement, Transgrid has the power to compulsorily acquire interests in land (including easements) under the *Electricity Supply Act 1995*.¹²⁶ The process of compulsory acquisition is governed by the *Land Acquisition (Just Terms Compensation) Act 1991*.¹²⁷ If land is acquired under this Act, the NSW Valuer-General determines the compensation amount to the landowner.¹²⁸

¹¹⁸ Transgrid, *HumeLink: Landowner Easement and Compensation Guide* (January 2023), https://www.transgrid.com.au/media/uqefurnr/tran_302377_landowner-compensation-brochure-update-january-2023_v3.pdf

¹¹⁹ Evidence, Mr Roberts, 7 August 2023, p 4.

¹²⁰ Evidence, Mr Roberts, 7 August 2023, p 4.

¹²¹ Evidence, Mr Roberts, 7 August 2023, p 4.

¹²² Evidence, Mr Roberts, 7 August 2023, p 5.

¹²³ Transgrid, *HumeLink: Landowner Easement and Compensation Guide* (January 2023), https://www.transgrid.com.au/media/uqefurnr/tran_302377_landowner-compensation-brochure-update-january-2023_v3.pdf

¹²⁴ Transgrid, *HumeLink: Landowner Easement and Compensation Guide* (January 2023), https://www.transgrid.com.au/media/uqefurnr/tran_302377_landowner-compensation-brochure-update-january-2023_v3.pdf

¹²⁵ Answers to questions on notice, Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, 21 August 2023, p 24.

¹²⁶ Evidence, Mr Roberts, 7 August 2023, pp 11-12. See *Electricity Supply Act 1995* s 44.

¹²⁷ Evidence, Mr Roberts, 7 August 2023, pp 3-4.

¹²⁸ Transgrid, *HumeLink: Landowner Easement and Compensation Guide* (January 2023), https://www.transgrid.com.au/media/uqefurnr/tran_302377_landowner-compensation-brochure-update-january-2023_v3.pdf

2.28 Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, reflected that landholders had mixed experiences with the process of acquiring an easement:

I have heard anecdotally from landowners that have gone through the process who believe—once they've gone through the process, understanding the compensation regime and the injurious affection of how it affects their lands—that they were fairly compensated through that process. However, I note that for some landowners there is no compensation value that will equal the impact that they will feel on their generational farming.¹²⁹

2.29 In addition to compensation, landowners may also be eligible to receive a payment under the Strategic Benefit Payment Scheme. Under this scheme, private landowners in New South Wales will receive annual payments for hosting certain transmission infrastructure on their land. The payments are a set rate of \$200,000 per km of transmission hosted, paid out in annual instalments over 20 years.¹³⁰ Mr Roberts said that Transgrid 'lobbied hard' for these payments to be introduced.¹³¹

2.30 Mr Bill Kingwill representing HumeLink Action Group told the committee that there was a huge amount of landholder resistance to overhead transmission lines.¹³²

The impacts of undergrounding HumeLink

2.31 During this inquiry, the committee received a significant amount of evidence about the merits of constructing HumeLink underground (particularly as an HVDC line) compared to the current plan for HumeLink to be constructed as an overhead transmission line. The overwhelming majority of community groups and individuals in the areas affected by HumeLink advocated strongly for the underground option. On the other hand, Transgrid submitted that cost and timing made undergrounding transmission unfeasible.

2.32 This section analyses the evidence the committee received to assess how the two options compare on the following measures:

- cost
- time to build
- technical suitability
- impacts on landowners
- impacts on the local community and economy
- impacts on the local environment
- bushfire risk.

¹²⁹ Evidence, Mr Roberts, 7 August 2023, p 4.

¹³⁰ EnergyCo, *Strategic Benefits Payments Scheme* (2023), <https://www.energyco.nsw.gov.au/community/strategic-benefit-payments-scheme>

¹³¹ Evidence, Mr Roberts, 7 August 2023, p 4.

¹³² Public forum, Mr Bill Kingwill, 26 July 2023, p 32.

Cost

- 2.33** One of the contested issues in this inquiry was how much it would cost to underground HumeLink. While most inquiry participants accepted that it would be more expensive than the current plan, estimates varied widely as to how *much* more.
- 2.34** The committee received a wide range of figures comparing the cost of undergrounding to the overhead approach, ranging from twice as much¹³³ to 20 times as much.¹³⁴ One of the challenges in assessing the cost was that many of these estimates referred to undergrounding in the abstract, or in connection with overseas examples, rather than in relation to HumeLink specifically. Another challenge was that many estimates did not differentiate between HVAC (which is typically more expensive) and HVDC options.¹³⁵
- 2.35** As previously stated, the current official cost of HumeLink is \$4.89 billion. The GHD report estimated that the cost of undergrounding HumeLink using a HVDC line would be \$11.5 billion and using a HVAC line (which most inquiry participants accepted would not be preferable) would be \$17.1 billion.¹³⁶ At the time of the GHD report in 2021, the estimated cost of the current plan was \$3.3 billion,¹³⁷ meaning undergrounding using an HVDC cable would be approximately 3.5 times more expensive.
- 2.36** However, the costing in the GHD report has been contested. Ms Andrea Strong, Vice-President, HumeLink Alliance, argued that the \$11.5 billion figure was 'significantly overstated'.¹³⁸ Ms Strong argued that the estimate of cost per km of transmission line (relied upon to obtain the cost estimate) was 'roughly about double what it should be'.¹³⁹ Other inquiry participants echoed Ms Strong's reservations about the estimate in the GHD report.¹⁴⁰ For example, the independent experts who, between them, had 142 years of experience in electricity transmission both in Australia and overseas, stated that the GHD cost per kilometre stated in the report was 'significantly high'.¹⁴¹ One reason for this high estimate in GHD's report, according to Professor Bartlett, was that assumptions were based upon undergrounding AC transmission, not DC, and that 'costs are typically only 2 to 3 times as much as overhead, and the line can be undergrounded as frequently along a route and for as far as needed in each case'.¹⁴²

¹³³ Submission 29, Professor Bartlett, p 4; Evidence, Mr Les Brand, Director and Principal Consultant, Amplitude Consultants, 26 July 2023, p 13.

¹³⁴ Submission 33, Energy Grid Alliance, p 1; Submission 44, RE-Alliance, p 3; Submission 89, EnergyAustralia, p 2.

¹³⁵ See, eg, Submission 33, Energy Grid Alliance, p 1

¹³⁶ GHD, *Concept Design and Cost Estimate: HumeLink Project – Underground* (22 August 2022) p vi; Evidence, Mr Redman, 18 July 2023, p 28; Evidence, Ms Strong, 18 July 2023, p 3.

¹³⁷ GHD, *Concept Design and Cost Estimate: HumeLink Project – Underground* (22 August 2022) p vi.

¹³⁸ Evidence, Ms Strong, 18 July 2023, p 3.

¹³⁹ Evidence, Ms Strong, 18 July 2023, p 3.

¹⁴⁰ Submission 111, HumeLink United, p 5; Submission 198, Stop Rethink HumeLink Campaign, p 5; Evidence, Mr Brand, 26 July 2023, p 14.

¹⁴¹ Evidence, Mr Brand, 26 July 2023, p 14.

¹⁴² Submission 29, Professor Bartlett, p 2.

2.37 On the other hand, Mr Brett Redman, Chief Executive Officer, Transgrid, argued that the \$11.5 billion figure was 'beneath the low end'.¹⁴³ Mr Redman argued that 'you wouldn't find a contractor that will build at that price'.¹⁴⁴ Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, also added that inflation since the GHD report would mean the real cost today would be closer to \$13-\$17 billion.¹⁴⁵

Who pays for the higher cost of undergrounding?

2.38 A key question for the committee in interrogating the two options was, if the more expensive undergrounding option was adopted, who would pay for the additional cost?

2.39 Mr Jim Cox, Acting Chair, Board of Directors, Australian Energy Regulator, told the committee that under the current national regulatory regime, 'only consumers' are liable to pay for the cost of HumeLink.¹⁴⁶ He explained that the regime does not require electricity generators or transmission network operators (like Transgrid) to pay the cost.¹⁴⁷ The cost would be passed on to consumers through higher electricity bills.¹⁴⁸

2.40 In its submission, Stop Rethink HumeLink Campaign stated that the current costing for HumeLink would add \$4.25 a year to the bill of New South Wales residents.¹⁴⁹ They extrapolated that, if undergrounding would be 3.5 times as expensive, the annual cost to the energy consumer for undergrounding HumeLink would be approximately an additional \$10.60 per consumer per year.¹⁵⁰

2.41 Some inquiry participants expressed concerns that undergrounding could not be justified if it would mean increasing the cost of electricity bills across New South Wales.¹⁵¹

2.42 Mr Brett Redman, Chief Executive Officer, Transgrid, explained that the increased cost of undergrounding HumeLink, and the fact that this cost would be passed on to consumers, means it would not be approved by the AER. Under questioning, Mr Redman explained:

The Hon. STEPHEN LAWRENCE: So you have no doubt the regulator would not have approved an underground—

BRETT REDMAN: There's no doubt at all in my mind. I see that in the push from government— governments on both sides at State and Federal level—on cost-of-living pressure and I see that translated into their rules and everything that they give us in terms of guidance. We get put through the absolute ringer for every dollar that we spend and it's appropriate to maintain lowest cost possible for consumer. There is no question

¹⁴³ Evidence, Mr Redman, 18 July 2023, p 29.

¹⁴⁴ Evidence, Mr Redman, 18 July 2023, p 29.

¹⁴⁵ Evidence, Mr Roberts, 7 August 2023, p 6.

¹⁴⁶ Evidence, Mr Jim Cox, Acting Chair, Board of Directors, Australian Energy Regulator, 18 July 2023, p 21.

¹⁴⁷ Evidence, Mr Cox, 18 July 2023, p 21.

¹⁴⁸ Evidence, Mr Cox, 18 July 2023, p 21.

¹⁴⁹ Submission 198, Stop Rethink HumeLink Campaign, p 7.

¹⁵⁰ Submission 198, Stop Rethink HumeLink Campaign, pp 7-8.

¹⁵¹ Submission 6, Save Our Surroundings (SOS), p 1; Submission 89, EnergyAustralia, p 2; Submission 114, Squadron Energy, p 2.

in my mind that this—we put up lots of proposals that are rejected. This one would absolutely be rejected.¹⁵²

Time to build

- 2.43** Another key issue during this inquiry was the difference in the total time to build the overhead and underground options, and the impact of any delays.
- 2.44** HumeLink, under the current plan, is estimated to be completed by 2026.¹⁵³ The GHD report estimated that undergrounding HumeLink would result in a delay of up to five years.¹⁵⁴ This would be due to increased construction work, as well as a need to redo the route selection, RIT-T process and environmental assessments, as well as locating new materials and contractors.¹⁵⁵ Most inquiry participants accepted that the underground option would take longer to build than the current plan.
- 2.45** Ms Marie Jordan, Executive General Manager—Network, Transgrid, told the committee that it would be a 'critical risk' not to build HumeLink on time, as it is a key element of 'how we get to a secure energy future'.¹⁵⁶ Ms Jordan explained that with coal generators closing, improving interconnections between renewable sources of generation and demand centres is key to ensuring reliability of supply.¹⁵⁷ Ms Jordan added, 'the quicker we transition to renewable energy, the quicker all consumers in the cities and in the regions will have energy security and access to lower cost energy'.¹⁵⁸
- 2.46** Similarly, the AEMO's Integrated System Plan (ISP) identifies that a key role of HumeLink is to mitigate the risk that not enough energy is available if there are early coal closures in the period 2026 to 2028.¹⁵⁹ The ISP notes that HumeLink is the only actionable project that could be delivered in this period that directly addresses this risk; and that, if it were delayed, more long-duration storage and/or additional gas-fired generation would be needed to maintain power system reliability in New South Wales.¹⁶⁰
- 2.47** Mr Jim Cox, Acting Chair, Board of Directors, Australian Energy Regulator, added that 'a long delay' to HumeLink would be 'of concern' to the AER, given that 'we do have a national energy strategy that is highly dependent on the rapid construction of transmission links, and we are doing what we can to accelerate the investment in those links'.¹⁶¹

¹⁵² Evidence, Mr Redman, 18 July 2023, p 35.

¹⁵³ Submission 102, Transgrid, p 8.

¹⁵⁴ Submission 102, Transgrid, p 14.

¹⁵⁵ Evidence, Ms Marie Jordan, Executive General Manager—Network, Transgrid, 7 August 2023, p 2.

¹⁵⁶ Evidence, Ms Marie Jordan, Executive General Manager—Network, Transgrid, 18 July 2023, p 33.

¹⁵⁷ Evidence, Ms Jordan, 18 July 2023, p 33.

¹⁵⁸ Evidence, Ms Jordan, 7 August 2023, p 2.

¹⁵⁹ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 68.

¹⁶⁰ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 68.

¹⁶¹ Evidence, Mr Jim Cox, Acting Chair, Board of Directors, Australian Energy Regulator, 7 August 2023, p 28.

2.48 However, community experts challenged the notion that undergrounding would take significantly more time than overhead when access to land was taken into account: 'Undergrounding HumeLink will give social licence and will mean that communities will be working with Transgrid and AEMO to deliver HumeLink on time'.¹⁶² In addition, Mr Bill Kingwill, Chair of the HumeLink Action Group, told the committee:

If this powerline is put underground—and that's what we have stated all along from the landholders that I represent—you can start tomorrow. But if it's going to be overhead, we're going to fight you until the last man standing.¹⁶³

2.49 Concerns were raised with the committee that a delay in constructing HumeLink would result in additional costs, which would be passed on to electricity consumers.¹⁶⁴ Transgrid provided figures estimating that a one-year delay in transmission projects could result in a residential consumer bill increase of \$283, rising to \$1,428 for a four-year delay.¹⁶⁵

Technical suitability

2.50 A further area of contention during this inquiry was whether the current plan (of overhead AC transmission lines) or the underground HVDC alternative would be more technically superior. The committee received evidence on the relative merits of each on a range of measures, including design, capacity, rate of losses, and reliability.

Design and purpose of HumeLink

2.51 Several inquiry participants explained that HVDC is most appropriate as a 'point-to-point', long-haul solution.¹⁶⁶ For example, Mr Brett Redman, Chief Executive Officer, Transgrid, explained 'DC works when it's more than, say, 350 kilometres and where all you want to do is get energy from point A to point B'.¹⁶⁷ He referred to SuedLink in Germany as a 'really good example' of this.¹⁶⁸

2.52 However, participants explained that HVDC is less suitable for projects where there are lots of 'tap in' or 'tee in' points, because each of these points would require an expensive converter station.¹⁶⁹ The Australian Energy Infrastructure Commissioner explained that the 'magnitude of

¹⁶² Submission 106, HumeLink Alliance Incorporated, p 3.

¹⁶³ Public forum, Mr Bill Kingwill, 26 July 2023, p 24.

¹⁶⁴ Submission 44, RE-Alliance, p 2, Submission 114, Squadron Energy, p 2.

¹⁶⁵ Answers to questions on notice, Mr Brett Redman, Chief Executive Officer, Transgrid, 28 July 2023, p 1.

¹⁶⁶ Submission 33, Energy Grid Alliance, p 11; Submission 235, Amplitude Consultants, p 10; Evidence, Ms Strong, 18 July 2023, p 8; Evidence, Professor Andrew Dyer, Australian Energy Infrastructure Commissioner, 18 July 2023, p 19; Evidence, Mr Brand, 26 July 2023, p 13; Evidence, Professor Bartlett, Independent expert, 26 July 2023, p 15.

¹⁶⁷ Evidence, Mr Redman, 18 July 2023, p 34.

¹⁶⁸ Evidence, Mr Redman, 18 July 2023, p 34.

¹⁶⁹ Submission 107, Australian Energy Infrastructure Commissioner, p 4; Submission 235, Amplitude Consultants, p 10; Evidence, Ms Strong, 18 July 2023, p 8; Evidence, Professor Dyer, 18 July 2023, p 19; Evidence, Mr Brand, 26 July 2023, p 13; Evidence, Professor Bartlett, 26 July 2023, p 15.

costs and impacts arising from installing converter stations at each existing and potential future connection point' would mean such projects would be unlikely to be economically feasible.¹⁷⁰

- 2.53** While many participants agreed on the above, there was disagreement about which category HumeLink fit into. Mr Brett Redman, Chief Executive Officer, Transgrid, told the committee that HumeLink is designed to connect multiple current and future renewable energy projects, with 'lots of cut-in points'.¹⁷¹ Given the unsuitability of HVDC lines for this type of model, he argued that it therefore makes more sense for HumeLink to be an overhead AC line.¹⁷² Professor Andrew Dyer, Australian Energy Infrastructure Commissioner, added that 'if the requirement is to tap in and add projects along the way, you're limited sensibly to do above ground'.¹⁷³
- 2.54** On the other hand, Ms Andrea Strong, Vice-President, HumeLink Alliance, said that the purpose of HumeLink is to 'shunt a big volume of power from Snowy 2.0 to the load centre of Sydney', making it 'ideal' for HVDC technology.¹⁷⁴ She argued that if renewable energy generators needed to 'tee in and tap off' from the transmission network, they could use the existing 330 kV overhead transmission network to do so.¹⁷⁵
- 2.55** Similarly, Professor Bartlett argued that HumeLink should be used as a point-to-point line, with the existing overhead network used as a 'distributing system'.¹⁷⁶ HumeLink United added that while the GHD report was being prepared, 'at no point was it considered, suggested, advised, questioned or vocalised that there was a need/requirement for renewables to tap into the 500 kV HumeLink infrastructure along the route'.¹⁷⁷

Capacity, losses, and reliability

- 2.56** The committee also received evidence about the comparative benefits of the two transmission models in relation to capacity, losses, reliability, and maintenance.
- 2.57** In its submission, Transgrid stated that underground lines do not have the same capacity as overhead lines due to the heat generated. They said that undergrounding HumeLink would therefore 'limit the ability to transport renewable generation sources along the route'.¹⁷⁸
- 2.58** The committee heard that at shorter distances, HVDC lines may have higher losses than AC lines, but that this is reversed at longer distances.¹⁷⁹ In evidence, Mr Les Brand, Director and Principal Consultant, Amplitude Consultants, explained that 'the longer the [HVDC] cable and the longer the transmission line, the greater the discrepancy between electrical losses'.¹⁸⁰ The

¹⁷⁰ Submission 107, Australian Energy Infrastructure Commissioner, p 4.

¹⁷¹ Evidence, Mr Redman, 18 July 2023, pp 27, 34.

¹⁷² Evidence, Mr Redman, 18 July 2023, p 34.

¹⁷³ Evidence, Professor Dyer, 18 July 2023, p 19.

¹⁷⁴ Evidence, Ms Strong, 18 July 2023, p 8.

¹⁷⁵ Evidence, Ms Strong, 18 July 2023, p 8.

¹⁷⁶ Evidence, Professor Bartlett, 26 July 2023, p 15.

¹⁷⁷ Submission 111a, HumeLink United, p 2.

¹⁷⁸ Submission 102, Transgrid, p 11.

¹⁷⁹ Submission 44, RE-Alliance, p 4; Submission 235, Amplitude Consultants, pp 7-8; Mr Brand, 26 July 2023, pp 13, 17.

¹⁸⁰ Evidence, Mr Brand, 26 July 2023, p 17.

submission from Amplitude Consultants referred to a study of an 88 km transmission project in Moorabool Shire, Victoria, which found that the electrical losses for an AC overhead transmission option would be three times that of the equivalent HVDC underground cable option.¹⁸¹

2.59 Several inquiry participants claimed that underground cables are more reliable than overhead lines. This was attributed to the perceived vulnerability of overhead lines to extreme weather events like lightning, severe winds, or bushfires.¹⁸² Some pointed to the 2019-2020 bushfires as proof of this; for example, Councillor Ian Chaffey, Mayor, Snowy Valleys Council, noted that there was a loss of power for 14 days in the southern part of the Snowy Valleys Council area during this time,¹⁸³ while the Stop Rethink HumeLink Campaign mentioned there were 65 outages of 330 kV lines in the Snowy Valleys area during the Dunns Road fire alone.¹⁸⁴

2.60 Some participants remarked that underground lines are much less vulnerable to such blackouts during weather events.¹⁸⁵ For example, HumeLink Alliance explained:

... underground cable systems are designed with 100% redundancy. If one circuit fails, there is a second circuit to take the load. Whereas if an overhead transmission line tower goes down in severe weather or a bushfire, both circuits will be lost, and then the lights will go out.¹⁸⁶

2.61 On the other hand, Ms Marie Jordan, Executive General Manager—Network, Transgrid, reported that the current reliability expectation of the overhead AC network in New South Wales is 99.998 per cent. She explained that by contrast, converter stations – which are necessary if HVDC underground cables are used – have a reliability rate of about 98 per cent.¹⁸⁷

2.62 In relation to ongoing maintenance, evidence before the committee was mixed. On one hand, some inquiry participants argued that underground cables have reduced maintenance requirements compared to overhead cables.¹⁸⁸ Reasons put forward included that they fail less often than overhead cables,¹⁸⁹ and that maintenance can be performed without cutting power

¹⁸¹ Submission 235, Amplitude Consultants, pp 7-8.

¹⁸² Submission 43, NSW Farmers – Goulburn Branch, p 1; Submission 106, HumeLink Alliance Incorporated, p 10; Evidence, Cr Ian Chaffey, Mayor, Snowy Valleys Council, 26 July 2023, p 2; Evidence, Professor Bartlett, 26 July 2023, p 15.

¹⁸³ Evidence, Cr Chaffey, 26 July 2023, p 2.

¹⁸⁴ Submission 198, Stop Rethink HumeLink Campaign, p 4.

¹⁸⁵ Submission 43, NSW Farmers – Goulburn Branch, p 1; Submission 106, HumeLink Alliance Incorporated, p 10; Submission 198, Stop Rethink HumeLink Campaign, p 3.

¹⁸⁶ Submission 106, HumeLink Alliance Incorporated, p 10.

¹⁸⁷ Evidence, Ms Jordan, 7 August 2023, p 3.

¹⁸⁸ Submission 43, NSW Farmers – Goulburn Branch, p 1; Submission 99, Upper Lachlan Shire Council, p 2; Submission 106, HumeLink Alliance Incorporated, p 10; Submission 163, NSW Farmers' Association, p 9.

¹⁸⁹ Submission 43, NSW Farmers – Goulburn Branch, p 1; Submission 235, Amplitude Consultants, p 8.

supply.¹⁹⁰ HumeLink Alliance argued that maintaining underground cables 'is limited to driving the route, every few weeks at most.'¹⁹¹

- 2.63** On the other hand, some participants argued that maintaining underground lines is more or equally as intensive as overhead lines.¹⁹² In particular, it was noted that faults can take a lot longer to repair than in the case of overhead lines, often taking weeks or months. This was attributed to the need for specialised materials and expert technicians, both of which may be scarce due to the limited number of underground HVDC cables in Australia.¹⁹³ RE-Alliance explained how this can delay the maintenance and repair process:

Overhead lines are exposed to weather-related outages, such as those caused by lightning strikes. When a fault or failure occurs, this can usually be located almost immediately and repaired within hours or, at most, a day or two. In a worst-case scenario where a tower has failed, the majority of supply can be restored, even on temporary structures, within 3-5 days. Underground cables need a large number of cable joints and these increase the risk of failure. In the event of a cable fault, locating and repairing the fault can be challenging and time-consuming, and may take several weeks/months to repair.¹⁹⁴

- 2.64** However, in evidence provided to the committee, Mr Les Brand, from Amplitude Consulting, an Australian based engineering company specialising in the transmission and distribution of electricity, said:

Having set up and managed operations for Australia's two long distance underground cable projects I can say that aside from preparedness for a cable failure and repair, ongoing maintenance of HVDC cables is significantly less onerous and challenging than overhead lines ... I do not support any statement that maintaining HVDC underground cables is more challenging than maintaining overhead lines.¹⁹⁵

Impacts on landowners

- 2.65** A central issue during this inquiry was the relative impacts of the current plan compared to the underground alternative on landowners who would be affected by HumeLink. Community members expressed significant concerns about how this project would affect their properties. Issues included devaluation of properties, size and use around easements, and disruptions from construction, maintenance and repair.

¹⁹⁰ Submission 43, NSW Farmers – Goulburn Branch, p 2; Submission 163, NSW Farmers' Association, p 9.

¹⁹¹ Submission 106, HumeLink Alliance Incorporated, p 10.

¹⁹² Submission 44, RE-Alliance, p 4; Submission 102, Transgrid, p 11; Evidence, Ms Jordan, 18 July 2023, p 31.

¹⁹³ Submission 44, RE-Alliance, p 4; Submission 102, Transgrid, p 11.

¹⁹⁴ Submission 44, RE-Alliance, p 4.

¹⁹⁵ Answers to questions on notice, Mr Les Brand, Director and Principal Consultant, Amplitude Consultants, 7 August 2023, p 3.

Devaluation of properties

- 2.66** Landholders in areas affected by HumeLink expressed concerns about how the construction of overhead transmission lines would affect the value of their properties. In his submission, Mr Kenneth Barber wrote that he gets 'many appeals from landowners who are devastated to learn that their properties will be immediately devalued, and their mortgages threatened, by the construction of such lines, on or nearby their properties'.¹⁹⁶ This sentiment was also expressed during the hearing and public forum in Tumut.¹⁹⁷
- 2.67** As previously discussed, owners of properties subject to an easement are paid compensation by Transgrid for the value of the easement, as well as related costs. However, the committee heard that landholders who are not directly affected by an easement do not receive any compensation, despite the fact that overhead lines may still impact them (such as obstructing their views).¹⁹⁸ For example, Mr Brad Dumbrell, a local resident of the Tumut area, explained that he would not receive compensation despite his view being affected:

That whole view now is going to diminish the value of our place. Not that we ever want to sell it, but if we have to, it's going to diminish the value of that place. We don't get any compensation and most people in this beautiful valley don't, because they don't know about it unless it's on their property ... It could be a million-dollar place and it could drop by \$200,000 by just those powerlines being on the other side.¹⁹⁹

- 2.68** Ms Andrea Strong, Vice-President, HumeLink Alliance, added that properties neighbouring overhead transmission lines could be devalued by 30 per cent, but the landowners are not told about HumeLink or offered compensation.²⁰⁰
- 2.69** A general view put to the committee was that undergrounding the transmission lines would have a lesser effect on the value of affected and neighbouring properties.²⁰¹

Size, access and use of easements

- 2.70** The easements required for the current overhead plan, compared to the underground alternative, was another contested issue raised during the inquiry. The committee received significant and sometimes conflicting evidence about the size of these easements and how the land around them could be used.

¹⁹⁶ Submission 3, Mr Kenneth Barber, p 1.

¹⁹⁷ Evidence, Cr Ham, 26 July 2023, p 8; Public forum, Mr Brad Dumbrell, 26 July 2023, p 21. See also Submission 112, Business Snowy Valleys, p 2; Submission 116, Batlow Community and Cultural Association Inc, p 1.

¹⁹⁸ Evidence, Ms Strong, 18 July 2023, pp 2-3; Public forum, Mr Brad Dumbrell, 26 July 2023, p 21.

¹⁹⁹ Public forum, Mr Brad Dumbrell, 26 July 2023, p 21.

²⁰⁰ Evidence, Ms Strong, 18 July 2023, pp 2-3.

²⁰¹ See, eg, Submission 43, NSW Farmers – Goulburn Branch, p 1; Submission 112, Business Snowy Valleys, p 2.

- 2.71** As discussed above, under the current plan Transgrid will require a 70 m wide easement over private land in most cases.²⁰² The 70 m figure was repeated in evidence by various inquiry participants.²⁰³ Easements typically have an 'exclusion zone' within which activity is largely prohibited. Outside the exclusion zone, however, agricultural activities (including cropping, grazing and irrigation) and planting or cultivation of trees and shrubs is permitted, subject to some limits.²⁰⁴
- 2.72** While the size of, and permitted use around, easements required for overhead lines was clear, the committee heard conflicting evidence about the easements required for the underground option. Several inquiry participants estimated that they would be approximately 10 m-20 m wide, with 15 m being cited frequently.²⁰⁵ Mr Les Brand estimated the underground option would require two trenches of 2.1 m wide, with three metres between them, and five metres either side, resulting in a total easement under 20 m.²⁰⁶
- 2.73** However, Ms Marie Jordan, Executive General Manager—Network, Transgrid, told the committee that for a project this size, the trench required would have to be at least 50 m.²⁰⁷ Ms Jordan explained that it would have to be this wide 'to account for the additional cables because of the amount of capacity reduction you have in underground facilities'.²⁰⁸
- 2.74** The committee also heard conflicting evidence about the land use permitted on top of or around easements for underground cables. On one hand, some participants argued that the vegetation above underground cables can be restored quickly after construction, and from then on, there is minimal impact on that environment.²⁰⁹ While it was accepted that deep rooted trees could not be planted above, participants suggested that grasses, shallow-rooted trees or even crops could be planted.²¹⁰
- 2.75** However, Mr Brett Redman, Chief Executive Officer, Transgrid, explained that the types of plants that could grow above underground lines were quite limited:

... you can put a light dusting of soil on the top, but you can't really grow most things on the top of it. Some specialised grasses will grow. From a farming point of view, you

²⁰² Transgrid, *HumeLink: Landowner Easement and Compensation Guide* (January 2023), https://www.transgrid.com.au/media/uqefurnr/tran_302377_landowner-compensation-brochure-update-january-2023_v3.pdf

²⁰³ Evidence, Mr Michael Katz, Member, HumeLink Alliance and Stop! Rethink HumeLink, 18 July 2023, pp 2, 4, 7; Evidence, Mr Ted Woodley, Executive Member, National Parks Association of NSW, 18 July 2023, p 12; Public forum, Mr Paul Sturgess, 26 July 2023, p 28; Public forum, Ms Rebecca Tobin, 26 July 2023, p 29.

²⁰⁴ Transgrid, *Easement Guidelines: Living and working with electricity transmission lines*, <https://www.transgrid.com.au/media/3tkdd5lr/easement-guidelines.pdf>

²⁰⁵ Submission 163, NSW Farmers' Association, p 5; Submission 198, Stop Rethink HumeLink Campaign, p 4; Evidence, Mr Katz, 18 July 2023, pp 2, 4; Evidence, Ms Strong, 18 July 2023, p 7; Evidence, Mr Woodley, 18 July 2023, p 12; Evidence, Mr Brand, 26 July 2023, pp 15-16.

²⁰⁶ Evidence, Mr Brand, 26 July 2023, pp 15-16.

²⁰⁷ Evidence, Ms Jordan, 18 July 2023, p 35.

²⁰⁸ Evidence, Ms Jordan, 18 July 2023, p 35.

²⁰⁹ Submission 235, Amplitude Consultants, p 9; Evidence, Mr Kenneth Barber, Director, Istana Park Pty Ltd, 26 July 2023, p 13.

²¹⁰ Submission 94, Community Power Agency, p 2; Evidence, Mr Barber, 26 July 2023, p 13.

can't crop it, both because things won't grow as well but also because you can't keep driving heavy machinery like ploughs over it ... You can't put any real crops in or plough crops in an underground. You can maybe graze around it, but I suspect the quality of those grasses won't be particularly good feed for cattle or sheep.²¹¹

2.76 However, Mr Les Brand who has decades of experience in underground cabling refuted this:

Having been O&M Manager for two of Australia's long distance underground HVDC cables, I can say based on experience that it is very difficult to find the location of an installed underground cable without the use of cable fault detectors. The vegetation grows just as healthily above the cables as on either side of it. A quick site visit to these locations will verify this. Overhead lines however must be kept clear of vegetation, directly under and to the side of overhead transmission lines.²¹²

Disruption from construction

2.77 Another source of concern for local landholders affected by HumeLink was the relative impacts of construction of the overhead and underground options.

2.78 Most inquiry participants accepted that the disruption from construction of underground lines would be more severe than that from the construction of overhead lines.²¹³ Participants attributed the increased disruption primarily to destruction arising from excavation, trenching and drilling required, and the associated soil and vegetation clearance.²¹⁴

2.79 For example, the Australian Energy Infrastructure Commissioner commented that he had received concerns from landholders about the impacts of underground cables:

We have also heard from landholders, with first-hand experience from being directly located on the proposed route for an HVDC underground transmission line, who are particularly concerned about the invasive impacts and destruction arising from the trenching and drilling required to place and locate the transmission cables underground. Concerns also include the ability to maintain and ensure compliance with bio-security requirements, the inability to deep-rip in vicinity of the easement and how landholders are compensated for the impost.²¹⁵

2.80 RE-Alliance noted that repairing faults in underground cables can be more disruptive for landholders as soil and any vegetation around the easement may have to dug up to enable physical inspection of the cables.²¹⁶

²¹¹ Evidence, Mr Redman, 18 July 2023, p 34. See also Evidence, Ms Jordan, Transgrid, 7 August 2023, p 15.

²¹² Answers to questions on notice, Mr Les Brand, Director and Principal Consultant, Amplitude Consultants, 7 August 2023, p 5.

²¹³ Submission 44, RE-Alliance, p 7; Submission 107, Australian Energy Infrastructure Commissioner, p 5; Evidence, Professor Dyer, 18 July 2023, p 19.

²¹⁴ Submission 44, RE-Alliance, p 7; Submission 107, Australian Energy Infrastructure Commissioner, p 5.

²¹⁵ Submission 107, Australian Energy Infrastructure Commissioner, p 5.

²¹⁶ Submission 44, RE-Alliance, p 7.

- 2.81** At the public forum in Tumut, the committee heard that constructing overhead lines may also be disruptive to landowners. Ms Renate Lunardello, a farmer from Yass, was concerned that the use of heavy machinery related to the construction of overhead lines would create a 'road of destruction through valuable environmental habitat and productive farmland'.²¹⁷

Impacts on the local community and economy

- 2.82** Concerns relating to the impacts that both the overhead and underground options for HumeLink would have on the local community and economy were also put to the committee.

Impacts on community wellbeing

- 2.83** The committee received evidence that HumeLink has had negative impacts on the wellbeing of local communities and residents.²¹⁸ Inquiry participants attributed various factors to this, including failures in the consultation process, lack of access to timely and accurate information, and concerns about how overhead powerlines would affect residents' homes and businesses.²¹⁹
- 2.84** Some participants reflected that there was a sense of uncertainty and powerlessness by those affected by HumeLink. In their submission, HumeLink United expanded on this, stating:

Local communities in the impacted region are experiencing significant anxiety about the HumeLink proposal and feel railroaded by current processes, and powerlessness at the hands of Transgrid. For some members of our community, the HumeLink proposal has prompted thoughts of suicide as they fear destruction to their family homes, properties, livelihoods and treasured landscapes that have been held dearly in their hearts for generations.²²⁰

- 2.85** Business Snowy Valleys referred to a 2019 study conducted by Murrumbidgee Health Services, in partnership with the University of Sydney and the University of New South Wales, which investigated the mental health impacts of transmission lines in the Snowy Valleys local government area. The study suggested 'that some people who lived near transmission lines may be more likely to experience anxiety, stress, and difficulty sleeping'.²²¹
- 2.86** In 2021, the Independent Member for Wagga, Dr Joe McGirr MP, undertook a survey of landholders impacted and of the respondents, 76 percent stated that HumeLink has negatively impacted their mental health.²²² One witness to the inquiry, Ms Jessie Reynolds, told the committee that 'the mental health concerns are huge. I'm concerned for the mental health of people who have to live with, look at and work under these 80-metre high transmission lines. I

²¹⁷ Public forum, Ms Renate Lunardello, 26 July 2023, p 24.

²¹⁸ Submission 111, HumeLink United, p 4; Submission 112, Business Snowy Valleys, p 2; Evidence, Mr Peter Thompson, General Manager, Wagga Wagga City Council, 26 July 2023, p 9; Evidence, Dr McGirr, 26 July 2023, p 35.

²¹⁹ Submission 111, HumeLink United, p 4; Evidence, Mr Thompson, 26 July 2023, p 9; Evidence, Dr McGirr, 26 July 2023, p 35.

²²⁰ Submission 111, HumeLink United, p 4.

²²¹ Submission 112, Business Snowy Valleys, p 2.

²²² Public forum, Ms Rebecca Tobin, 26 July 2023, p 28.

am a sufferer of depression and this imposed strain has had a huge impact on my mental health, which in turn affects my relationships with my children, my husband and my family'.²²³

- 2.87** Participants suggested that adopting the undergrounding option, which many in the community support, would alleviate some of these concerns.²²⁴ For example, at the public forum in Tumut, Ms Rebecca Tobin said that undergrounding would 'be a relief—a return of sleep; a removal of fear, anxiety and depression; and an elimination of mental health concerns'.²²⁵

Impacts on local industries

- 2.88** The committee also heard evidence regarding the potential negative effects of HumeLink, under the current plan, on the local economy. Three industries were highlighted: tourism, agriculture, and forestry.
- 2.89** In relation to tourism, several participants noted that tourism was a growing industry in the Riverina and Southern Tablelands regions.²²⁶ Business Snowy Valleys and Snowy Valleys Council pointed to government strategies that identify agritourism as an effective way to diversify regional economies and mitigate the impacts of droughts and bushfires.²²⁷
- 2.90** However, many participants were concerned that HumeLink would negatively affect tourism by reducing the visual appeal of the region.²²⁸ HumeLink United suggested that putting in overhead lines would 'negate the work' of existing government tourism initiatives; with Snowy Valleys Council agreeing, saying 'this investment should not be wasted by a landscape marred and scarred by overhead lines'.²²⁹
- 2.91** This issue was raised in the public forum in Tumut. For example, Mr Dave Purcell told the committee that he was currently developing a tourism opportunity in Batlow, as an opportunity to 'support tourism, jobs and growth in the region following the bushfires'. However, he reported that the prospect of HumeLink will now 'directly affect the viability of the investment' and he was 'in an unenviable position of trying to determine whether various stages of this development will go ahead'.²³⁰
- 2.92** In relation to agriculture, inquiry participants raised several concerns about the impact of HumeLink on agricultural production in the region. Key concerns related to biosecurity, aerial spraying, and technologically-enabled machinery.

²²³ Public forum, Ms Jessie Reynolds, 26 July 2023, p 26.

²²⁴ See, eg, Submission 38, Name suppressed, p 2; Submission 39, Mrs Lynette Heffernan, p 1; Public forum, Ms Jessie Reynolds, 26 July 2023, p 26; Public forum, Ms Rebecca Tobin, 26 July 2023, p 28; Evidence, Dr McGirr, 26 July 2023, p 36.

²²⁵ Public forum, Ms Rebecca Tobin, 26 July 2023, p 28.

²²⁶ Submission 100, Snowy Valleys Council, pp 4, 12-16; Submission 111, HumeLink United, p 5; Submission 112, Business Snowy Valleys, p 2; Evidence, Cr James Hayes, Councillor, Snowy Valleys Council, 26 July 2023, p 8.

²²⁷ Submission 100, Snowy Valleys Council, pp 4, 13, 16; Submission 112, Business Snowy Valleys, p 2.

²²⁸ Submission 99, Upper Lachlan Shire Council, p 1; Submission 100, Snowy Valleys Council, p 4; Submission 111, HumeLink United, p 5; Submission 112, Business Snowy Valleys, p 2; Submission 116, Batlow Community and Cultural Association Inc, p 2; Evidence, Cr Hayes, 26 July 2023, p 8.

²²⁹ Submission 100, Snowy Valleys Council, p 4; Submission 111, HumeLink United, p 5.

²³⁰ Public forum, Mr Dave Purcell, 26 July 2023, pp 30-31.

- 2.93** The committee heard concerns that if overhead lines require more maintenance, then each incident of maintenance could present a biosecurity risk. In their submission, NSW Farmers explained that during outbreaks of disease, farmers 'take stringent measures to ensure that substances that may contain pathogens do not enter their property'.²³¹ They argued that more frequent ongoing maintenance associated with overhead lines would increase 'the risk of biosecurity breaches that can be of devastating loss to farmers'.²³² It was argued to the committee that if underground lines require less frequent maintenance, they will not present such a concern.²³³
- 2.94** Ms Jessie Reynolds, who is a third and fourth generation farmer from Tumut said that biosecurity concerns are 'huge' for her family:
- We have a proposed 4½ kilometres of transmission lines and over seven kilometres of access tracks on just one block. The amount of vehicles coming in is a huge problem for us. Anything like foot-and-mouth, lumpy skin and then weeds are all really big concerns for us and that applies to both underground and above-ground.²³⁴
- 2.95** The committee also heard that aerial spraying is the preferred method of fertiliser application for many farmers in the region. NSW Farmers' Association explained how overhead powerlines can obstruct the flight path of crop-dusting aircrafts, which would make this option unavailable or significantly more expensive.²³⁵
- 2.96** Tumut Farmer Mr Peter Barratt told the committee of the impact that overhead transmission lines would have on his farming livelihood:
- I also use helicopters to aerially spray and fertilise three times a year. I have been informed by my operator that he can no longer do it as it's too dangerous to fly near the powerlines. So he won't be able to service us anymore, which will make our property worthless, because it will just turn to weed.²³⁶
- 2.97** The committee also heard about the increasing use of 'ag-tech' machinery in agriculture, such as that utilising the internet and GPS technology, and drones. It was argued that such technologies cannot be used around overhead powerlines as it disrupts signals.²³⁷ Stop Rethink HumeLink Campaign was concerned that this would 'severely disrupt' the 'efficient operation of modern farms'.²³⁸
- 2.98** In their submission, Softwoods Working Group discussed the impact of the selected route for HumeLink on the forestry industry. They explained that it would result in a loss of nearly 400

²³¹ Submission 163, NSW Farmers' Association, p 7.

²³² Submission 163, NSW Farmers' Association, p 7.

²³³ Evidence, Ms Strong, 18 July 2023, p 7.

²³⁴ Public forum, Ms Jessie Reynolds, 26 July 2023, p 26.

²³⁵ Submission 163, NSW Farmers' Association, p 7.

²³⁶ Public forum, Mr Peter Barratt, 26 July 2023, p 30.

²³⁷ Submission 106, HumeLink Alliance Incorporated, p 12; Submission 163, NSW Farmers' Association, p 7; Submission 198, Stop Rethink HumeLink Campaign, p 6; Evidence, Mr Barber, 26 July 2023, p 13.

²³⁸ Submission 198, Stop Rethink HumeLink Campaign, p 6. See also Submission 163, NSW Farmers' Association, p 7.

hectares of timber plantations and a further 300 hectares of native forest in the Bago State Forest.²³⁹ They stated that this would result in a loss of 8,000 tonnes of resources from the softwood processing industry each year.²⁴⁰ They were particularly concerned about the impact of this on the local economy, noting that the industry supports over 50 per cent of the employed workforce of Snowy Valleys Shire.²⁴¹

Impacts on the local environment

2.99 Another issue during this inquiry was the impact of HumeLink on the local natural environment, particularly in relation to land clearing and loss of biodiversity.

2.100 Ms Andrea Strong, Vice-President, HumeLink Alliance, told the committee that 5,000 hectares of land would be cleared for the project, and 1,862 hectares of 'critically endangered grassy woodland' would be directly impacted.²⁴² HumeLink United and the Stop Rethink HumeLink Campaign both stated that clearing of native forests and bushland would have 'serious impacts' on the habitat for 82 threatened species of plants and animals, including the koala, Booroolong frog, wedge-tailed eagle and powerful owl.²⁴³

2.101 Ms Louise Suzanne Freckelton, a farmer and tourism operator who appeared before the committee representing Riverina Highlands Landcare Network, told the committee:

The proposed corridor of the HumeLink energy project runs over many sites that are in the Riverina Highlands Landcare Network, which, in conjunction with many other government organisations and landowners, has invested tens of thousands of dollars and thousands of human hours of labour into projects to improve habitat and enhance biodiversity. Some of this has been funded by incentive grants, but almost inevitably there's 50 per cent that comes from landholders themselves that have invested this money.

Many of these projects contain critically endangered threatened species of fauna and flora.²⁴⁴

2.102 Multiple witnesses expressed their concern at the impact that overhead transmission lines would have on birds, including on many threatened species, including internationally listed migratory species. Mr Peter Redfearn, a rice farmer at Moulamein who has been involved in a lot of conservation work on his property, told the committee:

There are four endangered birds recorded on my place, including the ones that I've been releasing in a captive breeding program. We've released about 70 bush stone-curlews, which are endangered in New South Wales. The painted snipe, the Australasian bittern and the ground cuckoo-shrike are regularly recorded on my properties. The problem we've had with the bush stone-curlews is colliding with the single-wire earth return

²³⁹ Submission 92, Softwoods Working Group, p 2.

²⁴⁰ Submission 92, Softwoods Working Group, p 2.

²⁴¹ Submission 92, Softwoods Working Group, p 2.

²⁴² Evidence, Ms Strong, 18 July 2023, p 5.

²⁴³ Submission 111, HumeLink United, p 5; Submission 198, Stop Rethink HumeLink Campaign, p 3. See also Submission 86, Riverina Highlands Landcare Network, p 1.

²⁴⁴ Public forum, Ms Louise Suzanne Freckelton, 26 July 2023, p 21.

powerlines, which are single—quite a small-scale thing compared to what we're looking forward to. From my point of view, for the wildlife it will be a damn disaster apart from all the restrictions on our farming operation.²⁴⁵

- 2.103** Again, the committee heard conflicting evidence about whether the overhead or underground option would result in better environmental outcomes. On one hand, some inquiry participants argued that undergrounding would have less impacts on the environment.²⁴⁶ This was mostly attributed to a narrower easement, which would mean less land clearing, as well as other factors such as eliminating the need for concrete pads and reduced erosion for heavy vehicle maintenance vehicles.²⁴⁷
- 2.104** On the other hand, some participants commented that undergrounding also results in environmental impacts, and questioned whether it was actually a superior method. Transgrid noted that excavation and trenching can 'disrupt natural habitats, disturb ecosystems, and impact groundwater resources' and that trenching in particular 'requires removal of all above-ground vegetation as well as 1-2 m of the ground surface' which 'creates impacts for biodiversity above the ground and sub-surface fauna and fauna habitat, soils and water resources'.²⁴⁸
- 2.105** RE-Alliance also argued that undergrounding causes 'greater soil disturbance' due to the required continuous trench, whereas overhead line construction 'disturbs the soil mostly at the site of each transmission tower and can be micro-sited to avoid sensitive areas'.²⁴⁹

Bushfire risk

- 2.106** Another key issue during this inquiry was the bushfire risk posed by overhead transmission cables, compared to the underground alternative. This was a critical critical issue for the communities affected by HumeLink, many of whom lived through the Dunns Road fire of summer 2019-2020. Evidence was received on two key issues: the risk of a bushfire starting; and the impact on firefighting efforts. Ultimately the senior RFS representative was unable to say either that high voltage transmission lines would cause more fires or make fires that do occur worse than they would otherwise be.²⁵⁰

The risk of a bushfire starting

- 2.107** Several inquiry participants expressed concerns that overhead transmission lines can act as an ignition source for bushfires.²⁵¹ In particular, some witnesses were concerned that the lines pose

²⁴⁵ Evidence, Mr Peter Redfearn, Community Member, 16 August 2023, p 15.

²⁴⁶ Submission 4, Goulburn Mulwaree Council, p 1; Submission 99, Upper Lachlan Shire Council, pp 1-2; Evidence, Mr Woodley, 18 July 2023, p 12.

²⁴⁷ Submission 99, Upper Lachlan Shire Council, p 2; Evidence, Mr Woodley, 18 July 2023, p 12.

²⁴⁸ Submission 102, Transgrid, p 15.

²⁴⁹ Submission 44, RE-Alliance, p 7.

²⁵⁰ Evidence, Mr Jayson McKellar, Director Area Operations (Northern), Assistant Commissioner, Rural Fire Service, 27 July 2023, p 19.

²⁵¹ See, eg, Submission 4, Goulburn Mulwaree Council, p 1; Submission 33, Energy Grid Alliance, pp 2-3; Submission 88, Community Foundation for Tumut Region, p 1; Submission 103, Nature Conservation Council, p 2; Submission 115, Australian Pipelines and Gas Association, p 2; Submission 163, NSW Farmers' Association, p 6.

a risk of 'arcing'.²⁵² Mr Jayson McKellar, Director Area Operations (Northern), Assistant Commissioner, Rural Fire Service, explained that arcing is a 'broad term' for situations when something comes into contact with a powerline and the electricity travels to the ground. Mr McKellar explained that this usually occurs when there is high levels of wind and smoke and a lot of particulate matter in the air.²⁵³

2.108 The Mayor of Snowy Valleys Council, Councillor Ian Chaffey, expressed his concern regarding the potential of these power lines to cause fires:

This transmission of power across the country in high voltage AC is not 330,000 volts; it's 500,000 volts. The chances of corona effect, which is an arc from the line to the ground, is significantly increased. You can't fight fires under it while it's operating but, depending on the situation at the time, smoke and those other types of debris cause a greater incidence of corona. To me, as I said earlier, this is not an issue that we should be debating at all. The decision should have been made. We should be high voltage underground.²⁵⁴

2.109 NSW Farmers' Association argued that overhead transmission lines can also present a potential ignition source due to combustion of metal particles, burning of insulation fluids and vegetation contact with wires. They added that overhead powerlines are susceptible to grounding in dense smoke and exacerbating intense bushfire events.²⁵⁵

2.110 However, the committee received mixed evidence on the likelihood of overhead transmission cables causing bushfires, through arcing or otherwise. On one hand, both Stop Rethink HumeLink Campaign and Humelink Action Group reported that power line related faults cause up to 50 per cent of major fires when weather conditions are unfavourable.²⁵⁶ The latter also reported that power lines were a suspected cause of a few of the larger, damaging fires in the 2019-2020 Black Summer bushfires.²⁵⁷

2.111 However, others differentiated high-voltage transmission lines from other types of powerlines, noting that the risk of the former was actually low.²⁵⁸ Transgrid reported that bushfires in Australia caused by electricity infrastructure were usually ignited by distribution powerlines or equipment below 66 kV, 'rather than transmission equipment in voltage ranges of 110 kV and above'.²⁵⁹ In fact, Mr Brett Redman, Chief Executive Officer, Transgrid, reported that Transgrid could not find any instance of a bushfire started by any transmission line more than 66 kV.²⁶⁰

²⁵² Submission 88, Community Foundation for Tumut Region, p 1; Submission 116, Batlow Community and Cultural Association Inc, pp 1-2; Submission 163, NSW Farmers' Association, p 6; Submission 240, Humelink Action Group, pp 1-3.

²⁵³ Evidence, Mr McKellar, 27 July 2023, p 18.

²⁵⁴ Evidence, Cr Chaffey, 26 July 2023, p 7.

²⁵⁵ Submission 163, NSW Farmers' Association, p 6.

²⁵⁶ Submission 198, Stop Rethink HumeLink Campaign, p 3; Submission 240, Humelink Action Group, p 3.

²⁵⁷ Submission 240, Humelink Action Group, p 3.

²⁵⁸ Submission 44, RE-Alliance, p 8; Submission 102, Transgrid, p 16; Evidence, Professor Dyer, 18 July 2023, p 22; Evidence, Ms Jordan, 18 July 2023, p 36; Evidence, Cr Chaffey, 26 July 2023, p 10.

²⁵⁹ Submission 102, Transgrid, p 16.

²⁶⁰ Evidence, Mr Redman, 18 July 2023, p 30.

2.112 This point was repeated by other inquiry participants. Professor Andrew Dyer, Australian Energy Infrastructure Commissioner reported that the risk of a 220 kV or higher transmission line causing a bushfire was 'virtually zero', and that the risk is higher from the distribution network, from things like 'pole-top fires and fuses that jump to the ground that are red hot'.²⁶¹ Similarly, Councillor Ian Chaffey, Mayor, Snowy Valleys Council, said that the risk of fires was from lower voltage lines, from 22 kV to 66 kV, saying 'they're basically the ones that cause the fire'.²⁶²

2.113 Mr McKellar also added that authorities have spent 'considerable effort' in managing the bushfire risk of power lines over 'quite some time', including through putting spacers on lines so that powerlines can't touch, and maintaining the easements underneath powerlines so that they are cleared of potential fuel sources.²⁶³

The impacts on firefighting efforts

2.114 Another element of the issue of bushfire risk was whether and how overhead or underground cables would affect firefighting efforts.

2.115 Several inquiry participants argued that overhead power lines and transmission towers hinder and obstruct firefighters in conducting both ground and aerial based firefighting. On the ground, the committee heard that Rural Fire Service (RFS) firefighters cannot go near or under transmission towers during a fire, because smoke particles act as conductors, making it very dangerous.²⁶⁴ Similarly, in the air, the committee heard that planes and helicopters cannot fly near transmission towers because this is a safety risk.²⁶⁵ The committee was told that this is a significant hindrance as aerial firefighting is now the primary method used to manage bushfires.²⁶⁶

2.116 In its submission, HumeLink Action Group explained the risks that the transmission towers from HumeLink could pose:

These serious issues that the proposed HumeLink towers would create for firefighters was bought home earlier this year when I was called out to a fire in the area as the local RFS bridge Captain. This fire was directly in the path of the proposed HumeLink route and we would not have been able to fight it safely if the towers had been constructed. This would have resulted in significant risks to lives and damage to property including nearby valuable timber plantations and associated jobs.²⁶⁷

2.117 When asked about bushfire risks, Mr Brett Redman, Chief Executive Officer, Transgrid, told the committee that Transgrid 'work hand in glove with the RFS'.²⁶⁸ Mr Redman explained that

²⁶¹ Evidence, Professor Dyer, 18 July 2023, p 22.

²⁶² Evidence, Cr Chaffey, 26 July 2023, p 10.

²⁶³ Evidence, Mr McKellar, 27 July 2023, p 18.

²⁶⁴ Evidence, Mr Katz, 18 July 2023, p 5; Evidence, Ms Strong, 18 July 2023, p 6.

²⁶⁵ Submission 88, Community Foundation for Tumut Region, p 1; Submission 106, HumeLink Alliance Incorporated, p 12; Submission 163, NSW Farmers' Association, p 6; Submission 240, Humelink Action Group, p 3; Evidence, Mr Katz, 18 July 2023, p 5; Evidence, Ms Strong, 18 July 2023, p 6.

²⁶⁶ Submission 106, HumeLink Alliance Incorporated, p 12; Evidence, Mr Katz, 18 July 2023, p 5.

²⁶⁷ Submission 240, Humelink Action Group, p 4.

²⁶⁸ Evidence, Mr Redman, 18 July 2023, p 30.

the RFS 'are in control in a bushfire situation' and that Transgrid will work 'very closely with them'.²⁶⁹ Ms Marie Jordan, Executive General Manager—Network, Transgrid, added that Transgrid has a liaison officer in the RFS incident management team.²⁷⁰

- 2.118** Mr Redman stated that during a bushfire, if the RFS determines that a transmission line needs to be shut down for safety reasons, it will be shut down.²⁷¹ Some inquiry participants questioned this, saying that Transgrid refused to do so during the 2019-2020 bushfires.²⁷² In response, however, Ms Jordan reported that during the Dunns Road fire, Transgrid's control centre received five separate requests to de-energise overhead lines and 'all of those requests were actioned'.²⁷³
- 2.119** Mr Jayson McKellar, Director Area Operations (Northern), Assistant Commissioner, Rural Fire Service, confirmed that powerlines and transmission towers are an obstruction for RFS firefighters, explaining that firefighters are 'certainly not going to take a high level of risk and fly close to them' and instead would 'amend their strategy and work around the obstruction'.²⁷⁴
- 2.120** Mr McKellar also explained that if the RFS determined that they needed to go close to powerlines they would contact the relevant authority and ask that the lines be isolated. Mr McKellar reported that in his experience, he had never had a request to shut down a powerline denied.²⁷⁵

Climate change

- 2.121** A number of stakeholders raised their concerns regarding the role that overhead transmission posed as a result of climate change and the predicted increase in the frequency and severity of severe weather related events, including bushfires. Ms Sally Dye, a landholder that lives between Deniliquin and Moulamein, where 17 kilometres of powerline is planned to run through the middle of her property told the committee:

Climate change is upon us, and the problem we have is 45-degree days where we are—stinking hot north-westerly dry winds. If we're expecting more extreme events under climate change, the way it pans out, out our way, is that we end up with the winds and dust storms. Now, everyone knows dust and smoke create arcing from these major powerlines and start fires. Our nearest neighbours are 18 kilometres to the east, 18 kilometres to the west, and there's two or three of us living on our property at any one time. There is nobody to fight fires out there and if it's going to happen more often, we are so at risk. Fire insurance is becoming increasingly prohibitively expensive, as with all insurance with climate change.²⁷⁶

- 2.122** Similarly, Snowy Valleys Council, urged the committee to consider climate risk and factor in long-term resilience because of the expected increase in severe weather events:

²⁶⁹ Evidence, Mr Redman, 18 July 2023, p 30.

²⁷⁰ Evidence, Ms Jordan, 7 August 2023, p 2.

²⁷¹ Evidence, Mr Redman, 18 July 2023, p 30.

²⁷² Submission 106a, HumeLink Alliance Incorporated, p 9; Evidence, Ms Strong, 18 July 2023, p 27.

²⁷³ Evidence, Ms Jordan, 7 August 2023, p 2.

²⁷⁴ Evidence, Mr McKellar, 27 July 2023, p 17.

²⁷⁵ Evidence, Mr McKellar, 27 July 2023, p 16.

²⁷⁶ Public forum, Ms Sally Dye, 16 August 2023, p 24.

Undergrounding is a proven technology commonly adopted elsewhere in the world where communities, such as ours, will not tolerate overhead infrastructure and policy makers see the wisdom of planning infrastructure for long-run resilience to future climate events that threaten the security of supply of electricity through overhead lines, as they do here as well.²⁷⁷

Committee comment

- 2.123** This inquiry was established to investigate the feasibility of undergrounding transmission infrastructure. While we considered a range of current and planned transmission projects, the evidence we received overwhelmingly centred on HumeLink specifically. It is clear that the construction of this project is a significant issue for many local communities in South-Eastern New South Wales. The committee is grateful that so many members of these communities took the time to give evidence to this inquiry, through submissions and by giving evidence at the hearing and public forum in Tumut.
- 2.124** The current plan for HumeLink involves a 360 km transmission line made up of dual circuit 500 kV AC transmission cables supported by 850 steel transmission towers. The alternate model, put to the committee by many in the community, is to put this transmission line underground through HVDC cables.
- 2.125** The committee has carefully considered the merits of these approaches on a number of measures, including cost, time to build, technical suitability, impacts on landowners, impacts on the local community and economy, impacts on the local environment, and bushfire risk. It is clear that both options have advantages and disadvantages. It is also clear that the evidence is not necessarily settled, and the committee had to contend with competing and conflicting evidence on some issues.
- 2.126** On balance, with all measures considered, the committee finds that the current plan for HumeLink is the correct approach especially given the applicable regulatory environment and the lack of any action to date in progressing the undergrounding option. We acknowledge that this is not what many in the local community are calling for, and we emphasise that this was not an easy conclusion to come to. However, there were a number of matters on which we found the evidence in favour of the overhead option to be persuasive.
-

Finding 1

That, in considering all the evidence, the current plan for constructing HumeLink as a 500 kV overhead transmission line is the correct approach especially given the applicable regulatory environment and the lack of any action to date in progressing the undergrounding option.

- 2.127** A core issue for the committee was the cost of undergrounding HumeLink. While we received many different figures about how much it would cost, the evidence was nonetheless clear that it would be more expensive – at least double the cost.
- 2.128** The current regulatory framework dictates that electricity consumers pay for the cost of transmission projects. The evidence is clear that an undergrounding proposal would not be

²⁷⁷ Submission 100, Snowy Valleys Council, p 42.

approved by the regulator and could only occur with a sizeable financial contribution from state or federal governments and significant planning, which would need to have been occurred by now in order to avoid unacceptable delay.²⁷⁸

- 2.129** Another deciding issue for us was the delay associated with putting HumeLink underground. We note that New South Wales is in a critical stage of the transition of our electricity system. With coal fired generators withdrawing faster than expected, it is essential that we have the right infrastructure in place to transport renewable sources of energy to the demand centres along the coast.
- 2.130** We note that according to the 2022 ISP, HumeLink is the only actionable project that could address the risks of early coal closures in the period 2026 to 2028. Putting it underground would mean HumeLink would not be operational until well after this period. This is an unacceptable risk to the energy security and reliability of New South Wales. The last thing we want to do is to endorse the underground approach, only to have the delay mean that New South Wales is subject to blackouts. The evidence before us is that the previous state government took no steps to facilitate or plan for undergrounding of HumeLink and while we make no criticism it seems in our view the time has passed where such an option could occur even if it were desirable and/or possible in the regulatory environment.²⁷⁹
- 2.131** On the issues of impacts to local landowners, communities, and the environment, we take seriously the feedback given to us by inquiry participants. We acknowledge that some people are concerned about how HumeLink will impact their properties and businesses. However, we note the efforts of Transgrid to improve engagement with affected landowners via negotiation of route reallocation and compensation payments. We are also not convinced that the underground option would necessarily be less intrusive or disruptive for landholders.
- 2.132** We thank these communities for hosting HumeLink, and recognise they play an important part in ensuring New South Wales has the transmission infrastructure it requires.
- 2.133** Bushfire risk was another influential issue for the committee. The memory of the 2019-2020 bushfires still looms large, and we would not endorse something we believed had a real risk of contributing to fires. However, based on the evidence provided by Transgrid and the Rural Fire Service we are satisfied that overhead transmission lines do not pose a risk of igniting bushfires, and that the right procedures are in place to manage risk if bushfires are present.

²⁷⁸ Evidence, Ms Jordan, 7 August 2023, p 20.

²⁷⁹ Evidence, Ms Jordan, 7 August 2023, p 21; Evidence, Mr Roberts, 7 August 2023, p 21.

Chapter 3 Other issues relating to the transmission network

This chapter explores further issues relating to the transmission network that were raised during the inquiry. It begins by outlining concerns regarding community consultation and planning processes in the development of renewable energy zones. This is followed by a discussion of the regulatory oversight of Transgrid and EnergyCo; and of the RIT-T process and the National Electricity Rules and alternatives. The chapter concludes with a summary of key issues raised about the Victoria to New South Wales Interconnector West (VNI West) project.

Community consultation and planning processes in the development of renewable energy zones

Renewable energy zones (REZs)

- 3.1** As outlined in chapter one, a key element in the transformation of the state's electricity system is the creation of REZs – areas which contain new renewable energy infrastructure including generators, storage such as batteries and pumped hydro, and high-volume transmission infrastructure. As noted, to date, five REZs have been declared in New South Wales including the New England REZ, centred around Armidale, and the Central West Orana REZ centred by Dubbo and Dunedoo.²⁸⁰
- 3.2** Professor Andrew Dyer, Australian Energy Infrastructure Commissioner provided the committee with context relevant to the declaration of the REZs:
- We're moving from a highly centralised power generation grid system...to a very distributed generation approach, which is the nature of the beast with renewables. You need a diversity of geography to position the generating plant where the source is best. You will tend to find solar farms...go better west of the Great Divide, and you tend to put wind farms where it's windy...²⁸¹
- 3.3** As noted in chapter one, EnergyCo is the statutory authority responsible for leading the delivery of REZs in New South Wales. According to EnergyCo's website, it is coordinating investment in REZs across New South Wales to ensure the transition to renewable sources of energy is happening in an orderly way. EnergyCo states that it is leading strategic planning and consultation so that new transmission infrastructure for the transition is developed in the right place at the right time.²⁸²

²⁸⁰ EnergyCo, *Renewable Energy Zone Locations* (2023), <https://www.energyco.nsw.gov.au/renewable-energy-zones/renewable-energy-zone-locations>

²⁸¹ Evidence, Professor Andrew Dyer, Australian Energy Infrastructure Commissioner, 18 July 2023, p 24.

²⁸² EnergyCo, *Our Purpose* (2023), <https://www.energyco.nsw.gov.au/about-energyco/our-purpose>

Concerns about consultation and planning processes

- 3.4** During the inquiry, the committee heard there were many concerns about consultation and planning processes in the development of REZs.
- 3.5** ReD4NE Inc., a community alliance for responsible energy development for New England expressed the view that the energy transition agenda under the previous NSW Government was unnecessarily ambitious which, in turn, led to a hasty roll out of REZs across New South Wales. Accordingly, this group argued that consultation on the REZs was inadequate.²⁸³ For example, Dr John Peatfield, Deputy Chairman, ReD4NE spoke of the level of consultation to date:
- Five years ago this started, and these projects started to pop up without any government consultation whatsoever. Then environmental impact statements were issued and communities started to fight back. We then had a wave of EnCo consultation regarding the REZ zones, where we were told what was going to happen. We didn't appear to have any say... EnCo have given us good hearings, at our instigation, but they haven't listened. They have not varied from their line.²⁸⁴
- 3.6** Mr Mark Fogarty, Director, Bushtricity and Advisor, ReD4NE, referred to this approach to dealing with planning matters as the 'DAD principle' – decide, announce, and then defend.²⁸⁵
- 3.7** Mr Eric Noakes, Mayor of Walcha Council, which sits in the New England REZ, gave similar evidence stating that there needed to be a better way of engaging communities earlier in the planning process, and that informing is not consultation.²⁸⁶ Mr Noakes indicated that his community was not provided with a range of options from which to choose but was confronted with maps showing where transmission lines are to run with only slight opportunities for adjustment.²⁸⁷
- 3.8** Some stakeholders also complained of a lack of transparency when they sought information, with EnergyCo and Transgrid reluctant to supply it. For example, Mr Grant Piper, President, Uarbry Tongy Lane Alliance, and Farmer, Coolah District, Central-West Orana REZ told the committee that at community consultation meetings for the Central-West Orana REZ residents had struggled to obtain information about where transmission lines and renewable energy projects were going to be located. He stated that they were given a 'broadbrush description' and when community members sought more detail they were stonewalled. Further, when a route was decided on it was circulated on a map for acquisition, at which time community members had to start negotiating – there was no genuine consultation before this time.²⁸⁸

²⁸³ Submission 75, ReD4NE Inc., p 2 and Evidence, Mr Mark Fogarty, Director, Bushtricity and Advisor, ReD4NE Inc., 27 July 2023, p 2.

²⁸⁴ Evidence, Dr John Peatfield, Deputy Chairman, ReD4NE, 27 July 2023, p 7.

²⁸⁵ Evidence, Mr Fogarty, 27 July 2023, p 3.

²⁸⁶ Evidence, Mr Eric Noakes, Mayor, Walcha Council, 27 July 2023, p 10.

²⁸⁷ Evidence, Mr Noakes, 27 July 2023, p 11.

²⁸⁸ Mr Grant Piper, President, Uarbry Tongy Lane Alliance, and Farmer, Coolah District, Central-West Orana Renewable Energy Zone, 27 July 2023, p 7.

3.9 ReD4NE likewise stated that EnergyCo needed to be more transparent, also complaining of 'stonewalling' when it asked for details as to the benefits of the proposed new transmission line.²⁸⁹

3.10 Connected to these comments were concerns about the environmental impact statement (EIS) process with ReD4NE remarking that there is no community consultation at the scoping stage when different options could be considered, only an 'ex post facto' reflection on a site that has already been chosen.²⁹⁰ This accorded with evidence given by Mr Gary Dunnett, Chief Executive Officer, National Parks Association of NSW, who told the committee:

...there is nowhere apparent in the planning system at the moment that allows an objective assessment of alternatives. There is a cursory assessment of alternatives that is supposed to be built into each and every environmental impact statement. But the reality is if an EIS was to conclude that there was a better alternative, what the proponent knows is that that actually throws them back to the start of the process and they're commencing an entirely new EIS. And with these things being inevitably declared as critical State-significant infrastructure, that's just not going to happen. What we need is a way of making good proposals before we then test them in terms of their environmental impact.²⁹¹

3.11 Stakeholders also told the committee that due to the limited consultation at the scoping stage, broader costs to the community and cumulative impacts associated with REZs had not been given proper consideration.

3.12 Dr Peatfield noted that the New England REZ had been allocated eight gigawatts of transmitted energy which translates to approximately 1,500 wind towers and 9,000 hectares of solar panels as well as overhead transmission lines and five hubs. Given this 'incredible density' on productive, agricultural land, he stated that a thorough cumulative impact study should have been done before the designation of the REZ:

There has not been a proper cumulative impact study done for the New England REZ which is what we require. The terms of reference should be environmental, particularly for land clearing and its consequences; agriculture; resources; traffic, remembering that all infrastructure has to come via the New England Highway from Newcastle; social impact; visual impact; rental affordability; waste management and landfill; Indigenous cultural landscape; noise; compliance with wind and solar guidelines; and social licence. This, we believe, should have been done before the designation of the REZ.²⁹²

3.13 In a similar vein, Mr Noakes stated that mandating the New England REZ would have major social, economic and visual amenity impacts on the local community. He highlighted the cumulative impact of the routing of a 500 kV line through the Walcha local government area stating that it would 'lead to a concentration of a large number of renewable energy projects' that would 'industrialise' the landscape.²⁹³

²⁸⁹ Submission 75, ReD4NE Inc., p 5.

²⁹⁰ Submission 75, ReD4NE Inc., p 3.

²⁹¹ Mr Gary Dunnett, Chief Executive Officer, National Parks Association of NSW, 18 July 2023, p 13.

²⁹² Evidence, Dr Peatfield, 27 July 2023, p 2.

²⁹³ Evidence, Mr Noakes, 27 July 2023, p 10.

- 3.14** Regarding social impact, the committee heard of community friction within REZ localities related both to infrastructure that would arise out of the REZs and to the way that consultation processes had been carried out.
- 3.15** For example, Councillor Sam Coupland, Mayor of Armidale Regional Council, explained that there was resentment amongst those who would have overhead transmission lines running through their property to service neighbours who were reaping the financial benefits of hosting a renewable energy project on their property. He stated that a more equitable solution would be for project hosts to host transmission lines as well, where possible.²⁹⁴
- 3.16** On social friction arising from the consultation processes, Dr Peatfield stated that agents for foreign developers had signed up hosts for renewable energy projects within the New England REZ with gag clauses, so that most of the community was not consulted until later when EISs were issued in respect of the projects. He told the committee that this 'created tremendous community division and it was no way to prosecute government policy because it was purely about the dollar for largely foreign investors'.²⁹⁵
- 3.17** Mr Noakes commented that there were families within his community who were no longer speaking as a result of the projects, noting that the social impact had not been considered: 'Our community will never be the same again. Even if all this is scrapped now, the damage that it's done—we don't have a transmission line in our community yet our community is torn apart'.²⁹⁶

The need for 'top-down planning' and adequate consultation

- 3.18** The complaints of stakeholders who live within REZs that no proper cumulative impact studies are done, that broader social, economic and environmental impacts are not adequately considered, and that community consultation only occurs at the EIS stage, after decisions have been made, are consistent with the evidence of witnesses from the National Parks Association of NSW, some of which has already been touched upon above. Mr Ted Woodley, Executive Member, National Parks Association of NSW told the committee that the planning process for renewable energy projects is inadequate. He said projects are considered project by project rather than developing an overall plan to best build an entirely new energy environment.²⁹⁷
- 3.19** Similarly, Mr Dunnett told the committee that the greatest current weakness of the New South Wales planning framework is its inability to deal with cumulative impacts. He stated:

We've got a system that is entirely focused on the individual development footprints. If there was ever a situation where we need to think in a genuinely strategic way and do a genuine strategic plan surely it is actually in terms of routing these transmission lines because their cumulative impact is going to be immense ... We need to have that strategic plan up-front ... about how you provide the lightest possible footprint ... if we just rely on EISs to do this, we will fail.²⁹⁸

²⁹⁴ Evidence, Cr Sam Coupland, Mayor, Armidale Regional Council, 27 July 2023, pp 10 and 12.

²⁹⁵ Evidence, Dr Peatfield, 27 July 2023, p 7.

²⁹⁶ Evidence, Mr Noakes, 27 July 2023, p 13.

²⁹⁷ Evidence, Mr Ted Woodley, Executive Member, National Parks Association of NSW, 18 July 2023, p 15.

²⁹⁸ Evidence, Mr Dunnett, 18 July 2023, p 16.

3.20 Professor Dyer told the committee that it is essential to have a 'top-down planning approach' that sets out where each project is to go to avoid cumulative impacts and unnecessary agricultural impacts.²⁹⁹

3.21 The committee also notes evidence of Mr Jim Cox, Acting Chair, Board of Directors, Australian Energy Regulator (AER), that appropriate consultation processes involve:

- a willingness to listen and, if necessary, adopt an alternative proposal
- consulting over a broad enough range of issues, and in sufficient depth
- giving those consulted an opportunity to talk about what they would like to talk about.³⁰⁰

Transgrid evidence concerning consultation

3.22 As noted in chapter two, when discussing Transgrid's consultation with stakeholders Mr Jeremy Roberts, Major Project Delivery Director, Transgrid acknowledged that 'at the start, the consultation was not the best'.³⁰¹ He explained that Transgrid commissioned an independent report by Mr Rod Stowe, a former NSW Commissioner for Fair Trading, to review their consultation methodologies and provide a list of recommendations, all of which were adopted.³⁰²

3.23 Mr Roberts also stated that where its work is impacting a landowner Transgrid will make refinements to transmission routes:

Through that process with individual landowners, 77 per cent of route refinements on an individual's land we have accommodated and moved. Where we're impacting a landowner, we've discussed and actually microsited and changed towers and routes on the back of consultation with the landowners. That is about, I think, 20-odd out of 30 requests from individual landowners to move ... We are listening to and taking on board the route refinement process through our consultation.³⁰³

3.24 As touched upon in chapter one, Mr Brett Redman, Chief Executive Officer, Transgrid, also emphasised that haste was essential for the energy transition agenda, stating: 'Without an urgent acceleration in building transmission infrastructure, New South Wales will not be able to connect the renewable energy zones to the grid to move clean energy from where it's generated to where it is needed'.³⁰⁴

3.25 However, National Parks Association of NSW witnesses countered that these important projects needed to be properly consulted upon, planned and built, and stated, 'We're building something that's going to last for a hundred years so we need to get it right'. They also

²⁹⁹ Evidence, Professor Dyer, 18 July 2023, p 20.

³⁰⁰ Evidence, Mr Jim Cox, Acting Chair, Board of Directors, Australian Energy Regulator, 18 July 2023, p 17.

³⁰¹ Evidence, Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, 7 August 2023, p 8.

³⁰² Evidence, Mr Roberts, 7 August 2023, pp 8 and 9.

³⁰³ Evidence, Mr Roberts, 7 August 2023, p 5.

³⁰⁴ Evidence, Mr Brett Redman, Chief Executive Officer, Transgrid, 18 July 2023, p 26.

commented that it was unlikely that the ambitious timeframes for completion of the Central-West Orana REZ or the New England REZ of 2027 would be achieved anyway.³⁰⁵

Committee comment

- 3.26** The committee is concerned by evidence of inadequate planning and consultation processes in the development of REZs. In particular, complaints that proper cumulative impact studies are not done and that community consultation only occurs at the EIS stage, after decisions have been made about a proposed project so that alternatives are not seriously considered. The committee was however pleased to hear that Transgrid had adjusted its consultation processes in response to the Stowe review and that there is evidence that Transgrid does alter transmission routes in response to landholder feedback in many cases.
- 3.27** As detailed in chapter two, the committee accepts that New South Wales is at a critical stage of the transition of its electricity system with coal fired generators withdrawing faster than expected. In this context REZs are key – they must be online promptly to generate sufficient alternative (renewable) sources of energy and prevent blackouts in New South Wales. They are also key to meeting the target of net zero emissions by 2050, which all Australian states and territories have committed to.³⁰⁶
- 3.28** These considerations must however be balanced with a need for appropriate consultation and planning in the development of REZs. As these matters have far-reaching social, environmental, economic and other consequences proper process is important.
- 3.29** In this context, the committee is of the view that the NSW Government should consider the viability of changing the New South Wales planning framework to require a comprehensive cumulative impact study to be carried out before any REZ is declared. Ideally there would be a strategic plan up front for any declared REZ and community consultation would occur at the scoping stage, allowing adequate consideration of viable alternatives, not project by project at the EIS stage when decisions may have been made.

Recommendation 1

That the NSW Government consider the viability of changing the New South Wales planning framework to require:

- a comprehensive cumulative impact study to be undertaken before any renewable energy zone (REZ) is declared; and
 - community consultation on any proposed REZ to start at the scoping stage to allow adequate consideration of viable alternatives.
-

³⁰⁵ Evidence, Mr Dunnett and Mr Woodley, 18 July 2023, p 15.

³⁰⁶ See ClimateWorks Australia, *State and Territory Climate Action: Leading Policies and Programs in Australia* (October 2021) p 6.

Regulatory oversight of Transgrid and EnergyCo

3.30 Having regard to the above concerns about community consultation on REZs and decision making about transmission infrastructure, the committee also heard calls for greater regulatory oversight of Transgrid and EnergyCo.

3.31 For example, Wagga Wagga City Council complained of a Transgrid decision to compulsorily acquire a 1.8 kilometre long by 80 metre wide easement through the Council's waste management facility for high voltage overhead power lines thereby sterilising the area and shortening the life of the facility.³⁰⁷ Wagga Wagga City Council witnesses raised concerns about the consultation process regarding this easement, indicating that it had been impossible to obtain information from Transgrid about possible alternative engineering solutions.³⁰⁸ They also stated that there is a lack of transparency in the way in which Transgrid is approaching compulsory acquisitions because it was not clear whether there was full disclosure to the Minister that in acquiring the land in question Transgrid would be affecting the service provision of another government agency that itself had compulsorily acquired the land for a waste management facility 30 years prior.³⁰⁹

3.32 In a similar vein, Dr Joe McGirr MP, Member for Wagga Wagga, observed that Transgrid plays a significant role in the National Electricity Market (NEM) and more government oversight is needed to ensure the community is heard and alternative options such as undergrounding are given proper consideration. Dr McGirr stated:

... we ... have a system in which the private sector, Transgrid, plays a significant role. The question in all of this has been ... where is the Government? Where is the protection for citizens in this? ... Why have we as the New South Wales Government not been more proactive in researching these options and providing the case? ... Transgrid is operating in a system where, it seems to me, the Government has been very much at arm's length or even missing.³¹⁰

3.33 Given concerns about community consultation on REZs discussed earlier in the chapter, the committee also heard calls for greater oversight of EnergyCo. For example, Mr Fogarty of ReD4NE stated that the Government must 'put a microscope over EnergyCo' and find out whether it is 'the right institutional model'. He indicated that there is a need for complete, independent transparency on the cumulative impact of REZs, not just a consultation process that is just 'ticking the box'.³¹¹

Committee comment

3.34 The committee is of the view that, in addition to considering changes to planning and consultation requirements for REZs, the NSW Government should consider the creation of an

³⁰⁷ Submission 233, City of Wagga Wagga, p 1; and Evidence, Mr Peter Thompson, General Manager, Wagga Wagga City Council, 26 July 2023, pp 4 and 6.

³⁰⁸ Evidence, Mr Darryl Woods, Executive Manager, Major Projects, Wagga Wagga City Council, 26 July 2023, p 5.

³⁰⁹ Evidence, Mr Thompson, 26 July 2023, pp 4-6.

³¹⁰ Evidence, Dr Joe McGirr MP, Member for Wagga Wagga, 26 July 2023, pp 33-34.

³¹¹ Evidence, Mr Fogarty, 27 July 2023, p 7.

independent ombudsman to oversee consultation upon, and rollout of, renewable energy projects and transmission infrastructure in New South Wales.

3.35 As already noted, the committee acknowledges the adjustments that Transgrid has made to its consultation processes following the Stowe review and Transgrid's evidence that it does alter transmission routes in response to landholder feedback in many cases.

3.36 Notwithstanding this, there is a risk that Transgrid, which earns revenue from transmission infrastructure projects and has a high degree of technical expertise, does not always fully engage with stakeholders who may have less technical expertise about alternative options that would reduce negative community impacts but that may be more expensive. To ensure proper oversight, the committee considers that it may be helpful if there were an independent ombudsman to oversee consultation upon, and rollout of, renewable energy projects and transmission infrastructure in New South Wales and to receive and handle complaints about these processes.

Recommendation 2

That the NSW Government consider the creation of an independent ombudsman to oversee consultation upon, and rollout of, renewable energy projects and transmission infrastructure in New South Wales and to receive and handle complaints about these processes.

The RIT-T process and the National Electricity Rules

The regulatory framework

3.37 As detailed in chapter one, New South Wales is part of the National Electricity Market (NEM) which is governed by the National Electricity Law and the *National Electricity (New South Wales) Act 1997*.³¹²

3.38 Further, three national agencies govern, operate, and regulate the NEM:

- the Australian Energy Market Operator ('AEMO') administers and operates the gas and electricity markets and power systems
- the Australian Energy Market Commission ('AEMC') makes the National Electricity Rules and advises on the design of the NEM
- the AER enforces the National Electricity Rules, sets the amount of revenue that network businesses can recover from customers and monitors and reports on the conduct of market participants.³¹³

³¹² New South Wales Government, Department of Planning, Industry and Environment, *NSW Electricity Strategy* (2019), p 2.

³¹³ New South Wales Government, Department of Planning, Industry and Environment, *NSW Electricity Strategy* (2019), p 2; Australian Energy Regulator, *About Us*, <https://www.aer.gov.au/about-us>

3.39 The Australian Energy Infrastructure Commissioner also has an independent function to facilitate the handling of complaints about energy projects, identify and promote best practices for the planning, operation, and governance of such projects, and improve information access and transparency about proposed and operating projects and relevant government and industry information more broadly.³¹⁴

3.40 Within this framework, in owning and operating the transmission network, Transgrid may earn revenue on major capital projects although such projects are subject to various requirements including the completion of a regulatory investment test known as the RIT-T. Mr Cox of the AER provided the following details about the RIT-T to the committee:

... businesses can also apply to the AER for approval of the costs associated with major capital projects, such as transmission projects ... Under the national framework, transmission and distribution network service providers must apply a cost-benefit test referred to as the regulatory investment test – or RIT-T ... before building major electricity network infrastructure such as transmission lines or interconnectors. The purpose of this test is to assess a range of credible options that could address a need in the electricity network and then identify options to maximise benefits for the market.³¹⁵

Concerns about the RIT-T process

3.41 As noted in previous chapters, the cost of transmission infrastructure is chiefly borne by electricity consumers and in supervising the RIT-T process, Mr Cox noted the importance of considering benefits and costs while noting that monetary cost and thus affordability for consumers will always be 'a major part of our thinking' in assessing the optimal option.³¹⁶

3.42 In this context, the committee heard concerns from stakeholders that the RIT-T test is too narrow, focusing on the cheapest option for electricity consumers when assessing transmission infrastructure proposals, and giving insufficient consideration to broader social and community impacts.

3.43 For example, Mr Michael Katz, member of HumeLink Alliance and Stop! Rethink HumeLink told the committee that Transgrid supports overhead transmission infrastructure because it is operating in an outdated regulatory environment that encourages or forces it to pick the cheapest option without giving due regard to broader considerations:

These regulations were developed 30 years ago at a time when we were not contemplating low-emissions electricity supply systems ... By relying on these outdated regulations all that is being considered in the project costs are capital, operating and compliance costs. There is no mention of the external costs, such as bushfires, nor the cost impact on communities, on the mental health of the nearby residents, or on native birds and animals losing vast areas of habitat.³¹⁷

³¹⁴ Submission 107, Australian Energy Infrastructure Commissioner, p 1.

³¹⁵ Evidence, Mr Cox, 18 July 2023, p 17.

³¹⁶ Evidence, Mr Cox, 18 July 2023, p 19.

³¹⁷ Evidence, Mr Michael Katz, Member, HumeLink Alliance and Stop! Rethink HumeLink, 18 July 2023, p 2.

- 3.44** Similarly, Dr McGirr MP told the committee that the system under which Transgrid is operating requires it to choose the cheapest cash option for the electricity consumer without adequately considering things like environmental or social impact. Dr McGirr described Transgrid as a 'cog in the wheel' because under the RIT-T process 'They don't have the capacity ... to go back and advocate for other ways because they'll be accused of gold plating'.³¹⁸
- 3.45** Mr Peter Thompson, General Manager, Wagga Wagga City Council also gave evidence that as overhead transmission lines are the cheapest option Transgrid will not consider other options and that 'the impacts on local government, [and] the impacts on communities are not entering the balance sheet'.³¹⁹
- 3.46** These comments appear to broadly accord with evidence given by Mr Redman of Transgrid that under the current regulatory framework:
- The AER must be satisfied that the total investment is both prudent and efficient in terms of the cost to deliver the project because it has a direct impact on customer bills. The AER would not accept the cost of underground HumeLink because it would result in an unacceptable increase in the project cost of three to 10 times.³²⁰
- 3.47** The committee also received evidence from three witnesses with expertise in transmission who criticised the current regulatory environment. Professor Simon Bartlett AM was the Australian Chair of Transmission at the University of Queensland and the University of Tasmania, the Chief Operating Officer of Powerlink for 17 years and the Director of ElectraNet for 12 years. He was also awarded a Member of the Order of Australia for services to Australia's power industry and is an active member of CIGRE 'the world's leading institution for electric power systems'.³²¹ Professor Bartlett told the committee the RIT-T process is flawed, continually favouring the cheapest solution and that it and the planning process need to be re-examined because they are 'not achieving the best outcomes for this country'.³²²
- 3.48** Mr Les Brand, Director and Principal Consultant, Amplitude Consultants, who has over 30 years' experience in the power industry, the last 24 years nearly exclusively in high voltage direct current (HVDC) long-distance cables and subsea cables, and who is also an active member of CIGRE, agreed with Transgrid's assertion that under the current regulatory framework the AER would not accept the cost of undergrounding HumeLink.³²³ In contrast, Professor Bartlett stated that he was not convinced undergrounding would fail the regulatory test if it were done fairly.³²⁴
- 3.49** Mr Kenneth Barber, Director, Istana Park Pty Ltd, has had over 60 years' experience in the power industry in the supply and installation of overhead lines and underground cables and, like Professor Bartlett and Mr Brand, he is an active member of CIGRE of which he has been

³¹⁸ Evidence, Dr McGirr MP, 26 July 2023, p 35.

³¹⁹ Evidence, Mr Thompson, 26 July 2023, pp 8-9.

³²⁰ Evidence, Mr Redman, 18 July 2023, p 26.

³²¹ Evidence, Professor Simon Bartlett AM, Independent Expert, 26 July 2023, p 12.

³²² Evidence, Professor Bartlett, 26 July 2023, p 16.

³²³ Evidence, Mr Les Brand, Director and Principal Consultant, Amplitude Consultants, 26 July 2023, p 18.

³²⁴ Evidence, Professor Bartlett, 26 July 2023, p 18.

Deputy Chairman. He has been involved in technology for cables all over the world.³²⁵ Mr Barber stated that 'the Australian regulatory rules are wrong' for disregarding broader factors such as environmental impact. He commented that it is accepted in parts of Europe such as France and Germany that 'you have to pay for what you get'. In contrast, the system enforced by the AER is 'just dollar for dollar'. Mr Barber told the committee:

... yes, overhead lines are cheaper but are they what we want? If it's going to cost us and we're not going to be able to fight our bushfires and we can wipe out \$2 billion worth of trees ... I cannot see why, if the cost [of undergrounding] is higher the AER should oppose it because it would be in the interest of Australia to have it.³²⁶

3.50 Both Mr Brand and Professor Bartlett commended the regulatory model that applies in the United Kingdom – a 'triple bottom line analysis' that takes into account financial, social and environmental impacts of transmission projects. Professor Bartlett noted that using this model 'They've been able to justify...not just putting in [DC] cables but putting it out to the ocean. It is a small country, so there's a lot of adverse things to putting it overhead through those communities'.³²⁷ This accords with the evidence of Dr McGirr MP that the regulatory test needs to be re-configured to take into account environmental and social factors.³²⁸

3.51 The committee also heard that Victoria has departed from the RIT-T process. Ms Marie Jordan, Executive General Manager – Network, Transgrid stated that Victoria uses a multi-criteria analysis that allows a greater number of factors to be considered in approving transmission infrastructure proposals. However, Ms Jordan was of the view that within the current climate of price rises cost to electricity consumers has to be the primary consideration 'because you look at the demographics across New South Wales where a small saving can be a big difference to some of the people impacted by the cost of electricity today'.³²⁹

AER evidence concerning the RIT-T process

3.52 Mr Cox told the committee that in undertaking the RIT-T process, costs to electricity consumers are very important but other factors are taken into account and it is not true to say that the AER is required to approve the lowest cost option.³³⁰ Mr Cox stated that the AER aims to find the transmission infrastructure option that provides the greatest net benefit:

I wouldn't want to give the impression that we don't care about cost to the general community, which is a very important consideration. If the costs are very high, that, obviously, would tend to work against the project. But it's not to say there are not things that could be done, at reasonable cost, that would make the project more acceptable to the community.³³¹

³²⁵ Evidence, Mr Kenneth Barber, Director, Istana Park Pty Ltd, 26 July 2023, pp 12 and 13.

³²⁶ Evidence, Mr Barber, 26 July 2023, p 18.

³²⁷ Evidence, Professor Bartlett, 26 July 2023, p 18. See also Submission 235, Amplitude Consultants, p 6.

³²⁸ Evidence, Dr McGirr MP, 26 July 2023, p 37.

³²⁹ Evidence, Ms Marie Jordan, Executive General Manager – Network, Transgrid, 7 August 2023, p 20.

³³⁰ Evidence, Mr Cox, 7 August 2023, p 22.

³³¹ Evidence, Mr Cox, 7 August 2023, p 23.

- 3.53** When asked specifically about whether the AER would have approved undergrounding of HumeLink, Mr Cox noted that no proposal for a long-link undergrounding project had ever been put before the AER. However, he went on to state that cost is relevant and 'if it's the case that the long underground link was a very expensive link, that would obviously tend to count against it in the weighing of costs and benefits' – the costs to host communities must be weighed against interests of general consumers.³³² He also stated that while there are cases where undergrounding is justified 'you have to weigh up the benefits and the costs. For a long project, such as HumeLink, the costs would be substantial'.³³³
- 3.54** Mr Cox also indicated that this is an evolving area and that the Australian Minister for Climate Change and Energy, the Hon Chris Bowen MP, is proposing a change to the National Electricity Rules so that transmission providers will need to consult on matters of community concern, such as visual impact.³³⁴ Further, the Australian Government is passing legislation so that in applying the RIT-T process to a proposed infrastructure project the AER will be required to consider emissions reductions in deciding whether there is a net benefit.³³⁵ These changes provide avenues for broader considerations, like social and environmental impact, to be given more weight before transmission infrastructure projects are approved. Mr Cox stated:
- I think social licence issues are becoming increasingly to the fore and increasingly being thought about. We mentioned the Minister's rule change is going to require greater consultation on those aspects ... I think it is an evolving territory, but certainly there is scope to consider these things. But, as I was saying, they have to be weighed against the other thing, which is the cost to the general community and somehow a balance between those things needs to be struck because of concern about high electricity prices, which we all share.³³⁶
- 3.55** Mr Cox also noted that if government were to contribute towards the cost of an infrastructure transmission project, this would factor into the AER's approvals process under the RIT-T.³³⁷ That is, government investment would offset the cost of the project meaning that less of the cost would be passed to the consumer. If consumer costs are lower, other factors such as social and environmental impact may have more weight when the AER undertakes the cost benefit analysis required by the RIT-T process to decide whether to approve a project.

Cost burden of transmission infrastructure

- 3.56** In discussing the RIT-T process a related question that arose was whether regulatory requirements should be altered so that generators are required to share the costs of transmission infrastructure with consumers. Mr Cox stated that there are 'respectable arguments' that generators should contribute to 'some of the costs of these links that may be of particular benefit to them' and that he 'certainly wouldn't want to rule that out'.³³⁸

³³² Evidence, Mr Cox, 7 August 2023, pp 22 and 28.

³³³ Evidence, Mr Cox, 18 July 2023, p 24.

³³⁴ Evidence, Mr Cox, 7 August 2023, pp 22, 23 and 27.

³³⁵ Evidence, Mr Cox, 7 August 2023, p 24.

³³⁶ Evidence, Mr Cox, 7 August 2023, pp 27 and 28.

³³⁷ Evidence, Mr Cox, 7 August 2023, p 28.

³³⁸ Evidence, Mr Cox, 18 July 2023, p 21.

- 3.57 However, Professor Bartlett stated that 'The question of who pays has been orbiting around the regulatory arena for a long time' and that, regarding Snowy 2.0 pumped hydro project '...they're government owned so the cost is going to come back to the taxpayer in any case'.³³⁹

Committee comment

- 3.58 The committee notes concerns from some stakeholders that the regulatory test under which approvals for investment in transmission infrastructure are made is too narrow. The committee heard that this requires the AER to focus unduly on cost to electricity consumers in assessing any proposal meaning that a number of other important considerations like environmental and social impact are not given adequate weight.
- 3.59 The committee considers that consumer electricity costs are a very important factor in deciding on which transmission infrastructure projects are to go ahead. However, other factors such as environmental and social impact need to be given appropriate weight. In this regard, the committee was pleased at evidence from the AER that this is an evolving area and that regulatory changes at the Commonwealth level will provide an avenue for broader considerations to be given more weight before transmission infrastructure projects are approved.
- 3.60 In this context, the committee is of the view that the NSW Government should monitor the implementation of these changes to assess whether they provide an appropriate balance in the assessment of transmission infrastructure proposals. Given these evolving changes at the Commonwealth level, the committee considers that it would be premature to recommend any departure from the National Electricity Law at this time such as a move to 'triple bottom line' analysis of transmission infrastructure proposals.
- 3.61 The committee also notes evidence from the AER that if government were to contribute towards the cost of an infrastructure transmission project that would factor into the AER's cost-benefit approvals process under the RIT-T, removing some of the cost burden from consumers and thereby allowing broader factors such as social and environmental impacts to have more weight. This presents another option were the NSW Government to desire a particularly expensive project to go ahead in the future that may not otherwise pass the RIT-T cost benefit analysis.
- 3.62 On the related question of whether generators should be required to contribute to the cost of transmission infrastructure so that the consumer does not bear all the burden, the committee is of the view that the NSW Government could consider this, having regard to the benefits that generators derive from transmission infrastructure.

Victoria to New South Wales Interconnector West

- 3.63 On Wednesday 16 August 2023, the committee held a public hearing and public forum in Deniliquin. Evidence on this day centered on the Victoria to New South Wales Interconnector

³³⁹ Evidence, Professor Bartlett, 26 July 2023, p 16.

West (VNI West) project. This is a proposed 500 kV double-circuit overhead transmission line connecting major renewable energy projects in New South Wales and Victoria.³⁴⁰

3.64 VNI West is being jointly developed by Transgrid and AEMO Victoria Planning.³⁴¹ The regulatory approval process for the project began in 2019. The project is anticipated to be approved in 2025, with construction commencing in 2026, and completion in 2028.³⁴²

3.65 VNI West is listed as an 'actionable' project in the Australian Energy Market Operator's 2022 Integrated System Plan (ISP).³⁴³ According to the ISP, it is needed to:

- facilitate the development and dispatch of high-quality renewable energy resources in Victoria and southern New South Wales
- enable more efficient sharing of resources between National Electricity Market regions
- maintain electricity supply reliability in Victoria following the closure of coal-fired generators.³⁴⁴

3.66 In the first half of 2023, Transgrid conducted consultations, investigations and analysis to determine the preferred corridor for the New South Wales part of the line.³⁴⁵ Six potential corridors were considered.³⁴⁶ Ultimately, Corridor Option 1 was identified as the preferred corridor.³⁴⁷ This runs from Transgrid's Dinawan substation north of Jerilderie in New South Wales to the Victorian border north of Kerang.³⁴⁸

3.67 In June 2023, Transgrid released a Draft Corridor report, identifying Corridor 1 as the preferred option, for public consultation.³⁴⁹ The consultation period is due to close on 8 September 2023,³⁵⁰ which is after this inquiry will conclude.

³⁴⁰ Transgrid, *Victoria to New South Wales Interconnector West: Fact Sheet* (June 2023), https://www.transgrid.com.au/media/eg5a3bxq/tran_302459_vni-project-materials_victoria-to-nsw-interconnector-west-factsheet_fa_accessible.pdf.

³⁴¹ Transgrid, *Victoria to New South Wales Interconnector West: Fact Sheet* (June 2023), https://www.transgrid.com.au/media/eg5a3bxq/tran_302459_vni-project-materials_victoria-to-nsw-interconnector-west-factsheet_fa_accessible.pdf.

³⁴² Transgrid, *Victoria to New South Wales Interconnector West: Fact Sheet* (June 2023), https://www.transgrid.com.au/media/eg5a3bxq/tran_302459_vni-project-materials_victoria-to-nsw-interconnector-west-factsheet_fa_accessible.pdf.

³⁴³ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 67.

³⁴⁴ Australian Energy Market Operator, *2022 Integrated System Plan* (2022), p 74.

³⁴⁵ Transgrid, *Victoria to NSW Interconnector West: Draft Corridor Report – NSW* (June 2023), pp 22-28.

³⁴⁶ Transgrid, *Victoria to NSW Interconnector West: Draft Corridor Report – NSW* (June 2023), pp 41-49.

³⁴⁷ Transgrid, *Victoria to NSW Interconnector West: Draft Corridor Report – NSW* (June 2023), p 74.

³⁴⁸ Transgrid, *Victoria to NSW Interconnector West: Draft Corridor Report – NSW* (June 2023), p iii.

³⁴⁹ Transgrid, *Victoria to NSW Interconnector West: Draft Corridor Report – NSW* (June 2023).

³⁵⁰ Transgrid, *Victoria to NSW Interconnector West: Draft Corridor Report – NSW* (June 2023) ii.

Community views on VNI West

3.68 At the public hearing and public forum in Deniliquin, the committee heard a range of views about VNI West. Key issues were the consultation process by Transgrid, whether VNI West should be overhead or underground, and the impact of the project on the local area more broadly.

Consultation process

3.69 In Deniliquin, the committee heard concerns about the consultation process conducted by Transgrid to date. Mr Terry Dodds, Chief Executive Officer, Murray River Council, reported that from the Council's perspective, consultation 'started off in good faith' and 'there was some reasonably good consultation in the middle', but that there was 'rushed consultation with the public at the end'.³⁵¹ However, Mr Dodds acknowledged that this was not 'all of Transgrid's fault', noting the time pressures for the project and disruption caused by floods at the end of 2022.³⁵²

3.70 Mrs Helen Dalton MP, Member for Murray, was more negative about the consultation process, saying the general community is 'appalled by the lack of consultation' by Transgrid.³⁵³ She commented that information sessions were often arranged with little notice, making it difficult for the public to attend.³⁵⁴

3.71 As noted above, a draft corridor report was released by Transgrid in June 2023. However, some witnesses commented that they did not receive any communication from Transgrid until July.³⁵⁵ The feedback deadline for the report was originally 4 August but was subsequently extended to 8 September 2023.³⁵⁶ Mr Peter Redfearn, community member, commented that this was 'still totally inadequate, really, for the amount of work that's involved'.³⁵⁷

3.72 Concerns were also raised about the information being provided by Transgrid to community members. Mr Matt Rowlands said that Transgrid had 'conducted themselves in an inexcusable way' and had provided 'misinformation and misleading facts' to the community.³⁵⁸ Ms Alison Glenn also questioned the sincerity of the consultation process, saying 'when Transgrid came to the consulting meetings, they mentioned that it was not a fait accompli, but it sure did feel like it from our point of view'.³⁵⁹

³⁵¹ Evidence, Mr Terry Dodds, Chief Executive Officer, Murray River Council, 16 August 2023, p 5.

³⁵² Evidence, Mr Terry Dodds, Chief Executive Officer, Murray River Council, 16 August 2023, p 5.

³⁵³ Evidence, Mrs Helen Dalton MP, Member for Murray, 16 August 2023, p 10.

³⁵⁴ Evidence, Mrs Helen Dalton MP, Member for Murray, 16 August 2023, pp 10, 12.

³⁵⁵ Evidence, Mr Peter Redfearn, Community Member, 16 August 2023, p 15; Evidence, Ms Clare Martin, Community Member, 16 August 2023, p 19; Evidence, Mr Matt Rowlands, Community Member, 16 August 2023, p 19; Public forum, Ms Sally Dye, 16 August 2023, p 23; Public forum, Mr Donald Bull, 16 August 2023, p 27.

³⁵⁶ Evidence, Mr Terry Dodds, Chief Executive Officer, Murray River Council, 16 August 2023, p 2.

³⁵⁷ Evidence, Mr Peter Redfearn, Community Member, 16 August 2023, p 15.

³⁵⁸ Evidence, Mr Matt Rowlands, Community Member, 16 August 2023, p 19.

³⁵⁹ Evidence, Ms Alison Glenn, Community Member, 16 August 2023, p 20.

Whether it should be overhead or underground

- 3.73** Some witnesses considered whether it would be more desirable for VNI West to be constructed as an overhead or underground line. Several were in favour of undergrounding.³⁶⁰ Similar reasons were given as those expressed by proponents of undergrounding HumeLink, such as a reduced bushfire risk, less impact on the natural environment, improved visual amenity, and decreased impact on agriculture.³⁶¹ Another concern was the risk posed by overhead transmission lines to endangered birds in the region, including the bush stone-curlew, the Australian painted snipe, the Australasian bittern, the ground cuckoo-shrike and the plains-wanderer.³⁶²
- 3.74** Mr Terry Dodds, Chief Executive Officer, Murray River Council, said that the question of whether the line should be overhead or underground was one of 'what is the least worst solution, versus what is the best', commenting 'it is inevitable that much disruption to our peace and quality of life—whether overhead or underground—will occur'.³⁶³

Broader impacts of VNI West

- 3.75** The committee also heard concerns about the impact of VNI West on Deniliquin and the surrounding region more broadly. Mrs Helen Dalton MP, Member for Murray, argued that VNI West was an example of regional areas being taken advantage of, saying 'out here we're almost out of sight, out of mind ... our land can be just ripped up to provide power to the cities'.³⁶⁴ Others expressed similar sentiments.³⁶⁵
- 3.76** Some witnesses also expressed the view that VNI West would have broader negative implications for the region. Ms Nicole Fitzpatrick said that 'if this goes through, we will lose people in our community'.³⁶⁶ Mr Matt Rowlands added that any negative effects on agriculture would flow through to schools, hospitals, and other industries.³⁶⁷

³⁶⁰ Evidence, Mrs Helen Dalton MP, Member for Murray, 16 August 2023, p 7; Evidence, Mr Neil Bull, Community Member, p 14; Evidence, Mr Peter Redfearn, Community Member, 16 August 2023, p 16; Evidence, Ms Clare Martin, Community Member, 16 August 2023, pp 21, 22; Evidence, Ms Alison Glenn, Community Member, 16 August 2023, p 22; Public forum, Ms Sally Dye, 16 August 2023, pp 24, 29.

³⁶¹ Evidence, Mrs Helen Dalton MP, Member for Murray, 16 August 2023, pp 7, 10; Evidence, Mr Neil Bull, Community Member, pp 14, 29; Evidence, Mr Peter Redfearn, Community Member, 16 August 2023, p 15; Evidence, Ms Nicole Fitzpatrick, Community Member, 16 August 2023, pp 19-20; Public forum, Ms Sally Dye, 16 August 2023, pp 23-24, 29; Public forum, Ms Alleena Burger, 16 August 2023, p 26; Public forum, Mr Donald Bull, 16 August 2023, p 27; Public forum, Ms Ann Hare, 16 August 2023, pp 29-30

³⁶² Evidence, Mr Peter Redfearn, Community Member, 16 August 2023, pp 15, 17-18; Public forum, Mr Donald Bull, 16 August 2023, p 27; Public forum, Mr Neil Bull, 16 August 2023, p 29.

³⁶³ Evidence, Mr Terry Dodds, Chief Executive Officer, Murray River Council, 16 August 2023, p 2.

³⁶⁴ Evidence, Mrs Helen Dalton MP, Member for Murray, 16 August 2023, p 7.

³⁶⁵ Evidence, Ms Ann Hare, Community Member, 16 August 2023, pp 15-16; Evidence, Ms Nicole Fitzpatrick, Community Member, 16 August 2023, p 22.

³⁶⁶ Evidence, Ms Nicole Fitzpatrick, Community Member, 16 August 2023, p 19.

³⁶⁷ Evidence, Mr Matt Rowlands, Community Member, 16 August 2023, p 20.

Committee comment

- 3.77** The committee recognises that the VNI West project is in the early planning stage with public consultations currently taking place on the preferred corridor. We also note that the project is yet to receive approval.
- 3.78** The committee acknowledges the range of views expressed by inquiry participants about the VNI West project, including the consultation process to date, whether the project should be overhead or underground, and the impacts of VNI West on the region more broadly. We thank the community for bringing these issues to our attention.

Appendix 1 Submissions

No.	Author
1	Mr Richard Sharp
2	Mr Duncan Gidley-Baird
3	Mr Kenneth Barber
3a	Mr Kenneth Barber
4	Goulburn Mulwaree Council
5	Ms Mary-Jane Betts
6	Save Our Surroundings (SOS)
7	Mr Rodney Blundell
8	Mr John Mendl
9	Name suppressed
10	Name suppressed
11	Name suppressed
12	Mr Rick Campbell
13	Name suppressed
14	Mr Malcolm Ritter
15	Rodney McConnell
16	Mr Roy Currie
16a	Mr Roy Currie
17	Name suppressed
18	Douglas and Berlinde Rand
18a	Douglas and Berlinde Rand
19	Name suppressed
20	Mr John Glenn
21	Mr Kevin Parker
22	Ms Jan Joseland
23	Ms Robin Quilty
24	Mrs Jane Berry
25	Mrs Jan McGruer
26	Mr Jim Morgan
27	Andrew and Louise Sinca
28	Name suppressed
29	Professor Simon Bartlett
29a	Professor Simon Bartlett

No.	Author
29b	Professor Simon Bartlett
30	Mr David McGruer
31	Mr Peter Brunskill
32	Hon Wendy Tuckerman MP
33	Energy Grid Alliance
34	Ms Anne Hallard
35	Name suppressed
36	Strathvale Pastoral Company
37	Mr Peter Lees
38	Name suppressed
39	Mrs Lynette Heffernan
40	Name suppressed
41	Name suppressed
42	Nexa Advisory and Climate Energy Investor Group
43	NSW Farmers - Goulburn branch
44	RE-Alliance
45	Mr Andrew MacDougall
46	Hon Pru Goward AO
47	Name suppressed
48	Mr William Arthur
49	Mr Paul Hewitt
50	Name suppressed
51	Name suppressed
52	Name suppressed
53	Mrs Victoria Mendl
54	Mrs Cheryl Polonski
55	Name suppressed
56	Mrs Lorraine Sutton
57	Name suppressed
58	Name suppressed
59	Mr Ben Heij
60	Mr Christopher Bright
61	Name suppressed
62	Mr Russell Erwin
63	Mr Richard Strong

No.	Author
64	Mrs Melissa Noble
65	Mr Richard Breward
66	Mrs Janet Peel
67	Mr Ian Robson
68	Name suppressed
69	Mrs Rosemary Miller
69a	Mrs Rosemary Miller
69b	Mrs Rosemary Miller
70	Mr David Newbry
71	Name suppressed
72	Clare and John Seligman
73	Mr Ross Smith
74	Mr Scott Churchill
75	ReD4NE Inc.
76	Shana Nerenberg
77	Mrs Amanda Smith
78	Name suppressed
79	Mr Roger McLennan
80	Mrs Christine Rose
81	Jody McNally
82	Mrs Suzanne Bell
83	Name suppressed
84	Mr Peter Barratt
85	Mr Keith McGrath
86	Riverina Highlands Landcare Network
87	Kingston and District Power Alliance
88	Community Foundation for Tumut Region
89	EnergyAustralia
90	IAL Moloney
91	Name suppressed
92	Softwoods Working Group
93	Name suppressed
94	Community Power Agency
95	National Parks Association of NSW
96	Uarbry Tongy Lane Alliance Inc.

No.	Author
97	Cr Adrian Cameron
98	Mr Aaron Chatfield
99	Upper Lachlan Shire Council
100	Snowy Valleys Council
101	NSW Farmers Upper Lachlan Branch
102	Transgrid
103	Nature Conservation Council of NSW
104	Name suppressed
105	Name suppressed
106	HumeLink Alliance Incorporated
106a	HumeLink Alliance Incorporated
106b	HumeLink Alliance Incorporated
106c	HumeLink Alliance Incorporated
107	Australian Energy Infrastructure Commissioner
108	Community Consultation Group Representatives on the HumeLink Undergrounding Study Steering Committee (CCGSC)
109	Reiland Angus
110	Confidential
111	HumeLink United
111a	HumeLink United
112	Business Snowy Valleys
113	Iberdrola Australia Networks
114	Squadron Energy
115	Australian Pipelines and Gas Association
116	Batlow Community and Cultural Association Inc.
117	Dr Joe McGirr MP
118	Kevin and Virginia Hawke
119	Mrs Sandra Wood
120	Name suppressed
121	Mr Charlie Webb
122	Name suppressed
123	Mr Eddie Taylor
124	Mr George Papadopoulos
125	Mr James Morgan
126	Mr Jesse Rand
127	Mr Paul McMahan

No.	Author
128	Paul and Andrea Sturgess
129	Mr Phillip Price
130	Ms Esther Rand
131	Name suppressed
132	Name suppressed
133	Mr Stephen Philip
134	Mr Steven Clark
135	Name suppressed
136	Name suppressed
137	Name suppressed
138	Name suppressed
139	Kerry and Marlene Pearce
140	Name suppressed
141	Name suppressed
142	Name suppressed
143	Ms Susann Vetma
144	Name suppressed
145	Andrew Purcell
146	Angela Hawke
147	Ms Belinda Parker
148	Dr Clive Cawthorne
149	Dr John Peatfield
150	Ms Jocelyn Guy
151	Dr Richard Hayes
152	The Wilderness Society
153	Elizabeth Webster
154	Jon Price
155	Name suppressed
156	Name suppressed
157	Ms Hannah Speers
158	Name suppressed
159	Name suppressed
160	Name suppressed
161	Miss Kymberly Heffernan
162	Name suppressed

No.	Author
163	NSW Farmers' Association
164	Mr Alexander Tobin
165	Mr Andrew Hallard
166	Name suppressed
167	Mr Anthony McFadyen
168	Anthony and Suzanne Morrison
169	Mr Anthony Webb
170	Mr Barney Hyams
171	Mr Bill Johnson
172	Mr Blake Smith
173	Name suppressed
174	Name suppressed
175	Name suppressed
176	Mr Brian Cameron
177	Name suppressed
178	Mr Christopher Kingwill
179	Mr Cody Howe
180	Mr Colin Smith
181	Tess Dawson
182	Name suppressed
183	Name suppressed
184	Mr Geoff Casburn
185	Mr George Philip
186	Name suppressed
187	Mr Greg McGrath
188	Mr Harry Lucas
189	Name suppressed
190	Mr James Bell
191	Name suppressed
192	Mr John Brannan
193	Mr John McGrath
194	Name suppressed
195	Confidential
196	Name suppressed
197	Miss Heli Alkumaa

No.	Author
198	Stop Rethink HumeLink Campaign
198a	Stop Rethink HumeLink Campaign
198b	Stop Rethink HumeLink Campaign
199	Mr Michael Tobin
200	Mr Nigel Wood
201	Name suppressed
202	Mr Peter Lawson
203	Mrs Rachael Purcell
204	Name suppressed
205	Mr Raymond Billing
206	Mr Richard Martin
207	Mr Robert Ironside
208	100 percent Renewable Energy Group, School of Engineering, College of Engineering, Computing & Cybernetics, Australian National University
209	Name suppressed
210	Name suppressed
211	Name suppressed
212	Mr Thomas Henderson-Drife
212a	Mr Thomas Henderson-Drife
213	Mr Trevor Woolley
214	Mr William Reynolds
215	Mrs Christine Lucas
216	Mrs Annette Piper
217	Name suppressed
218	Mrs Cheryl Smith
219	Mrs Chris Shoemark
220	Name suppressed
221	Name suppressed
222	Name suppressed
223	Mrs Jennifer Dumbrell
224	Mrs Jessie Reynolds
225	Name suppressed
226	Mrs Lorraine Tobin
227	Name suppressed
228	Name suppressed
229	Susan Moore

No.	Author
230	Mr Warren Lowrey
231	Vivian Weatherall
232	Mark Boileau
233	City of Wagga Wagga
234	Confidential
235	Amplitude Consultants
236	NSW Aboriginal Land Council
237	Name suppressed
238	Mr Michael Kingwill
239	Renate Lunardello
240	Humelink Action Group
241	Name suppressed
242	Ms Amy Wyer
243	Ms Bethan David
244	Ms Donna Killeen
245	Ms Elizabeth Place
246	Ms Johanne Shepherd
247	Name suppressed
248	Ms Leeanne Dean
249	Ms Lorraine Veness
250	Ms Robyn Sweeney
251	Hills of Gold Preservation Inc
252	Name suppressed
253	Ms Susan Quinnell
255	Name suppressed
256	Rebecca Piper
257	Name suppressed
258	Jarrah Bousfield
259	Keith Bousfield
260	Mrs Jan Lucas
261	The Hon Thomas Hughes AO KC and Mrs Christine Hughes
262	Joan Brookes
263	Juliet Lockhart
264	Ann Cochrane
265	Gabrielle King

No.	Author
266	Corinda Weatherall
267	David J. and Kerry A. Campbell
268	Georgina Arthur
269	Janet Harwood
269a	Janet Harwood
270	Stuart and Donna Hackney, Bruce and Pam Davis, Anthony and Anne Jones
271	Victorian Farmers Federation
272	Mr Justin Wunsch
273	Gerald Conroy
274	Confidential
275	Pasture Agronomy Service
276	Confidential
277	Name suppressed
278	Confidential
279	Cr Julia Ham
280	Upper Lachlan Landcare
281	Mr Shaun Ryan
282	Drew Harris
283	Ann Hare
284	Kerri Redfearn
285	Helen Monk
286	Val and Rodney Dunn
287	Paul and Jenny Dunn
288	Ricegrowers Association of Australia
289	Peter Redfearn
290	Brett Dunn
291	R. B. Crawford
292	Matt Rowlands
293	Marcus and Bree Nalder
294	Ross and Clare Martin
295	Nicole Fitzpatrick
296	Alison and Robert Glenn
297	Allthread Industries
298	Specialist Tunnel Excavation
299	Murray River Council

No.	Author
300	Sally Dye
301	Name suppressed

Appendix 2 Witnesses at hearings

Date	Name	Position and Organisation
Tuesday 18 July 2023 Macquarie Room Parliament House, Sydney	Mr Michael Katz	Stop! Rethink Humelink
	Ms Andrea Strong	Stop! Rethink Humelink
	Mr Gary Dunnett	Chief Executive Officer, National Parks Association of NSW
	Mr Ted Woodley	Executive Committee, National Parks Association of NSW
	Ms Jacqui Mumford	Chief Executive Officer, Nature Conservation Council NSW
	Prof Andrew Dyer	Energy Infrastructure Commissioner, Energy Infrastructure Commission
	Mr Jim Cox	Acting Chair, Board of Directors, Australian Energy Regulator
	Mr Brett Redman	Chief Executive Officer, Transgrid
	Ms Marie Jordan	Executive General Manager - Network, Transgrid
Mr Jeremy Roberts	Major Project Delivery Director, Transgrid	
Wednesday 26 July 2023 Tumut Golf Club Fairway Drive, Tumut	Cr Julia Ham	Councillor, Snowy Valleys Council
	Cr Ian Chaffey	Mayor, Snowy Valleys Council
	Mr Peter Thompson	General Manager, Wagga Wagga City Council
	Mr Darryl Woods	Executive Manager, Major Projects, Wagga Wagga City Council
	Mr Les Brand	Director and Principal Consultant, Amplitude Consultants
	Mr Kenneth Barber	Director, Istana Park Pty Ltd
	Prof. Simon Bartlett AM	Independent expert
	Dr Joseph (Joe) McGirr MP	Member of the Legislative Assembly, Member for Wagga Wagga
	Mr Peter Brunskill	Private individual (<i>Public forum</i>)
Mr Philip Clements	Private individual (<i>Public forum</i>)	

Date	Name	Position and Organisation
	Mr Brad Dumbrel	Private individual (<i>Public forum</i>)
	Ms Louise Suzanne Freckelton	Private individual (<i>Public forum</i>)
	Mr Barney Hyams	Private individual (<i>Public forum</i>)
	Ms Anne Hallard	Private individual (<i>Public forum</i>)
	Mr Bill Kingwill	Private individual (<i>Public forum</i>)
	Ms Renate Lunardello	Private individual (<i>Public forum</i>)
	Ms Rachael Purcell	Private individual (<i>Public forum</i>)
	Ms Berlinde Rand	Private individual (<i>Public forum</i>)
	Ms Jessie Reynolds	Private individual (<i>Public forum</i>)
	Ms Andrea Strong	Private individual (<i>Public forum</i>)
	Mr Paul Sturgess	Private individual (<i>Public forum</i>)
	Ms Rebecca Tobin	Private individual (<i>Public forum</i>)
	Mr Chris Piper	Private individual (<i>Public forum</i>)
	Mr Peter Barratt	Private individual (<i>Public forum</i>)
	Mr Michael Kingwill	Private individual (<i>Public forum</i>)
	Mr Dave Purcell	Private individual (<i>Public forum</i>)
	Mr Jim Morgan	Private individual (<i>Public forum</i>)
	Mr Kenneth Barber	Private individual (<i>Public forum</i>)
Thursday 27 July 2023		
Auditorium, Armidale City		
Bowling Club		
92/96 Dumaresq St, Armidale		
	Dr John Peatfield	Deputy Chairman of ReD4NE, Responsible Energy for New England
	Mr Mark Fogarty	Director Bushticity and advisor to ReD4NE
	Cr Sam Coupland	Mayor, Armidale Regional Council
	Mr Daniel Boyce	Chief Officer Planning and Activation, Armidale Regional Council
	Cr Eric Noakes	Mayor, Walcha Council
	Ms Kate Jessep	General Manager, Uralla Shire Council
	Ms Toni Averay	Executive Director Infrastructure and Development, Uralla Shire Council
	Mr Jayson McKellar	Director Area Operations (Northern), Assistant Commissioner, Rural Fire Service

Date	Name	Position and Organisation
Tuesday 7 August 2023 Macquarie Room Parliament House, Sydney	Ms Marie Jordan	Executive General Manager of Network, Transgrid
	Mr Jeremy Roberts	Major Project Delivery Director, Transgrid
	Mr Jim Cox	Deputy Chair, Australian Energy Regulator
Wednesday 16 August 2023 Dunlop Room, Deniliquin RSL 72 End St, Deniliquin	Mr Terry Dodds	Chief Executive Officer, Murray River Council
	Mrs Helen Dalton MP	Member for Murray
	Ms Ann Hare	Private individual (<i>Public forum</i>)
	Mr Neil Bull	Private individual (<i>Public forum</i>)
	Mr Peter Redfearn	Private individual (<i>Public forum</i>)
	Mr R. B. (Bob) Crawford	Private individual (<i>Public forum</i>)
	Mr Matt Rowlands	Private individual (<i>Public forum</i>)
	Ms Clare Martin	Private individual (<i>Public forum</i>)
	Ms Nicole Fitzpatrick	Private individual (<i>Public forum</i>)
Ms Alison Glenn	Private individual (<i>Public forum</i>)	

Appendix 3 Minutes

Minutes no. 2

Thursday 22 June 2023

Standing Committee on State Development

Room 1136, Parliament House, Sydney at 12.40 pm

1. Members present

Ms Suvaal (*Chair*)

Mr Farraway (*Deputy Chair*)

Mr Buttigieg

Ms Faehrmann

Ms Hurst

Mr Lawrence

Mrs MacDonald (substituting for Mr Martin)

Mr Primrose

2. Previous minutes

The committee noted that draft minutes no. 1 were confirmed via email on 1 June 2023, as per a previous resolution of the committee.

3. Correspondence

The committee noted the following items of correspondence:

Received

- 19 June 2023 – Letter to the Hon Emily Suvaal MLC, Chair, Standing Committee on State Development from the Hon Penny Sharpe MLC, Minister for Climate Change, Minister for Energy, Minister for the Environment, Minister for Heritage, Leader of the Government in the Legislative Council, requesting the committee to consider terms of reference for an inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects.
- 21 June 2023 – Letter from the Hon Adam Marshall MP, Member for Northern Tablelands to the Hon Emily Suvaal MLC, Chair, Standing Committee on State Development, requesting that the committee visit the Northern Tablelands Electorate as part of its inquiry into undergrounding the transmission infrastructure for renewable energy projects.

4. Consideration of ministerial terms of reference

The Chair tabled the following terms of reference received from the Hon Penny Sharpe MLC, Minister for Climate Change, Minister for Energy, Minister for the Environment, Minister for Heritage, Leader of the Government in the Legislative Council on 19 June 2023:

1. That the Legislative Council Standing Committee on State Development inquire into and report on the feasibility of undergrounding the transmission infrastructure for renewable energy projects, with particular reference to:
 - a) the costs and benefits of undergrounding,
 - b) existing case studies and current projects regarding similar undergrounding of transmission lines in both domestic and international contexts,
 - c) any impact on delivery timeframes of undergrounding, and
 - d) any environmental impacts of undergrounding.
2. The Committee report on its findings by 31 August 2023.

Resolved, on the motion of Mr Primrose: That the committee adopt the terms of reference.

5. Conduct of the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

5.1 Proposed timeline

Resolved, on the motion of Ms Faehrmann: That the committee adopt the following timeline for the administration of the inquiry:

- Friday 14 July 2023 – closing date for submissions
- Weeks of 17 – 28 July 2023 – site visits to Wagga Wagga and Northern Tablelands
- Weeks of 17 – 28 July 2023 – Three hearings be held, one in Wagga Wagga, one in the Northern Tablelands and one at Parliament House, Sydney
- Week of 21 August 2023 – circulation of Chair's draft report
- Monday 28 August 2023 – Report deliberative
- Thursday 31 August 2023 – Tabling of report.

5.2 Stakeholder list

Resolved, on the motion of Mr Buttigieg: That the secretariat circulate to members the Chairs' proposed list of stakeholders to provide them with the opportunity to amend the list or nominate additional stakeholders, and that the committee agree to the stakeholder list by email, unless a meeting of the committee is required to resolve any disagreement.

5.3 Chair's draft report

Resolved, on the motion of Mr Buttigieg: That the Chair's draft report be circulated to members late in the week commencing Monday 21 August 2023 ahead of the report deliberative on Monday 28 August 2023.

5.4 Approach to submissions

Resolved, on the motion of Ms Hurst: That, to enable significant efficiencies for members and the secretariat while maintaining the integrity of how submissions are treated, in the event that 200 or more individual submissions are received, the committee may adopt the following approach to processing short submissions:

- All submissions from individuals 250 words or less in length will:
 - have an individual submission number, and be published with the author's name or as name suppressed, or kept confidential, according to the author's request
 - be reviewed by the secretariat for adverse mention and sensitive/identifying information, in accordance with practice
 - be channelled into one single document to be published on the inquiry website.
- All other submissions will be processed and published as normal.

5.5 Advertising

The committee noted that all inquiries are advertised via Twitter, Facebook, stakeholder emails and a media release distributed to all media outlets in New South Wales.

6. Adjournment

The committee adjourned at 12.57pm, *sine die*.

Stephen Fujiwara
Committee Clerk

Minutes no. 4

Tuesday 18 July 2023

Standing Committee on State Development

Macquarie Room, Parliament House, Sydney at 9.48 am

1. Members presentMs Suvaal, *Chair*

Mr D'Adam (substituting for Mr Buttigieg until 1.45 pm)

Ms Faehrmann (until 3.45 pm)

Mr Fang (substituting for Mr Farraway for the duration of the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects)

Ms Hurst

Mr Lawrence

Mr Martin

Mr Nanva (substituting for Mr Primrose until 3.45 pm)

2. Previous minutes

Resolved, on the motion of Ms Hurst: That draft minutes no. 3 be confirmed.

3. Correspondence

The committee noted the following items of correspondence:

Received

- 20 June 2023 – Email from Paul Purcell, Corporate Affairs Manager, Australian Pipelines & Gas Association, to the Chair, regarding the use of hydrogen gas for transporting renewable energy, and offering to provide a briefing to the committee
- 26 June 2023 – Email from the Office of the Hon Chris Rath MLC, Opposition Whip to secretariat, advising that the Hon Wes Fang MLC will be substituting for the Hon Sam Farraway MLC for the duration of the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects
- 10 July 2023 – Email from Lynette LaBlack, individual to committee, requesting an extension to lodge a submission and requesting that the committee hold a hearing in south west NSW
- 11 July 2023 – Email from Nick Savage, Policy Director – Environment, NSW Farmers, to secretariat, advising that NSW Farmers will be unable to attend the hearing on 18 July 2023 for the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects, and inquiring as to whether NSW Farmers can instead appear via video at one of the off-site hearings
- 12 July 2023 – Email from Georgia Webster, General Manager, Farmer for Climate Action to secretariat, advising the group is unable to attend the hearing on 18 July 2023 for the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects
- 13 July 2023 – Email from Witness X to secretariat, requesting that Witness X appear in camera at the hearing on 18 July 2023 for the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects
- 13 July 2023 – Email from Vicki Johnson, Vice Chair, Moorabool and Central Highlands Power Alliance Inc., to secretariat, requesting an extension to lodge a submission
- 17 July 2023 – Email from Sarah Hudson, A/Manager, Strategy and Policy, NSW Aboriginal Land Council (NSWALC), advising that they are not able to send a representative to the hearing on 18 July 2023 for the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects
- 17 July 2023, Email from Tim Smith OAM, Director, Assessments, Heritage NSW, Department of Planning and Environment, advising that they are not able to send a representative to the hearing on 18 July 2023 for the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects.

Sent

- 29 June 2023 – Email from secretariat to the Hon Adam Marshall MP, Member for Northern Tablelands, advising that the committee have resolved to visit the Northern Tablelands electorate as part of its inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects
- 12 July 2023 – Email from secretariat to Lynette LaBlack, individual, granting an extension until 19 July 2023 to lodge a submission to the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects
- 13 July 2023 – Email from secretariat to Vicki Johnson, Vice Chair, Moorabool and Central Highlands Power Alliance Inc., granting an extension until 19 July 2023 to lodge a submission to the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

4. Election of Deputy Chair

The Chair noted the absence of the Deputy Chair for the meeting and for the meetings on 26 and 27 July 2023.

The Chair called for nominations for a member to act as Deputy Chair for the purpose of the meeting and for the meetings on 26 and 27 July 2023.

Mr Martin moved: That Mr Martin be elected Deputy Chair of the committee for the purpose of the meeting and for the meetings on 26 and 27 July 2023.

There being no further nominations, the Chair declared Mr Martin elected Deputy Chair for the purpose of the meeting and for the meetings on 26 and 27 July 2023.

5. Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects**5.1 Public submissions**

The committee noted that submissions nos. 1-3, 3a, 4, 6-8, 12, 14-16, 18, 20-27, 29-33, 34, 37, 39, 42-49, 53-56, 59, 60, 62-67, 69, 70, 95, 102, 103 and 107 were published by the Committee Clerk under the resolution appointing the committee.

5.2 Partially confidential submissions

Resolved, on the motion of Mr Martin: That the committee keep the following information confidential, as per the request of the author: names and/or identifying and sensitive information in submissions nos. 9-11, 13, 17, 19, 28, 35, 38, 40, 41, 50-52, 57, 58, 61, and 68.

5.3 Charter flight travel

Resolved, on the motion of Mr Lawrence: That the committee authorise the engagement of a charter plane for its regional visit to Tumut and Armidale on 26 and 27 July 2023 at a cost of \$29,400.

5.4 Site visit itinerary and hearing schedules – Tumut and Armidale

Resolved, on the motion of Ms Faehrmann: That the committee adopt the itineraries and witness lists for the site visits and hearings in Tumut and Armidale on Wednesday 26 and Thursday 27 July 2023, including a public forum in Tumut on Wednesday 26 July 2023, noting that times and witnesses may change depending on availability.

5.5 Invitation to Aboriginal Land Councils to public forum and public hearing

Resolved, on the motion of Ms Hurst: That the committee invite the relevant local Aboriginal Land Councils to attend the public forum in Tumut on Wednesday 26 July and the public hearing in Armidale on Thursday 27 July.

5.6 In camera hearing

Resolved, on the motion of Ms Hurst: That the committee agree to the request from Witness X to provide evidence *in camera*.

5.7 Timeframe for answers to questions on notice and supplementary questions

The committee noted that due to the short timeframe between the return of the transcript for today's hearing and drafting the report for the deliberative, it may be unlikely for any written responses received in relation to questions on notice/supplementary questions to be included in the final report.

Resolved, on the motion of Mr Lawrence: That:

- members provide any supplementary questions to the secretariat within 24 hours of receiving the transcript of evidence
- witnesses be required to provide answers to questions on notice/supplementary questions within 7 days.

5.8 Public hearing

The committee noted that, unless the committee decides otherwise, the sequence of questions to be asked at hearings is to alternate between opposition, crossbench and government members, in that order, with equal time allocated to each.

Witnesses, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were sworn and examined:

- Mr Michael Katz, Stop! Rethink Humelink
- Ms Andrea Strong, Stop! Rethink Humelink

Ms Strong tendered the following document: Humelink project HVDC cable diagram.

Mr Katz tendered the following document: Tower diagram.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Mr Gary Dunnett, Chief Executive Officer, National Parks Association of NSW
- Mr Ted Woodley, Executive Committee, National Parks Association of NSW
- Ms Jacqui Mumford, Chief Executive Officer, Nature Conservation Council NSW

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Professor Andrew Dyer, Energy Infrastructure Commissioner, Energy Infrastructure Commission
- Mr Jim Cox, Acting Chair, Board of Directors, Australian Energy Regulator

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Mr Brett Redman, Chief Executive Officer, Transgrid
- Ms Marie Jordan, Executive General Manager - Network, Transgrid
- Mr Jeremy Roberts, Major Project Delivery Director, Transgrid

The evidence concluded and the witnesses withdrew.

The public hearing concluded at 3.45 pm. The public and the media withdrew.

Resolved, on the motion of Mr Lawrence: That the committee proceed to take evidence *in camera*.

The committee proceeded to take *in camera* evidence.

Persons present other than the committee: Madeleine Foley, Stephen Fujiwara, Arizona Hart, Gareth Perkins, Robin Howlett, Hansard reporters and audio-visual broadcast operators.

The evidence concluded and the witnesses withdrew.

Tendered documents

Resolved, on the motion of Mr Fang: That the committee accept and publish the following documents tendered during the public hearing:

- Humelink project HVDC cable diagram, tendered by Ms Andrea Strong
- Tower diagram, tendered by Mr Michael Katz.

6. Adjournment

The committee adjourned at 4.26 pm until Friday 21 July 2023.

Arizona Hart

Committee Clerk

Minutes no. 6

Wednesday 26 July 2023

Standing Committee on State Development

Execujet Terminal, 394 Ross Smith Ave, Mascot at 6.00 am

1. Members present

Ms Suvaal, *Chair*

Mr Donnelly (from 12.47 pm, substituting for Mr Primrose via Webex)

Ms Susan Carter (from 1.00 pm until 5.16 pm, substituting for Mr Martin via Webex)

Ms Fachrmann

Mr Fang (from 8.30 am)

Ms Hurst (via Webex from 12.47 pm to 12.59 pm)

Dr Kaine (from 12.47 pm, substituting for Mr Buttigieg via Webex)

Mr Lawrence

Mr Tudehope (via Webex from 12.47 pm to 12.59 pm, substituting for Mr Martin for the duration of the inquiry into the Debt Retirement Fund)

2. Previous minutes

Resolved, on the motion of Mr Fang: That draft minutes no. 5 be confirmed.

3. Correspondence

The committee noted the following items of correspondence:

Received

- 24 July 2023 – Email from Mr Ted Woodley, Executive Committee, National Parks Association of NSW to committee, attaching responses to evidence given by Transgrid
- 24 July 2023 – Email from Mr William Jennings, Research Officer, Office of Dr Joe McGirr MP, Member for Wagga Wagga, advising of attendance of community members at site visits on Wednesday 26 July 2023
- 24 July 2023 – Email from Ms Lisa Williams, Senior Electorate Officer, Northern Tablelands Electorate, declining invitation to attend the public hearing on Thursday 27 July on behalf of Mr Adam Marshall MP
- 24 July 2023 – Email from Ms Julie Rogers, Director Planning & Environment, Yass Valley Council, declining invitation to attend the public hearing on Wednesday 26 July 2023
- 25 July 2023 – Email from Dianne James, Upper Lachlan Shire Council, to secretariat, declining invitation to attend the public hearing on Wednesday 26 July 2023.

4. Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

4.1 Tumut site visit

Resolved, on the motion of Mr Fang: That the committee authorise Dr Joe McGirr MP, Member for Wagga Wagga and any other relevant persons to accompany the committee on the bus to the properties of Mr Peter Lawson and Ms Pippa Quilty.

The committee visited agricultural properties in Book Book and Darlow led by Dr Joe McGirr and Mr William Jennings.

The committee met with the following stakeholders on the site visits:

- Peter Lawson
- Malcolm, Craig and Kerrie Plum
- Jim Morgan
- Leanne Rogers
- Lachlan Brown
- Mark Lucas
- Paul and Robin Quilty
- Ian and Donna Robson
- David Whiteman
- Rebecca Tobin
- Andrew MacDougall
- Jess Reynolds
- Andrea Strong.

5. Inquiry into the Debt Retirement Fund

Mr Tudehope joined the meeting.

Ms Hurst joined the meeting.

5.1 Supplementary questions to NSW Treasury

Mr Fang moved: That the following supplementary questions be sent to NSW Treasury:

1. Does TCorp issue bonds?
2. What impact would a reduction of gross debt have on the value of TCorp-issued bonds?
3. How would holders of TCorp-issued bonds benefit from a change in the value of those bonds?
4. Mr Christopher Joye proposes in his submission to this inquiry that besides using all the funds in the DRF for “aggressive debt reduction”, “There is more than \$10 billion in other special TCorp investment funds that” Treasury “could also use to help cauterise the state’s fiscal crisis”. Which funds could Joye be referring to?
5. Is Treasury considering using monies from the NSW Infrastructure Future Fund, the Social and Affordable Housing Future Fund or any other “special TCorp investment funds” for “aggressive debt reduction”?
6. Treasury submission, Attachment B Relevant Credit Opinions and Research Reports, Item 2, is the latest commentary from S&P, dated 27 March 2023. It mentions just one risk to the AA+ credit rating – the risk from “higher overall spending on public sector wages” calling into question “the quality of the state’s financial management”. What steps is Treasury taking to avoid this risk to our credit rating?
7. In Treasury’s submission, it identifies three metrics to consider for further contributions to the DRF - Net Lending/Borrowing, Budget Result or Net Cash Operating Balance. Which of these three metrics does Treasury recommend the Government adopt?
8. Is there a registry of bond-holders for all TCorp-issued bonds?
9. Where can this registry be found?
10. Does Coolabah Capital Investments own or invest in TCorp-issued bonds?

11. Has Treasury been directed or requested to prepare any briefing notes or memos Treasury that includes references to changes to the NSW Generations Fund Act 2018 or any other legislation that would affect the Debt Retirement Fund?
12. Is any work underway within Treasury that would involve changes to the NSW Generations Fund Act 2018 or any other legislation that would affect the Debt Retirement Fund?
13. Please provide a list of all payments into the Debt Retirement Fund and out of the Debt Retirement Fund by date, specifying the nature of each payment.
14. Who can authorise a payment into the Debt Retirement Fund and under what circumstances?
15. When did NSW Treasury ask EY Port Jackson Partners to advise on a possible framework to guide when additional contributions should be made to the NSW Generations Fund? Please provide all correspondence between NSW Treasury and EY Port Jackson Partners relating to this report.

Mr Lawrence moved: That Mr Fang's motion be amended by omitting questions 1 to 6, 8, 9 and 15.

Amendment of Mr Lawrence put.

The committee divided.

Ayes: Mr Donnelly, Ms Faehrmann, Dr Kaine, Mr Lawrence, Ms Suvaal.

Noes: Mr Fang, Ms Hurst, Mr Tudehope.

Amendment of Mr Lawrence resolved in the affirmative.

Original question of Mr Fang as amended put and passed.

Mr Tudehope left the meeting.

Ms Hurst left the meeting.

6. Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

6.1 Timeframe for answers to questions on notice and supplementary questions

Resolved, on the motion of Mr Fang: That:

- members provide any supplementary questions to the secretariat within 24 hours of receiving the transcript of evidence
- witnesses be required to provide answers to questions on notice/supplementary questions within 7 days.

6.2 Format of public forum

Resolved, on the motion of Ms Faehrmann: That each public forum speaker be allocated three minutes to address the committee, with a bell to sound at the conclusion of three minutes.

6.3 Public hearing

Sequence of questions

Resolved, on the motion of Mr Fang: That the sequence of questions to be asked at the hearings on 26 and 27 July 2023 are to alternate between opposition, crossbench and government members, in that order, with equal time allocated to each.

Witnesses, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were sworn and examined:

- Cr Julia Ham, Snowy Valleys Council
- Cr Ian Chaffey, Mayor, Snowy Valleys Council
- Cr James Hayes, Snowy Valleys Council

- Mr Peter Thompson, General Manager, Wagga Wagga City Council
- Mr Darryl Woods, Executive Manager, Major Projects, Wagga Wagga City Council.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Mr Les Brand, Director and Principal Consultant, Amplitude Consultants
- Mr Kenneth Barber, Director, Istana Park Pty Ltd
- Prof. Simon Bartlett AM, Independent expert.

The evidence concluded and the witnesses withdrew.

The hearing concluded at 3.20 pm to allow for a public forum.

6.4 Public forum

The Chair made an opening statement regarding the broadcasting of proceedings, guidelines for the public forum and other matters.

The following participants addressed the committee:

- Peter Brunskill
- Philip Clements
- Brad Dumbrel
- Louise Suzanne Freckelton
- Barney Hyams
- Anne Hallard
- Bill Kingwill
- Renate Lunardello
- Rachael Purcell
- Berlinde Rand
- Jessie Reynolds
- Andrea Strong
- Paul Sturgess
- Rebecca Tobin
- Chris Piper
- Peter Barratt
- Michael Kingwill
- Dave Purcell
- Jim Morgan
- Kenneth Barber

The evidence concluded and the participants withdrew.

6.5 Public hearing resumed

The public hearing resumed at 5.10 pm.

The Chair noted that Members of Parliament swear an oath to their office, and therefore do not need to be sworn prior to giving evidence before a committee.

Dr Joseph (Joe) McGirr MP, Member for Wagga Wagga was admitted and examined.

The evidence concluded and the witness withdrew.

The public hearing concluded at 5.37 pm.

Tendered documents

Resolved, on the motion of Mr Fang:

- That the committee accept and publish the submission from Mr Mark Lucas, tendered during the site visit in Book Book
- That the Chair table in the House the petition tendered by Mr William (Bill) Kingwill during the public forum, subject to advice from the Clerk.

6.6 Public submissions

The committee noted that submission nos. 5, 16a, 69a, 109, 111-116, 118-119, 121, 123-130, 133-134, 139, 143, 145-153, 157, 161, 163-165, 167-172, 176, 178-179, 192-193, 198-200, 202-203, 205-208, 212-216, 218-219, 223-224, 226, 230-232, 233 and 235-236 were published by the Committee Clerk under the resolution appointing the committee.

6.7 Partially confidential submissions

Resolved, on the motion of Mr Fang: That the committee keep the following information confidential, as per the request of the author: names and/or identifying and sensitive information in submissions nos. 105, 120, 122, 131-132 135-138, 140-142, 144, 155-156, 158-160, 162, 166, 173-175, 177, 191, 194, 196, 201, 204, 209-211, 217, 220-222, 225, 227-228 and 237.

6.8 Additional witness for Armidale hearing

Resolved, on the motion of Mr Lawrence: That the committee invite representatives from Uarbry Tongy Lane Alliance to give evidence at the public hearing in Armidale on 27 July 2023.

6.9 Adjournment

The committee adjourned at 5.46 pm, until 6.30 am, Thursday 27 July 2023 (regional public hearing – Armidale).

Stephen Fujiwara
Committee Clerk

Minutes no. 7

Thursday 27 July 2023

Standing Committee on State Development

Auditorium, Armidale City Bowling Club, 92/96 Dumaresq St, Armidale at 10.20 am

1. Members present

Ms Suvaal, *Chair*

Mr Buttigieg (via Webex)

Ms Faehrmann

Mr Fang

Mr Lawrence

Ms MacDonald (substituting for Mr Martin)

Mr Murphy (substituting for Mr Primrose via Webex)

2. Apologies

Ms Hurst

3. Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects**3.1 Public hearing**

Witnesses, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were sworn and examined:

- Dr John Peatfield, Deputy Chairman, Responsible Energy for New England, (ReD4NE)
- Mr Mark Fogarty, Director Bushtricity and advisor to ReD4NE
- Mr Grant Piper, President, Uarbry Tongy Lane Alliance.

Mr Grant Piper tendered the following documents:

- Three maps relating to proposed transmission lines.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Cr Sam Coupland, Mayor, Armidale Regional Council
- Mr Daniel Boyce, Chief Officer Planning and Activation, Armidale Regional Council
- Cr Eric Noakes, Mayor, Walcha Council
- Ms Kate Jessep, General Manager, Uralla Shire Council
- Ms Toni Averay, Executive Director Infrastructure and Development, Uralla Shire Council.

The evidence concluded and the witnesses withdrew.

The following witness was sworn and examined:

- Mr Jayson McKellar, Director Area Operations (Northern), Assistant Commissioner, Rural Fire Service.

The evidence concluded and the witness withdrew.

Hon Aileen MacDonald MLC tabled the following document:

- Australian Energy Market Operator Limited, 2021 Transmission Cost Report Final Report for the Integrated System Plan (ISP) August 2021.

The public hearing concluded at 12.30 pm.

Tendered documents

Resolved, on the motion of Mr Fang: That the committee accept and publish the following documents tendered during the public hearing:

- Three maps relating to proposed transmission lines tendered by Mr Grant Piper, President, Uarbry Tongy Lane Alliance.
- Australian Energy Market Operator Limited, 2021 Transmission Cost Report Final Report for the Integrated System Plan (ISP) August 2021 tabled by the Hon Aileen MacDonald MLC.

3.2 Written questions to the Australian Energy Regulator

Resolved, on the motion of Mr Murphy:

That the committee write to Mr Jim Cox PSM, Deputy Chair, Australian Energy Regulator seeking responses to additional questions as provided to the secretariat via email.

3.3 Further hearing

Resolved, on the motion of Mr Murphy:

- That the committee hold a further hearing, in the afternoon on 8 August 2023 with Transgrid invited to appear before the committee.

4. Adjournment

The committee adjourned at 12.50 pm, Thursday 27 July 2023 until Tuesday 8 August 2023, TBC, Parliament House, (public hearing – feasibility of undergrounding the infrastructure transmission for renewable energy projects).

Luke Hollands
Committee Clerk

Minutes no. 8

Monday 7 August 2023
 Standing Committee on State Development
 Macquarie Room, Parliament House, Sydney at 1.50 pm

1. Members present

Ms Suvaal, *Chair*
 Mr Buttigieg
 Ms Faehrmann (until 4.58 pm)
 Mr Fang (via Webex until 4.58 pm)
 Ms Hurst
 Mr Lawrence
 Mr Martin (until 3.15 pm)
 Mr Primrose

2. Previous minutes

Resolved, on the motion of Mr Lawrence: That draft minutes nos. 6 and 7 be confirmed.

3. Correspondence

The committee noted the following items of correspondence:

Received

- 26 July 2023 - Email from Mr Michael Katz, Stop, Rethink Humelink, to the secretariat, providing a supplementary submission
- 26 July 2023 - Email from Ms Maheshini (Mesh) Weerackoon, GM Networks Regulation & Connections, Iberdrola Australia Networks, to the secretariat, requesting the committee publish attachment to the Iberdrola Australia Networks submission (submission number 113)
- 26 July 2023 - Emails from Ms Pippa Quilty, to the secretariat, providing photographs of transmission infrastructure and annotations regarding impacts
- 31 July 2023 - Email from Cr James Hayes OAM, Councillor, Snowy Valleys Council, to the secretariat, providing photos of a fire caused by 132 kv transmission lines he attended at Gilmore, near Visy Pulp and Paper, on 4 January 2018
- 2 August 2023 – Email from Ms Rhiannon Heath, Policy Advisor – Environment, NSW Farmers, to the secretariat, requesting to appear before the committee at the next hearing date in Sydney
- 4 August 2023 – Email from Mr Douglas Rand, to the committee, providing a supplementary submission
- 4 August 2023 – Email from Mr Ted Woodley, to the secretariat, providing a short document entitled 'Further issues for the NSW Legislative Council inquiry', and inquiring about the publication of his prior correspondence
- 5 August 2023 – Email from Hannah Gustavson, Project Manager, Stride Renewables, requesting permission for Allthread industries to make a late submission to the inquiry.

Resolved, on the motion of Ms Faehrmann: That the committee authorise the publication of:

- supplementary submission from Mr Michael Katz, Stop Rethink Humelink, dated 26 July 2023
- attachment to submission 113 from Iberdrola Australia Networks, as per request of the author, dated 26 July 2023

- supplementary submission from Mr Douglas Rand, dated 4 August 2023
- documents provided by Mr Ted Woodley on 4 August and 24 July 2023.

4. Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

4.1 Public submissions

The committee noted that the following submissions were published by the committee clerk under the authorisation of the resolution appointing the committee: submission nos. 36, 69b, 106a, 111a, 154, 180, 181, 184, 185, 187, 188, 190, 197, 229, 238, 242, 243, 244, 245, 248, 249, 250, 251, 253, 256, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 269a, 270, 271, 272, 273, 275, 279, 280 and 281.

4.2 Partially confidential submissions

Resolved, on the motion of Mr Lawrence: That the committee keep the following information confidential, as per the request of the author: names and/or identifying and sensitive information in submissions nos. 104, 182, 183, 186, 189, 241, 246, 247, 252, 255, 257, 277.

4.3 Confidential submissions

Resolved, on the motion of Mr Buttigieg: That the committee keep submission 234 confidential, as per the recommendation of the secretariat, as it contains potential adverse mention.

Resolved, on the motion of Mr Lawrence: That the committee keep submission nos. 110, 195, 274, 276, 278 confidential, as per the request of the author.

4.4 Documents tendered during public forum – Tumut – 26 July 2023

Resolved, on the motion of Mr Primrose: That the committee accept and not publish the document tendered by Ms Renate Lunardello during the public forum held on 26 July 2023 in Tumut, as per the recommendation of the secretariat, as it is not a public document and was not provided in full.

4.5 Answers to questions on notice and supplementary questions – responses received

The committee noted that the following answers to questions on notice and supplementary questions were published by the committee clerk under the authorisation of the resolution appointing the committee:

- Office of the Australian Energy Infrastructure Commissioner (AEIC), received on 28 July 2023
- Transgrid, received on 28 July 2023
- Australian Energy Regulator (AER), received on 1 August 2023
- Mr Michael Katz, Stop Rethink Humelink, received on 3 August 2023
- Ms Andrea Strong, Stop, Rethink HumeLink, received on 4 August 2023.

4.6 Answers to questions on notice and supplementary questions - time frame for further responses

The committee noted that due to the short timeframe between the return of the transcripts and drafting the report for the deliberative, it may be unlikely for any written responses received in relation to questions on notice/supplementary questions to be included in the final report.

Resolved, on the motion of Ms Hurst: That:

- members provide any supplementary questions to the secretariat within 24 hours of receiving the transcript of evidence
- witnesses be required to provide answers to questions on notice/supplementary questions within 3 days.

4.7 Hearing date

The committee noted that it previously agreed via email to bring forward the date of the hearing proposed for Tuesday 8 August 2023 to Monday 7 August 2023, with Transgrid invited as a witness.

4.8 Additional witnesses

The committee noted that it previously agreed via email to invite the Australian Energy Regulator to appear to give evidence at a public hearing on Monday 7 August 2023.

4.9 Scheduling of report deliberative

The committee noted that it previously resolved to hold a deliberative meeting to consider the Chair's draft report on Monday 28 August 2023.

Resolved, on the motion of Ms Faehrmann: That the committee conduct a report deliberative at 10.00 am on Monday 28 August 2023, to consider the Chair's draft report for the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects.

4.10 Public hearing

Sequence of questions

Resolved, on the motion of Ms Faehrmann: That the sequence of questions to be asked at the hearing on 7 August 2023 are to alternate between opposition, crossbench and government members, in that order, with equal time allocated to each.

Witnesses, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were examined on their former oath:

- Ms Marie Jordan, Executive General Manager – Network, Transgrid
- Mr Jeremy Roberts, Major Project Delivery Director, Transgrid

Ms Jordan tendered the following documents:

- National Grid UK 400kV double circuit (DCCT) pictorial example
- Photo – Nordlink cable feeder
- Photo – Suedlink excavation cable trench for the 525kV DCCT DC
- Photo – Nordlink excavation cable trench for the 525kV single circuit (SCCT) DC
- Photo – Suedlink excavation

Mr Martin left the meeting.

The evidence concluded and the witnesses withdrew.

The following witness was examined on his former oath:

- Mr Jim Cox, Deputy Chair, Australian Energy Regulator

The evidence concluded and the witness withdrew.

The public hearing concluded at 4.58 pm. The public and the media withdrew.

Mr Fang and Ms Faehrmann left the meeting.

Tendered documents

Resolved, on the motion of Mr Buttigieg: That the committee accept and publish the following documents tendered during the public hearing, subject to the secretariat confirming with Transgrid that they have no objections to them being published:

- National Grid UK 400kV double circuit (DCCT) pictorial example
- Photo – Nordlink cable feeder
- Photo – Suedlink excavation cable trench for the 525kV DCCT DC
- Photo – Nordlink excavation cable trench for the 525kV single circuit (SCCT) DC
- Photo – Suedlink excavation

5. Inquiry into the Debt Retirement Fund

5.1 Scheduling of report deliberative

The committee noted that it previously resolved to hold a deliberative meeting to consider the Chair's draft report on Tuesday 15 August 2023.

Resolved, on the motion of Ms Hurst: That the committee conduct a report deliberative at 11.00 am on Tuesday 15 August 2023, to consider the Chair's draft report for the inquiry into the Debt Retirement Fund.

6. Adjournment

The committee adjourned at 5.03 pm until 11.00 am, Tuesday 15 August 2023 (report deliberative - inquiry into the Debt Retirement Fund).

Arizona Hart

Committee Clerk

Minutes no. 10

Wednesday 16 August 2023

Standing Committee on State Development – sub-committee

Dunlop Room, Deniliquin RSL, 72 End St, Deniliquin at 10.03 am

1. Members present

Ms Suvaal, Chair

Mrs Carter (substituting for Mr Martin)

Ms Faehrmann

Mr Fang

Mr Primrose (via Webex, from 10.15 am)

(meeting as a sub-committee)

2. Apologies

Mr Buttigieg

Ms Hurst

Mr Lawrence

3. Correspondence

The sub-committee noted the following items of correspondence:

Received

- 9 August 2023 – Email from Mr Ted Woodley to committee, providing questions for Transgrid following the hearing on 7 August 2023, including attachment.

Resolved, on the motion of Mrs Carter: That the committee authorise the publication of the correspondence from Mr Ted Woodley received on 9 August 2023, including attachment.

4. Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects.

4.1 Public submissions

The sub-committee noted that the following submissions were published by the committee clerk under the authorisation of the resolution appointing the committee: submission nos. 29a, 29b, 106b, 106c, 198b, 282-298 and 299.

4.2 Answers to questions on notice and supplementary questions

The sub-committee noted that the following answers to questions on notice and supplementary questions were published by the committee clerk under the authorisation of the resolution appointing the committee:

- answers to supplementary questions from Mr Les Brand, Director and Principal Consultant, Amplitude Consultants received on 7 August 2023

- answers to supplementary questions from Mr Kenneth Barber, Director, Istana Park Pty Ltd received on 7 August 2023
- answers to supplementary questions from Professor Simon Bartlett, Independent expert received on 7 August 2023.

4.3 Timeframe for answers to questions on notice and supplementary questions

The sub-committee noted that there is insufficient time for answers to questions on notice or answers to supplementary questions from the hearing on Wednesday 16 August 2023 to be incorporated into the report.

Resolved, on the motion of Mrs Carter: That:

- witnesses for the hearing on Wednesday 16 August 2023 not be required to provide answers to questions on notice, and
- members will not submit supplementary questions to witnesses appearing at the hearing on Wednesday 16 August 2023.

4.4 Timeframe for transcript corrections

The sub-committee noted that there is limited time for evidence from the hearing on Wednesday 16 August 2023 to be incorporated into the report.

Resolved, on the motion of Ms Faehrmann: That witnesses for the hearing on Wednesday 16 August 2023 be given three days from receipt to provide corrections to the transcript.

4.5 Format of public forum

Resolved, on the motion of Ms Faehrmann: That each public forum speaker be allocated five minutes to address the sub-committee.

4.6 Public hearing

Sequence of questions

Resolved, on the motion of Ms Faehrmann: That for the hearing on 16 August 2023:

- the sequence of questions to be asked to Mrs Helen Dalton MP is to alternate between opposition, crossbench and government members, in that order, with equal time allocated to each
- the timing of questioning for other sessions be left in the hands of the Chair.

Witnesses, the public and the media were admitted.

Mr Primrose joined the meeting.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witness was sworn and examined:

- Mr Terry Dodds PSM, Chief Executive Officer, Murray River Council

The evidence concluded and the witness withdrew.

The Chair noted that Members of Parliament swear an oath to their office, and therefore do not need to be sworn prior to giving evidence before a committee.

Mrs Helen Dalton MP, Member for Murray, was admitted and examined.

The evidence concluded and the witness withdrew.

The following witnesses were sworn and examined:

- Ms Ann Hare
- Mr Neil Bull
- Mr Peter Redfearn
- Mr R. B. (Bob) Crawford
- Mr Matt Rowlands

- Ms Clare Martin
- Ms Nicole Fitzpatrick
- Ms Alison Glenn

Mr R. B. (Bob) Crawford tendered the following document:

- An updated submission to the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects.

The evidence concluded and the witness withdrew.

The hearing concluded at 12.30 pm to allow for a public forum.

4.7 Public forum

The Chair made an opening statement regarding the broadcasting of proceedings, guidelines for the public forum and other matters.

The following participants addressed the committee:

- Ms Sally Dye
- Mr Matt Rowlands
- Mr Donald Bull
- Ms Charleton Glenn
- Mr Robert Bolton
- Mr Paul Brownrigg
- Ms Alison Glenn
- Mr Neil Bull
- Ms Aleena Burger
- Ms Ann Hare

Ms Sally Dye tendered the following document:

- A submission to the inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

Mr Matt Rowlands tendered the following documents:

- Three maps relating to proposed transmission lines.

The evidence concluded and the participants withdrew.

The public forum concluded at 2.00 pm

Tendered documents

Resolved on the motion of Mrs Carter: That:

- the sub-committee accept and publish the revised submission from Mr R. B. (Bob) Crawford, replacing his existing submission (no. 291), tendered during the hearing held on 16 August 2023
- the sub-committee accept and publish the submission from Ms Sally Dye, tendered during the public forum held on 16 August 2023
- the sub-committee accept and publish the three maps provided by Mr Matt Rowlands, tendered during the public forum held on 16 August 2023.

5. Adjournment

The sub-committee adjourned at 2.03 pm until 10.00 am, Monday 28 August 2023 (report deliberative - inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects.)

Stephen Fujiwara
Committee Clerk

Draft minutes no. 11

Monday 28 August 2023

Standing Committee on State Development

Room 1254, Parliament House, Sydney at 10.04 am

1. Members presentMs Suvaal, *Chair*

Mr Buttigieg

Ms Faehrmann

Mr Fang

Ms Hurst

Mr Lawrence (via videoconference)

Mr Martin (via videoconference)

Mr Primrose

2. Previous minutes

Resolved, on the motion of Mr Fang: that draft minutes nos. 9 and 10 be confirmed.

3. Correspondence

The committee noted the following items of correspondence:

Received

- 16 August 2023 – Email from Professor Simon Bartlett to the secretariat, providing a report on the correlation between El Niño events and the failure of transmission towers in Australia and New Zealand
- 17 August 2023 – Email from Mr Paul Brownrigg, Office of Helen Dalton MP, to the secretariat, providing a news article by Rachel Millard, published in the Financial Times on 30 July 2023 entitled ‘Will there be enough cables for the clean energy transition?’
- 21 August 2023 – Letter from the Hon Daniel Mookhey, MLC, Treasurer, to the Chair, thanking the Standing Committee on State Development for efficient conduct of the inquiry to the Debt Retirement Fund and advising the committee’s recommendations will be carefully considered.
- 21 August 2023 – Email from Witness X, to the secretariat, advising of contact from another witness and third parties regarding evidence given before the committee, including and attaching examples of the correspondence
- 23 August 2023 – Email Witness X, to the secretariat, requesting the Standing Committee on State Development be provided the email dated 21 August 2021 and associated attachments, and requesting that the committee keep the email and attachments confidential
- 24 August 2023 – Email Witness X, to the secretariat, confirming that no further action is being requested of the committee, and requesting the committee keep recent correspondence and associated attachments confidential.
- 25 August 2023 – Email from Professor Simon Bartlett to the secretariat, providing a copy of advice provided to AEMO regarding risk planning for VNI West.

Sent

- 22 August 2023 – Email from the secretariat to witness X, acknowledging concerns outlined and seeking to clarify the request, and the confidentiality of the request
- 23 August 2023 – Email from the secretariat to witness X, advising actions open to the committee are constrained by the request for confidentiality, and seeking to confirm the request being put to the committee.

Resolved, on the motion of Mr Fang: That the committee keep the following correspondence confidential, as per the request of the correspondent:

- Correspondence, including attachments, from witness X, regarding contact from other witnesses, dated 21 August 2023
- Correspondence from the secretariat to witness X, acknowledging concerns outlined and seeking to clarify the request, dated 22 August 2023
- Correspondence from witness X, to the secretariat, requesting the Standing Committee on State Development be provided the email dated 21 August 2021 and associated attachments, and requesting that the committee keep the email and attachments confidential, dated 23 August 2023
- Correspondence, from the secretariat to witness X, advising actions open to the committee are constrained by the request for confidentiality, dated 23 August 2023
- Correspondence, from witness X, to the secretariat, confirming his request that the committee keep confidential recent correspondence and attachments, dated 24 August 2023.

4. Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

4.1 Public submission

The committee noted that the following submission was published by the committee clerk under the authorisation of the resolution appointing the committee: submission no. 300.

4.2 Partially confidential submissions

Resolved, on the motion of Mr Fang: That the committee keep the following information confidential, as per the request of the author: names and/or identifying and sensitive information in submissions no. 301.

4.3 Answers to questions on notice and supplementary questions

The committee noted that the following answers to questions on notice and supplementary questions were published by the committee clerk under the authorisation of the resolution appointing the committee:

- answers to questions on notice and supplementary questions from Mr Jim Cox, Deputy Chair, Australian Energy Regulator, received 16 August 2023
- answers to supplementary questions from Ms Marie Jordan, Executive General Manager-Network, Transgrid, and Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, received, received 18 August 2023
- answers to questions on notice from Ms Marie Jordan, Executive General Manager-Network, Transgrid, and Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, received 21 August 2023
- answers to questions on notice from Mr Peter Thompson, General Manager, Wagga Wagga City Council, received 21 August 2023

4.4 Consideration of Chair's draft report

The Chair submitted her draft report entitled **Feasibility of undergrounding the transmission infrastructure for renewable energy projects**, which, having been previously circulated, was taken as being read.

Chapter 2

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.4:

'The committee also heard evidence that the cost of HumeLink had increased by a much larger amount when compared against TransGrid's first estimate Project Assessment Draft Report (PADR), issued in January 2020. This initial cost estimate was just \$1.35bn. [FOOTNOTE: Submission 106a HumeLink Alliance, p 8.]'

Resolved, on the motion of Ms Faehrmann: That paragraph 2.12 be amended by:

- a) omitting 'An alternate model to construct HumeLink is to place the cables underground. This is something that many in the community have called for.' and,
- b) inserting instead 'The committee heard there is widespread opposition to HumeLink and strong support for underground transmission lines.'

Resolved, on the motion of Ms Faehrmann: That paragraph 2.17 be amended by omitting 'the inquiry heard several concerns' and inserting 'the inquiry heard numerous concerns'.

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.24:

'In answers to questions on notice, Transgrid provided the following information:

"Currently Transgrid has Consents to Enter for approximately 249.9 km of the total alignment of 328 km or 76% of the line. Approximately 40.747 km of this is public land or approximately 16% of the 249.9 km where we have Consents to Enter." [FOOTNOTE: Answers to questions on notice, Mr Jeremy Roberts, Major Project Delivery Director, Transgrid, 21 August 2023, p 24.]

Ms Faehrmann moved: That the following new paragraph be inserted after paragraph 2.24:

'Mr Bill Kingwill representing the HumeLink Action Group told the committee that there was a huge amount of landholder resistance to overhead transmission lines:

"We've got around about 160 landholders that have not signed the consent to enter and they are going to fight. Yes, we're going to fight. That 160 landholders at \$600,000 each—there is a billion dollars that we don't really want to spend in litigation. Why I'm bringing this up is, if it is put underground none of that will happen. And that's about what I'll finish off on. I don't want to be there waving the sabre at you, but this is the track that we are going down, and those people out there, my members that have put me here to say this, they're supporting it and that's what we're going to do. I commend you. Please put the powerline underground. It is clean, it is green and it's unseen." [FOOTNOTE: Public forum, Mr William (Bill) Kingwill, 26 July 2023.]

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.24:

'Mr Bill Kingwill representing HumeLink Action Group told the committee that there was a huge amount of landholder resistance to overhead transmission lines.' [FOOTNOTE: Public forum, Mr William (Bill) Kingwill, 26 July 2023.]

Resolved, on the motion of Ms Faehrmann: That paragraph 2.28 be omitted: 'During this inquiry, the committee received a significant amount of evidence about the merits of the current plan for HumeLink (that is, constructing it as an overhead transmission line) compared to constructing it underground (particularly as an HVDC line). Many community groups and individuals in the areas affected by HumeLink advocated strongly for the underground option.' And the following new paragraph be inserted instead:

'During this inquiry, the committee received a significant amount of evidence about the merits of constructing HumeLink underground (particularly as an HVDC line) compared to the current plan for HumeLink to be constructed as an overhead transmission line. The overwhelming majority of community groups and individuals in the areas affected by HumeLink advocated strongly for the underground option. On the other hand, Transgrid submitted that cost and timing made undergrounding transmission unfeasible.'

Resolved, on the motion of Ms Faehrmann: That paragraph 2.33 be amended by inserting at the end of the paragraph: 'For example, the independent experts who, between them, had 142 years of experience in electricity transmission both in Australia and overseas, stated that the GHD cost per kilometre stated in the report was "significantly high". [FOOTNOTE: Evidence, Mr Brand, 26 July 2023, p 14.] One reason for this high estimate in GHD's report, according to Professor Simon Bartlett, was that assumptions were based upon undergrounding AC transmission, not DC, and that "costs are typically only 2 to 3 times as much as overhead, and the line can be undergrounded as frequently along a route and for as far as needed in each case."' [FOOTNOTE: Submission 29, Professor Simon Bartlett, p 2.]

Mr Fang moved: That the following new paragraph be inserted after paragraph 2.39:

'Mr Jim Cox however, told the committee, the Federal Government have proposed a rule change for the RIT-T, to increase the scope of what must be considered for new projects:

"I think that if the proposed rule change goes ahead, transmission companies will be required to consult more fully with the local communities on the sort of issues that have we've been talking about. What we would then want to see is that the business had considered the input it had received from community and had taken that into account in making its decisions. That doesn't mean they would necessarily do what the community prefers, but it means they would have turned their minds to the issues and seriously addressed them. So we would expect that process to happen." [FOOTNOTE: Evidence, Mr Jim Cox, Deputy Chair, Australian Energy Regulator, 7 august 2023, p 24.]

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 1.12:

'Several independent electricity experts, including Prof Simon Bartlett told the committee that Australia is lagging well behind "international best practice, knowledge and experience both in terms of undergrounding and especially the use and benefits of HVDC VSC technology". [FOOTNOTE: Submission 29, Professor Simon Bartlett, p 2.] Professor Bartlett told the committee that "other than TasNetworks and Amplitude Consultants, there is almost no knowledge of HVDC VSC in Australia. In fact, AEMO and the other TNSP's are unaware of the key role for this technology in the massive integration of renewables into Australia's power systems. Proof can be found in AEMO's Draft 2023 Transmission Expansions Options Report, issued 2 May 2023, that contained the most appalling assumptions on all their HVDC options ever imaginable".' [FOOTNOTE: Submission 29, Professor Simon Bartlett, p 2.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.44:

'However, community experts challenged the notion that undergrounding would take significantly more time than overhead when access to land was taken into account: "Undergrounding HumeLink will give social licence and will mean that communities will be working with Transgrid and AEMO to deliver HumeLink on time".' [FOOTNOTE: Submission 106, HumeLink Alliance Incorporated, p 3.]

Resolved, on the motion of Ms Fang: That paragraph 2.45 be amended by inserting at the end:

'In addition, Mr Bill Kingwill, Chair of the HumeLink Action Group, told the committee:

"If this powerline is put underground—and that's what we have stated all along from the landholders that I represent—you can start tomorrow. But if it's going to be overhead, we're going to fight you until the last man standing." [FOOTNOTE: Public forum, Mr Bill Kingwill, 26 July 2023, p 24.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.59:

'However, in evidence provided to the committee, Mr Les Brand, from Amplitude Consulting, an Australian based engineering company specialising in the transmission and distribution of electricity, said:

"Having set up and managed operations for Australia's two long distance underground cable projects I can say that aside from preparedness for a cable failure and repair, ongoing maintenance of HVDC cables is significantly less onerous and challenging than overhead lines ... I do not support any statement that maintaining HVDC underground cables is more challenging than maintaining overhead lines."
[FOOTNOTE: Answers to questions on notice, Mr Les Brand, Director and Principal Consultant, Amplitude Consultants, 7 August 2023, p 3.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.70:

'However, in evidence provided to the committee, Mr Les Brand, from Amplitude Consulting, an Australian based engineering company specialising in the transmission and distribution of electricity, said:

"Having set up and managed operations for Australia's two long distance underground cable projects I can say that aside from preparedness for a cable failure and repair, ongoing maintenance of HVDC cables is significantly less onerous and challenging than overhead lines ... I do not support any statement that maintaining HVDC underground cables is more challenging than maintaining overhead lines."
[FOOTNOTE: Answers to questions on notice, Mr Les Brand, Director and Principal Consultant, Amplitude Consultants, 7 August 2023, p 3.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.79:

'In 2021, the Independent Member for Wagga, Dr Joe McGirr MP, undertook a survey of landholders impacted and of the respondents, 76 percent stated that HumeLink has negatively impacted their mental health. One witness to the inquiry, Ms Jessie Reynolds, told the committee that "the mental health concerns are huge. I'm concerned for the mental health of people who have to live with, look at and work under these 80-metre high transmission lines. I am a sufferer of depression and this imposed strain has had a huge impact on my mental health, which in turn affects my relationships with my children, my husband and my family".' [FOOTNOTE: Public forum, Ms Jessie Reynolds, 26 July 2023, p 26.]

Ms Faehrmann moved: That the following new paragraph be inserted after paragraph 2.80:

'Some witnesses also raised concerns regarding the possible health impacts of overhead transmission lines. Professor Simon Bartlett AOM, said that one of the many advantages of undergrounding with HVDC VSC technology was that the "electro-magnetic fields generated by HVDC lines do not vary at 50 cycles a second, but are constant like the earth's magnetic field. This eliminates landowners' potential concerns about harmful health effects such as childhood leukemia." [FOOTNOTE: Submission 29, Professor Simon Bartlett, p 4.]

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.86:

'Ms Jessie Reynolds, who is a third and fourth generation farmer from Tumut said that biosecurity concerns are 'huge' for her family:

"We have a proposed 4½ kilometres of transmission lines and over seven kilometres of access tracks on just one block. The amount of vehicles coming in is a huge problem for us. Anything like foot-and-mouth, lumpy skin and then weeds are all really big concerns for us and that applies to both underground and above-ground." [FOOTNOTE: Public forum, Ms Jessie Reynolds, 26 July 2023, p 26.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.87:

"Tumut Farmer Mr Peter Barratt told the committee of the impact that overhead transmission lines would have on his farming livelihood:

"I also use helicopters to aerially spray and fertilise three times a year. I have been informed by my operator that he can no longer do it as it's too dangerous to fly near the powerlines. So he won't be able to service us anymore, which will make our property worthless, because it will just turn to weed." [FOOTNOTE: Public forum, Mr Peter Barratt, 26 July 2023, p 30.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.91:

'Ms Louise Suzanne Freckelton, a farmer and tourism operator who appeared before the committee representing Riverina Highlands Landcare Network, told the committee:

"The proposed corridor of the HumeLink energy project runs over many sites that are in the Riverina Highlands Landcare Network, which, in conjunction with many other government organisations and landowners, has invested tens of thousands of dollars and thousands of human hours of labour into projects to improve habitat and enhance biodiversity. Some of this has been funded by incentive grants, but almost inevitably there's 50 per cent that comes from landholders themselves that have invested this money.

Many of these projects contain critically endangered threatened species of fauna and flora." [FOOTNOTE: Public forum, Ms Louise Suzanne Freckelton, 26 July 2023, p 21.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.91:

'Multiple witnesses expressed their concern at the impact that overhead transmission lines would have on birds, including on many threatened species, including internationally listed migratory species. Mr Peter Redfearn, a rice farmer at Moulamein who has been involved in a lot of conservation work on his property, told the committee:

"There are four endangered birds recorded on my place, including the ones that I've been releasing in a captive breeding program. We've released about 70 bush stone-curlews, which are endangered in New South Wales. The painted snipe, the Australasian bittern and the ground cuckoo-shrike are regularly recorded on my properties. The problem we've had with the bush stone-curlews is colliding with the single-wire earth return powerlines, which are single—quite a small-scale thing compared to what we're looking forward to. From my point of view, for the wildlife it will be a damn disaster apart from all the restrictions on our farming operation." [FOOTNOTE: Evidence, Mr Peter Redfearn, Community Member, 16 August 2023, p 15.]

Resolved, on the motion of Mr Lawrence: That paragraph 2.95 be amended by inserting at the end: 'Ultimately the senior RFS representative was unable to say either that high voltage transmission lines would cause more fires or make fires that do occur worse than they would otherwise be.' [FOOTNOTE: Evidence, Mr Jayson McKellar, Director Area Operations (Northern), Assistant Commissioner, Rural Fire Service, 27 July 2023, p 19.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.96:

'The Mayor of Snowy Valleys Council, Councillor Ian Chaffey, expressed his concern regarding the potential of these power lines to cause fires:

"This transmission of power across the country in high voltage AC is not 330,000 volts; it's 500,000 volts. The chances of corona effect, which is an arc from the line to the ground, is significantly increased. You can't fight fires under it while it's operating but, depending on the situation at the time, smoke and those other types of debris cause a greater incidence of corona. To me, as I said earlier, this is not an issue that we should be debating at all. The decision should have been made. We should be high voltage underground." [FOOTNOTE: Evidence, Cr Chaffey, 26 July 2023, p 7.]

Ms Faehrmann moved: That paragraph 2.103 be amended, by inserting at the end:

'For example, Tumut farmer Mr Peter Barratt told the committee that during the Dunns Road fires they were saved twice by "aerial appliances" and that "if they hadn't been there pulling water out of our dams, which are directly under where the powerlines are going through, we would have lost everything, and that happened twice." [FOOTNOTE: Public Forum, Mr Peter Barratt, 16 August 2023, p 30.]

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Resolved, on the motion of Ms Faehrmann: That the following new paragraph with the heading 'Climate Change' be inserted after paragraph 2.108:

'A number of stakeholders raised their concerns regarding the role that overhead transmission posed as a result of climate change and the predicted increase in the frequency and severity of severe weather related events, including bushfires. Ms Sally Dye, a landholder that lives between Deniliquin and Moulamein, where 17 kilometres of powerline is planned to run through the middle of her property told the committee:

"Climate change is upon us, and the problem we have is 45-degree days where we are—stinking hot north-westerly dry winds. If we're expecting more extreme events under climate change, the way it pans out, out our way, is that we end up with the winds and dust storms. Now, everyone knows dust and smoke create arcing from these major powerlines and start fires. Our nearest neighbours are 18 kilometres to the east, 18 kilometres to the west, and there's two or three of us living on our property at any one time. There is nobody to fight fires out there and if it's going to happen more often, we are so at risk. Fire insurance is becoming increasingly prohibitively expensive, as with all insurance with climate change." [FOOTNOTE: Public forum, Ms Sally Dye, 16 August 2023, p 24.]

Resolved, on the motion of Ms Faehrmann: That the following new paragraph be inserted after paragraph 2.108:

'Similarly, Snowy Valleys Council, urged the committee to consider climate risk and factor in long-term resilience because of the expected increase in severe weather events:

"Undergrounding is a proven technology commonly adopted elsewhere in the world where communities, such as ours, will not tolerate overhead infrastructure and policy makers see the wisdom of planning infrastructure for long-run resilience to future climate events that threaten the security of supply of electricity through overhead lines, as they do here as well." [FOOTNOTE: Submission 100, Snowy Valleys Council, p 42.]

Ms Faehrmann moved: That the paragraph 2.112 be omitted:

'On balance, with all measures considered, the committee finds that the current plan for HumeLink is the correct approach. We acknowledge that this is not what many in the local community are calling for, and

we emphasise that this was not an easy conclusion to come to. However, there were a number of matters on which we found the evidence in favour of the overhead option to be persuasive.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Mr Fang moved: That:

- a) paragraph 2.112 be omitted: 'On balance, with all measures considered, the committee finds that the current plan for HumeLink is the correct approach. We acknowledge that this is not what many in the local community are calling for, and we emphasise that this was not an easy conclusion to come to. However, there were a number of matters on which we found the evidence in favour of the overhead option to be persuasive.' and the following new paragraph inserted instead:

'The conflicting evidence, not only on the issue of cost, but the impact of the factors, which are not captured within the current RIT-T process, makes any decision on the HumeLink proposal difficult. Given the federal government may soon capture many of these issues, within their proposed rule change, it would seem appropriate to further investigate, not only the cost of undergrounding HumeLink, but establishing the methodology by which other factors normally captured within the term 'social license' may be provided a value, to allow their measurement and weight within the RIT-T process.'

- b) the words after Finding 1 be omitted: 'That, in considering all the evidence, the current plan for constructing HumeLink as a 500 kV overhead transmission line is the correct approach.' and the following new wording be inserted instead:

'In order to determine the most appropriate method of transmitting, renewable energy, further detailed work and analysis must be undertaken, to determine the feasibility and likely cost of underground transmission lines.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Mr Lawrence moved: That:

- a) paragraph 2.122 be amended by inserting 'especially given the applicable regulatory environment and the lack of any action to date in progressing the undergrounding option' after 'the current plan for HumeLink is the correct approach'.
- b) Finding 1, which follows paragraph 2.122, be amended by inserting at the end: 'especially given the applicable regulatory environment and the lack of any action to date in progressing the undergrounding option.'

Question put.

The committee divided.

Ayes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

Noes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

There being an equality of votes, question resolved in the affirmative on the casting vote of the Chair.

Ms Faehrmann moved: That Finding 1, which follows paragraph 2.122, be omitted: 'That, in considering all the evidence, the current plan for constructing HumeLink as a 500 kV overhead transmission line is the correct approach especially given the applicable regulatory environment and the lack of any action to date in progressing the undergrounding option.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Ms Faehrmann moved: That the following Finding be inserted after paragraph 2.112:

'That Transgrid has no social licence to build HumeLink as currently planned with overhead transmission lines and, as a result, faces lengthy and costly delays due to strong opposition from the community.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Mr Fang moved: That paragraph 2.113 be amended by omitting: '- at least double the cost' after 'it would be more expensive'.

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Mr Fang moved: That paragraph 2.114 be amended by:

- a) omitting 'With the cost of living such a critical issue at the moment, the committee cannot justify passing on this cost to the people of New South Wales', and
- b) inserting instead 'While the cost of undergrounding projects, such as HumeLink, may result in slightly higher electricity bills, the committee believes it is unreasonable and unequitable to expect rural and regional New South Wales communities, to bear the brunt of these overhead transmission line projects, when the cost of undergrounding might only add a few dollars to consumer's electricity bills. The committee believes that a further, deeper analysis, prior to commencement on the project is urgently required, to establish with greater certainty, the most beneficial pathway forward for HumeLink.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Mr Lawrence moved: That paragraph 2.114 be amended by:

- a) omitting 'With the cost of living such a critical issue at the moment, the committee cannot justify passing on this cost to the people of New South Wales', and
- b) inserting instead 'The evidence is clear that an undergrounding proposal would not be approved by the regulator and could only occur with a sizeable financial contribution from state or federal governments and significant planning, which would need to have been occurred by now in order to avoid unacceptable delay' [FOOTNOTE: Evidence, Ms Jordan, 7 August 2023, p 20.]

Question put.

The committee divided.

Ayes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

Noes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

There being an equality of votes, question resolved in the affirmative on the casting vote of the Chair.

Mr Fang moved: That paragraphs 2.115 to 2.119 be amended by:

- a) omitting paragraphs 2.115 to 2.119:

'Another deciding issue for us was the delay associated with putting HumeLink underground. We note that New South Wales is in a critical stage of the transition of our electricity system. With coal fired generators withdrawing faster than expected, it is essential that we have the right infrastructure in place to transport renewable sources of energy to the demand centres along the coast.

We note that according to the 2022 ISP, HumeLink is the only actionable project that could address the risks of early coal closures in the period 2026 to 2028. Putting it underground would mean HumeLink would not be operational until well after this period. This is an unacceptable risk to the energy security and reliability of New South Wales. The last thing we want to do is to endorse the underground approach, only to have the delay mean that New South Wales is subject to blackouts.

On the issues of impacts to local landowners, communities, and the environment, we take seriously the feedback given to us by inquiry participants. We acknowledge that some people are concerned about how HumeLink will impact their properties and businesses. However, we note the efforts of Transgrid to improve engagement with affected landowners via negotiation of route reallocation and compensation payments. We are also not convinced that the underground option would necessarily be less intrusive or disruptive for landholders.

We thank these communities for hosting HumeLink, and recognise they play an important part in ensuring New South Wales has the transmission infrastructure it requires.

Bushfire risk was another influential issue for the committee. The memory of the 2019-2020 bushfires still looms large, and we would not endorse something we believed had a real risk of contributing to fires. However, based the evidence provided by Transgrid and the Rural Fire Service we are satisfied that overhead transmission lines do not pose a risk of igniting bushfires, and that the right procedures are in place to manage risk if bushfires are present.' and

- b) inserting a new recommendation, after paragraph 3.29 and before Recommendation 1:

'The Legislative Council establish a select committee, to further investigate the feasibility, cost and impact of underground transmission lines. The committee shall comprise of two opposition members, two crossbench members and three government members. The chair shall be a member of the opposition, or crossbench.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Mr Lawrence moved: That paragraph 2.116 be amended by inserting at the end: 'The evidence before us is that the previous state government took no steps to facilitate or plan for undergrounding of Hume Link and while we make no criticism it seems in our view the time has passed where such an option could occur even if it were desirable and/or possible in the regulatory environment' [FOOTNOTE: Evidence, Ms Jordan, 7 August 2023, p 21; Evidence, Mr Roberts, 7 August 2023, p 21.]

Question put.

The committee divided.

Ayes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

Noes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

There being an equality of votes, question resolved in the affirmative on the casting vote of the Chair.

Ms Faehrmann moved: That the following finding and recommendation be inserted after paragraph 2.114:

- a) Finding: 'That due to the increasing frequency and severity of severe storms, floods and fires as a result of climate change, overhead transmission lines pose an unacceptable risk to regional communities and firefighting efforts.'
- b) Recommendation: 'That, due to the increasing frequency and severity of severe storms, floods and fires as a result of climate change, and the increased risk that overhead transmission lines pose to regional communities and firefighting efforts, the NSW Government instruct Transgrid to prioritise underground transmission lines wherever feasible.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Ms Faehrmann moved: That the following new Recommendation be inserted after paragraph 2.119:

'That the NSW Government urge TransGrid to move to international best practice and use underground transmission whenever passing through areas of high environmental, social, agricultural or cultural significance.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Resolved, on the motion of Ms Faehrmann: That paragraph 3.4 be amended by inserting 'many' before 'concerns about consultation and planning processes'.

Ms Faehrmann moved: That:

- a) the following paragraph be inserted after paragraph 3.29: 'The committee is also of the view that all options should have been adequately considered in the planning process but weren't. It therefore

considers that a review of planning laws, including the impact of declaring projects critical state significant infrastructure, be undertaken.' and

- b) the following recommendation be inserted after the new paragraph: 'That the NSW Government undertake a review of the Environmental Planning & Assessment Act to assess the impact of the declaration of projects as critical state significant infrastructure, and to ensure that all options for major infrastructure builds are given due and equal consideration.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Ms Faehrmann moved: That the following new recommendation be inserted after paragraph 3.62:

'That the NSW Government work with the Commonwealth to prioritise regulatory reform that will ensure a fairer sharing of the cost of transmission infrastructure upgrades, including that the energy producer and government contribute.'

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Ms Suvaal, Mr Primrose

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Mr Fang moved: That the committee reject the report.

Question put.

The committee divided.

Ayes: Ms Faehrmann, Mr Fang, Ms Hurst, Mr Martin

Noes: Mr Buttigieg, Mr Lawrence, Mr Primrose, Ms Suvaal

There being an equality of votes, question resolved in the negative on the casting vote of the Chair.

Resolved, on the motion of Mr Primrose: That:

- a. the draft report as amended be the report of the committee and that the committee present the report to the House
- b. the transcripts of evidence, submissions, tabled documents, answers to questions on notice and supplementary questions, and correspondence relating to the inquiry be tabled in the House with the report
- c. upon tabling, all unpublished attachments to submissions be kept confidential by the committee
- d. upon tabling, all unpublished transcripts of evidence, submissions, tabled documents, answers to questions on notice and supplementary questions, and correspondence relating to the inquiry, be published by the committee, except for those documents kept confidential by resolution of the committee
- e. the committee secretariat correct any typographical, grammatical and formatting errors prior to tabling
- f. the committee secretariat be authorised to update any committee comments where necessary to reflect changes to recommendations or new recommendations resolved by the committee

- g. dissenting statements be provided to the secretariat within 24 hours after receipt of the draft minutes of the meeting
- h. the secretariat is tabling the report at 10.00 am, Thursday 31 August
- i. the Chair advised the secretariat and members that they did not intend to hold a press conference.

5. Adjournment

The committee adjourned at 12.16 pm, *sine die*.

Stephen Fujiwara
Committee Clerk

Appendix 4 Dissenting Statements

Hon Wes Fang MLC, The Nationals and Hon Taylor Martin MLC, Liberal Party

This report into the feasibility of undergrounding the transmission infrastructure for renewable energy projects from the State Development committee, is nothing short of a profound disappointment. In just about every conceivable way, the report fails to accurately capture the evidence and objections from community members and the landholders who will be directly or indirectly impacted.

For these communities, to whom the Government promised so much, both in consideration of the substantive issue and with an empathy for their circumstance, they have every right to feel betrayed. The community provided their submissions, gave evidence, openly provided access to their properties and bared their souls with raw emotion, to provide us their insights in relation to the consultation process and the impacts the overhead transmission lines will have on their properties, their communities and their personal well-being. They did so, in the hope the committee would acknowledge these impacts and seek to work with them to find a solution. On every level, this report fails them.

Legitimate issues which were raised in the submissions, were canvassed in evidence and were evaluated during the hearings, have been overlooked or minimised within this report. The committee took overwhelming evidence from landholders, about the impacts on their land values, their farming operations and the increased risk of fire, all of which are having devastating and detrimental ramifications on their livelihoods.

Of equal concern, was the harmful impact on the mental health and general well-being of the affected landholders, as well as their communities. These issues are not simply solved with compensation payments, as for many community members, no amount of money will eliminate their concerns.

Both the community and the Opposition agree these transmission projects, which will criss-cross rural and regional New South Wales are required in order to link the renewable energy zones (REZ) and large renewable projects such as Snowy 2.0 into the current electricity grid, landholders and communities are asking that these projects minimise the impacts on them. Broadly speaking, they seek to have these transmission lines undergrounded to reduce the physical impacts on their operations and property and maintain the visual amenity of the area they love.

The evidence from TransGrid, that undergrounding is difficult and costly, belies, the fact that they have not done the detailed work in relation to costing, or feasibility. The evidence from the Australian Energy Regulator, that the least costly solution is required, is at odds with the recent federal government advice, proposing a rule change, in relation to the regulatory investment test for transmission assessments for future projects, that a broader scope of issues be considered, when determining the suitability of a project.

It is disappointing that the Minister in referring this issue to the State Development committee, chose a committee which is dominated by Government members with a Government chair. This single action meant the government could ultimately determine the outcome of the committee's report. Exactly one month before this report was to be handed down, the Premier in a radio interview indicated that regardless of the committee's findings the Government was already of the view that undergrounding was too expensive. Regardless of the evidence that was put before the committee, it appears the die was already cast.

If this were the view of the Government, the Minister in seeking to refer the issue to the State Development committee for inquiry, was enacting nothing more than a cynical and cruel hoax, offering false hope to those landholders and community members to whom the government had promised so much, but would ultimately fail. It is not lost on us that the evidence from TransGrid was also that they had already commenced the procurement process for project, such as HumeLink. It is unclear if this played any role in the report's conclusions.

We made an attempt to amend the report, to provide more balance and give a voice to those rural and regional communities that will feel let down by this report. Ultimately, the Government used their numbers to block the vast majority of these changes. This inquiry has clearly demonstrated the community opposition to overhead transmission lines and deserves an inquiry that will assess the evidence without the financial impacts being the predominant determinant. Where rural and regional New South Wales is asked to play a part in these projects to provide metropolitan areas with access to renewable energy from the gazetted REZs, it is only fair that these impacts are minimised so that rural and regional landholders do not bear the brunt of the projects.

Given that this report is not worth the paper it is written on, it is incumbent upon the Legislative Council to do justice to the evidence and the issue. We propose a new select committee, where the Government does not have an automatic majority, chaired by a crossbench or Opposition member should be established in order to allow this issue to be reassessed.

Hon Emma Hurst, Animal Justice Party

It is incredibly disappointing that the Minns Labor government has failed to support the undergrounding of transmission infrastructure for renewable energy projects in this Inquiry.

The committee heard extensive concerns about this project from experts and local communities, many of whom felt their views about undergrounding had been ignored and sidelined, particularly around the bushfire risks associated with above-ground transmission lines and the risk to human life.

The committee heard about the impact overhead transmission lines will have on animals and the environment, noting we received evidence that clearing of native forests and bushland required for HumeLink will have 'serious impacts' on the habitat for 82 threatened species of plants and animals, including the koala, Booroolong frog, wedge-tailed eagle and powerful owl.

I support a further Inquiry into this issue given there were concerns raised by every other political party on the committee, but those concerns were muted from this report by a Labor majority.

Ms Cate Faehrmann MLC, The Greens

This Inquiry has let the people of NSW down. It was a missed opportunity to provide strong recommendations to Transgrid, the Australian Energy Regulator (AER), Australian Energy Market Operator (AEMO) and the Commonwealth Government that underground transmission lines must be prioritised in energy transmission.

It is extremely disappointing that, after the overwhelming evidence received by this committee about the benefits of undergrounding transmission lines compared with overhead, that this report contains just the one finding which was only supported by government members:

“That, in considering all the evidence, the current plan for constructing HumeLink as a 500 kV overhead transmission line is the correct approach especially given the applicable regulatory environment and the lack of any action to date in progressing the undergrounding option.”

This absolutely does not reflect the evidence received by the committee. Unfortunately, what it confirms is that this Inquiry was a ‘tick-a-box’ exercise by the Minister, an exercise in looking like the Government was taking community concerns around the various proposed transmission line projects in the pipeline in NSW seriously, but had already made up its mind. That’s incredibly disrespectful to the community and stakeholders who put time and effort into giving evidence. I, for one, want to reassure the community and all stakeholders that their concerns were heard by at least some members of the committee and that the end of this Inquiry is not the end of the Parliament taking this issue on.

While I was pleased that quite a number of my amendments to the draft report were supported, which ensured more evidence was included to balance the report, my amendments to change the findings and recommendations were ultimately rejected by government members. These are outlined below:

No Social Licence

It was made abundantly clear to the committee that HumeLink, as currently proposed, has no social licence.

Proposed New Finding: That Transgrid has no social licence to build HumeLink as currently planned with overhead transmission lines and, as a result, faces lengthy and costly delays due to strong opposition from the community.

- rejected by government members.

Bushfire and Climate Risk

Multiple witnesses gave evidence to the committee regarding the increased risk that overhead transmission lines pose during bushfires. This increased risk, in terms of starting fires and impeding firefighting, rescue and safety efforts, in the face of climate change, should be reason enough for the NSW and Commonwealth Governments to remove any regulatory barriers and instruct Transgrid to bury transmission lines wherever feasible.

The Greens amendment inserting a sub-section detailing evidence received regarding the increased risk of bushfires as a result of climate change was supported.

However, the final report did not adequately address the concerns we heard from multiple witnesses about the impact that kilometres of 500kv transmission lines, with massive steel towers, cutting through their properties would have in the inevitable case of fire. They spoke about how it would prevent any aerial activity like irrigation and firefighting taking place, including that fire trucks and other vehicles cannot pass under transmission lines in the event of a fire.

A number of witnesses told the committee that they had seen powerlines and transmission lines cause fire, through arcing or birds hitting them. However, Transgrid said that they had no knowledge of a transmission line ever causing a fire. It was disappointing that there was no attempt by the committee to seek detailed expert evidence to be able to confirm this one way or the other. In fact, my questions taken on notice by the one representative from NSW Rural Fire Service who appeared before the committee seeking evidence of whether transmission lines have caused fires were not ultimately provided to the committee.

Transmission lines built now will have an operating lifetime of at least 50 years, yet building this infrastructure to better withstand more severe and extreme weather-related events as a result of climate change was not considered by this inquiry.

Further, the attitude of Transgrid and the AER when asked about bushfire and climate risk was to hunker down and defend how they've always done things. This was disappointing from a (once-public) company that owns and manages our transmission network and the market regulator, at a time when innovation is needed to ensure that infrastructure built now is able to withstand an increasingly unstable climate in decades to come.

The transition to 100% renewable energy does not have to mean 500kv transmission lines with hundreds of giant steel towers criss-crossing through our national parks, state forests and productive agricultural land, with all of the associated fire risks.

Proposed New Finding: That due to the increasing frequency and severity of severe storms, floods and fires as a result of climate change, overhead transmission lines pose an unacceptable risk to regional communities and firefighting efforts.

- rejected by the government

Proposed Recommendation: That, due to the increasing frequency and severity of severe storms, floods and fires as a result of climate change, and the increased risk that overhead transmission lines pose to regional communities and firefighting efforts, the NSW Government instruct Transgrid to prioritise underground transmission lines wherever feasible.

Proposed Recommendation: That the NSW Government work with the Commonwealth to prioritise regulatory reform that will ensure a fairer sharing of the cost of transmission infrastructure upgrades, including that the energy producer and government contribute.

Proposed Recommendation: That the NSW Government urge TransGrid to move to international best practice and use underground transmission whenever passing through areas of high environmental, social, agricultural or cultural significance.

- All rejected by government members

The rushed nature of this Inquiry did not allow adequate time for members to examine the detailed evidence put to it, particularly in terms of the conflicting evidence we heard regarding underground transmission lines, including Transgrid's constant undermining of the technology. That's why I support a Select Committee being established that is not dominated by government members, to examine this important issue more thoroughly and genuinely.

Due to all of the reasons I've outlined, the Greens do not endorse this report.

